NP 24

RECORD OF AMENDMENTS

The table below is to record Section IV Notice to Mariners amendments affecting this volume.
Sub paragraph numbers in the margin of the body of the book are to assist the user with amendments to this volume from these amendments.

Weekly Notices to Mariners (Section IV)

2004	2005	2006	2007

NP 24

BLACK SEA AND SEA OF AZOV PILOT

Marmara Denizi, Black Sea and Sea of Azov with adjacent coasts of Turkey, Bulgaria, Romania, Ukraine, Russia and Georgia

FIRST EDITION
2003

PUBLISHED BY THE UNITED KINGDOM HYDROGRAPHIC OFFICE

To be obtained from Agents
for the sale of Admiralty Charts and Publications

Previous editions:

Black Sea Pilot
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Fourth Edition 1893
Fifth Edition 1900
Sixth Edition 1908
Seventh Edition 1920
Eighth Edition 1930
Ninth Edition 1942
Tenth Edition 1955
Eleventh Edition 1969
Twelfth Edition 1990
Thirteenth Edition 2000

PREFACE

The First Edition of the *Black Sea and Sea of Azov Pilot* has been prepared by Captain R D Peddle, Master Mariner, and contains the latest information received in the United Kingdom Hydrographic Office to the date given below.

This edition supersedes the Thirteenth Edition of the *Black Sea Pilot* (2000), which is cancelled.

Information on climate, currents and ice has been based on data provided by the Meteorological Office, Bracknell.

The following sources of information, other than UKHO publications and Ministry of Defence papers, have been consulted:

Briefing on USSR sea commercial ports, 3rd edition 1984.
Charts – Bulgarian, Romanian, Russian, Turkish, Ukrainian.
Danube Commission Publications.
Encyclopaedia Britannica.
Fairplay World Ports Directory 2004.
Lloyds Ports of the World 2004.
Romanian Sailing Directions (1989).
Russian Black Sea Pilot No 1244 (1996 Edition).
Russian Sea of Azov Pilot No 1243 (1995 Edition).
Statesman's Year Book 2004.
Turkish Department of Navigation, Hydrography and Oceanography – The Strait of Ístanbul, Sea of Marmara and the Strait of Çanakkale Routeing Guide (2002).
Turkish Department of Navigation, Hydrography and Oceanography – Harbour Regulations.
Turkish Waters and Cyprus Pilot 2001 (6th Edition), Rod Heikell (Imray, Laurie, Norie and Wilson Ltd).
Whitakers Almanac 2004.

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18th December 2003

CONTENTS

EXPLANATORY NOTES

Admiralty Sailing Directions are intended for use by vessels of 12 m or more in length. They amplify charted detail and contain information needed for safe navigation which is not available from Admiralty charts, or other hydrographic publications. They are intended to be read in conjunction with the charts quoted in the text.

This volume of the Sailing Directions will be kept up-to-date by the issue of a new edition at intervals of approximately 3 years, without the use of supplements. In addition important amendments which cannot await the new edition are published in Section IV of the weekly editions of *Admiralty Notices to Mariners*. A list of such amendments and notices in force is published in the last weekly edition for each month. Those still in force at the end of the year are reprinted in the *Annual Summary of Admiralty Notices to Mariners*.

This volume should not be used without reference to Section IV of the weekly editions of Admiralty Notices to Mariners.

CD–ROM

Status. A compact disc is provided at the back of this volume. The paper publication of Sailing Directions satisfies the requirements of Chapter V of the International Convention for the Safety of Life at Sea. The CD version does not satisfy these requirements and should only be used in conjunction with the paper publication and any amendments affecting the paper publication. Where any discrepancy exists between data on the CD and in the paper publication of Sailing Directions, the paper publication (inclusive of amendments) is to be relied upon.

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References to hydrographic and other publications

The Mariner's Handbook gives general information affecting navigation and is complementary to this volume.

Ocean Passages for the World and *Routeing Charts* contain ocean routeing information and should be consulted for other than coastal passages.

Admiralty List of Lights should be consulted for details of lights, lanbys and fog signals, as these are not fully described in this volume.

Admiralty List of Radio Signals should be consulted for information relating to coast and port radio stations, radio details of pilotage services, radiobeacons and direction finding stations, meteorological services, radio navigational aids, Global Maritime Distress and Safety System (GMDSS) and Differential Global Positioning System (DGPS) stations, as these are only briefly referred to in this volume.

Admiralty Maritime Communications is a comprehensive guide on all aspects of maritime communications for the yachtsman and small craft user. It provides general information on Global Maritime Distress and Safety System (GMDSS), the management of VHF, Maritime Safety Information, NAVTEX, Inmarsat and Radio Facsimile, and detailed information and procedures for marinas and harbours used by small craft.

Annual Summary of Admiralty Notices to Mariners contains in addition to the temporary and preliminary notices, and amendments and notices affecting Sailing Directions, a number of notices giving information of a permanent nature covering radio messages and navigational warnings, distress and rescue at sea and exercise areas.

The International Code of Signals should be consulted for details of distress and life-saving signals, international ice-breaker signals as well as international flag signals.

Remarks on subject matter

Buoys are generally described in detail only when they have special navigational significance, or where the scale of the chart is too small to show all the details clearly.

Chart index diagrams in this volume show only those Admiralty charts of a suitable scale to give good coverage of the area. Mariners should consult NP 131 *Catalogue of Admiralty Charts and Publications* for details of larger scale charts.

Chart references in the text normally refer to the largest scale Admiralty chart but occasionally a smaller scale chart may be quoted where its use is more appropriate.

Firing, practice and exercise areas. Except for submarine exercise areas, details of firing, practice and exercise areas are not mentioned in Sailing Directions, but signals and buoys used in connection with these areas are sometimes mentioned if significant for navigation. Attention is invited to the Annual Notice to Mariners on this subject.

Names have been taken from the most authoritative source. When an obsolete name still appears on the chart, it is given in brackets following the proper name at the principal description of the feature in the text and where the name is first mentioned.

Tidal information relating the daily vertical movements of the water is not given; for this *Admiralty Tide Tables* should be consulted. Changes in water level of an abnormal nature are mentioned.

Time difference used in the text when applied to the time of High Water found from the *Admiralty Tide Tables*, gives the time of the event being described in the Standard Time kept in the area of that event. Due allowance must be made for any seasonal daylight saving time which may be kept.

Wreck information is included where drying or below-water wrecks are relatively permanent features having significance for navigation or anchoring.

Units and terminology used in this volume

Latitude and Longitude given in brackets are approximate and are taken from the chart quoted.

Bearings and directions are referred to the true compass and when given in degrees are reckoned clockwise from 000° (North) to 359°
Bearings used for positioning are given from the reference object.
Bearings of objects, alignments and light sectors are given as seen from the vessel.
Courses always refer to the course to be made good over the ground.

Winds are described by the direction from which they blow.

Tidal streams and currents are described by the direction towards which they flow.

Distances are expressed in sea miles of 60 to a degree of latitude and sub-divided into cables of one tenth of a sea mile.

Depths are given below chart datum, except where otherwise stated.

Heights of objects refer to the height of the structure above the ground and are invariably expressed as "... m in height".

Elevations, as distinct from heights, are given above Mean High Water Springs or Mean Higher High Water whichever is quoted in *Admiralty Tide Tables*, and expressed as, "an elevation of ... m". However the elevation of natural features such as hills may alternatively be expressed as "... m high" since in this case there can be no confusion between elevation and height.

Metric units are used for all measurements of depths, heights and short distances, but where feet/fathoms charts are referred to, these latter units are given in brackets after the metric values for depths and heights shown on the chart.

Time is expressed in the four-figure notation beginning at midnight and is given in local time unless otherwise stated. Details of local time kept will be found in *Admiralty List of Radio Signals Volume 2*.

Bands is the word used to indicate horizontal marking.

Stripes is the word used to indicate markings which are vertical, unless stated to be diagonal.

Conspicuous objects are natural and artificial marks which are outstanding, easily identifiable and clearly visible to the mariner over a large area of sea in varying conditions of light. If the scale is large enough they will normally be shown on the chart in bold capitals and may be marked "conspic".

Prominent objects are those which are easily identifiable, but do not justify being classified as conspicuous.

ABBREVIATIONS

The following abbreviations are used in the text.

Directions

N	north (northerly, northward, northern, northernmost)
NNE	north-north-east
NE	north-east
ENE	east-north-east
E	east
ESE	east-south-east
SE	south-east
SSE	south-south-east
S	south
SSW	south-south-west
SW	south-west
WSW	west-south-west
W	west
WNW	west-north-west
NW	north-west
NNW	north-north-west

Navigation

AIS	Automatic Indentification System
CVTS	Co–operative Vessel Traffic System
DGPS	Differential Global Positioning System
GPS	Global Positioning System
Lanby	Large automatic navigation buoy
MCTS	Marine Communications and Traffic Services Centres
ODAS	Ocean Data Acquisition System
Satnav	Satellite navigation
TSS	Traffic Separation Scheme
VMRS	Vessel Movement Reporting System
VTC	Vessel Traffic Centre
VTS	Vessel Traffic Services
VTMS	Vessel Traffic Management System

Offshore operations

ALC	Articulated loading column
ALP	Articulated loading platform
CALM	Catenary anchor leg mooring
CBM	Conventional buoy mooring
ELSBM	Exposed location single buoy mooring
FPSO	Floating production storage and offloading vessel
FSO	Floating storage and offloading vessel
PLEM	Pipe line end manifold
SALM	Single anchor leg mooring system
SALS	Single anchored leg storage system
SBM	Single buoy mooring
SPM	Single point mooring

Organizations

IALA	International Association of Lighthouse Authorities
IHO	International Hydrographic Organization
IMO	International Maritime Organization
NATO	North Atlantic Treaty Organization
RN	Royal Navy
UKHO	United Kingdom Hydrographic Office

Radio

DF	direction finding
HF	high frequency
LF	low frequency
MF	medium frequency
Navtex	Navigational Telex System
RT	radio telephony
UHF	ultra high frequency
VHF	very high frequency
WT	radio (wireless) telegraphy

Rescue and distress

AMVER	Automated Mutual Assistance Vessel Rescue System
EPIRB	Emergency Position Indicating Radio Beacon
GMDSS	Global Maritime Distress and Safety System
JRCC	Joint Rescue Cooperation Centre
MRCC	Maritime Rescue Co-ordination Centre
MRSC	Maritime Rescue Sub-Centre
SAR	Search and Rescue

Tides

HAT	Highest Astronomical Tide
HW	High Water
LAT	Lowest Astronomical Tide
LW	Low Water
MHHW	Mean Higher High Water
MHLW	Mean Higher Low Water
MHW	Mean High Water
MHWN	Mean High Water Neaps
MHWS	Mean High Water Springs
MLHW	Mean Lower High Water
MLLW	Mean Lower Low Water
MLW	Mean Low Water
MLWN	Mean Low Water Neaps
MLWS	Mean Low Water Springs
MSL	Mean Sea Level

Times

ETA	estimated time of arrival	UT	Universal Time
ETD	estimated time of departure	UTC	Co-ordinated Universal Time

Units and miscellaneous

°C	degrees Celsius	kHz	kilohertz
DG	degaussing	km	kilometre(s)
dwt	deadweight tonnage	kn	knot(s)
DZ	danger zone	kW	kilowatt(s)
feu	forty foot equivalent unit	m	metre(s)
fm	fathom(s)	mb	millibar(s)
ft	foot (feet)	MHz	megahertz
g/cm^3	gram per cubic centimetre	mm	millimetre(s)
GRP	glass reinforced plastic	MW	megawatt(s)
grt	gross register tonnage	No	number
gt	gross tonnage	nrt	nett register tonnage
hp	horse power	teu	twenty foot equivalent unit
hPa	hectopascal		

Vessels and cargo

HMS	Her (His) Majesty's Ship	POL	Petrol, Oil & Lubricants
LASH	Lighter Aboard Ship	RMS	Royal Mail Ship
LNG	Liquefied Natural Gas	Ro-Ro	Roll-on, Roll-off
LOA	Length overall	SS	Steamship
LPG	Liquefied Petroleum Gas	ULCC	Ultra Large Crude Carrier
MV	Motor Vessel	VLCC	Very Large Crude Carrier
MY	Motor Yacht		

GLOSSARY

B = Bulgarian Ro = Romanian Ru = Russian T = Turkish U = Ukrainian

Foreign word	*Language*	*English meaning*
ada, –sı	T	island
adacık	T	islet
ağaç	T	mouth
ağız	T	mouth
ak	T	white
alb, –	Ro	white
apus, ul	Ro	west
aziz	T	saint
baklysh	Ru	rock above water
balçık	T	clay, mud, silt
balkan	B	mountain
bazin, –ul	Ro	basin
banka	Ru	bank
bank, –ı	T	bank, shoal
bashnya	Ru	tower
basseyn	Ru	basin
bata, –k, –ğı	T	swamp, marsh, quicksand
batı	T	west
bel	T	pass
bel–yy, aya, –oye	Ru	white
beyaz	T	white
bikın	T	beacon
boğaz, –ı	T	strait
bolnitsa	B	hospital
bol'sh–oy,–aya,–oye	Ru	large
braţ, –ul, –u	Ro	branch, arm
bryag	B	bank
bucak	T	creek
bukhta	Ru	bay, inlet
burun, burnu	T	cape, headland, point
bük	T	bay
büyük	T	great
byal, –a, –o	B	white
çamur	T	mud
cap, –ul, –u	Ro	cape, headland, promontory
çay, –ı	T	river, stream
chatal	Ro	fork of river
cher–en, –na, –no	B	black
chern–yy,–aya,–oye	Ru	black
cherven–a, –o	B	red
dağ, –ı	T	mountain
deal, –ul	Ro	hill
debarcader, –ul	Ro	pier, quay, landing place
demiryeri	T	anchorage
deniz, –i	T	sea
dere	B	gorge, ravine
dere, –si	T	stream, valley
dig, –ul	Ro	jetty, pier
dil	T	isthmus, point
dîmb, –ul	Ro	hill, hillock
diş	T	outer
doğu	T	east, sunrise
dolina	B, Ru	valley
dyuny	Ru	sandhills
est, –ul	Ro	east
estic	Ro	eastern
ezero	B	lake, pond
far	B	lighthouse
far, –ul	Ro	lighthouse, beacon
farvater	Ru	fairway
fener	B, T	lighthouse
gavan'	Ru	harbour, basin
geçit, –i, geçid, –i	T	channel
ghiol, –ul	Ro	lake, lagoon
gîrl–ă, –a	Ro	stream
girlo	Ru	river mouth
göl, –ü	T	lake
golf, –ul	Ro	gulf
gora	Ru	mountain, hill
gorod	Ru	city, town
grad	B, Ru	city
guba	Ru	gulf, bay, inlet
gümrük	T	customs house
güney	T	south
gur–ă, –a	Ro	mouth
hastane	T	hospital
hisar	T	fort
hora	U	mountain, hill
hory	U	mountains, hills
iç	T	inner
insul–ă, –a	Ro	island
ırmak	T	river
iskele, –si	T	landing place, jetty
iztok	B	east
kale	B	fort
kale, –si	T	fort, castle
kamen'	Ru	rock, stone
kanal	B, Ru, T	canal
kara	T	black, land, mainland
kaya, –sı	T	rock
kayalı–k, –ğı	T	reef
kilise	T	church
kırmızı	T	red
köprü	T	bridge
körfez, –i	T	gulf
kosa	Ru	spit
kovsh	Ru	cove
koy, –u	T	small bay
köy, –ü	T	village
krasn–yy, –aya,–oye	Ru	red
küçük	T	small
kuzey	T	north
lac, –ul, –u	Ro	lake
laguna	B, Ru	lagoon
lagun–ă, –a	Ro	lagoon
liman	Ru	estuary
liman, –ı	T	bay, harbour, port
liman, –ul	Ro	harbour
liman başkanı	T	harbour master
liman başkanlığı	T	harbour master's office
limanreisi	T	harbour master

Foreign word	*Language*	*English meaning*
lotsman	Ru	pilot
luda, ludka	Ru	small rocky islet
mal–ŭk, –ka, –ko	B	small
mal–yy, –aya,–oye	Ru	little, small
mansa–p, –bı	T	estuary, mouth of river
mel’	Ru	shoal
mendire–k, –ği	T	mole, breakwater
mic, –ă	Ro	small
minare	T	minaret
mis	B	promontory
misto	U	city, town
mol	Ru	mole
more	B, Ru	sea
most	Ru	bridge
munte, –le	Ro	mountain
mys	Ru	cape, point, headland
navolok	Ru	cape, point, headland
neagră, negru	Ro	black
nehir, nehri	T	river
nis–ŭk, –ka, –ko	B	low, lower
nizhn–iy, –yaya,–eye	Ru	lower
nizk–iy, –aya, –oye	Ru	low
nord, –ul	Ro	north
nos	B, Ru	cape, headland
nov–yy,–aya,–oye	Ru	new
oblast	Ru	city, town
obmilyna	Ru	bank, shoal
obryv	Ru	bluff
oraş, –ul	Ro	town, city
ostriv	U	island
ostrov	B, Ru	island
ostrov, –ul	Ro	island
ostrovok	Ru	islet
otmel’	Ru	shoal, flat
ozero	Ru	lake
pakhta	Ru	bluff, cliff
perebor, perekat	Ru	bar
peredn–iy,–yaya,–eye	Ru	front
peresheyek	Ru	isthmus
pereshyyok	U	isthmus
pesok	Ru	sand
pirs	Ru	jetty
pivostriv	U	peninsula
planina	B	mountain
poluostrov	B	peninsula
port	Ru	port
port, –ul	Ro	port
pristan’	Ru	pier, landing stage
pristanishte	B	harbour
proliv	B, Ru	strait
protok	B	strait
protoka	U	strait
provlak	B	isthmus
recif, –ul	Ro	reef
rechka	Ru	stream
reka	B, Ru	river
resif, –i	T	reef
reyd	Ru	roadstead
richka, rika	U	river
rif	B, Ru	reef
rîu, –l	Ro	river
roş, roşu	Ro	red
ryf	U	reef
sari	T	yellow
sarp	T	cliff, steep, rocky
sato	T	castle
şehir, şehri	T	city, town
seleniye	Ru	settlement
selo	Ru	village
sever	B	north
sever–en, –na, –no	B	northern
severn–yy,–aya,–oye	Ru	north, northern
sfînt–u(l), –â	Ro	saint (with article).
sığlı–k	T	bank, shoal
siyah	T	black
skala	B, Ru	rock, cliff
spital, –ul	Ro	hospital
sred–en, –na, –no	B	middle, central
sredn–yy,–aya,–oye	Ru	middle
star, –a, –o	B	old
star–yy,–aya,–oye	Ru	old
stînc–ă, –a	Ro	rock, cliff
strelka	Ru	narrow spit
strîmtoare	Ro	pass, strait
sud,–ul	Ro	south
svet–i, –a	B	saint
tabya	T	battery
tărm, –ul	Ro	bank
tepe, –si	T	hill, peak
tersane	T	dockyard
turn, –ul	Ro	tower
ustie	B	river mouth
ust’ye	Ru	river mouth
veche, vechiu	Ro	old
vest, –ul	Ro	west
verkn–iy,–aya,–eye	Ru	upper
vkhod	Ru	entrance
vneshn–iy,–yaya,–eye	Ru	outer
vnutrenn–iy,yaya,eye	Ru	inner
volnolom	Ru	breakwater
vorota	Ru	entrance
vostochn–yy,aya,oye	Ru	east
vütresh–en,–na,–no	B	inner
yakornoya stoyanka	Ru	anchorage
yarımada, –sı	T	peninsular
yeşil	T	green
yug	B, Ru	south
yuzh–en, –na, –no	B	southern
yuzhn–yy,aya,oye	Ru	southern
zadn–iy,yaya,eye	Ru	rear
zaliv	B, Ru	gulf, bay, inlet
zapad	B, Ru	west
zapad–en, –na, –no	B	western
zapadn–yy,aya,oye	Ru	western
zastruga	Ru	long sandy drying shoal
zatoka	U	gulf, bay
zavod’	Ru	cove, creek, inlet
zelen, –a, –o	B	green
zelen–yy, aya, oye	Ru	green
zemlya	Ru	land
zhelt–yy, aya, oye	Ru	yellow
znak	Ru	beacon

LINGUISTIC NOTES

BULGARIAN

A slavic language which uses the Cyrillic alphabet.

ROMANIAN

Romanian is in structure a Romance language, but in vocabulary more than half Slavonic, besides including many words borrowed from Greek, Magyar and Turkish. It is written in the Latin character, with diacritical marks to represent Slavonic sounds.

A guide to Romanian pronunciation is given below:

a	as 'a' in father.
c	as in cut; or in chit (before e and i).
ch	as in choir
g	as in get; but as in gem (before e and i).
gh	as in gherkin.
î	as 'ea' in earth (approximately).
j	as 's' in measure.
ş	as 'sh' in ship.
ţ	as 'ts' in bats.

RUSSIAN

Russian (properly Great Russian) is the principal Slavonic language using the Cyrillic alphabet. This alphabet is largely based on Greek, but includes some letters of unknown, possibly Eastern origin.

Nouns in Russian are declined, with 6 cases singular and 6 plural.

Adjectives are declined, and agree with the nouns, but have gender endings only. Adjectival endings exist for masculine, feminine and neuter genders singular. The plural form is the same for all genders.

Dictionaries normally show nominative singular for nouns and nominative singular, masculine gender, for adjectives.

TURKISH

Ottoman Turkish was originally written in Arabic script, but was converted to Roman letters in 1928.There are eight vowels, four back (a, ı, o, u) and four front (e, i, ö, ü). If the vowel of the first syllable of a word is a back vowel, succeeding vowels will normally also be back vowels; similarly front vowels follow front vowels. Exceptions to this rule are mainly in words of foreign origin and then, in general, suffixes follow the vowel in the last syllable. This is known as the rule of vowel harmony. Suffixes are used when words are declined to indicate their case, and to give additional meanings. These normally follow the rule of vowel harmony. Those most commonly used in this book are:

Possessive –ı, –i, –u, –ü	Samsun Körfezi = Samsun Bay, from körfez = bay
Possessive –sı, –si, su, –sü	Marmar Adası = Island of Marmara from ada = island
Plural –lar, –ler	Adalar = Islands
Adjective –lık, –lik	Kayalık = Rocky from kaya = rock

For place names which are composed of two nouns, the possessive case is used for the second noun. However, when they are made up of an adjective and a noun, the nominative case is used, eg:

Ada = Island	Deniz = Sea
Büyük Ada = Large Island	Kara Deniz = Black Sea
Zeytin Adası = Zeytin Island	Marmara Denizi = Sea of Marmara
Burun = Cape	İskele = Jetty
Kara Burun = Black Cape	İc̀ İskele = Inner Jetty
Aydos Burnu = Cape Aydos	Gömrük İskele = Customs Jetty

Pronunciation

Generally stress is laid equally on all syllables of a word. Letters are pronounced as in English with the following exceptions:

c	As 'j' in jealous.
ç	As 'ch' in 'chop'
ğ	Between two front vowels – as 'y' in 'yet'.
ğ	Between two back vowels – not sounded, but preceding vowel is lengthened.
ı	As something between 'i' in 'big' and 'u' in 'bug'.
j	As 'su' in 'pleasure'.
ö	As 'u' in 'urn' or 'ea' in 'earth'
s	As in 'sh' in 'shop'.
ü	As 'e' in 'yew'.
er	As 'air' in 'fair'
ey	As 'ai' in 'pain'.
ay	As 'i' in 'mine'.

TABLE FOR THE TRANSLITERATION OF RUSSIAN GEOGRAPHICAL NAMES INCLUDING THE CYRILLIC MORSE CODE

Russian (properly "Great Russian") is the principal Slavonic language using the Cyrillic alphabet, the latter being largely based on the Greek, but including some letters of unknown, possibly Eastern, origin.

The rules for pronunciation and accent are so complicated, and contain so many exceptions, that it would be out of place to give them here. For these and other reasons it has been decided, after full consideration, that Russian words will be spelt, not as they are pronounced, but as they are written; in fact, a letter-for-letter transliteration has been adopted.

The Permanent Committee on Geographical Names (PCGN), in agreement with the United States Board of Geographical Names (USBGN), approved, on 19th May 1948, the use of the following table for the transliteration of Russian, which has the advantage over previous tables of mechanical applicability.

RUSSIAN Print	RUSSIAN Script	Transliteration	Cyrillic Morse Code Symbol
А а	*А а*	a	· —
Б б	*Б б*	b	— · · ·
В в	*В в*	v	· — —
Г г	*Г г*	g	— — ·
Д д	*Д д*	d	— · ·
Е е	*Е е*	e (ye)[2]	·
Ж ж	*Ж ж*	zh	· · · —
З з	*З з*	z	— — · ·
И и	*И и*	i	· ·
Й[1] й	*Й й*	y	· — — —
К к	*К к*	k	— · —
Л л	*Л л*	l	· — · ·
М м	*М м*	m	— —
Н н	*Н н*	n	— ·
О о	*О о*	o	— — —
П п	*П п*	p	· — — ·
Р р	*Р р*	r	· — ·
С с	*С с*	s	· · ·
Т т	*Т т*	t	—
У у	*У у*	u	· · —
Ф ф	*Ф ф*	f	· · — ·
Х х	*Х х*	kh	· · · ·
Ц ц	*Ц ц*	ts	— · — ·
Ч ч	*Ч ч*	ch	— — — ·
Ш ш	*Ш ш*	sh	— — — —
Щ щ	*Щ щ*	shch	— — · —
Ъ[3] ъ	*ъ*	”	· — — · — ·
Ы[1] ы	*Ы ы*	y	— · — —
Ь ь	*ь*	’	— · · —
Э э	*Э э*	e	· · — · ·
Ю ю	*Ю ю*	yu	· · — —
Я я	*Я я*	ya	· — · —

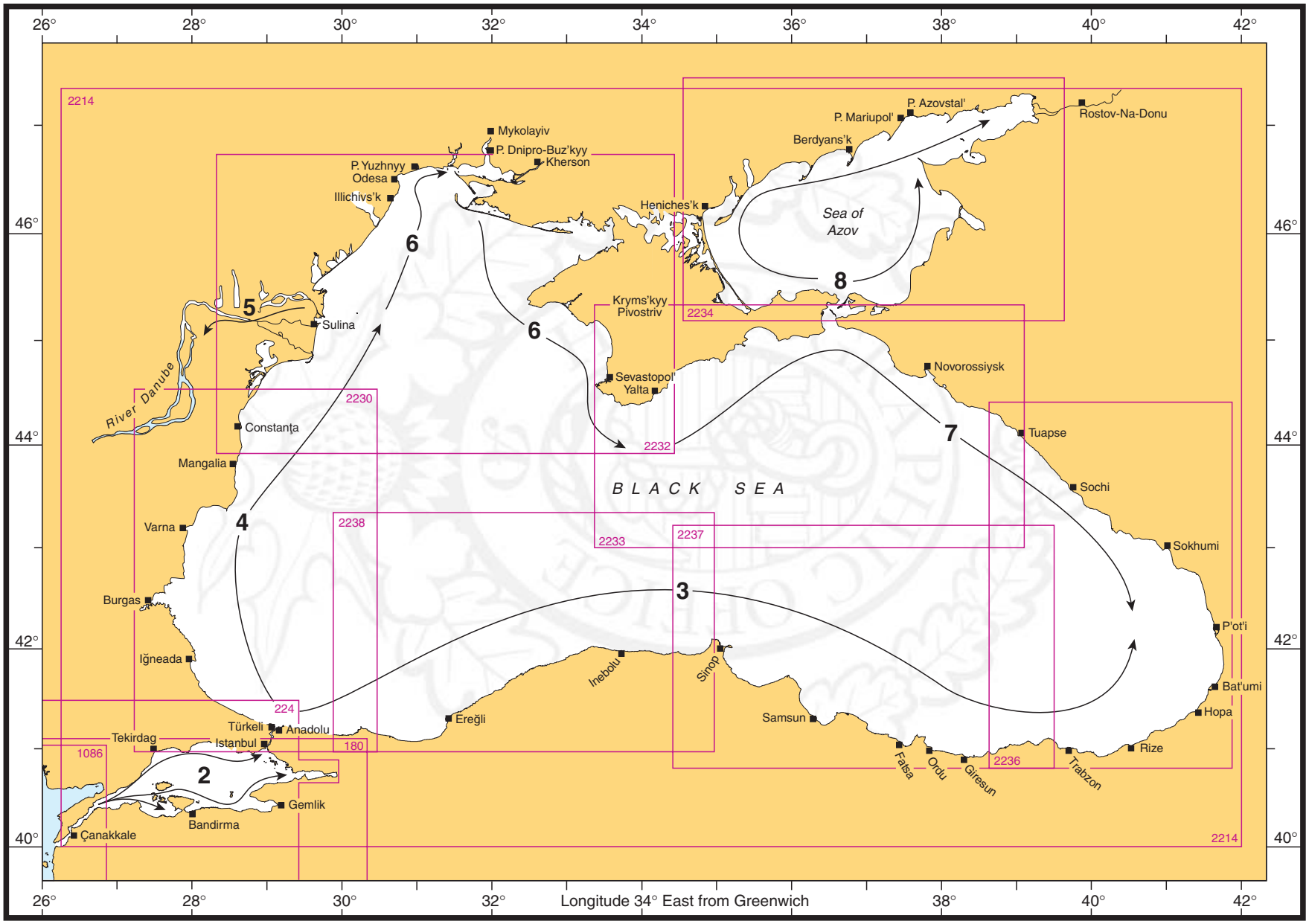
Notes

1 Seldom initial except in words of non-Russian origin.

2 ye initially, after vowels (a, e, ё, И, o, y, Ы, Э, Ю, Я), and after Ъ, Ь; e elsewhere; when written as ё in Russian, transliterate as yë or ë.

3 Ъ is sometimes written as ’ in Russian, but should always be transliterated as ”.

Chapter Index Diagram



LAWS AND REGULATIONS APPERTAINING TO NAVIGATION

While, in the interests of the safety of shipping, the United Kingdom Hydrographic Office makes every endeavour to include in its hydrographic publications details of the laws and regulations of all countries appertaining to navigation, it must be clearly understood:–

(a) that no liability whatever will be accepted for failure to publish details of any particular law or regulation, and

(b) that publication of details of a law or regulation is solely for the safety and convenience of shipping and implies no recognition of the international validity of the law or regulation.

BLACK SEA AND SEA OF AZOV PILOT

CHAPTER 1

NAVIGATION AND REGULATIONS COUNTRIES AND PORTS NATURAL CONDITIONS

NAVIGATION AND REGULATIONS

LIMITS OF THE BOOK

Chart 2214

Area covered

1.1

1 This volume contains Sailing Directions for the Black Sea, Sea of Azov (8.1) and Marmara Denizi (Sea of Marmara) (2.1) within a line joining Kumkale Burnu (40°01′N, 26°12′E) and Mehmetçik Burnu (40°03′N, 26°10′E).

This area includes the Straits of Çanakkale Boğazi (Dardanelles) (2.14) and İstanbul Boğazi (Bosporus) (2.366).

1.2

1 **Countries.** The shores of the area covered by this volume form part of the territories of six nations. Turkey in Marmara Denizi and along the S coast of the Black Sea, Bulgaria and Romania along the W coast, Ukraine along the N coast, Russian Federation along the NE coast and Georgia along the E coast.

NAVIGATIONAL DANGERS AND HAZARDS

General considerations

Coastal and offshore waters

1.3

1 In general, the coastal and offshore waters of the area covered by this book are remarkably free of dangers and hazards. The few that do exist are most likely to be met in the NW Black Sea and Sea of Azov and are described in Chapters 6 and 8 respectively.

Ice

1.4

1 See 1.158.

Former mine danger areas

1.5

1 In the former mine danger areas, which are open to navigation, anchoring outside the appointed areas is not recommended.

When fishing in these areas it is necessary to recognise the possibility of mines and other explosive substances being present on the seabed.

See 5.17.

TRAFFIC AND OPERATIONS

Traffic

Density

1.6

1 The greatest concentration of shipping is liable to be found in the restricted waters of Çanakkale Boğazi and İstanbul Boğazi and in the traffic separation schemes that are situated in the approaches to the major ports.

There are also liable to be above average concentrations of traffic along the recommended routes which have been established between Russian ports in the N part of the Black Sea and in Sea of Azov.

High speed craft

1.7

1 High speed craft operate in areas covered by this volume. Mariners are advised to maintain a good lookout. Some high speed craft may generate large waves, which can have a serious impact on small craft and their

moorings close to the shoreline and on shallow off-lying banks. For further details see Annual Notice to Mariners No 23.

Fishing

1.8

1 Sturgeon and mackerel are caught in large numbers in the NW part of the Black Sea; herring are found chiefly in Kerch Strait and off the mouth of the River Danube and Rika Dnipro; anchovy is caught in large quantities along the coast of Kryms'kyy Pivostriv; and the flounder is found nearly all over the Black Sea.

Exercise areas

Turkish

1.9

1 **Submarine.** The general position of Turkish submarine exercise areas is shown on the charts. Submarines exercise frequently in these areas and a good lookout is to be kept for them when passing through these waters. See the *Annual Summary of Admiralty Notices to Mariners.*

2 **Other areas.** Other military exercise and firing areas are situated in Turkish waters. The limits of these areas are shown on Turkish charts. Notice of exercises and firing practices, giving the limits of the area and duration of the exercise, is promulgated by radio navigational warning. See 1.25.

Bulgaria, Russia and Georgia

1.10

1 See Appendix II for Russian Regulated areas; Appendix III for details of Bulgarian Regulated Areas and Appendix IV for Georgian Regulated Areas. See also 1.39 and 1.40.

PRESENCE OF SUBMARINES

Russia

1.11

1 Russian Federation submarines carry their navigation lights in special positions as follows:

2 One steaming light on the upper part of the front edge of the fin.

Side lights on the relevant side of the fin in its central part.

One or two stern lights. When one light is displayed it will be carried on the stern or on the rear edge of the vertical stabiliser. When two lights are carried they are situated on the rear part of the fin.

3 Anchor lights are placed on the bow section and on the stern or vertical stabiliser. On submarines with a high stabiliser the stern anchor light may be replaced by two lights set on the sides of the stabiliser which together are visible over 360°.

NUC and other all-round visibility lights may be raised on a mast, not less than 2·5 m in height, on the fin.

Manoeuvring lights are not carried.

4 When in areas of heavy traffic submarines on the surface may also exhibit either one or two orange quick flashing lights. See also *The Mariner's Handbook* and *Annual Summary of Admiralty Notices to Mariners.*

For submarine warning signals see 1.60; for distress signals see 1.61.

Special areas

Russian regulated areas

1.12

1 Russian regulated areas include all areas where navigation, fishing and anchoring are prohibited or restricted. Such areas are normally charted and mentioned in Sailing Directions.

Some prohibited areas are designated by the Russian authorities as being temporarily prohibited for navigation, however, as these restrictions are for an indefinite period, they are treated in the same way as permanently prohibited areas.

2 Other regulated areas consist of areas declared periodically dangerous for navigation. These areas which include various firing danger and exercise areas lie partly or wholly outside Russian territorial waters. Some of these areas are charted. See also Appendix II.

3 Responsibility for violation of the limits of the regulated areas rest with the Master of the ship involved; ignorance of the limits will not serve as a basis to avoid responsibility.

Information about Russian regulated areas is announced by PRIP or NAVIP. Similar warnings may occasionally be broadcast concerning areas where navigation is periodically prohibited. Details of PRIP and NAVIP radio broadcasts are given in *Admiralty List of Radio Signals Volume 3(1).*

CHARTS AND PUBLICATIONS

Charts

Admiralty charts

1.13

1 **Coverage.** British Admiralty charts provide full coverage of the Black Sea and Marmara Denizi, including plans of the principal Turkish, Bulgarian, Romanian, Ukrainian and Georgian ports. There are also plans of the main Russian ports that are open to international trade (1.44).

Sources. British Admiralty metric charts are based on the most recent charts issued by the Turkish, Bulgarian, Romanian, Russian and Ukrainian authorities.

Foreign charts

1.14

1 **Turkish** charts provide full coverage of the area covered by this book and detailed coverage of the anchorages and harbours in Marmara Denizi and along the N Turkish coast.

Russian charts providing coverage of Russian coastal waters and ports are available.

2 **Bulgarian** charts of Bulgarian coastal waters and ports are available.

Romanian charts providing coverage of Romanian coastal waters and ports are available.

Ukrainian charts providing coverage of Ukrainian coastal waters and ports are available.

1.15

Publishing authorities:

1 *Turkish charts:*
Seyir, Hidrografı ve Oşinografı Dairesi Başkanlığı,
Çubuklu 81647,
İSTANBUL.

2 *Russian charts:*
Glavnoe Oupravlenie Navigatsii I,
Okeanografii, 8, 11 Iiniya B–34
ST PETERSBURG 199034

3 *Bulgarian charts:*
Hidrografska Sluzhba Pri
Ministerstvo Na Otbranata
PO Box No 50
VARNA 9000

4 *Romanian charts:*
Directia Hidrografica Maritima,
Str. Fulgerului Nr. 1
CONSTANŢA 8700

5 *Ukrainian charts:*
State Hydrographic Institution,
26, Elektrykiv Street,
KYIV 04176

1.16

1 In certain areas where the British Admiralty charts show insufficient detail for navigation close inshore, these Sailing Directions have been written using foreign charts. These are not quoted as reference charts in the text, which has been written on the assumption that mariners wishing to navigate in these areas will have provided themselves with suitable charts on which to do so.

2 Foreign charts may be obtained from the publishing authorities shown above. These charts are not issued by the UKHO, nor are they amended by *Admiralty Notices to Mariners.*

Datums

1.17

1 **Vertical.** Depths and heights on the majority of British Admiralty charts are reduced to MSL. The datum used is normally shown on the chart.

Horizontal. All metric British Admiralty charts are based on the same horizontal datum as the National charts from which they are derived.

NAVIGATIONAL AIDS

Buoys

1.18

1 Implementation of IALA Maritime Buoyage System Region A (red to port) is substantially complete in Marmara Denizi, Black Sea and Sea of Azov. For further details see *The Mariners Handbook.*

For details of buoyage system used in the Maritime Danube, see 5.10.

Caution. In areas where sea ice forms during the winter months, navigational buoys may be lifted.

2 It has been reported that all navigational aids in Georgian waters may be unreliable and that navigational aids in Georgian and Ukrainian waters may be different from those charted and described in nautical publications. Mariners should exercise extreme caution in the identification of navigational aids.

PILOTAGE

General

1.19

1 In general, pilotage is compulsory for all non-Turkish vessels, other than yachts, entering port in Turkey.

Pilotage is also compulsory for all vessels entering Russian, Bulgarian, Ukrainian, Georgian and Romanian ports.

Russia

1.20

1 **General information.** Pilotage is compulsory for all foreign vessels entering or leaving ports in Russia that are open to foreign trade. Special regulations are in force with regard to naval vessels. For regulations applying to naval vessels see 1.42.

Signals. The signals for a pilot are those laid down in the *International Code of Signals.* If a pilot is available the pilot flag will be displayed at the pilot look-out station and if none is available a ball will be displayed.

2 **Regulations.** The following are extracts from the Regulations concerning Russian Government Marine Pilots:

1. Pilotage will be carried out exclusively by Russian Government Marine Pilots.
14. Areas of compulsory and non-compulsory pilotage are published in port regulations, Russian Sailing Directions and Notices to Mariners.
17. The port captain has the right to prohibit the movement of ships when safe pilotage is hampered by weather conditions.

3 25. Pilots are obliged to observe all the laws and regulations and are not to allow soundings to be taken in the fairway unless required by the pilot.
26. Pilots must indicate to the Master of the ship all observed breaches of regulations and demand their observance.
31. When embarking or disembarking a pilot, communications must be maintained with the pilot boat.
32. If an accident occurs when embarking or disembarking a pilot, the shipowner is liable to pay compensation.

4 33. In the event of bad weather the pilot boat, with the agreement of the Master of the ship, may lead the ship; during this time constant communication must be maintained with the pilot boat.
35. The pilot will provide a copy of the port regulations.
39. The presence of a pilot on a ship does not remove from the Master his responsibility for the safe conduct of the ship. The pilot will act only in an advisory capacity.

5 40. If the master refuses the pilot's advice, the pilot has the right to refuse pilotage, in which event the pilot will demand that this is recorded in the ships' log and the pilotage account.
42. The pilot does not have the right to leave the ship without the agreement of the Master before it is in a safe anchorage, or mooring, or turned over to another pilot.

Area pilotage services

1.21

1 Marmara Denizi. See 2.10.
North-west Black Sea. See 6.6.
Sea of Azov. See 8.5.

RADIO FACILITIES

Electronic position fixing systems

Satellite Navigation Systems

1.22

1 For details of Satellite Navigation Systems see *Admiralty List of Radio Signals Volume 2.*

Differential Global Positioning System

1.23

1 Within the area covered by this volume DGPS data is broadcast from the following places:

Ostriv Zmiyinyy Light (45°15′N, 30°12′E).
Yenykal'skyy Light (45°23′N, 36°38′E).
Kavarna (43°25′·2N, 28°21′·9E).

For further details see *Admiralty List of Radio Signals Volume 2.*

Other radio navigational aids

Racons

1.24

1 There are several racons in the area to aid both offshore navigation and entry into harbours. See *Admiralty List of Radio Signals Volume 2* for details.

Radio navigational warnings

General

1.25

1 The area covered by this book lies within NAVAREA III.

For details of the World-wide Navigational Warning Service see *Admiralty List of Radio Signals Volume 3(1)* and the *Annual Summary of Admiralty Notices to Mariners.*

For details of radio navigational warnings issued by coast radio stations see *Admiralty List of Radio Signals Volume 3(1).*

Radio weather reports

General

1.26

1 For full details of radio weather services and the stations from which they are issued see *Admiralty List of Radio Signals Volume 3(1).*

Turkey

1.27

1 **VHF broadcasts** of weather forecasts for Turkish coastal waters are made on Channel 67 in English from most Turkish coast radio stations. For details see *Admiralty List of Radio Signals Volume 3(1).*

REGULATIONS

International regulations

Chart 2214

Submarine cables and pipelines

1.28

1 See *The Mariners Handbook* for information on the *International Convention for the Protection of Submarine Cables.* See also 1.29.

1.29

Pipelines

1 Mariners are advised not to anchor or trawl in the vicinity of pipelines. Gas from a damaged oil or gas pipeline could cause an explosion, loss of a vessel's buoyancy or other serious hazard. Pipelines are not always buried and their presence may effectively reduce the charted depth by as much as two metres. They may also span seabed undulations and cause fishing gear to become irrecoverably snagged, putting a vessel in severe danger. See *Annual Notice to Mariners No 24* and *The Mariner's Handbook.*

Pollution

1.30

1 See *The Mariners Handbook* for information on *The International Convention for the Prevention of Pollution from Ships 1973,* as modified by the Protocol of 1978 (MARPOL 73/78).

1.31

1 Marmara Denizi, the Black Sea and Sea of Azov are Special Areas under the terms of this convention. All discharge of oil at sea is prohibited and special regulations apply to the discharge of garbage.

1.32

1 **Russia.** Ships records relating to the prevention of pollution by oil and injurious substances, the treatment and management of rubbish, and the loading and discharge of ballast water are liable to inspection by state port authorities. The state port authorities will also verify that the procedures associated with compliance with the relevant regulations are known to the ships crew.

2 Failure to inform the nearest Russian authority of accidental or emergency discharge of polluting substances, as described in the MARPOL 73/78 convention, within the territorial and internal waters of Russia, and failure to note the occurrence in the ship's log, carries severe penalties.

3 Russian merchant vessels and civil aircraft are instructed to inform Russian authorities of witnessed infringements of the Russian and International regulations.

Within the territorial and internal waters of Russia, vessels suspected of infringing the regulations are liable to be stopped, boarded and inspected. If an infringement has taken place within those waters the vessel is liable to be detained.

Traffic Separation

1.33

1 See IMO publication *Ships' Routeing* for general provisions on Ships' Routeing. Regulations for IMO adopted schemes are contained in Rule 10 of the *International Regulations for Preventing Collisions at Sea (1972).*

2 Schemes within territorial waters such as those in Marmara Denizi may be regulated nationally either on a permanent basis or while waiting adoption by IMO.

Turkish regulations

Prohibited entry

1.34

1 Entry is prohibited into certain waters without the permission of the Turkish authorities. These areas are shown on the chart and mentioned in the appropriate part of this volume.

Prohibited landing areas

1.35

1 Landing is prohibited on certain stretches of the Turkish coastline. These areas are shown on the chart and mentioned in the appropriate part of this volume.

Prohibited diving areas

1.36

1 In order to protect underwater cultural and natural resources, the Turkish authorities have prohibited diving in certain areas. The areas concerned are marked on the relevant Turkish charts.

Ports of entry for yachts

1.37

1 A yacht entering Turkey must call at a port of entry, where the necessary officials are stationed.

The following ports in Marmara Denizi are ports of entry:

Çanakkale (2.31).
Bandırma (2.153).
İstanbul (2.299).

Bulgarian and Romanian regulations

Prohibited entry

1.38

1 Entry is prohibited into certain areas. These areas are shown on the chart and mentioned in the appropriate part of this volume.

Bulgarian Regulated Areas

1.39

1 Bulgarian Regulated Areas where navigation, fishing and anchoring are prohibited, are normally charted and referred to in the Sailing Directions. Areas where navigation is only periodically prohibited or where navigation, fishing and anchoring are only periodically declared to be dangerous are also normally charted, and are generally referred to in Sailing Directions. See also Appendix III.

2 The times during which these areas are either prohibited or dangerous for navigation, fishing or anchoring are announced by radio navigational warning 3 to 5 days before the start of the period of prohibition or of the dangerous operation.

Georgian regulations

1.40

1 Georgian Regulated Areas where navigation, fishing and anchoring are prohibited, are normally charted and referred to in the Sailing Directions. Areas where navigation is only periodically prohibited or where navigation, fishing and anchoring are only periodically declared to be dangerous are also normally charted, and are generally referred to in Sailing Directions. See also Appendix IV.

Russian regulations

Economic zone

1.41

1 The Government of Russia claims an economic zone extending 200 miles seaward from the limits of its territorial sea. Within this economic zone the Government of Russia issues regulations in connection with and for the control of the following:

2 Exploitation and conservation of resources found on or below the seabed and in the waters above it including anadromic fish (those that ascend rivers to spawn). Catching of anadromic types of fish is permitted only as a result of inter-governmental agreement.

Marine scientific research.

3 Pollution of the marine environment; these regulations are in accordance with the MARPOL 73/78 Convention. There are also regulations for the inspection of vessels suspected of causing pollution and there are penalties for infringements, see 1.32.

4 Freedom of passage for ships and aircraft through the economic zone is assured.

Entry into territorial and internal waters

1.42

1 **Foreign naval vessels.** Warships intending to enter the waters of Russia or to visit Russian ports should obtain a copy of *Regulations for foreign naval vessels navigating and remaining in the territorial or internal waters of Russia or visiting Russian ports.* These regulations are published in Russian Annual Notices to Mariners.

Proposals to visit Russian ports should be forwarded through the Russian Ministry of Affairs not less than 30 days prior to the suggested visit. This rule does not apply to warships on which heads of government or heads of state are embarked, or to ships accompanying them.

2 Ships whose approach is necessitated by foul weather or engine failure which threatens the safety of the ship, must inform the nearest port of the reason for entry, and if possible, go to a recognised port open to foreign merchant vessels or to a point indicated by the vessel sent to aid or meet it.

1.43

1 **Foreign merchant vessels.** Foreign non-military vessels enjoy the right of innocent passage through Russian territorial waters in accordance with Russian laws and International treaties; innocent passage is effected by crossing them without entering Russia's internal waters, or by passing through them en-route to and from Russian ports.

2 While effecting innocent passage vessels must follow the customary navigational course or course recommended through sea corridors or in accordance with traffic separation schemes. The Master of a foreign non-military vessel which has violated the rules of innocent passage is accountable under Russian legislation.

For further information see article concerning territorial waters in *The Mariner's Handbook.*

Russian ports of entry

1.44

1 Foreign merchant vessels are permitted only to call at one of the recognised ports of entry where Customs stations are situated.

In 2003 the following Russian ports were open to foreign ships:

Black Sea. Anapa, Gelendzhik, Novorossiysk, Sochi and Tuapse.

Sea of Azov. Port Kavkaz, Port Temryuk, Yeysk, Taganrog, Azov and Rostov-Na-Donu.

Preliminary notice of arrival

1.45

1 The owner or Master of a vessel should send preliminary information concerning his vessel and cargo to the appropriate agency at the port of destination not less than 12 days (14 days for tankers, gas carriers, and vessels loaded with liquid chemicals) prior to arrival. In this preliminary notice the following information is required by port authorities:

2
1. Name and flag of vessel.
2. Port of departure (last port of call).
3. Vessels draught at bow and stern.
4. Cargo capacity of vessel, volume of hold etc.
5. Name and quantity of cargo and its distribution by hold (tankers, in addition, should indicate type and disposition of ballast).
6. Requirements for port services.

3 Information concerning a vessels sanitation state must be reported in accordance with current sanitation, veterinary and quarantine regulations: see 1.47.

In addition, Masters must indicate that the vessel has certification guaranteeing civil responsibility for damage from oil pollution.

Notification of ETA

1.46

1 Estimated time of arrival should be forwarded to port of destination and agency at least 96 hours in advance followed by confirmation 12 hours before arrival. Oil tankers should confirm their ETA 72 hours and 12 hours before arrival.

Other reports

1.47

1 A vessels arrival in port must be registered directly with the port authority or with a representative of the Transport Fleet Maintenance Service, within the first 6 hours in port, completing sanitation, quarantine, customs and border formalities.

On sailing, the port authority must be informed of intended departure at least 6 hours in advance; during a short term anchorage (less than 6 hours) at least 2 hours notice is required.

Observance of regulations

1.48

1 All foreign vessels, when within territorial or internal waters of Russia, must observe radio communication, navigational, port, customs, sanitary and other rules.

For special regulations concerning the use of radio by foreign vessels in Russian Federation territorial waters, see *Admiralty List of Radio Signals Volume 1(1).*

2 In the event of an emergency entry into territorial waters or emergency non-observance of rules for navigation and stay in these waters, foreign vessels must immediately notify the nearest Russian port authority.

Customs

1.49

1 Before customs inspection commences the Master of a vessel must complete or present the following information:

1. A general declaration.
2. A cargo declaration.
3. A declaration of the crew personal effects.
4. Crew lists.
5. Passenger lists.

2 6. A manifest with bills of lading and list of documents on the cargo, and other ship's documents as required by the customs service.

7. A currency and valuables list.

3 Until the customs inspection is completed no person may enter or leave the ship.

Quarantine

1.50

1 Vessels arriving at any of the ports covered by this volume are subject to the national quarantine regulations. Quarantine is enforced in accordance with International Health Regulations, 1969. Vessels entering territorial waters from abroad should hoist the appropriate International Code signal flag by day, and a red light over a white light at night, and have no communication with the shore until they have been visited by the Port Health officer and granted pratique. An international signal code is used for sending Radio Pratique Messages. This code is part of the *International Code of Signals* and is given in *Admiralty List of Radio Signals Volume 1(1)*, which also lists the authorities to whom the signal should be addressed.

2 In normal circumstances, vessels, irrespective of flag, proceeding from one port to another in the European Community, need not request pratique.

SIGNALS

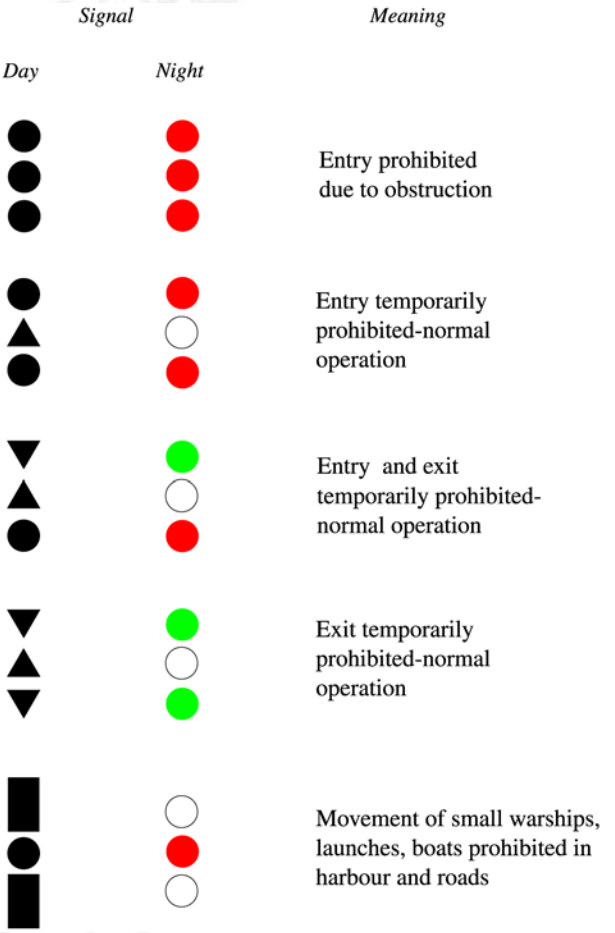
Russia

Traffic signals

1.51

1 Signals relating to entry and departure of ships to and from ports in the Russian Federation are as follows:

All signals vertically disposed and all day signal shapes black.

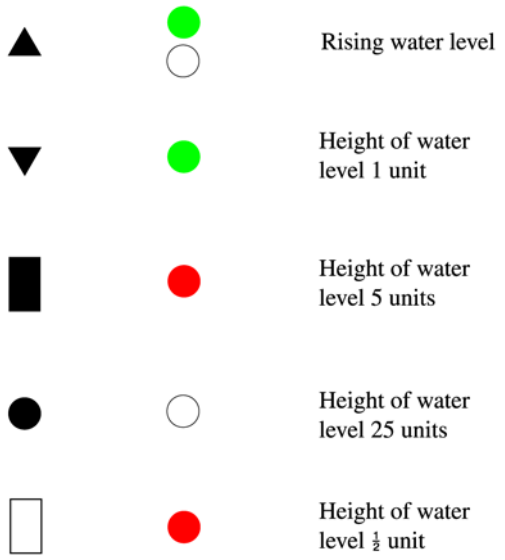


Traffic Signals (1.51)

Tidal and water level signals

1.52

1 The following signals are displayed at ports in the Russian Federation to indicate the height of the water above chart datum in units of 20 cm:



Tidal and Water level signals (1.52)

Dredger signals

1.53

1 Dredgers in the waters of the Russian Federation show the appropriate shapes or lights from the *International Regulations for Preventing Collisions at Sea (1972).* These signals should be interpreted merely as an indication of the side on which the dredger proposes to allow the approaching vessel to pass.

2 The approaching vessel should reduce to the minimum speed for steerage way by the time she is at a distance of 5 cables from the dredger and one prolonged blast should be sounded on the siren. The dredger will then, in addition to showing the above signals, confirm the side on which she is to be passed in the following manner:

Signal	*Meaning*
One long blast	Leave me on your port hand
Two long blasts	Leave me on your starboard hand
Three long blasts	No passage. Wait until clear

3 If there is no answering sound signal from the dredger, the approaching vessel must assume that there is no free passage.

The following regulations also apply:

1. Two vessels passing a dredger must not overtake one another.
2. Vessels passing a dredger must not tow astern a hawser or chain on the bottom; nor may they trail an anchor.

Vessels engaged in special operations

1.54

1 Russian vessels when engaged in surveying operations show a blue triangular flag with a rounded point to the fly, having a white circular disc bearing the figure of a lighthouse.

2 Russian vessels, with the exception of dredgers, engaged in special operations in narrow waters, such as cable laying, maintaining navigational aids and surveying will display the appropriate signals from the *International Regulations for the Prevention of Collisions at Sea (1972).* Vessels approaching such a ship must reduce speed in good time and, at a distance of at least 5 cables, sound one prolonged blast. She must not pass the ship engaged in special operations until such a ship has lowered or extinguished the special signal she is displaying.

3 Vessels engaged in special operations should cease work, and if possible proceed to the edge of the channel, when approached by a vessel showing the shape or lights for a vessel constrained by her draught.

Light-vessel signals

1.55

1 In Russian waters, when off station, the light-vessel discontinues its characteristic light and fog signal, and if possible, will lower its daymark.

It will show instead two large black balls, one forward and one aft, or two all round red lights, one forward and one aft. In addition, it will hoist the international code flags LO or will fire red and white flares simultaneously at least every 15 minutes.

Signals between tugs and towed vessels

1.56

1 The following sound signals are used by the vessel being towed:

Signal	*Meaning*
One long blast	Tow straight ahead or astern
Two long blasts	Stop engines
One long, one short blast	Reduce speed
One short, one long blast	Increase speed
One long, one short, one long blast	Let go or take up tow
One short blast	Tow to starboard
Two short blasts	Tow to port
Three short blasts	Go full speed astern
At least five short blasts	Stop immediately

2 When two tugs are employed, one will be directed by the ship's whistle and the other by oral whistle signals. All signals are to be repeated by the tug or tugs.

Special warning service signals

1.57

1 It may occasionally be necessary to prohibit entry into certain areas within Russian Federation territorial waters. For certain coastal areas a warning service has been established on special warships, guardships, examination vessels or coastguard stations, which display the following signals:

2 By day; a blue triangular flag.

By night; three blue lights vertically disposed.

Should entry to or navigation within a certain area be prohibited, additional signals will be displayed as follows:

By day; three red balls vertically disposed.

By night; three red lights vertically disposed.

3 Should entry or navigation into a given area be unrestricted, and no special signal or instruction regarding further movements have been made or given by the guardship or coastguard station, an incoming vessel is free to proceed to her destination, but she must observe such regulations as may already have been promulgated.

If Russian naval vessels are present and if no special instructions have been issued for navigation in this area from the warning service, then mariners must set course in such a manner as to avoid passing between the naval vessels.

Frontier guardships

1.58

1 The following signals are shown by frontier guardships for stopping non-naval vessels within the territorial or internal waters of Russia:

By day; International Code flag L.

By night; two green lights disposed vertically.

Vessels affected must stop and remain stopped until permission to proceed is granted by the guardship.

Signals from naval vessels

1.59

1 The following warning signals may be made by naval vessels of the Russian Federation to foreign submarines which are submerged in Russian waters:

Signal; a series of three explosions at one minute intervals followed after an interval of three minutes by a second set of three explosions.

Meaning; you have been found within Russian Federation waters. I demand that you immediately come to the surface. If you do not do so you will be fired upon.

2 Simultaneously a hydro-acoustic signal may be given which will have the same meaning. The signal will consist of five dashes, each three seconds long, with three second intervals between dashes.

Submarine warning signals

1.60

1 Russian naval vessels exercising with, or accompanying submarines, display the appropriate signal from the *International Code of Signals.* In addition, when possible, the escorting vessel will transmit by radio-telephone, on the international wave-length of 500 khz, a message in plain language indicating the presence of submarines.

Vessels are cautioned to give a wide berth to such vessels, maintaining a good lookout meanwhile for submarines, whose presence may only be indicated by their periscopes showing above water.

2 Submerged submarines surfacing by night may release light-buoys exhibiting a white light, and may also display normal navigation lights. Submerged submarines may release signal cartridges which emit coloured smoke by day, or coloured rockets by night.

It must not be inferred from these signals that submarines exercise only when in company with escorting vessels.

Submarine distress signals

Russia

1.61

1 In cases where a Russian Federation submarine is in distress and cannot surface it will indicate its position by releasing:

1. A distress signal buoy.
2 Fuel and lubricating oil.
3. Air bubbles.

2 Russian Federation submarines are equipped with two distress signal buoys, one in the bow and the other in the stern. These are, in shape, truncated cones with a flat bottom and rounded top, or in some cases flattened spheres. Details are as follows:

Diameter	0·9 m to 1·25 m
Height	0·45 m to 0·7 m
Freeboard	0·4 m to 0·6 m
Colour	Red with top part sectored white and red.
Markings	Black H for bow and K for stern buoy on a white sector.
Visibility	1·5 to 2·0 miles
Light	Quick flash white, 70 flashes per minute, visible for 5 miles.

3 Mariners finding indications of a submarine in distress should determine the position and report to the nearest Russian Federation Port Authority and establish communication with the submarine by the buoy telephone.

See also *Annual Summary of Admiralty Notices to Mariners.*

DISTRESS AND RESCUE

General information

1.62

1 The radio watch on international distress frequencies which certain classes of vessels are required to keep when at sea is one of the most important factors in the arrangements for the rescue of people in distress at sea.

For general information concerning distress and rescue, including helicopter assistance, see *Annual Summary of Admiralty Notices to Mariners* and *The Mariner's Handbook.*

Rescue services

Turkey

1.63

1 Responsibility for the coordination of all maritime distress and safety incidents is jointly held by the Undersecretariat for Maritime Affairs in Ankara and regional Turkish Coast Guard centres. A network of Coast Radio Stations maintains a continuous listening watch on international distress frequencies. See *Admiralty List of Radio Signals Volume 5* for details.

Bulgaria

1.64

1 Search and rescue incidents are controlled by the State Shipping Inspectorate based in Sofiya with stations in Burgas (4.54) and Varna (4.94). See *Admiralty List of Radio Signals Volume 5* for details.

Romania

1.65

1 Search and rescue incidents are controlled by the State Inspectorate of Civil Navigation in Constanţa with stations at Mangalia (4.140), Constanţa (4.152), Midia (4.183), and Sulina (5.21). See *Admiralty List of Radio Signals Volume 5* for details.

Ukraine

1.66

1 Search and rescue incidents are controlled by the General State Maritime Inspection of Safety at Sea through control centres at Odesa (6.65), Sevastopol' (6.367), Kerch' (8.59) and Mariupol' (8.106). See *Admiralty List of Radio Signals Volume 5* for details.

Georgia

1.67

1 Search and rescue incidents are controlled by the State Maritime Administration (SMRCC Georgia) through a control centre at Bat'umi (3.297) and the Harbour Masters of Bat'umi and P'ot'i (3.327). See *Admiralty List of Radio Signals Volume 5* for details..

Search and Rescue Regions (SRR)

1.68

1 Provisional search and rescue regions between Bulgaria, Romania, Russian Federation, Turkey and Ukraine, are the topic of bilateral and multilateral discussions between nations which will eventually form part of the Agreement on Cooperation regarding Maritime Search and Rescue Services among Black Sea Coastal States, formulated in İstanbul, May 1997.

Ship reporting systems

Georgia (GEOREP)

1.69

1 GEOREP is operated by MRCC Georgia and serves to identify and monitor the positions of vessels in the area covered by the system. Participation in the scheme is compulsory and free of charge, with vessels making regular reports to enable the authorities to maintain a chart plot of vessels' positions.

2 **Area of coverage:**

Point	Latitude N	Longitude E
A	43°23′	40°00′
B	42°24′	38°48′
C	42°17′·5	39°11′
D	42°08′	39°50′·5
E	42°02′	40°26′
F	41°57′	40°42′
G	41°35′·5	41°16′·5
H	41°31′	41°33′

For details of the reports required see *Admiralty List of Radio Signals Volume 1(1).*

Global Maritime Distress and Safety System

1.70

1 The Global Maritime Distress System (GMDSS) enables Search and Rescue authorities on shore, in addition to shipping in the immediate vicinity of a vessel in distress, to be rapidly alerted to an incident so that assistance can be provided with the minimum of delay.

For full details of the services within the area covered by this volume, see *Admiralty List of Radio Signals Volume 5.*

COUNTRIES AND PORTS

TURKEY

General description

1.71

1 Turkey, known to the Turks as Türkiye, is situated in the E Mediterranean and is bounded on the W by the Aegean Sea and Greece, on the N by the Black Sea and Bulgaria, on the E by Georgia, Armenia, Azerbaijan and Iran and on the S by Iraq and Syria.

The country lies partly in Asia and partly in Europe, the two parts being separated by Marmara Denizi (Sea of Marmara). The Asian part is called Anadolu (formerly Anatolia or Asia Minor); the European part, which comprises only 3 per cent of the country, is called Trakya (formerly Eastern Thrace).

2 Ankara (39°57′N, 32°54′E), about 200 km from the Black Sea coast is the capital of the country and İstanbul (formerly Constantinople or Byzantium) (41°01′N, 28°59′E) is the largest city.

National limits

1.72

1 In the Black Sea, Turkey claims a limit of 12 miles for both its territorial sea (TS) and fisheries zone (FZ) and 200 mile exclusive economic zone. In the Aegean, Turkey claims territorial waters and fisheries jurisdiction limits of 6 miles. See *Annual Summary of Admiralty Notices to Mariners.*

History

Early history of the area

1.73

1 During the first millennium BC, Asia Minor was, at one period or another, part of many of the principal empires of the classical era. In the eighth century BC, Greek colonies were established on the Black Sea coast of Asia Minor and in the sixth century the region came under Persian rule. In 334 BC Alexander the Great crossed the Hellespont (Çanakkale Boğazı) and after his defeat of the Persians, the area became part of the Macedonian empire.

1.74

1 After the death of Alexander the Great in 323 BC, his empire was divided between his warring generals and in Asia Minor the result was a confused situation out of which arose a number of independent Hellenic states of which Bithynia and Pontus, on the Black Sea coast, were amongst the most powerful. In the middle of the second century BC, the expanding power of Rome began to make itself felt in Asia Minor and by the end of the first century AD, the whole area had become part of the Roman Empire.

2 In the third century AD the Roman Empire, which had reached its maximum extent, became increasingly difficult to govern and was divided into two parts. The provinces of Asia Minor formed part of the Eastern Roman Empire which, after 330 AD, was governed from the new imperial capital of Constantinople. When the Western Roman Empire finally collapsed in 476 AD, the Eastern Roman Empire continued as the Byzantine Empire for nearly another 1000 years.

3 For the next 500 years, the area now known as Turkey formed part of the Byzantine Empire although at times, large parts of it were occupied by Arab invaders, who on two occasions laid siege to Constantinople.

The Ottoman Empire

1.75

1 During the middle of the eleventh century the Byzantine Empire began its long decline which was to end in 1453 when Constantinople fell to the Ottoman Turks. In 1071 the central part of Anatolia (Anadolu) was lost to the Seljuk Turks, who had emerged from central Asia in the previous century. The Empire also suffered grievous harm from its fellow Christians, culminating in the sack of Constantinople in 1204 by the armies of the 4th Crusade.

2 The Seljuk triumph was short lived. In the middle of the thirteenth century occurred one of the most devastating invasions in world history, the onslaught on W Asia and E Europe by the Mongol hordes. The effect on Asia Minor of this invasion was to end the dominance of the Seljuks, and after a brief Mongol occupation, to leave the area under the control of a number of Minor Turcoman states.

3 In 1281 Osman, after whom the Ottoman dynasty was called, became the ruler of a small state in W Anatolia. Under his leadership this state began the expansion which was to become the Ottoman Empire. Initial expansion was largely directed into the Balkans, most of which had been occupied by the end of the fourteenth century, and it wasn't until after the fall of Constantinople that the Emirates of Kandar and Trebizond (Trabzon) on the N coast of Anatolia were finally incorporated into the Empire.

1.76

1 The Ottoman Empire, which reached its maximum extent in the second half of the seventeenth century, continued to control most of the areas covered by this volume until the end of the eighteenth century. However in the nineteenth century a decline which had started a century earlier, began to accelerate and by the outbreak of World War I, the Ottoman Empire had lost most of its European provinces.

2 During World War I Turkey entered the war on the side of Germany and Austria. In 1915, in an unsuccessful attempt to gain control of the entrance to the Black Sea, Allied forces landed on the Gallipoli peninsular (Gelibolu Yarımadası). With the defeat of the Central Powers in 1918, the Ottoman Empire lost its remaining non-Turkish lands. Nationalist forces under the leadership of Kemal Atatürk resisted the punitive terms of a peace treaty and in 1922, at the end of a bitter war, in which invading Greeks were expelled from Anatolia, the Ottoman Empire formally came to an end and the Turkish Republic was established.

Turkish Republic

1.77

1 Kemal Atatürk, who became the first president of the Turkish Republic, introduced sweeping reforms to modernise the country's institutions and reduce the influence that Islam had on the life of the nation.

Turkey remained neutral for most of World War II, only entering the war in 1945 so as to become a charter member of the United Nations.

2 After World War II, Turkey sided with the West in its conflict with the Russian Union. It sent troops to fight under United Nations Command in Korea and joined NATO in 1952 and CENTO in 1955.

In the 1960's relations with Greece deteriorated as the Turkish government sought to protect the interests of the Turkish minority in Cyprus. This dispute culminated in the Turkish occupation of N Cyprus in 1974.

3 The 1960s and 70s were troubled times politically for Turkey as the armed forces on a number of occasions

assumed political control of the country. In 1982 a new constitution was introduced which restored parliamentary rule.

In 2003, as part of a programme to meet preconditions on joining the European Union, the parliament passed laws easing restrictions on freedom of speech, Kurdish language rights and reducing the political role of the armed forces.

Government

1.78

1 Turkey is a democratic, secular republic with a parliamentary form of government and an independent judiciary.

Under the latest constitution, adopted by referendum in 1982, Turkey has a unicameral parliament, known as the Grand National Assembly. The President of the Republic is chosen by the assembly for a term of seven years. The President appoints a Council of Ministers who are responsible to the Grand National Assembly. Executive powers are shared between the President and Prime Minister.

Population

1.79

1 **Population.** In 2001 the population of Turkey was 67 632 000.

Religion. Islam ceased to be the state religion in 1928 but 99 per cent of the population are Muslim. In İstanbul and near the Syrian border there are Greek Orthodox, Armenian, Christian and Jewish minorities.

Language

1.80

1 The official language is Turkish although Kurdish is widely spoken in the SE of the country.

Physical features

1.81

1 Anadolu consists of a plateau between 750 and 1350 m high which is surrounded by narrow coastal plains. This plateau, which becomes increasingly rugged as it progresses E, rises to a maximum height of 5168 m at Mount Araat. In the N the plateau is buttressed by the Pontic range which stretches W along the Black Sea coast.

Earthquakes are frequent throughout Anadolu and the region is remarkable for the number of its thermal and mineral springs.

Industry and trade

1.82

1 **Agriculture** accounts for about one sixth of the gross national product. About 40 per cent of the working population are farmers. The main crops are cotton, tobacco, cereals, sugar beets, fruits and nuts.

Industry. Industry accounts for just over one quarter of the gross national product. The main products are textiles, processed foodstuffs, iron and steel, cement and leather goods.

Natural resources. Coal, chrome and iron ore, copper, boron and oil.

BULGARIA

General description

1.83

1 The Republic of Bulgaria (Bŭlgariya), is situated in the Balkan peninsula. It is bounded by Romania to the N, Serbia and Macedonia to the W, and Greece and Turkey to the S. Sofiya (Sofia) is the capital of Bulgaria.

National limits

1.84

1 Bulgaria claims territorial seas (TS) out to 12 miles, and a contiguous zone (CZ) to 24 miles, and an exclusive economic zone (EEZ) to 200 miles. See *Annual Summary of Admiralty Notices to Mariners.*

History

Early history of area

1.85

1 In the eighth century BC, Hellenic colonies were established on the Black Sea coast of what is now Bulgaria. The area was for a short period federated to the Empire of Alexander the Great. After the death of Alexander in 323 BC, the area reverted to barbarian control until it was absorbed into the Roman Empire at the end of the first century AD. In about the sixth century AD the area was settled by Slavic people and in the seventh century by Turkic Bulgars who had originated from the N of the Caspian Sea. The latter tribe, which gave the country its modern name, were largely absorbed by the Slavs and the two tribes became the precursors of the modern Bulgarian people.

Middle ages

1.86

1 During the seventh century AD, the Bulgar state established itself as a major power in the area. The First Bulgarian Kingdom, as it is often called, reached the heights of its power in the late ninth century. During this period, under the leadership of Boris I and his son Simeon, the Kingdom stretched from the Black Sea to the Adriatic and S almost to the Aegean.

2 In 1018 the Bulgarian Kingdom was subjugated by the forces of a revived Byzantine Empire, but regained its independence again at the end of the twelfth century. The Second Bulgarian Kingdom remained independent for nearly two hundred years until it was incorporated into the Ottoman Empire in 1396. The Bulgarian people remained under Ottoman rule for the next five hundred years.

Modern Bulgaria

1.87

1 At the Congress of Berlin, following the Russo-Turkish war of 1877-8 in which Russian forces were victorious, an independent principality of Bulgaria was created between the Danube and the Balkan mountains. Originally its size was to have been larger, giving it access to the Aegean, but these boundaries were opposed by Britain and Austria-Hungary who feared the spread of Russian influence into the Mediterranean. As a compromise, the autonomous province of E Rumelia, consisting of the S part of the country, was formed within the Ottoman Empire. In 1885, E Rumelia proclaimed its union with the Principality of Bulgaria and in 1908 Bulgaria including E Rumelia, proclaimed a fully independent kingdom, which had boundaries similar to those of modern Bulgaria.

1.88

1 In 1912 the First Balkan War was fought between an alliance of Balkan States and Turkey. The alliance was victorious. Turkey lost most of its remaining European possessions and Bulgaria expanded its territories, which included access to the Aegean. However, Bulgaria and Serbia quarrelled over the division of Macedonia and in 1913, in the Second Balkan War, the Bulgarians were

defeated by their former allies. Bulgaria lost most of the territories gained in the first conflict, although she did keep her access to the Aegean.

1.89

1 During the First World War, Bulgaria sided with the Central Powers and in the ensuing peace treaties lost further territories including her Aegean coastline. In the Second World war, Bulgaria once again sided with Germany but did not declare war on the Russian Union. In 1944 Russian forces invaded Bulgaria and a communist dominated coalition seized power. In 1947 Bulgaria formally became a Communist state when it adopted a constitution based on that of the USSR.

2 Until 1989 Bulgaria remained one of the staunchest supporters of the Russian Union within the Warsaw Pact, but in November 1989, after the resignation of Todor Zhivkov, the Bulgarian Communist Party renounced its guaranteed role within the constitution.

Government

1.90

1 Bulgaria became a multi-party democracy in 1990 and a new constitution was adopted in 1991 providing for a directly elected president who serves for no more than two five-year terms. The 240-member National Assembly is directly elected by proportional representation, with the president nominating a prime minister from the largest party in the legislature.

Population

1.91

1 **Population.** In 2001 the population was 7 973 671 with Bulgarians constituting about 86 per cent and Turks about 9 per cent of the population.

Religion. About 86 per cent of the population belong to the Bulgarian Orthodox Church with the remainder being mostly Muslim.

Language

1.92

1 The official language is Bulgarian, a southern slavonic tongue closely allied to Serbo-Croat and Russian with local admixtures of modern Greek, Albanian and Turkish words. The alphabet is Cyrillic.

Turkish is spoken by the Turkish minority.

Physical features

1.93

1 Bulgaria is mainly a mountainous country. Stara Planina (The Balkan mountains), which reach heights of over 2500 m, stretch from E to W across the central part of the country. N of Stara Planina is a fertile plateau which extends N to the Danube River.

S of Stara Planina, Bulgaria consists of a mountainous W part and a lowland E part.

Industry and trade

1.94

1 **Agriculture.** Although the relative importance of agriculture has declined in recent decades, it still remains a very important sector of the Bulgarian economy with about 24 per cent of the population working in agriculture. Principal crops are wheat, maize, beet, tomatoes, tobacco, oleaginous seeds, fruit, vegetables and cotton.

Industry. The main industrial products are processed agricultural products, machinery, chemicals and metallurgical products.

Natural resources. Copper, lead, zinc, coal, iron, manganese, silver and lumber. There are small deposits of oil and natural gas.

ROMANIA

General description

1.95

1 Romania, is situated in the N part of the Balkan peninsula. It is bounded on the N by Ukraine and Moldova, on the S by Bulgaria, on the NW by Hungary and on the SW by Serbia and Montegreno.

Bucureşti (Bucharest) is the capital of Romania.

National limits

1.96

1 Romania claims territorial sea (TS) out to 12 miles, a contiguous (CZ) to 24 miles, and an exclusive economic zone (EEZ) to 200 miles. See *Annual Summary of Admiralty Notices to Mariners.*

History

Early history of the area

1.97

1 The area that is now Romania was part of the Roman Empire from the beginning of the second century AD, when the Roman Legions finally conquered the Dacians, until about 270 AD when the Romans were forced to withdraw from the area in the face of increasing barbarian pressure. For the next 1000 years, the region's history was violent and dramatic as it was subjected to an endless series of invasions and migrations by barbarian tribes such as the Goths, Huns, Bulgars, Magyars and Mongols. Yet, despite this turmoil many of the cultural and linguistic traditions of the Roman settlers survived in the Carpathian mountains, and Romania today is a latin island in E Europe.

2 In the thirteenth century, having been driven out of the Carpathians by the Hungarians, the Romanian people established themselves in Walachia and Moldavia, to the S and E of these mountains, respectively. The two principalities that emerged from this migration in the first half of the fourteenth century, are the beginning of the history of modern Romania.

Principalities of Walachia and Moldavia

1.98

1 The independence of Walachia and Moldavia was short lived and in the first half of the fifteenth century both principalities became vassals of the expanding Ottoman Empire. For the next four hundred years the principalities were victims of the struggle for power in Central Europe that took place between the Ottoman Empire, the Austro-Hungarian Empire, and in later years the Russian Empire. For most of the period they were under Turkish control, interspersed with brief periods of independence or Hungarian, Polish and Russian domination.

2 In 1829, after Turkey's defeat in the Greek War of Independence, Walachia and Moldavia became Russian protectorates, although remaining under nominal Turkish Rule. In 1861, the two principalities were united under one ruler and became, in practice, an independent state. The full independence of Romania was recognised at the

Congress of Berlin in 1878 and in 1881 Carol I became the first ruler of the Kingdom of Romania.

The Kingdom of Romania

1.99

1 In World War I, Romania sided with the Allies and declared war on the Central Powers in 1916. Most of the country was occupied by Austro-Hungarian and German forces, but after the Armistice, Romania was rewarded with substantial territories at the expense of the former Austro-Hungarian Empire, Russia and Bulgaria. Romania emerged from the war having almost doubled its population and area. However, in 1940 after the signing of the German-Russian pact, some of these territories were returned to Hungary, Bulgaria and USSR.

2 In June 1941, Romania entered the war on the side of the Axis Powers and took part in the German invasion of Russia. In 1944 the country, which had signed an armistice with the Allies, was occupied by Russian forces. In 1947 the King was forced to abdicate and the Socialist Republic of Romania was established.

3 In December 1989, after the suppression of a demonstration in the W city of Timisoara, a general uprising in Bucharest overthrew the Communist government. The leader of the party, Nicolea Ceausescu, was executed on Christmas day.

In 2002 Romania was formally invited to accession talks with NATO and is expected to join in 2004.

Government

1.100

1 A new Constitution was approved by referendum on the 8th December 1991. The government machinery consists of a National Assembly of 345 seats, of which 18 are reserved for ethnic minorities, and a Senate of 140 seats. The president must be apolitical and serves a maximum of two 4-year terms.

Population

1.101

1 **Population.** In 2001 the population was 21 698 181 with Romanians constituting about 89 per cent and Hungarians about 7 per cent of the population. There are also Gypsy, German, and Ukrainian minorities.

Religion. About 87 per cent of the population belong to the Romanian Orthodox Church.

Language

1.102

1 The official language is Romanian, a Romance language with many archaic forms and with admixtures of Slavonic, Turkish, Magyar and French words.

Physical features

1.103

1 The central and N part of Romania is a fertile plateau lying between 300 and 450 m above sea level. It is divided by wide valleys and rivers and is fringed by the Carpathian mountains. This chain, which rises to a highest point of 2500 m, traverses Romania in a wide arc from NE to SW.

In the S part of the country the plains of Walachia lie between the S fringes of the Carpathian mountains and the Danube. In the SE the agricultural region of Dobrogea lies between the Danube and the Sea.

Industry and trade

1.104

1 **Agriculture** is 13 per cent of the GNP. The main products are cereals, vegetables, flax and hemp.

Industry is 59 per cent of the GNP. The main industries are mining, forestry, construction materials, metal production, chemicals and food processing.

Natural resources. Oil, natural gas, timber and coal.

RUSSIAN FEDERATION

General description

Extent

1.105

1 The Russian Federation, known to the Russians as Rossiiskaya Federatsiya, occupies an area of 17 075 400 square kilometres, three quarters of the total area of the former USSR. It extends from the Arctic Ocean in the N to the Black and Caspian Seas in the S, and from the Bering Sea in the E to the Gulf of Finland in the W.

The part of the seaboard of the Russian Federation included in this volume extends from the border with the Ukraine to the NW and the border with Georgia to the SE.

Administrative divisions

1.106

1 The Russian Federation is divided into 89 primary administrative units, all of equal status, consisting of 21 republics, 6 krays (territories), 49 oblasts (regions), 2 cities with primary division status (Moskva and Sankt Peterburg), 1 autonomous oblast, and 10 autonomous okrugs (areas).

National limits

Territorial waters

1.107

1 The Russian Federation claims territorial sea (TS) out to 12 miles and an exclusive economic zone (EEZ) to 200 miles.

For further details see *Annual Summary of Admiralty Notices to Mariners* and *the Mariner's Handbook.*

Russian internal waters

1.108

1 The internal waters of Russia include:

1. All maritime waters shoreward from straight base lines used to define the width of territorial waters.
2. The waters of Russian ports.
3. The waters of gulfs, bays, inlets, etc, whose shores belong wholly to Russia.
4. The waters of gulfs, bays, inlets, estuaries, seas and straits historically belonging to Russia.

History

Early history of Russia

1.109

1 The races who peopled the area now known as Russia were vaguely known as the Scythians in classical times and a general theory is that the Russians were so called from the Finnish word *ruotsi,* a term applied to the Vikings, or Varangians, who visited N Russia before the 9th century AD.

2 One of the first references is to the Varangarian Rurik who founded the first Russian state at Novgorod in 862 AD. Thereafter, a federation of princely states known as the Kievan Rus controlled most of the E part of European Russia and Christianity was adopted by Prince Vladimir I of Kiyev in 988 AD.

3 In the 11th and 12th centuries the Kievan Rus was weakened by internal feuding and pressure from the nomadic peoples farther E. In 1169 the capital was moved to Vladimir, E of Moscow, after Kiyev was sacked in a civil war.

The Mongols defeated the northern states in 1238 and for the next hundred years the principalities were vassal states of the Khan of the Golden Horde.

Muscovy and Tsarist Russia

1.110

1 Moskva, destined to be the core of the future Russian State, was founded in 1147 by George Dolgorouki, son of Vladimir Monomakh who had married the daughter of Harold II of England and founded the city of Vladimir in 1116.

2 In the mid-fourteenth century the principality of Muscovy, based on Moskva, began to emerge as a leading power in the area and from 1339 the rulers assumed the title of Grand Princes of Russia. By 1480, having absorbed most of its neighbours, the state was strong enough under the rule of Ivan III, the Great, to gain independence from the Mongols. Ivan had married the niece of the last Emperor of Constantinople and, based on this, his grandson, Ivan IV, the Terrible, assumed the title of Tsar in 1547.

3 Russia was formerly created from the principality of Muscovy and its territories by Tsar Peter I, the Great, who ruled from 1682 to 1725 and introduced western ideas of government and organisation. Under Peter and his successors territorial expansion continued and it was as a huge multinational autocratic state that the Russian Empire entered World War I against the Central Powers in 1914.

4 Because of food and fuel shortages, repressive government and lack of competent military leadership a series of mutinies, strikes and demonstrations culminated in revolution on 12th March 1917, or 27th February in the Julian calendar which was not replaced by the Gregorian Calendar until February 1918. Three days later Tsar Nicholas II abdicated, a provisional government was formed and a republic declared on the 14th September (1st September). A political struggle ensued leading to the October Revolution of 7th November (25th October) 1917 in which the Bolsheviks (Communists) led by V I Lenin (Ulyanov) seized power and created the Council of People's Commissars as the new governmental authority.

Union of Soviet Socialist Republics

1.111

1 In March 1918 the Treaty of Brest-Litovsk marked the end of the war with the Central Powers. Armed resistance to the Communist rule developed into civil war in the same year, lasting until 1922, when the Red Army finally defeated the anti-revolutionary White Forces.

During the Civil War, Russia was declared a Soviet Republic and other Soviet Republics had been formed in Ukraine, Belarus and Transcaucasia. These four republics merged to form the USSR on the 30th December 1922 and by August 1940 the union had been expanded to comprise sixteen Soviet Socialist Republics.

2 In June 1941 Nazi Germany invaded the Soviet Union resulting in the Great Patriotic War in which the USSR lost 26 000 000 combatants and civilians. The Soviet Union played a major part in the defeat of Germany in World War II and afterwards became a world power with a significant influence on world affairs.

The Communist Party remained dominant in all facets of life until 1985 when President Gorbachev introduced policies of restructuring (perestroika) and openness (glasnost).

3 This political openness allowed ethnic and nationalist tensions to surface and in order to reimpose Communist control a coup was attempted in August 1991. The coup was defeated but it could be seen that effective power was in the hands of the leaders of the republics and the Soviet Union began to break up. On 26th December 1991 the USSR formally ceased to exist.

The Russian Federation

1.112

1 The Russian Soviet Federative Socialist Republic adopted a constitution in April 1978 and in June 1990, pending promulgation of a new constitution, a declaration of republican sovereignty was adopted. In December 1991 it became a founding member of the Commonwealth of Independent States, inherited the Soviet Union's seat at the United Nations and adopted the name Russian Federation.

2 A new Russian Federal Treaty was signed on 13th March 1992 between the central government and the autonomous republics and a period of confrontation in 1992-93 between the President and the parliament culminated in a new parliament being elected and a new constitution being adopted in December 1993.

Tatarstan and Bashkortostan signed the treaty in 1994 after securing considerable legislative and economic autonomy.

Government

Constitution

1.113

1 According to the provisions of the constitution, which came into effect on 24th December 1993, the Russian Federation is a democratic, federal, legally-based, secular state with a republican form of government.

The state is based upon a separation of powers and upon federal principles which include a 15 member Constitutional Court. The most important matters of state, such as defence, foreign affairs, budget and taxation are reserved for the federal government and other matters, such as education, health, use of land and water are for joint management by the federal and local governments.

2 The President, who is directly elected for a maximum of two 4-year terms, has a central role in defining the basic directions of domestic and foreign policies.

Legislature

1.114

1 The representative and legislative organ of the Russian Federation is the bicameral Federal Assembly. The upper house is the Council of the Federation and the lower is the State Duma. The former consists of 178 deputies, 2 from each of the 89 members of the federation, and the latter consists of 450 deputies, chosen for a four-year term.

The Council of the Federation considers all matters that apply to the federation as a whole and the Duma adopts federal laws and approves nominations for Prime Minister and Deputy Prime Ministers.

Regional and Local Government

1.115

1 The Council of the Heads of the Republics is chaired by the President and includes the Prime Minister. Its function is to provide an interaction between the federal government

and regional authorities, which also have the right to legislate within their spheres of competence.

Population

1.116

1 It was estimated (2002) that the population of the Russian Federation was 145 924 900.

The Russian Federation is a multinational state with more than 130 nationalities and ethnic groupings. The largest of these groupings is the Russians, constituting about 87·5 per cent of the population.

The Russian Orthodox Church is the predominant religion although the Tatars and many in the N Caucasus are Muslims, and there are Jewish communities in Moscow and St Petersburg.

Language

1.117

1 The Russian language is the state language of the Russian Federation throughout its territory. The language is a branch of the Slavonic family of language and is written in Cyrillic script.

Physical features

1.118

1 The Russian seaboard of Sea of Azov is predominantly flat and featureless whilst that of the Black Sea is mountainous with spurs of the Caucasian range extending towards the coast creating many gorges and valleys with rivers.

Industry and trade

1.119

1 The Russian Federation is one of the most industrialised of the former Soviet Republics. Besides its resource based industries, it has developed large manufacturing capacities, notably in machinery.

A radical reform of the rigid state control of industry and trade has resulted in about three quarters of the economy being in private hands.

2 The Russian Federation has some of the richest mineral deposits in the world including oil, natural gas, coal, ferrous and non-ferrous ores, salt, asbestos, precious metals and gemstones.

Russia's main trading partners are Germany, the USA, Italy, China and the former Soviet states.

UKRAINE

General description

1.120

1 Ukraine is situated on the E side of the Balkan peninsula and is bounded by Belarus to the N, Russia to the N and E, Romania and Moldova to the SW and Hungary, Slovakia and Poland to the W.

Its capital is Kiev.

National limits

1.121

1 Ukraine claims territorial sea (TS) out to 12 miles and an exclusive economic zone (EEZ) to 200 miles. See *Annual Summary of Notices to Mariners.*

History

1.122

1 Ukraine and its capital Kiev were formed in the ninth century AD by the joining of the two Slav states of Kiev and Novgorod and thus established the first common Russian language and nationality. The Ukraine was invaded and ruled over by many different countries until the middle of the 17th century, when it became independent but closely allied with Russia and eventually became a constituent republic of the USSR in December 1922.

After a referendum in December 1991 Ukraine declared its independence from the Soviet Union.

2 In 1997 a treaty of friendship and co-operation was signed with Russia and agreement was also reached over the division of the Soviet Black Sea Fleet. Also in 1997 Ukraine signed the NATO-Ukraine Charter to enhance co-operation on peacekeeping. In 1998 a treaty on economic co-operation was signed with Russia.

Government

1.123

1 A new constitution was adopted in June 1996 which gives the President the power to appoint the government without reference to the People's Council (*Narodna Rada)* and also allows greater presidential power to rule by decree. The constitution also provides for the creation of a Constitutional Court and following an amendment in September 1997, half the 450 People's Council seats are elected from single-seat constituencies by simple majority and the other half by proportional representation from party lists.

Population

1.124

1 The population of the Ukraine (2001) was 49·1 million made up of 73 per cent Ukrainians and 22 per cent Russians with the balance being multinational.

The predominant religion within the Ukraine is Orthodox Christianity.

Language

1.125

1 Ukrainian is the official language but a significant minority speak Russian.

Physical features

1.126

1 The Ukrainian seaboard covered by this volume extends from its border with Romania on the Danube in the W part of the Black Sea to its border with the Russian Federation, E of Mariupol' in the NE part of Sea of Azov. The N shore of the Black Sea and Sea of Azov is bordered by the treeless lowland of the S Ukrainian Steppes. This fertile plain stretches N for several hundred miles before it meets the wooded plains of central European Russia. Three great rivers, Rika Dnestr (6.15), Rika Dnipro (6.245) and Reka Don (8.203) flow through this region before entering the Black Sea and Sea of Azov.

Industry and trade

1.127

1 The S part of the country is a large coal mining and heavy industrial area and the Black Sea coast is an important ship building area. The Ukraine has a very large and important agricultural and livestock industry.

GEORGIA

General description

1.128

1 Georgia lies on the E side of the Black Sea and is bordered by Russia to the N, Azerbaijan to the SE, Armenia to the S and Turkey to the SW.

The capital of Georgia is Tbilisi.

National limits

1.129

1 Georgia claims territorial sea (TS) out to 12 miles and an exclusive economic zone (EEZ) to 200 miles. See *Annual Summary of Notices to Mariners.*

History

1.130

1 Georgia evolved from the joining of two states, Colchis and Iberia, on the coast of the Black Sea around 1000 BC and was occupied and fought over by numerous ethnic groups until the late 19th century when the state came under the influence of Russia. In 1922 Georgia joined the Soviet Union as part of the Transcaucasian Soviet Socialist Republic. Georgia declared independence from the Soviet Union in May 1991 and was admitted to UN membership in July 1992.

Government

1.131

1 The 1995 constitution provides for a federal republic with a one chamber assembly with a two chamber legislature to be set up as and when conditions are considered suitable. The president is selected by the general public and serves a maximum of two five-year terms.

Population

1.132

1 **Population.** In 2001 the population was 5 239 000 with Georgians constituting 70 per cent, Armenians 8 per cent, Russians 6 per cent, Azerbaijanis 6 per cent, Ossetians 3 per cent, and Abkhazians 2 per cent of the population. There are also smaller groups of Greeks, Ukrainians, Jews and Kurds.

Religion. About 65 per cent of the population belong to the Georgian Orthodox Church with 11 per cent being Muslim, 10 per cent Russian Orthodox and 8 per cent Armenian Orthodox.

Language

1.133

1 Georgian is the sole official language except in Abkhazia where Abkhazian is also officially recognised. Russian and Armenian are also commonly spoken.

Physical features

1.134

1 The Black Sea seaboard of Georgia is fairly mountainous to the N with prominent gorges and river valleys but becomes less severe and more uniform towards the S with an almost subtropical climate.

Industry and trade

1.135

1 The economy of Georgia has been very badly affected by internal strife and division. There is, however, a thriving horticultural sector that has been aided in recent years by legislation allowing private ownership of arable land. There are large coal reserves but despite a severe energy crisis, these resources have not been utilised.

In 2003 work began on the Georgian section of an oil pipeline from Baku, Azerbaijan through Georgia to Ceyhan in Turkey.

PRINCIPAL PORTS, HARBOURS AND ANCHORAGES

1.136

Turkey

Marmara Denizi

Çanakkale (40°09′N, 26°24′E) (2.31)	Commercial port Port of entry Ferry terminal
Gelibolu (40°25′N, 26°40′E) (2.71)	Commercial port Ferry terminal
Karabiga (40°24′N, 27°18′E) (2.110)	Commercial port
Erdek (40°24′N, 27°47′E) (2.123)	Commercial port Summer resort
Bandırma (40°21′N, 27°58′E) (2.153)	Commercial port Port of entry
Mudanya (40°23′N, 28°52′E) (2.185)	Commercial port
Gemlik (40°26′N, 29°09′E) (2.190)	Commercial port Oil terminal
Martas (40°58′N, 27°56′E) (2.209)	Commercial port
Tekirdağ (40°59′N, 27°31′E) (2.219)	Major commercial port
Botaş (41°00′N, 27°59′E) (2.225)	Natural gas terminal
Ambarlı (40°58′N, 28°41′E) (2.231)	Major commercial port
Gölcük (40°44′N, 29°49′E) (2.281)	Naval base
Diliskelesi (40°46′N, 29°32′E) (2.285)	Major commercial port
Yarımca-Tütünçiftlik (40°45′N, 29°46′E) (2.291)	Major chemical and oil terminal
Derince (40°45′N, 29°50′E) (2.295)	Commercial port
Port of İstanbul (41°01′N, 29°00′E) (2.299)	Major commercial port
Haydarpaşa (2.356)	Commercial port
Galata (2.359)	Tourist ship terminal
Haliç Dockyard (2.363)	Ship repairs

North coast

Ereğli (41°17′N, 31°25′E) (3.35)	Major coal and steel port
Zonguldak (41°28′N, 31°47′E) (3.58)	Major coal port
Bartin (41°41′N, 32°14′E) (3.83)	Commercial port
Amasra (41°45′N, 32°23′E) (3.97)	Commercial port

İnebolu (41°59′N, 33°46′E) (3.118)	Commercial port
Samsun (41°18′N, 36°20′E) (3.154)	Commercial port
Giresun (40°55′N, 38°23′E) (3.198)	Commercial port
Trabzon (41°01′N, 39°44′E) (3.232)	Commercial port
Rize (41°02′N, 40°31′E) (3.257)	Commercial port
Hopa (41°24′N, 41°26′E) (3.274)	Commercial port

Bulgaria

Burgas (42°29′N, 27°29′E) (4.54)	Major commercial port
Varna (43°12′N, 27°55′E) (4.94)	Major commercial port

Romania

Mangalia (43°48′N, 28°36′E) (4.140)	Commercial port
Constanţa (44°09′N, 28°40′E) (4.152)	Major commercial port
Midia (44°20′N, 28°41′E) (4.183)	Commercial port

Danube river

Sulina (45°09′N, 29°39′E) (5.21)	Riverine port Freeport.
Tulcea (45°11′N, 28°48′E) (5.65)	Riverine port
Galaţi (45°25′N, 28°05′E) (5.81)	Riverine port
Brăila (45°16′N, 27°59′E) (5.87)	Riverine port

Ukraine

Danube river

Reni (45°26′N, 28°17′E) (5.74)	Riverine port
Izmayil (45°20′N, 28°50′E) (5.98)	Riverine port
Kiliya (45°26′N, 29°16′E) (5.103)	Riverine port
Ust'-Dunaysk (45°28′N, 29°42′E) (5.120)	Lighter transhipment

North west Black Sea

Bilhorod-Dnistrovs'kyy (46°11′N, 30°22′E) (6.25)	Commercial port
Illichivs'k (46°19′N, 30°40′E) (6.37)	Major commercial port
Odesa (46°30′N, 30°45′E) (6.65)	Major commercial port
Port Yuzhnyy (46°36′N, 31°01′E) (6.94)	Major commercial port
Mykolayiv (46°57′N, 31°58′E) (6.219)	Major commercial port
Kherson 46°38′N, 32°37′E) (6.272)	Major commercial port

Black Sea

Yevpatoriya (45°12′N, 33°22′E) (6.362)	Commercial port
Sevastopol' (44°37′N, 33°32′E) (6.367)	Commercial port, Naval base Tourist port
Yalta (44°30′N, 34°10′E) (7.28)	Commercial port Tourist port
Feodosiya (45°02′N, 35°23′E) (7.64)	Commercial port Tourist port
Kerch (44°30′N, 34°10′E) (8.59)	Major commercial port

Sea of Azov

Berdyans'k (46°45′N, 36°46′E) (8.76)	Commercial port
Port Mariupol' (47°05′N, 37°34′E) (8.106)	Major commercial port

Russian Federation

North East Black Sea

Novorossiysk (44°43′N, 37°47′E) (7.118)	Major commercial port
Tuapse (44°06′N, 39°04′E) (7.155)	Major oil port
Sochi (43°35′N, 39°43′E) (7.185)	Commercial port

Georgia

East Black Sea

Sokhumi (43°00′N, 41°01′E) (7.223)	Commercial port. Tourist port.
Bat'umi (41°39′N, 41°39′E) (3.297)	Major oil port
Supsa Terminal (42°01′N, 41°43′E) (3.324)	Offshore oil terminal
P'ot'i (42°09′N, 41°39′E) (3.327)	Commercial port

PORT SERVICES—SUMMARY

Docking facilities

1.137

Russia.

1 Novorossiysk (7.141). Floating dock capable of handling vessels of up to 150 000 tonnes dwt.

Turkey

2 İstanbul (2.299).
İstanbul Dockyard (2.342). Dry dock to 170 000 dwt.
Haliç Dockyard (2.363). Dry dock, length 153 m.
Tuzla (2.336). Floating dock capable of handling vessels of up to 18 000 dwt.
Izmit (2.283). Slipway to 20 000 tonnes.

Bulgaria

3 Burgas (4.77). Floating dock with 3000 dwt capacity.
Varna (4.114). Docking capacity for vessels of up to 30 000 dwt.

Romania

4 Mangalia (4.151). Dry dock with capacity up to 150 000 dwt.

Constanţa (4.170). Dry dock with capacity up to 200 000 dwt and floating docks to 15 000 tonnes.

Sulina (5.37). Synchrolift. Capacity 1200 tonnes.

Tulcea (5.69). Synchro lift to 6 500 dwt.

Galaţi (5.86). Docking to 60 000 tonnes.

Ukraine

5 Ilichivs'k (6.61). Four floating docks to 60 000 tonnes.

Kerch (8.59). Two floating docks, maximum 8500 tonnes.

Mykolayiv (6.240). and Sevastopol' (6.392) are reported to have repair facilities.

Other facilities

Salvage

1.138

1 Odessa (6.89).

Compass adjustment

1.139

1 Bat'umi (3.314).
P'ot'i (3.345).
Novorossiysk (7.142).
Tuapse (7.176).
Sochi (7.204).

Deratting

1.140

1 Deratting and deratting certificates:

İstanbul (2.362).
Bat'umi (3.314).
P'ot'i (3.345).
Burgas (4.78).
Varna (4.115).
Mangalia (4.151).
Constanţa (4.171).
Midia (4.187).
Tulcea (5.69).
Reni (5.80).
Izmail (5.102).
Ust'-Dunaysk (5.138).
Bilhorod-Dnistrovs'kyy (6.35).
Odesa (6.89).
Port Yuzhnyy (6.119).
Mykolayiv (6.241).
Kherson (6.295).
Yevpatoria (6.366).
Illichivs'k (6.62).
Sevastopol' (6.393).
Feodosiya (7.87).
Novorossiysk (7.142).
Tuapse (7.176).
Kerch (8.59).
Berdyans'k (8.97).
Port Mariupol' (8.130).

1.141

1 Exemption certificates only:

İzmit (2.283).
Ereğli (3.52).
Zonguldak (3.76).
Samsun (3.169).
Trabzon (3.249).
Hopa (3.286).
Galaţi (5.86).
Braila (5.91).
Yalta (7.43).
Sochi (7.204).
Sokhumi (7.243).

Measured distances

1.142

1 İzmit Körfezi (2.271).
Burgaski Zaliv (4.42).
Burgas (4.68).
Varna (4.85).
Capul Tuzla (4.135).
Illichivs'k (6.55).
Mys Priboynyy (6.327).

2 Mys Uret (6.350).
Lukull'skaya (6.357).
Strilets'ka (6.385).
Karatynna (6.385).
Khersonesskaya (6.399).
Solnechnogorskaya (7.48).
Novorossiysk (7.104).

NATURAL CONDITIONS

MARITIME TOPOGRAPHY

General remarks

Chart 2214

Geological history

1.143

1 The present form of the Black Sea probably emerged at the end of the Paleocene Period about 40 million years ago when structural upheavals in Asia Minor split off the Caspian Basin from the Mediterranean. About 25 million years ago the the Black Sea gradually became separated from the Caspian region. Further earth movements and changes in sea level associated with the Ice Age glaciers, resulted in intermittent connections with the Mediterranean. The present connection with the Mediterranean was formed 6 to 8 thousand years ago at the end of the last Ice Age.

Seabed

1.144

1 The seabed in the central part of the Black Sea consists of bluish-grey or blue mud; near the coast it is mud mixed with shells and in places with sand and shingle.

CURRENTS

General remarks

1.145

1 **Direction.** Currents in the Black Sea, which in general are weak and inconsistent, consist of a main circulation setting anti-clockwise along its shores, with several branches connecting its various parts. Counter currents, setting in a direction contrary to that of the main current, occur between the main current and the shore in many places. These counter currents are very irregular. There is also an almost constant flow of water from the Black Sea through Marmara Denizi to the Mediterranean.

2 **Causes.** Currents in the Black Sea are due to two causes: the outflow of the rivers, the bulk of which enters the NW part of the sea, and the influence of the wind. Variations in the amount of discharge from the rivers, and variations of the wind distribution, due to the passage of depressions and other causes, may effect the normal currents to a very large extent, and, in some areas, may even reverse their direction.

3 **Strength.** The strength and consistence of this anti-clockwise circulation is greatest after the melting of the snows in late spring and early summer, when the discharge from the rivers is greatest. In late summer and autumn, when the volume of water discharged by the rivers is relatively small, the circulation is generally weaker and more subject to changes due to the influences of the wind. The largest variations in the current are found in the NW part of the sea; here, especially during the spring, the outflow of the River Danube is often felt well offshore, causing a considerable E, or even NE, set.

4 **Current diagrams.** Diagrams 1.145.1 to 5 show the general circulation of currents in the Black Sea and Marmara Denizi during the seasons of the year, but it must be emphasised that it is only rarely that this circulation is to be found in its entirety over the whole extent of the sea. Definition of the terms used are as follows:

5 "Predominant direction" is the mean direction of the 90° sector containing the greatest number of vector representations of all the current observations in the area.

"Constancy" is a measure of a current's persistence. "Low constancy", for example, implies marked variability in rate and, particularly, in direction.

1.146

1 **Local current** systems are found off the mouths of rivers. As a rule river water flows out of the mouth in a direction at right angles to the trend of the coastline, thence it gradually turns to the right and may even turn so much towards the shore as to produce an eddy returning towards the mouth.

SEA LEVEL AND TIDES

Sea level

1.147

1 The annual range in Mean Sea Level due to meteorological pressure effects is about 5 cm, exceptionally a rise of 15 cm and a fall of 18 cm has been recorded. Superimposed on this are variations resulting from changes in the amount of water entering or leaving the Black Sea of from 50 cm to 1·5 m.

1.148

1 **Winds** exercise a considerable effect on the water level. In general, onshore winds tend to raise, and offshore winds to lower the level. The range of level thus caused depends largely upon local conditions, being much more marked in bays and inlets than in more open places, and may be as much as 30 cm.

2 **Seiches**, which occur with little or no warning, can raise or lower the sea level by about 1 m over wide areas. The seiches may be the result of seismic disturbances some distance away or the consequence of changes in atmospheric pressure. See *The Mariners Handbook.*

Tidal ranges

1.149

1 Tidal influence has virtually no effect on water levels in the Black Sea. The average spring range in the W part of the Black Sea is only 8 cm.

SEA AND SWELL

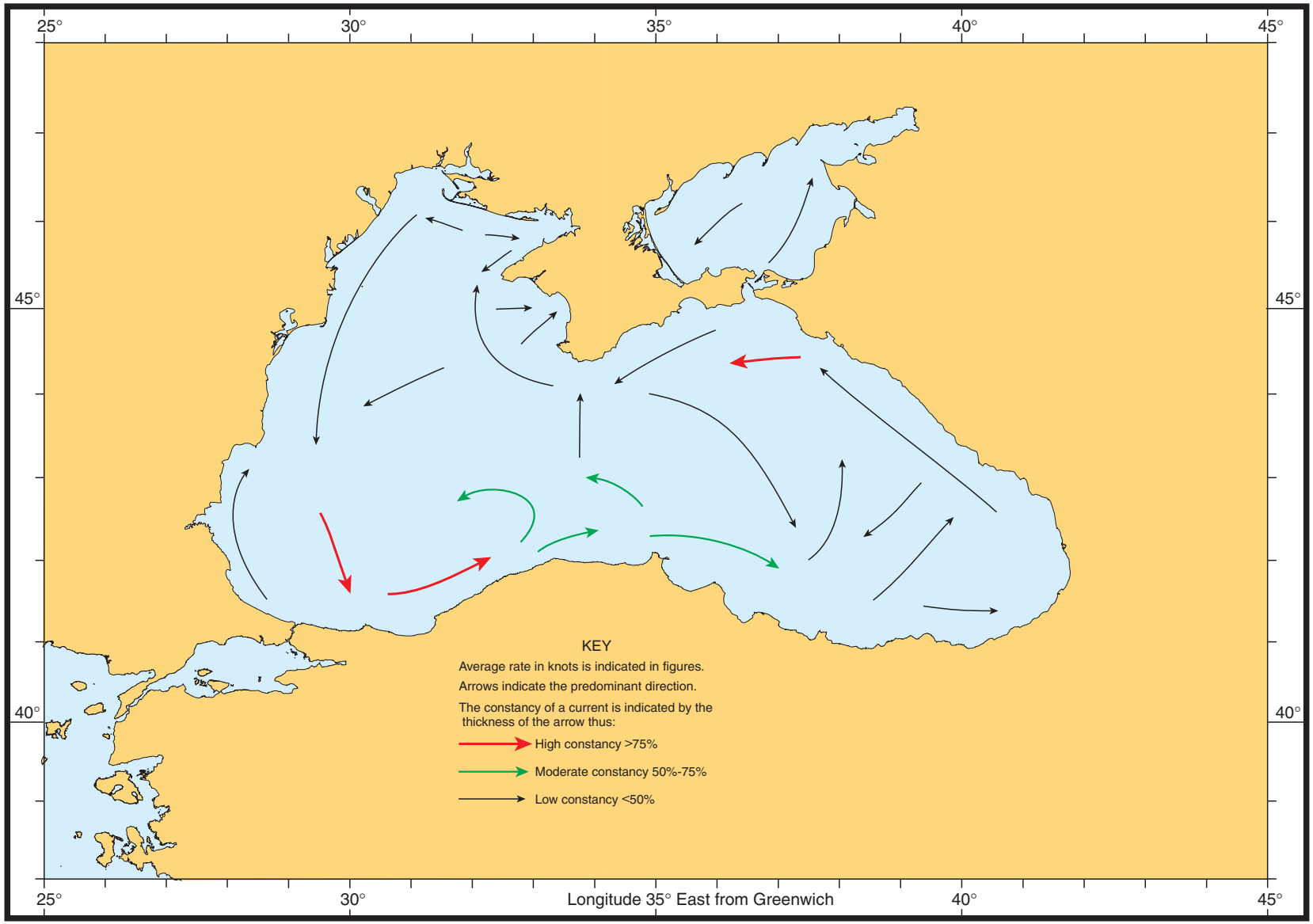
Sea waves

1.150

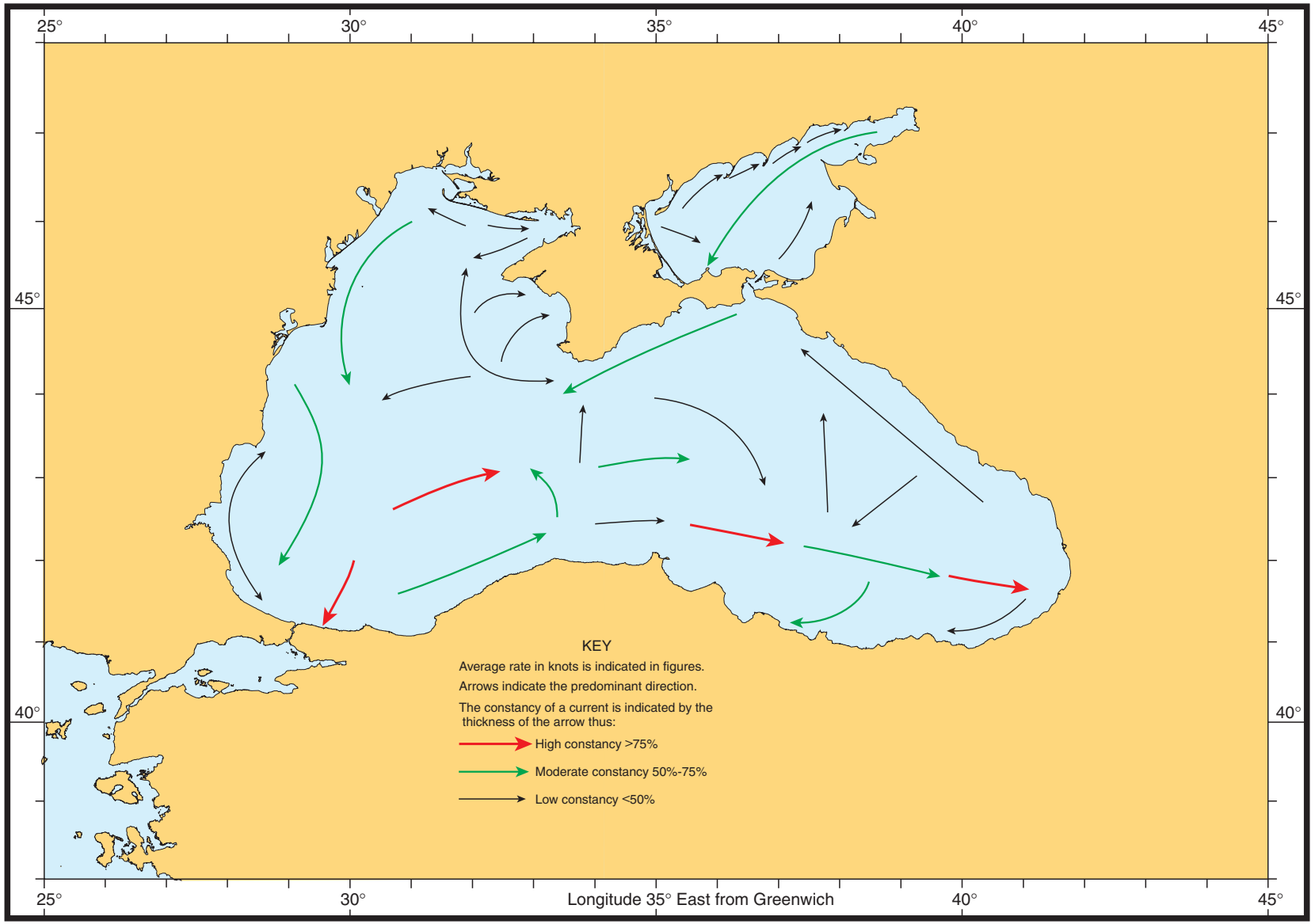
1 The information available is limited but indicates that throughout the region slight seas with waves of ½ m or less are reported in over 30 per cent of observations in winter and in over 50 per cent of observations in spring and autumn. Waves exceeding 2·5 m are recorded in less than 10 per cent of observations. At times very rough seas are raised by the strong winds that blow in this area and waves of 6 to 8 m have been recorded in all parts. Heights of up to 13 m have been reported in isolated instances in both the SW and NE Black Sea.

2 In summer very rough seas are unusual. Slight seas with waves of ½ m or less are reported in over 64 per cent of occasions in all parts.

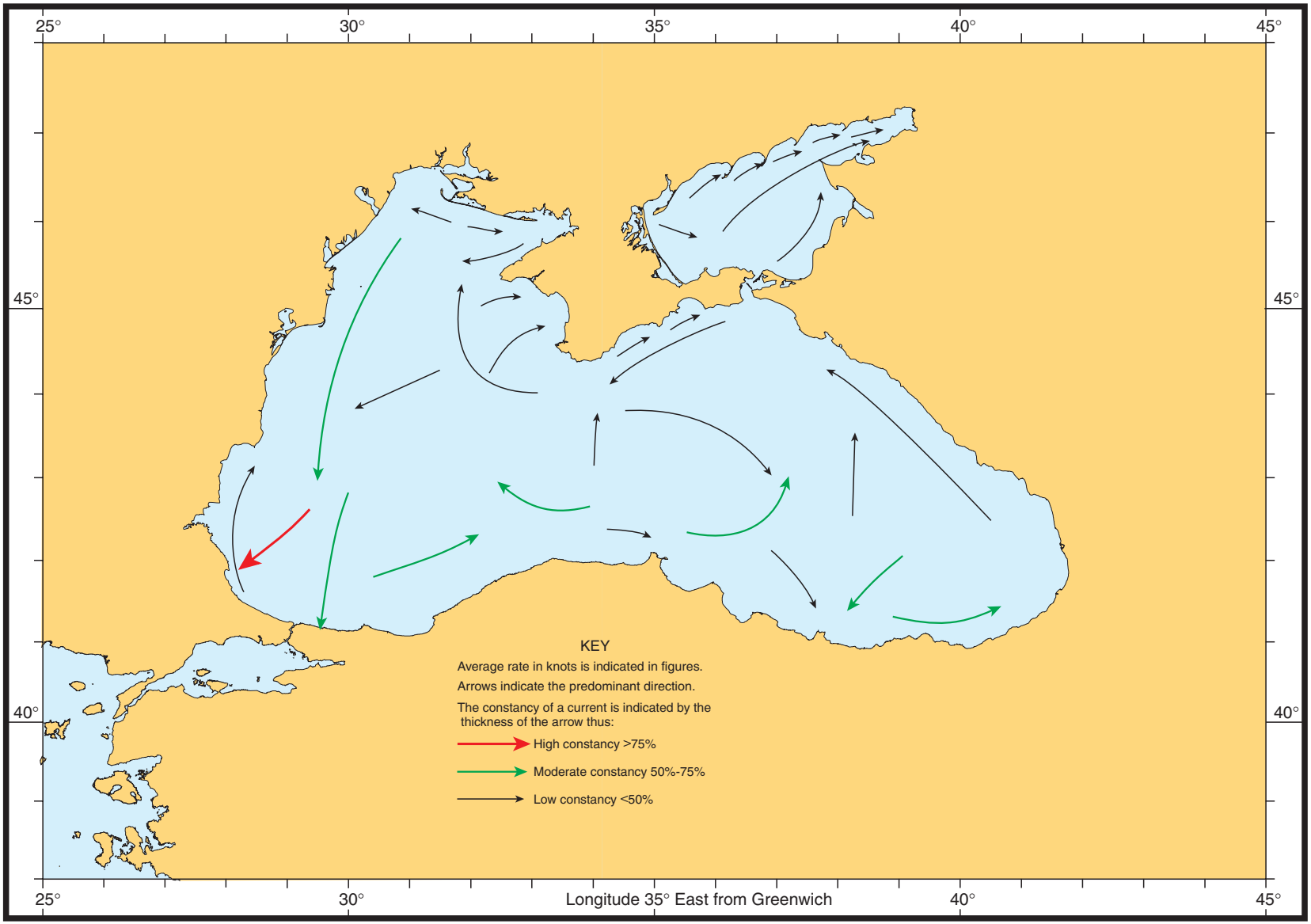
In some localities the wind blows offshore with great strength at times and short, steep and heavy seas may be raised within a short distance of the coast. The Bora blows offshore with much violence in the Novorossiysk area and can give dangerous conditions soon after onset. Although wind speeds may decrease farther out to sea, the high seas raised can move on to affect a large area of the Black Sea.



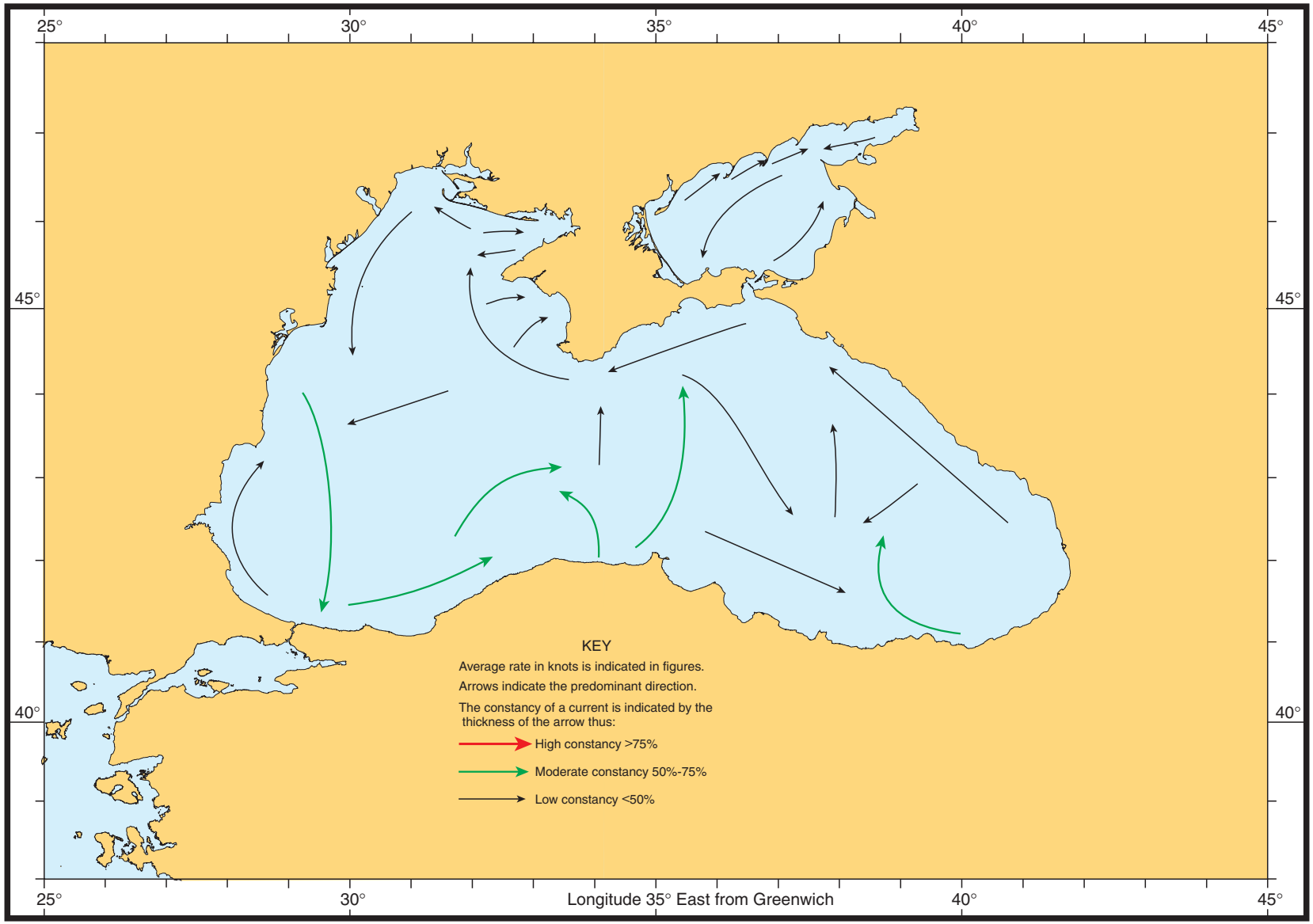
Predominant currents JANUARY to MARCH (1.145.1)



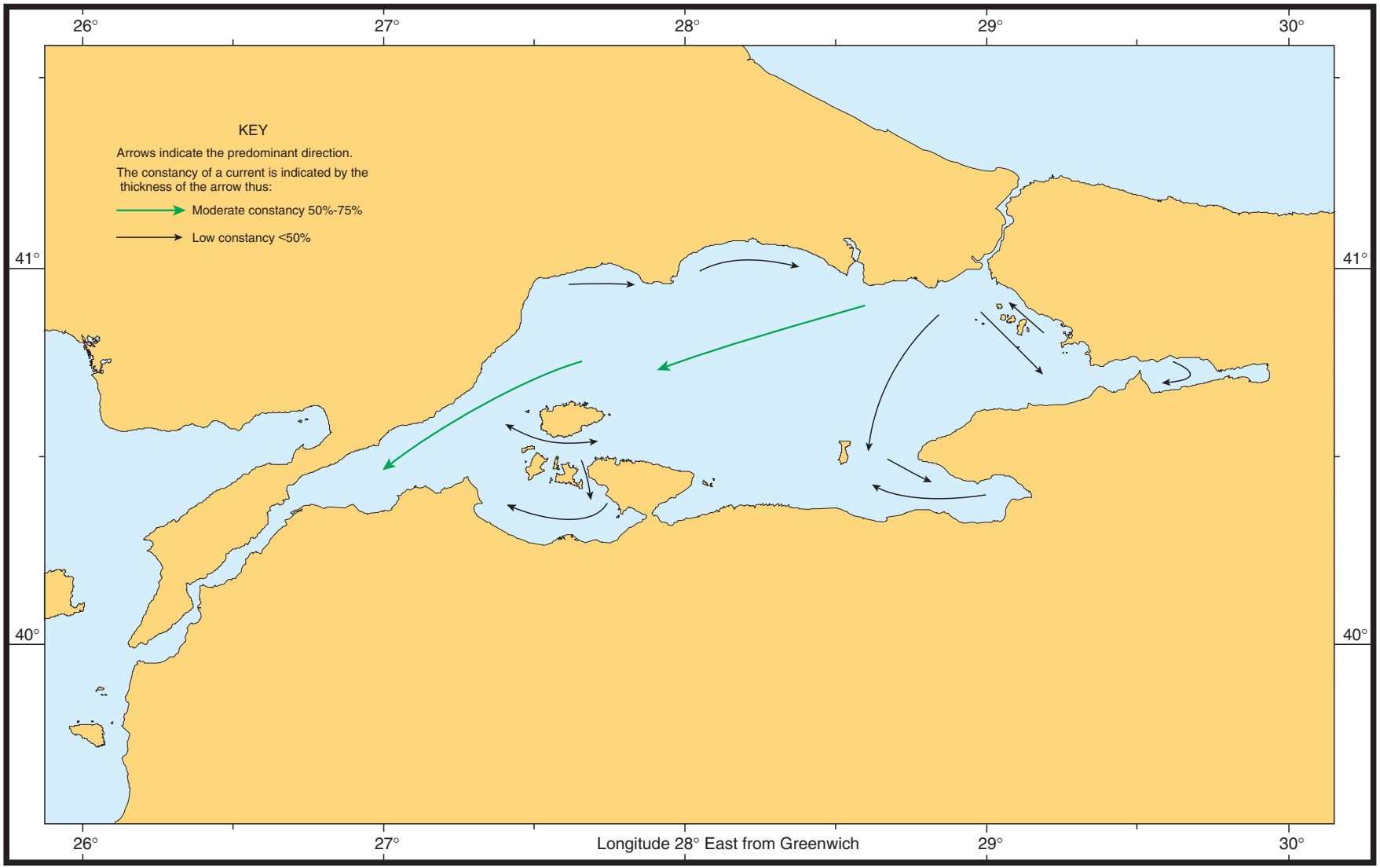
Predominant currents APRIL to JUNE (1.145.2)



Predominant currents JULY to SEPTEMBER (1.145.3)



Predominant currents OCTOBER to DECEMBER (1.145.4)



Predominant currents JANUARY to DECEMBER (1.145.5)

3 Worthy of special mention elsewhere are the heavy seas which can be raised near the S shore of the Black Sea by strong N winds which tend to be enhanced locally by high ground rising steeply from the coast. In the waters off the W coast of the Black Sea, S or SE gales can give unpleasantly steep and confused seas where they meet the opposing S-going current.

Swell

1.151

1 Although information is again limited, reports indicate that in the W Black Sea swells are most frequently from between NW and NE but in the NW of the region, S swells are also a significant feature in winter. In the E, swells are most commonly from between SW and NW but instances of very heavy N or NE swells have been experienced in spring, winter and autumn.

2 In winter, swell waves are for the most part less than 2 to 3 m high, but occasionally reach 6 to 8 m. In spring (March to May) isolated instances of swells up to 10 m have been recorded in several areas and there have been reports of swells reaching 13 to 15 m in the E Black Sea. In summer, swells are generally low and heights of 1 m or less are recorded in around 50 per cent of observations; swells exceeding 4 m are unusual.

Tyagun

1.152

1 Several ports on the E shore of the Black Sea are liable to development of unpleasant and sometimes dangerous wave conditions inside the harbour. This phenomena, which is known as the Tyagun, may occur when waves of some critical period or direction enter the harbour and set up resonant wave movement of the waters inside the harbour. When these conditions occur, it may be necessary for vessels to move from an alongside berth to a buoy or put to sea.

2 The waves which cause the Tyagun may be generated locally by strong winds or by swell waves raised by a distant storm. In the latter case, a Tyagun can develop in a port when local wind conditions are calm or light and variable.

The Tyagun is reported to affect ports on the Caucasian coast between Tuapse and Bat'umi.

SEA WATER CHARACTERISTICS

Density and salinity

1.153

1 The average density of the surface layer of the Black Sea is 1·014 g/m^3, while the salinity is just under 22 parts per thousand. An explanation of both characteristics is given in *The Mariners Handbook.*

Oxygen levels

1.154

1 Marine life can only exist in the surface waters of the Black Sea. Below a depth of 155 m in the middle of the sea, and nearly twice that depth at its edges, there is no oxygen to support life and the water is charged with sulphuretted hydrogen.

2 The reason for this situation is that while the surface layers are regularly replenished by river water and direct precipitation, the deeper layers of the Black Sea are only renewed by the saline undercurrent from Marmara Denizi. The volume of water thus introduced is small in comparison to the total volume of water in the sea and it has been estimated that water at greater depths is only renewed about once every 2500 years.

Sea surface temperature

1.155

1 **Minimum sea temperatures** are generally experienced in February and March. Values fall below 0°C in a coastal strip around the NW shores of the Black Sea from the vicinity of the Danube estuary to W Kryms'kyy Pivostriv and also in the coastal waters of Sea of Azov. Except in severe winters, temperatures over the open seas, in these localities are usually 1 to 2° C higher. There is a substantial and rapid increase in sea water temperature to the S with mean values of 7 to 8° C off S Kryms'kyy Pivostriv, over much of the S and central regions of the Black sea, and also in Marmara Denizi.

1.156

1 **Maximum sea temperatures** are attained in August. Temperatures increase throughout spring and summer, slowly at first but more rapidly later to reach 23 to 25° C over most of the Black Sea and Marmara Denizi in August. In this month the warmest sea temperatures are found in the SE Black Sea and Sea of Azov, whilst the coolest waters are in the NW Black Sea. The differences throughout are only around 2 to 3° C.

1.157

1 Temperatures can vary considerably from one year to another. In severe winters the sea temperature may fall below 0° C over most of the Sea of Azov, the NW basin of the Black Sea and in a coastal strip down the W coast of the Black Sea possibly as far S as the N entrance to İstanbul Boğazi.

Conversely, summer sea temperatures as high as 28° C have been recorded in the central and S part of the Black Sea in some years and up to 29° C in Marmara Denizi.

ICE CONDITIONS

Sea Ice

1.158

1 In the area covered by this volume, ice is formed during the prolonged periods of frost which occur in the winter in the N parts of the Black Sea and Sea of Azov. The severity of the winter, and therefore the extent and thickness of the ice cover, varies in different years but even in the most severe winter, only a comparitively small part of the whole area of the Black Sea is affected by ice.

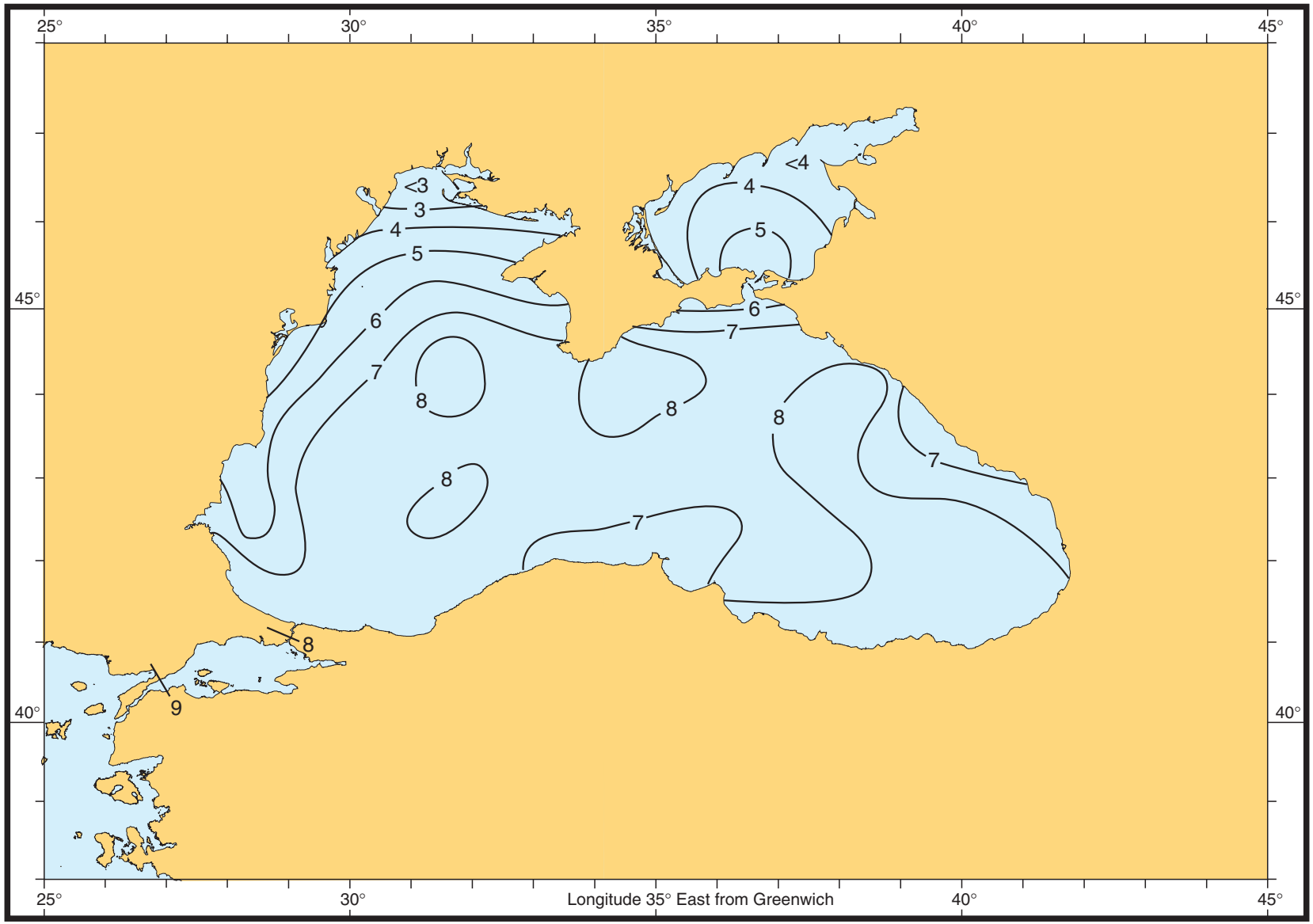
2 Navigation is affected in only three regions: River Danube; the NW part of the Black Sea and Sea of Azov, together with Kerch Strait. February is the month of greatest ice cover in all these regions.

Ice accumulation

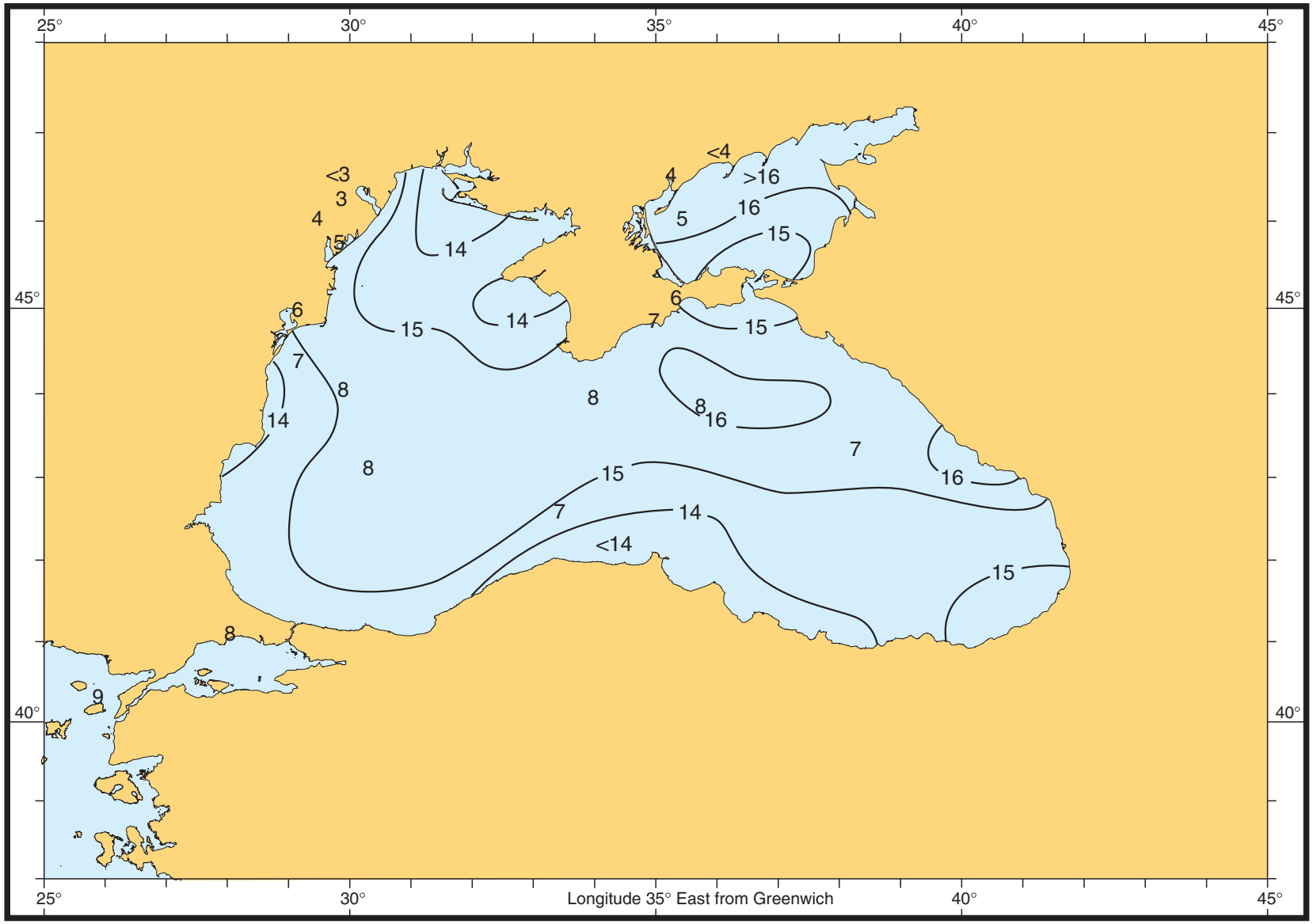
1.159

1 The extremely cold winter temperatures together with very high wind speeds experienced in some N parts of the Black Sea create conditions which result in the accumulation of ice on hulls and superstructures. Build up of ice can be very rapid and constitute a dangerous hazard to ship safety. When air temperatures fall to -2° C or below, in winds exceeding force 5, ice accumulation may occur. *The Mariner's Handbook* lists the various criteria favouring superstructure icing and details the obligatory reports required when icing conditions are encountered.

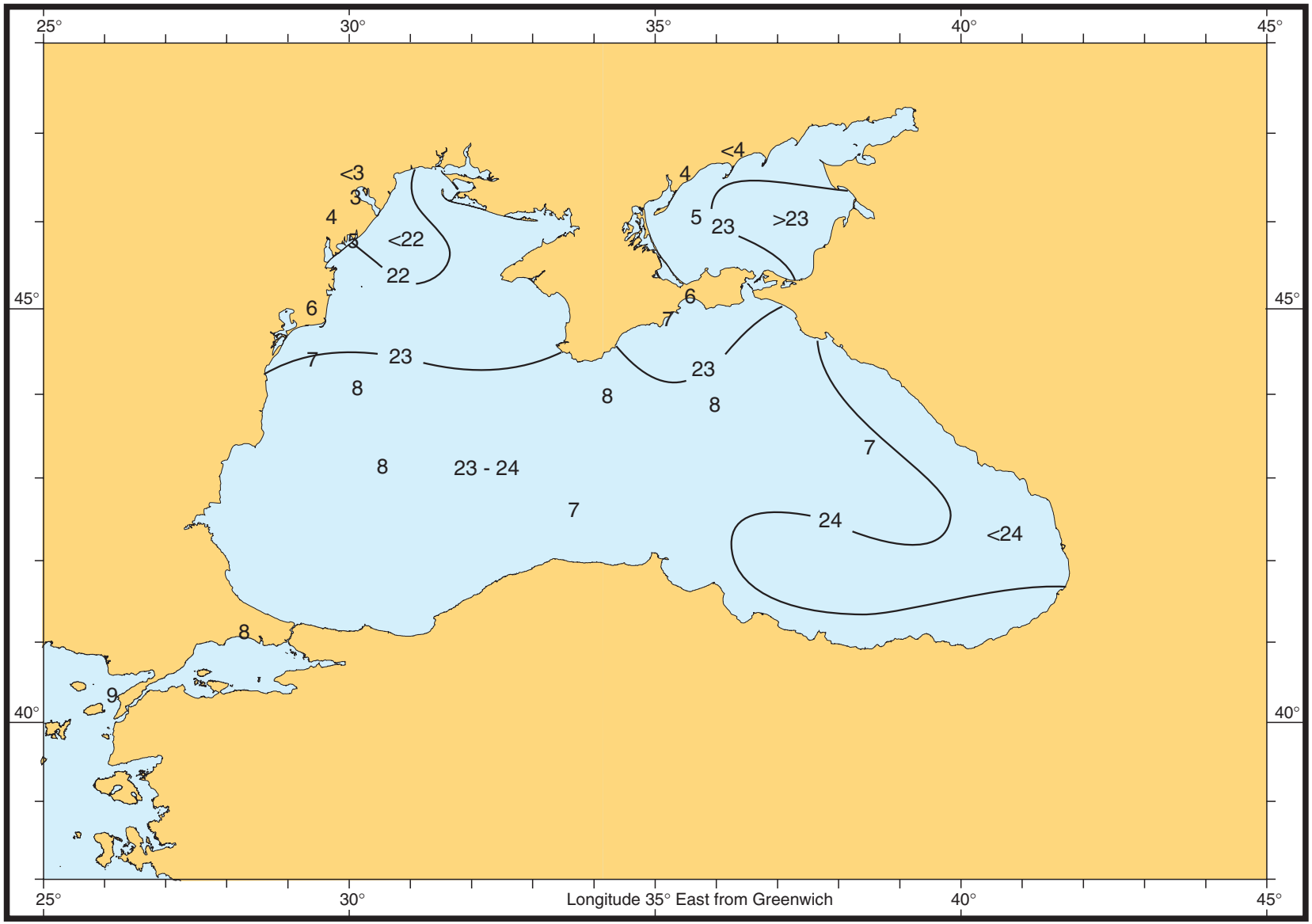
2 Diagrams are given which enable an assessment to be made of the degree of icing to be expected according to wind strength and the sea and wind temperatures.



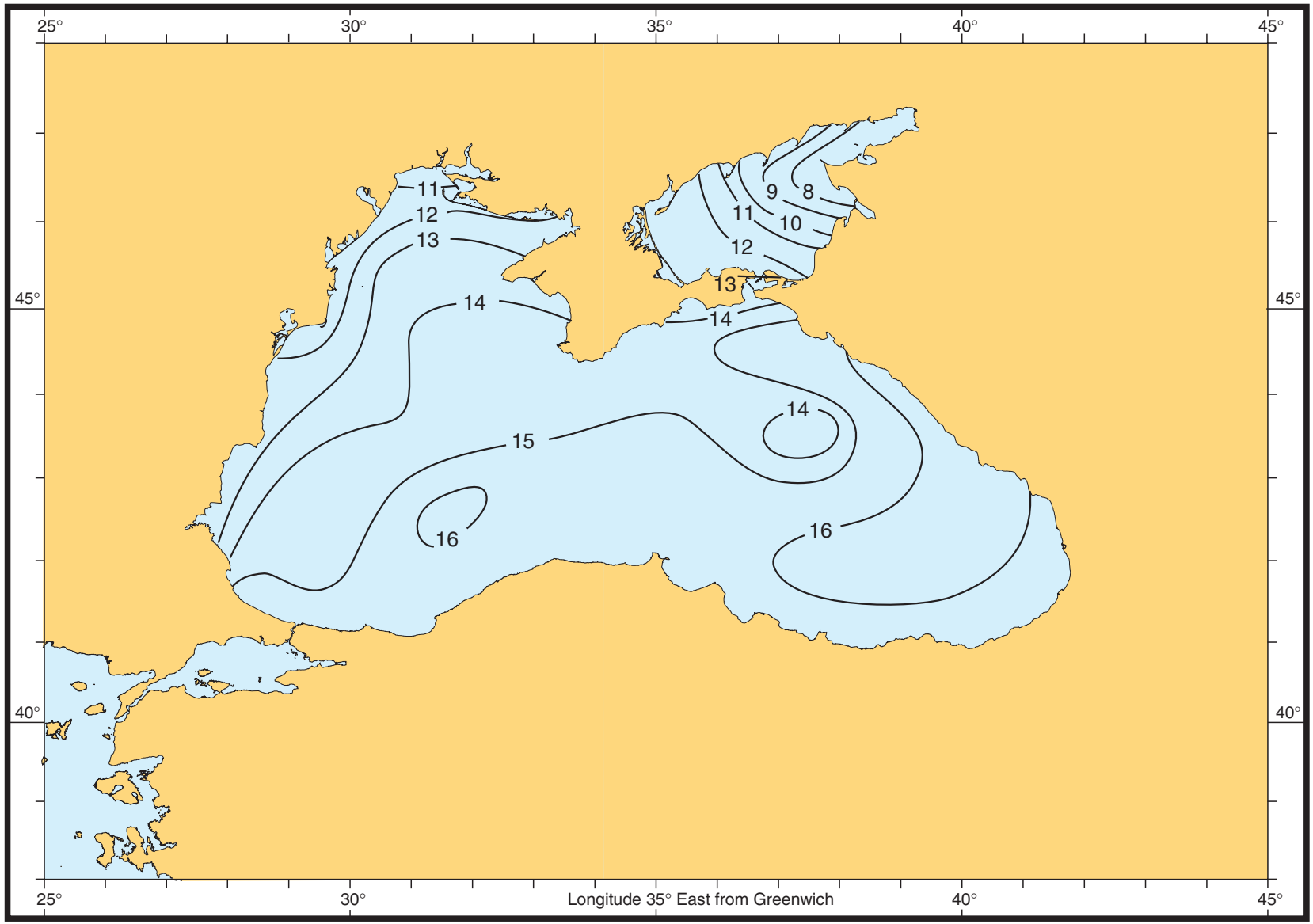
Mean sea surface temperature (°C) FEBRUARY (1.157.1)



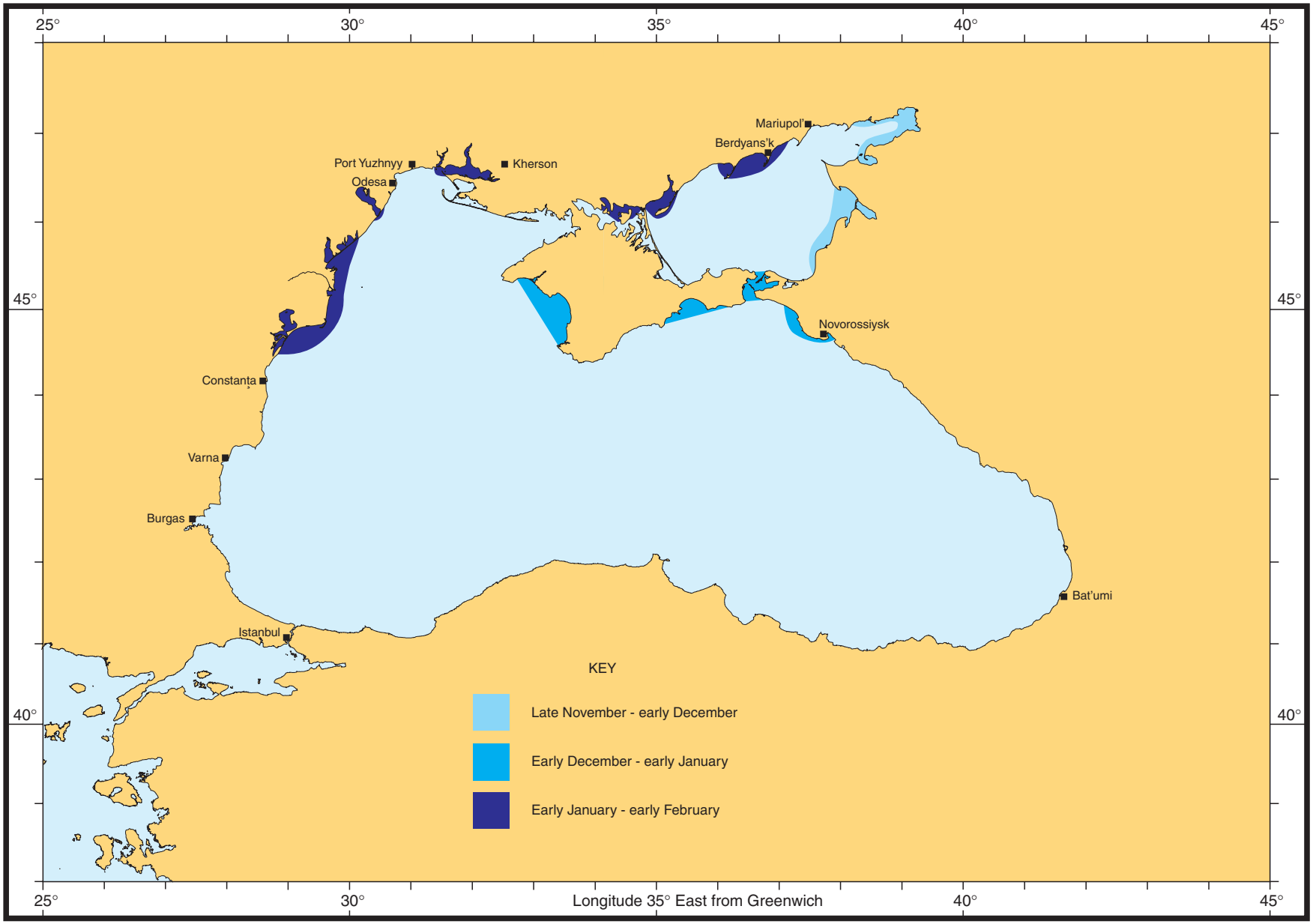
Mean sea surface temperature (°C) MAY (1.157.2)



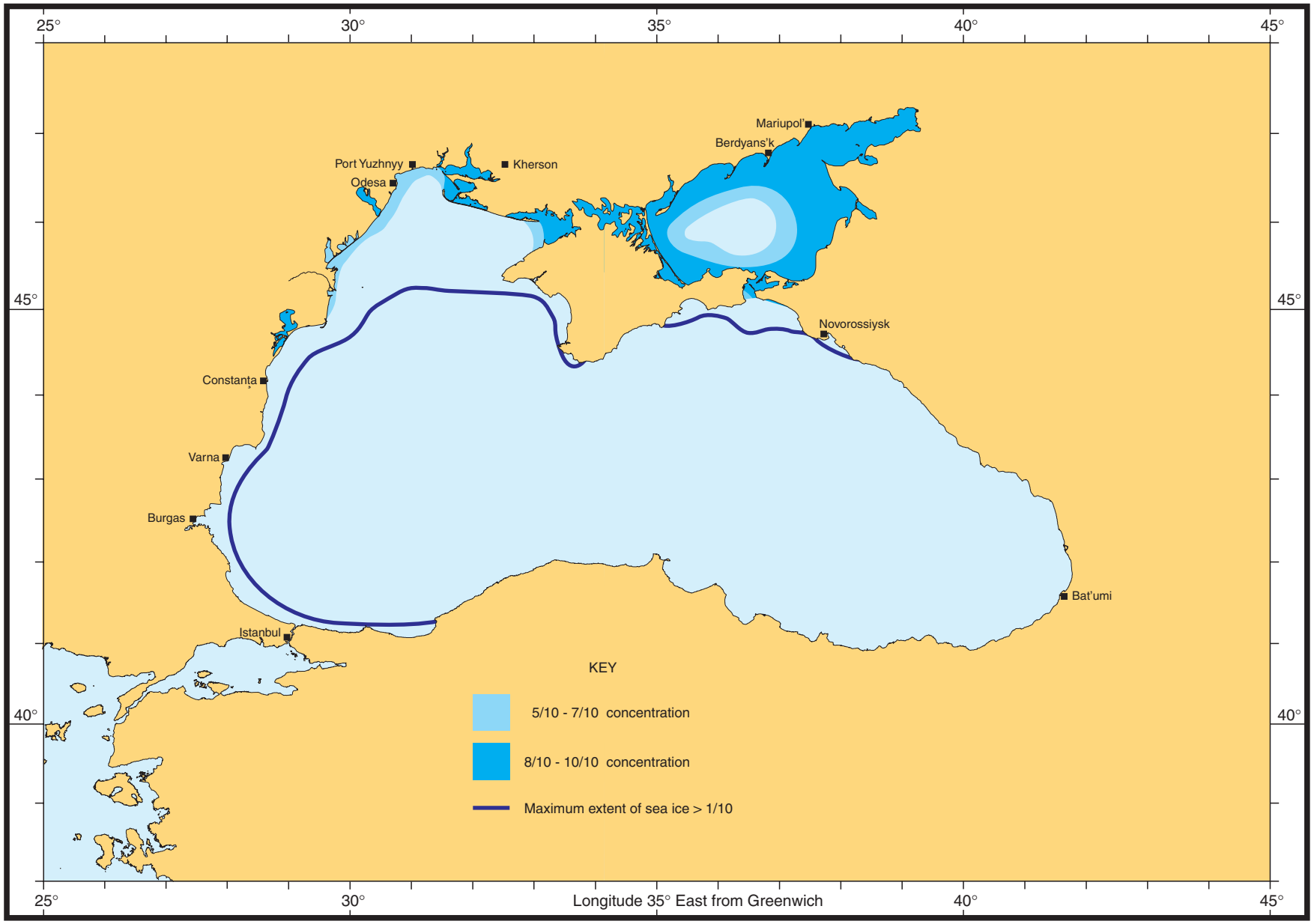
Mean sea surface temperature (°C) AUGUST (1.157.3)



Mean sea surface temperature (°C) NOVEMBER (1.157.4)



Average dates of appearance of ice (1.158.1)



Average maximum extent and concentration of sea ice in FEBRUARY (1.158.2)

In the Black Sea and Sea of Azov, the greatest risk is between November and March and especially with Bora type gales such as are experienced around Novorossiysk when winds of up to force 12 and temperatures as low as -20° C are possible.

CLIMATE AND WEATHER

General information

1.160

1 The following should be read in conjunction with the relevant chapters of *The Mariner's Handbook.*

Weather reports and forecasts are broadcast regularly from shore stations, usually in the language of the country from which the transmissions are made but in some cases the information is repeated in English. Warnings of hazardous conditions are issued when appropriate. Schedules and details of transmissions are given in *Admiralty List of Radio Signals Volume 3(1).*

General conditions

1.161

1 The climate of the area varies from fine, hot sunny summers of Mediterranean type, to the very cold winters which are substantially colder than conditions in the Mediterranean.

Most disturbed weather occurs in winter and is usually associated with depressions moving E across the area. There may be some rain at all times of the year, turning to snow in winter; amounts are generally small in the N and W of the region and summer in Marmara Denizi is usually dry.

2 Along the N coast of Turkey, high ground near the coast induces appreciable annual rainfall; wettest conditions are found in the SE around Bat'umi and P'ot'i where falls are substantial especially from September to November.

Fog at sea may occasionally be encountered in winter and spring but is rare in summer. In coastal areas fog and poor visibility are again most frequent in winter and spring and are particularly common in the far N, with incidence decreasing markedly farther S.

Pressure

1.162

1 **Average distribution.** The pressure field is dominated by the large scale seasonal pressure changes over the Asian land mass. In winter the vast continental anticyclone is centred over Siberia with a ridge reaching W towards the Ukraine whilst pressure is relatively low over the Mediterranean. In summer pressure falls over Asia with the centre of low pressure over Pakistan; a ridge of high pressure extends E from the Azores anticyclone over Europe and the Mediterranean. Short transition periods between winter and summer situations occur in April/May and in late September/early October.

2 The large scale patterns are modified locally over the Black Sea region by a tendency for pressure to be higher over the sea than over the warmer land in summer. In winter the situation is reversed with lowest pressure over the relatively warm sea; and depressions which generally follow tracks across the sea rather than over land give lower average values over the sea.

1.163

1 **Variations.** The average conditions described above are the mean of very changeable pressure patterns which may vary markedly from day to day, especially in winter when depressions moving across the sea introduce considerable frequent and rapid pressure variations.

Diurnal variation of pressure is small in this region with an amplitude of about 1 hPa (mb). Maxima occur at about 1000 and 2200 local time and minima are around 0400 and 1600. The diurnal oscillations are often masked by larger pressure changes in the general pattern.

Anticyclones

1.164

1 In both winter and summer, anticyclones are the dominant feature of the pressure field and thus the climate of the Black Sea areas.

The Asian winter anticyclone induced by the cooling of the huge continental land mass, becomes established in October and centred over Siberia/NW Mongolia with an elongated E-W axis. Maximum development is attained in February and throughout the winter this anticyclone is the source of cold air which flows SW or W to affect the Black Sea area. Occasionally, a separate high pressure centre develops over the Baltic/Finland area and this can result in very cold winter conditions as Arctic air is brought to the Black Sea region. From mid-March the Asian anticyclone weakens and finally disappears in May.

2 In summer the semi-permanent Azores anticyclone often extends its influence E as a ridge of high pressure builds across Europe and the Mediterranean to the Black Sea region, giving fine settled weather. When the ridge recedes to the W, showery and thundery conditions may ensue as troughs of low pressure are permitted to encroach from the N. Occasionally a ridge may well extend well to the E and N of the Black Sea and unusually warm conditions result as warm dry air is brought to the region from S Asia on the S flank of the ridge.

Depressions

1.165

1 Mobile depressions affect the Black Sea frequently in winter and occasionally in summer; they are responsible for most of the disturbed weather in the area, bringing strong winds, rain or snow and sometimes quite abrupt changes in the weather, temperature and humidity. They usually have active frontal systems.

2 In winter and occasionally in summer these depressions approach the Black Sea from the NW having originated in the N Atlantic and moved E across N Europe. During the summer months they may pass farther to the N but associated troughs can affect the Black Sea area. Other frontal depressions reach the Black Sea from the Mediterranean moving E from the Adriatic across Bulgaria and Romania or NE from the Aegean Sea via Marmara Denizi; these tracks are most usual in winter as Mediterranean depressions are few in summer months.

3 Depressions generally favour a sea track as they travel E across the Black Sea, usually at speeds of around 20 kn. They most commonly leave the area on a NE track passing somewhere near Rostov-Na-Donu or E to the N of Bat'umi.

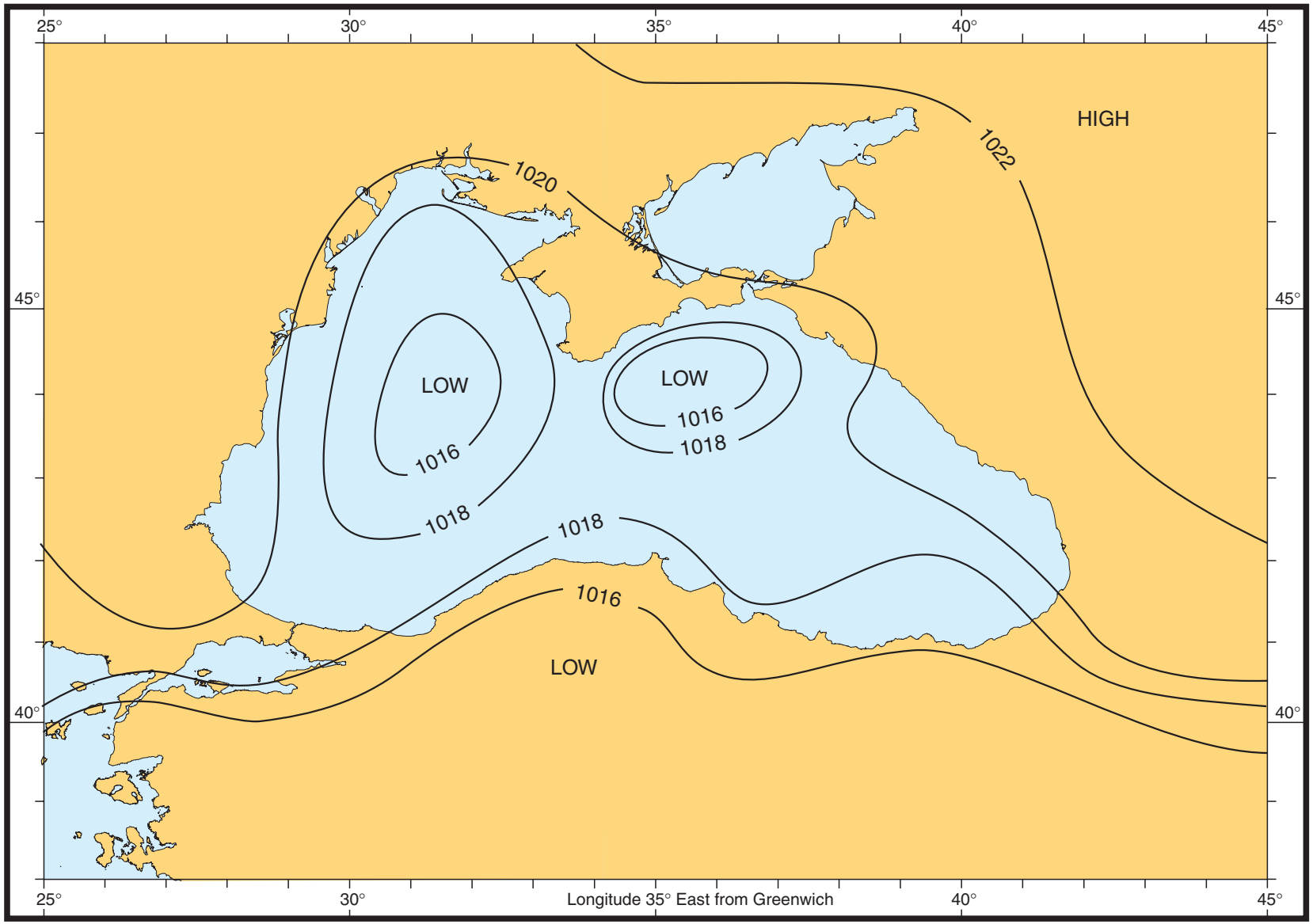
Tropical storms do not affect this area.

Frontal systems

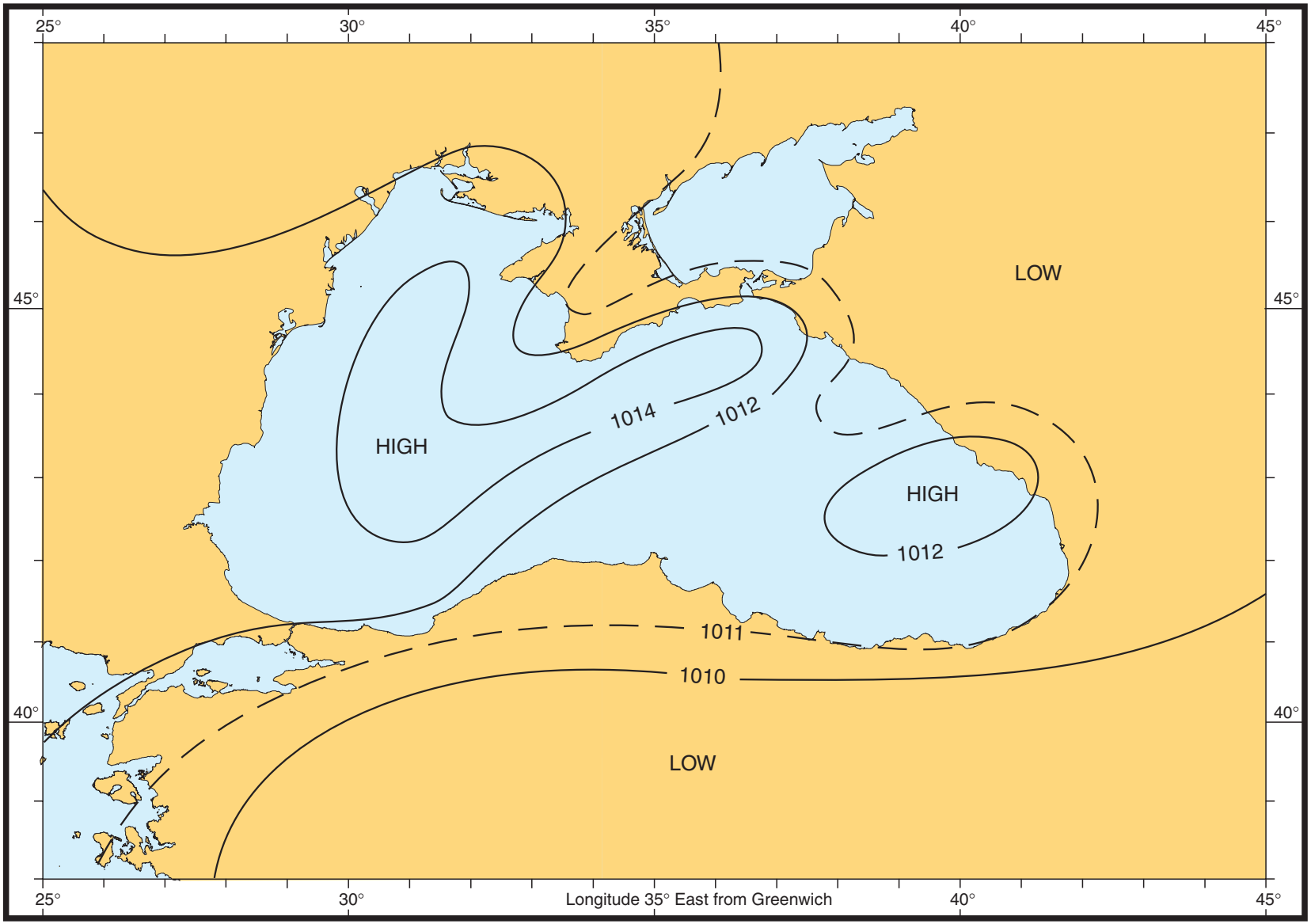
1.166

1 Both warm and cold fronts affect the Black Sea frequently in winter; warm fronts are uncommon in summer, but from time to time active cold frontal troughs cross the sea.

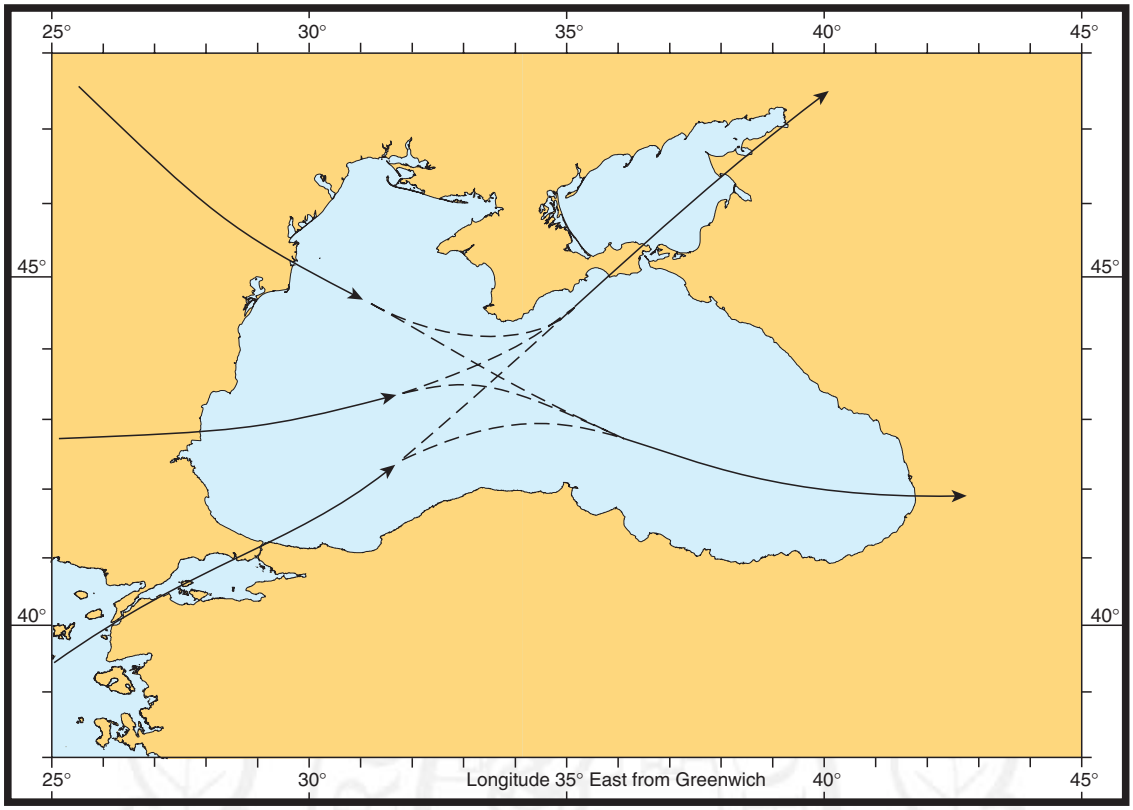
2 Cold fronts and occlusions are most commonly associated with the depressions arriving over the Black Sea



Average barometric pressure at mean sea level (hPa) JANUARY (1.163.1)



Average barometric pressure at mean sea level (hPa) JULY (1.163.2)



Principal depression tracks (1.165)

from NW Europe, and in the winter they bring outbreaks of cold or very cold air to the region. Ahead of the front the wind generally freshens from S or SW and may become strong; as the front passes the wind veers to a N point, sometimes abruptly, and there is often a belt of rain, sleet or snow. As the front moves S across the Black Sea there is sometimes a tendency for conditions to become more unstable and heavy thundery showers, possibly with hail and squalls, may develop as the front approaches the S shores. In summer the cold fronts and occlusions crossing the Black Sea continue to be fairly active although the air behind the cold front is usually mild and no substantial fall in temperature is to be expected; the associated rain belt may not be widespread but heavy showers and thunderstorms may mark the passing of the front.

1.167

1 Mediterranean depressions, which are most common in winter, may have active warm and cold fronts. The approach and passage of the warm front brings a mild S airstream to the area with extensive cloud, rain and sometimes poor visibility, especially on the N coast of the Black Sea. In the warm sector behind the cold front, S areas in the lee of the Turkish plateau often have fair weather with good visibility, but farther N, cloud increases to give overcast conditions towards the N shores. The cold fronts of these lows have characteristics similar to those of the N European depressions described above.

Winds

General

1.168

1 In general winds are strongest in winter and in the N of the region.

Wind roses showing the frequency of winds by direction and speed in January, April, July and November are shown in the diagrams for various areas of the Black Sea and Marmara Denizi. the wind data for parts of this area are sparse; these wind roses are included here as a useful guide but in view of the limited data from which they are computed, caution is necessary in their application.

Open sea

1.169

1 In winter, winds over the open sea throughout the region vary substantially from day to day due to the frequent transiting of depressions, but in the W part of the Black Sea, winds from between NE and NW predominate. Winds from E are a common winter feature in the SE of the area, but NW winds are also frequent and occasionally strong.

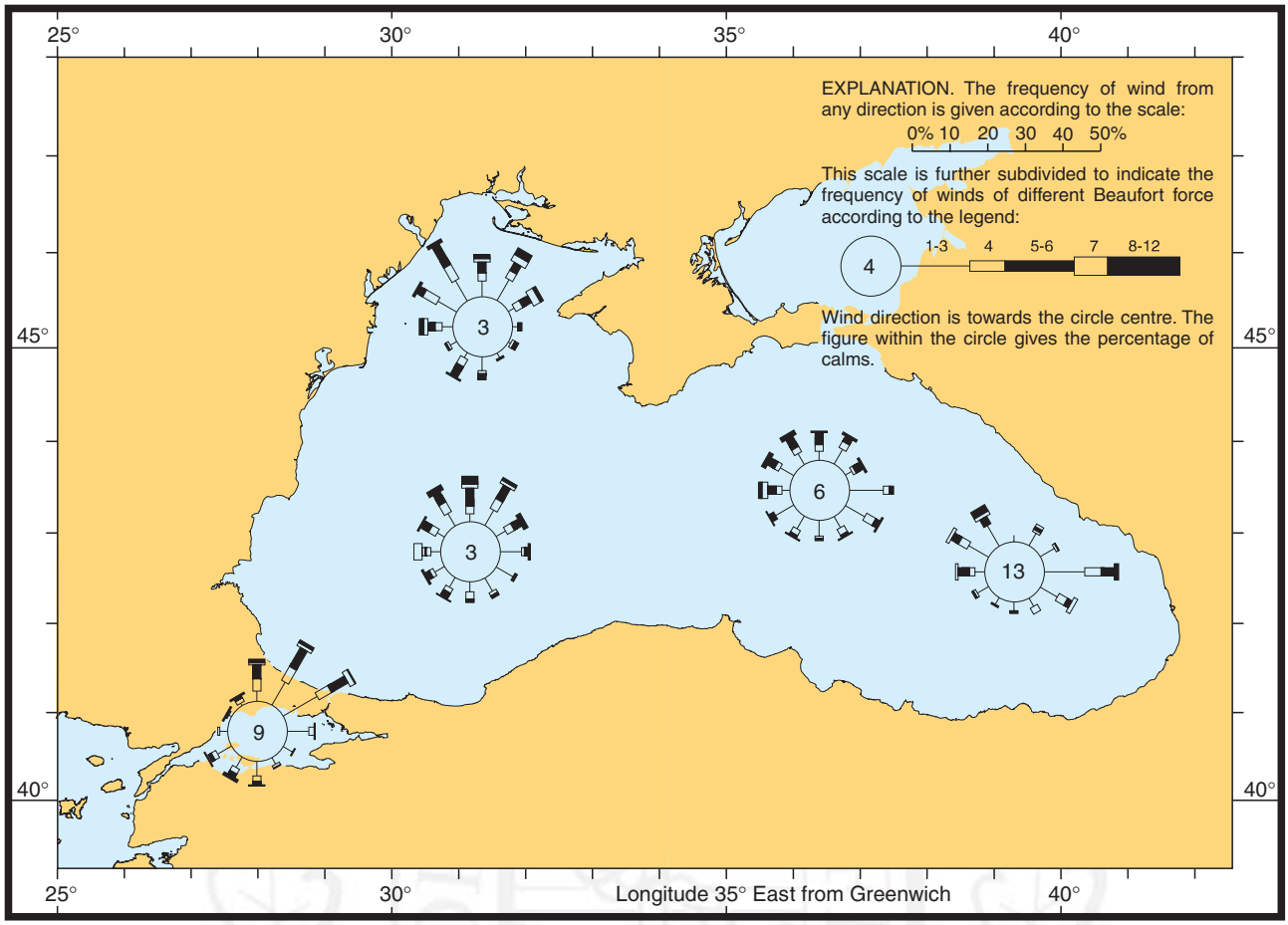
2 In summer the winds are generally lighter and more variable in direction but in the SE, winds from a W point are most frequent; strong winds are unusual and winds rarely exceed force 6.

Coastal waters

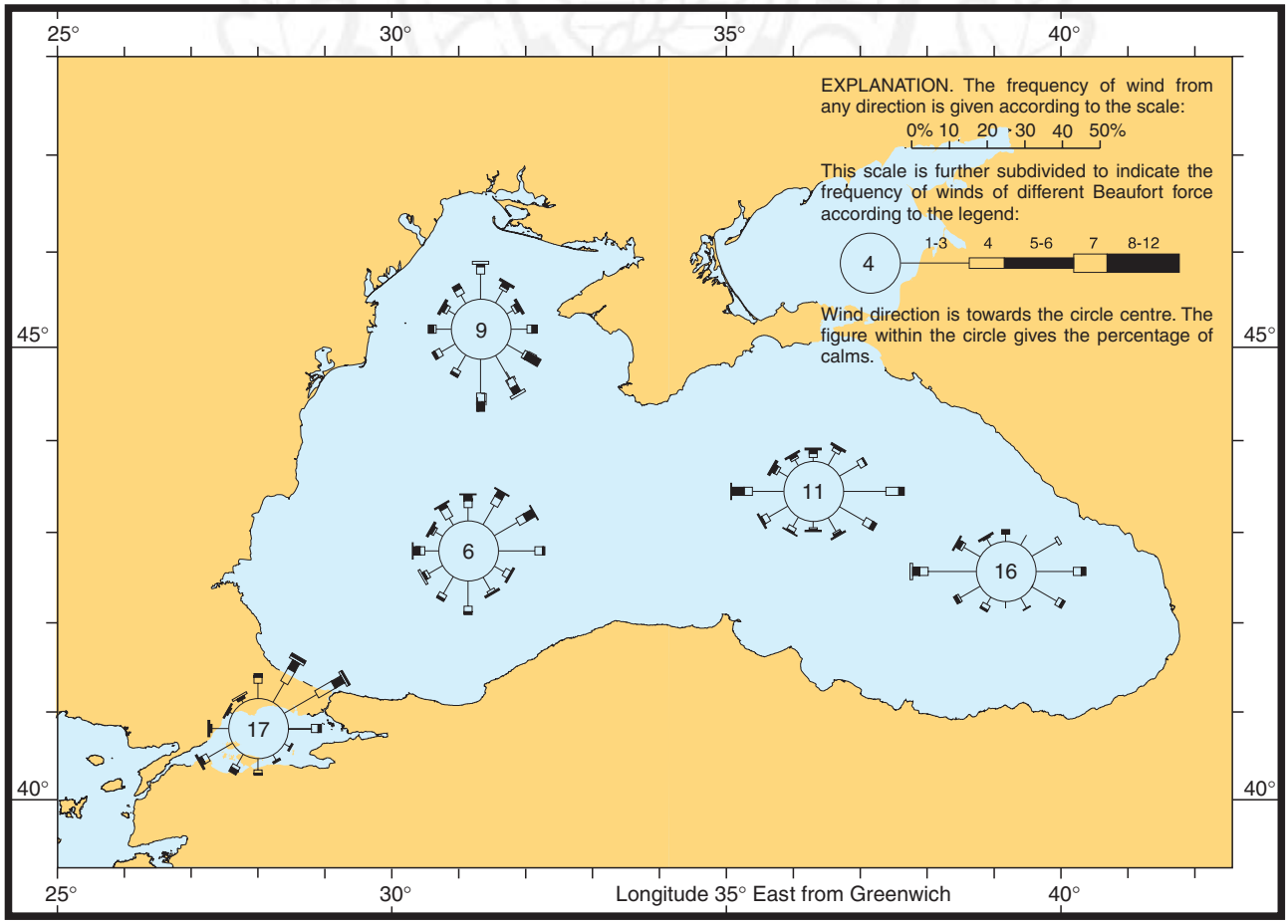
1.170

1 In coastal waters within about 20 miles of the coast, winds blowing over the open seas may be considerably modified due to land and sea breeze effects and topographical influences.

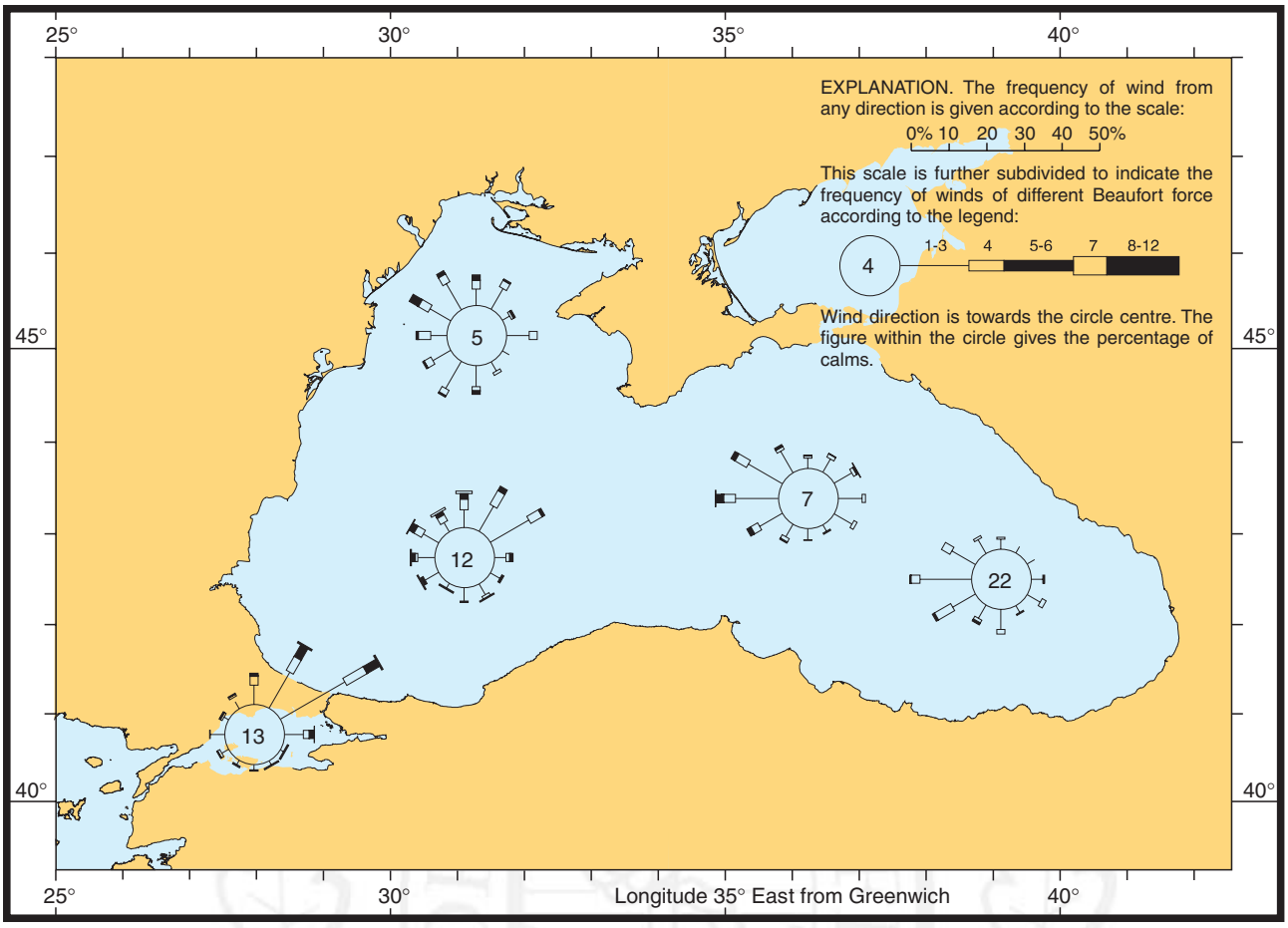
2 Land and sea breezes are well marked in the summer throughout the region and are also frequent in spring and autumn. The sea breeze usually sets in about mid-morning as an onshore breeze; it freshens until mid-afternoon when it may reach force 3 to 4 and fades soon after dusk. The land breeze is usually weaker and blows offshore from late evening until shortly after sunrise. In windy conditions the effect of the land or sea breeze may be to modify the



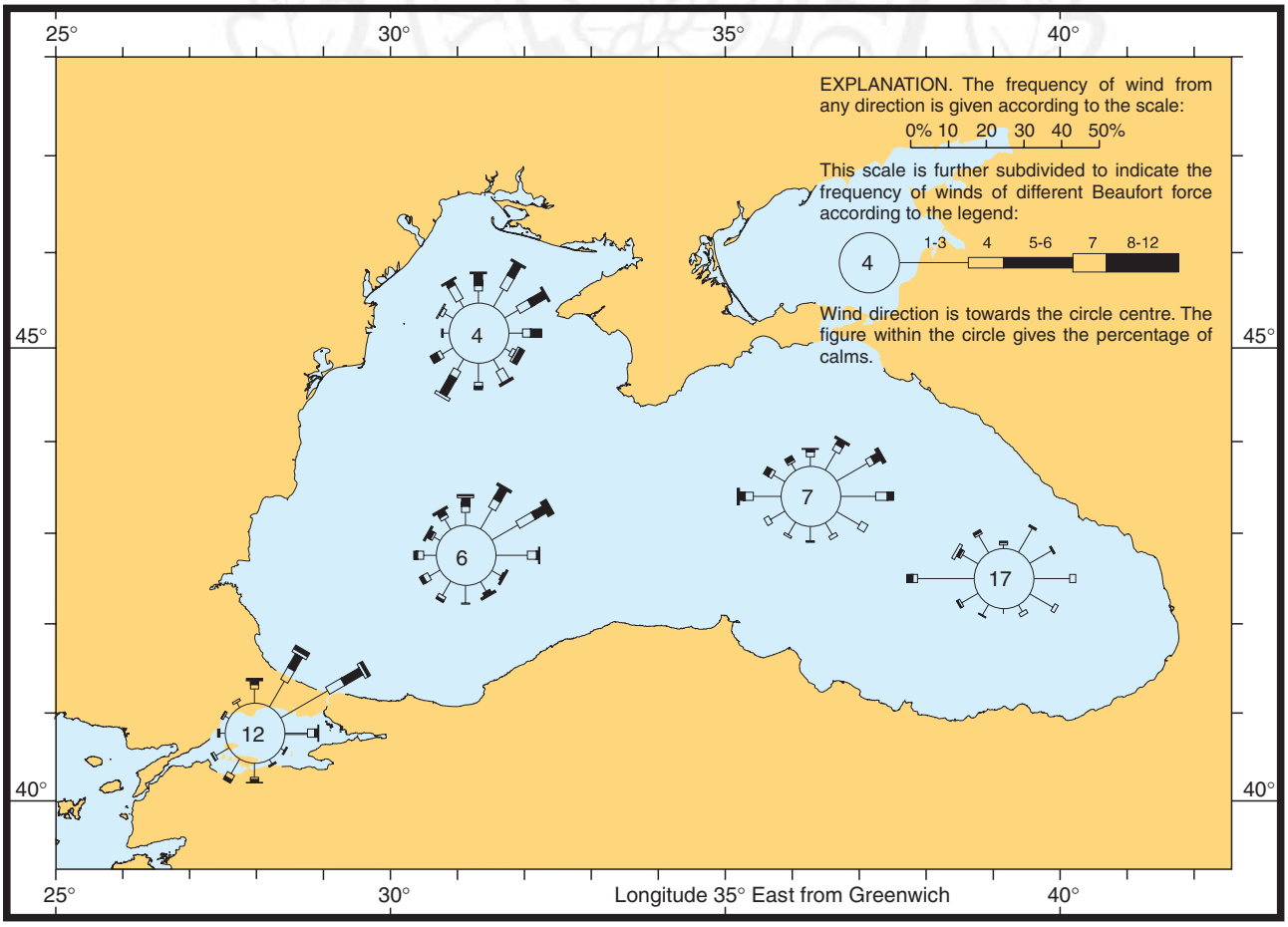
Wind distribution JANUARY (1.168.1)
Caution: Wind roses are based on very limited data



Wind distribution APRIL (1.168.2)
Caution: Wind roses are based on very limited data



Wind distribution JULY (1.168.3)
Caution: Wind roses are based on very limited data



Wind distribution OCTOBER (1.168.4)
Caution: Wind roses are based on very limited data

prevailing wind by reinforcing it, opposing it or causing a change in its direction.

1.171

1 Local topography such as the position of mountain barriers and the direction of valleys may have an important effect on the wind. The Rionskiy valley which extends E from near P'ot'i has very high ground on either side; in winter the winds frequently blow through the valley from the E, sometimes very strongly due to funnelling, and in the summer they blow from the W. The effects are apparent at a considerable distance offshore.

1.172

1 At Novorossiysk a violent wind known as the Bora is a well known feature caused by the NE airstream being deflected around the N flank of Bol'shoy Kavkaz (the Caucusus Mountains) and channelled through a gap in the hills.

Along the N coast of Turkey katabatic SE winds blow in coastal waters when cool air drains at night from high ground to the S. These winds occur especially in winter.

Marmara Denizi

1.173

1 In Marmara Denizi, which includes İstanbul Boğazi and Çanakkale Boğazi, the NE winds are predominant throughout the year and especially in summer when they are a part of the seasonal N airstream which blows in the Aegean. These winds are widely known as Meltemi (Turkish) or Etesians (Greek). When not blowing from the NE, winds in this area are most often from the SW.

Gales

Winter

1.174

1 In winter, gales are experienced over the open sea throughout the region and winds of force 8 or more are recorded in up to 5 per cent of observations generally and up to 10 per cent off the W coasts. Winds of force 9 to 10 have been recorded in most areas and force 12 has been reached off the W coast of the Black Sea and in the Novorossiysk locality. Most gales are from the NE, but occasionally SE or S winds reach gale force as a depression approached from the W; although short lived these S gales can be uncomfortable especially in the W where the short steep seas may result in the S going current. In Sea of Azov, E gales are often prolonged. In the SE Black Sea gales most usually blow from between N and W.

2 In coastal waters gales are experienced in all parts in winter but with the exception of the Novorossiysk and P'ot'i localities it is only on the N coasts that gales occur with any substantial incidence, reaching a frequency around about 5 per cent in February; direction is mostly between N and E. In Marmara Denizi gales are again most frequent from the NE or N but occasionally from S to SW. At İstanbul and Çanakkale gales are recorded in around 3 to 4 days per month in winter.

3 At P'ot'i on the SE coast of the Black Sea, E gales are the result of winds funnelling in the Rionskiy valley; winds of up to force 11 have been recorded and gales reach their highest incidence of about 6 per cent in January.

1.175

1 **Bora** is a strong cold NE wind which sometimes blows with extreme violence in the area around Novorossiysk. The local topography causes the wind to blow much more strongly here than elsewhere along this coast, with the extremely cold air plunging, like an avalanche, through a pass in the hills above Novorossiysk. Conditions favourable for Bora are high pressure to the N and low pressure over the sea. Wind speeds of 78 kn are not unusual and on rare occasions winds of over 100 kn have been recorded.

Summer

1.176

1 In summer gales are unusual throughout the region although on isolated occasions winds of force 8 to 9 have been recorded in the N. At Novorossiysk and P'ot'i strong NE and E winds blow occasionally but do not usually reach gale force.

Spring and autumn

1.177

1 In the N and E, gale frequency is generally lower than in winter although the incidence of Bora and of NE gales in the area SE of Kryms'kyy Pivostriv is maintained at winter frequency through March and does not decrease markedly until April. On the W coast gales are few.

Cloud

Winter

1.178

1 Cloud amounts are greater in winter throughout the region. At sea average amounts are 5 to 6 oktas with the W part of the Black Sea being rather more cloudy than the E part. Winds from a S point give increasing amounts of cloud from S to N; as the air flows over progressively cooler seas, small amounts of stratocumulus in the S increase farther N to give overcast skies of stratocumulus or stratus which extend to the N coasts. With winds from a N point, skies are usually well broken on the N coasts, but as air passes over warmer seas farther S, increasing instability gives development of cumulus and stratocumulus and greater likelihood of showers. There is little diurnal variation in cloud amounts at sea.

2 In coastal waters the winter months are cloudy in all regions with amounts averaging 6 to 7 oktas. Onshore winds produce the cloudiest conditions particularly where high ground rises steeply from the coast line. Conversely offshore winds are often accompanied by little or no low cloud, especially when the coast lies on the leeward side of high ground. Although there is little variation in cloud amounts according to the time of day, the trend is for greater cloud amounts in the morning with possibly some decrease in the afternoon and evening.

Summer

1.179

1 Summer is generally fine with around 2 to 3 oktas of well broken cumulus at sea and in most coastal areas. An exception is the SE coastal area between Sokhumi and Giresun where the summer months are more cloudy than elsewhere with cloud amounts around 4 to 5 oktas. Farther W along the N coast of Turkey cloud amounts decrease and Marmara Denizi enjoys summer skies with very little cloud (2 oktas or less).

2 Although cloud amounts are small, cloudiest conditions occur around midday and in the afternoon. Development of large cumulus and cumulonimbus cloud with associated showers is not uncommon inland and these clouds can sometimes drift ashore to affect coastal waters.

Precipitation

Rain

1.180

1 **Coastal areas.** There is a very large difference between the precipitation received by the N and W coasts where the amounts are small at all seasons and that in the SE where rainfall is substantial, especially in the autumn.

2 In the N and W, summer is slightly wetter than winter but the difference is small; annual amounts are generally no more than 300 to 500 mm. There is rain, usually in the form of showers, on around 4 to 6 days per month in summer; in winter rain and snow is more often of frontal origin and can be expected on around 10 days per month on the N coast and slightly less frequently on the W coast.

3 On the E coast, precipitation amounts are greater than elsewhere and increase markedly from N to S. In the NE, falls are largest in winter with around 10 rain days per month and least in summer when rain falls on some 5 days each month. The total annual rainfall is between 400 and 700 mm.

Farther SE the amount of rain increases progressively, probably due to the frequent moist onshore winds and frontal depressions which affect the area, coupled with the orographic effects of the mountains which rise close inland. The Bat'umi locality is the wettest area of all with annual falls of around 2500 mm; monthly amounts vary from around 80 mm in spring to about 300 mm in autumn which is the wettest time of the year. The number of days each month on which rain can be expected varies only slightly throughout the year, from about 15 days in the wet season to 9 or 10 days in the spring.

4 On the S coast of the Black Sea there is a pronounced seasonal variation with largest rainfalls in winter (around 100 to 150 mm per month) and least in summer with monthly amounts of around 50 mm. Rain is often associated with frontal depressions and especially the N or NW winds which usually blow after the depression has passed; the orographic effects of the high ground along the coast are an important factor. Annual falls vary somewhat according to the degree of exposure to the N winds and the proximity of high ground; most parts receive between 1000 and 1500 mm annually but there is a drier region from about Samsun to Sinop where annual falls of 500 to 750 mm are more usual. In winter rain falls on some 12 to 15 days per month, in summer 4 to 8 days per month.

5 **Marmara Denizi** has most rain in winter when frontal depressions move through the area en route from the Mediterranean to the Black Sea. Falls of 100 to 120 mm per month are normal with rain on about 10 to 15 days per month. Summer is a dry season when less than 40 mm falls in the NE of the area and barely 10 mm per month in Çanakkale Boğazi. Rain can be expected on fewer than 4 days per month.

6 **Over the open sea** the frequency of observations recording precipitation is similar to those in coastal waters. Rain occurs most often in winter whilst at other seasons it is infrequent. It is likely that over much of the sea area rain falls on average with a frequency of less than 1 day in 5.

7 Rainfall amounts are not recorded at sea but it is apparent that orographic influences are important in inducing the comparitively large falls in the SE and S coastal areas. It is thus likely that amounts of rain falling at sea in these parts will decrease with distance from the shore.

Snow

1.181

1 For most of the year rain is the usual form of precipitation but during winter and early spring snow may fall in all parts of the region. In some N localities snow frequency may equal or exceed rain frequency in January and February.

Over the open sea snow has been recorded in all months from October to April but it is unusual in any month other than January and February. Some 10 per cent of observations record snow in winter in the N and E of the Black Sea.

2 **In coastal areas** all parts can expect some snow during the months December to March. It is rare in most parts before November and after April, although in the N of the region snow is sometimes experienced in October and May. It falls most frequently in the N and especially in Sea of Azov where in January and February the frequency may reach 7 to 10 days per month and snow is as common as rain at that season. An especially dangerous situation arises when snow and strong winds combine to give blizzard conditions with almost zero visibility.

3 Likelihood of snow decreases farther S, but even in the central part of the W coast of the Black Sea and in Çanakkale Boğazi where snow frequency is least, snow may fall on some 3 to 4 days per month in January and February.

1.182

1 Duration of snow cover on the ground varies between different parts of the region. First snow cover usually appears on the N coast in early December and eventually disappears in late February or early March; on average there is complete snow cover for around 20 to 30 days but in the far NE and over the Caucasus this cover increases to about 60 days.

In other regions including the coast of N Turkey, the number of days with lying snow averages between 5 and 15 days per year.

Thunderstorms

1.183

1 Thunderstorms are infrequent at sea and rare in winter. In summer it seems likely that most storms are either associated with cold fronts crossing the area or otherwise develop inland and subsequently drift offshore.

In coastal areas they are most frequent on the NE coast of Sea of Azov and also on the E coast of the Black Sea where the mountains are nearest the coast; these areas can expect thunderstorms on around 3 to 6 days per month in summer. Whilst the summer months are generally the season for maximum thunderstorm activity, the SW Black Sea and Marmara Denizi experience most thunderstorms in autumn.

Fog and visibility

1.184

1 Fog is most likely to be encountered in coastal waters rather than over the open sea; greatest incidence is in winter and spring. Off the coast of Romania some 10 per cent of observations record fog in winter; in the SW Black Sea and off the S coast, the frequency is about 4 to 6 per cent. In other sea areas fog is rare at all seasons.

2 Poor visibility (less than 2 miles) is very common in the winter in the NW of the region off the coast of Romania; it is frequent in the SE and SW areas of the Black Sea in spring. Poor visibility is unusual in summer and autumn.

1.185

1 Highest fog frequencies are on the N coast and in Sea of Azov where moist S airstreams are chilled by the cold plains and coastal waters in winter, giving widespread and persistent fog. Fog is common from October to March with the highest evidence in December when fog may occur in around 5 to 9 days per month; early morning is usually the worst time of day.

Odesa and Rostov-Na-Donu are particularly prone to fog; snow falls are partly responsible for visibility falling below fog limits.

2 The S shores of Kryms'kyy Pivostriv are markedly less foggy than other N parts; fog incidence is usually no more than 2 to 4 days per month on average from December to May.

Fog is infrequent in summer.

Arctic sea smoke or steam fog may occur in the NW and in Sea of Azov in autumn and winter when very cold E and NE winds blow offshore over a relatively warm sea. The sea surface appears to be steaming and the resulting fog can be dense though usually shallow.

1.186

1 On the W coast of the Black Sea fog is most frequent from October to March. Average occurrence is 3 to 5 days per month in most parts but this increases markedly farther N to as much as 8 to 10 days per month in the far NW.

At Brălia on the Danube fog frequency is highest in December but all months from October to March have frequencies between 3 and 7 days per month.

Fog is unusual in July and August.

1.187

1 The high ground bordering E and S coasts gives considerable protection from the moist airstreams likely to produce fog. Frequency is generally highest in April and May (3 to 5 days per month on average). Radiation fog is the most common type and is most likely to develop at night and in the early morning especially in the valleys, estuaries and over low lying ground. It usually disperses after sunrise.

2 Snow and heavy rain can seriously impair visibility and in the Bat'umi locality fog is frequent during the wet season in September and October (3 to 5 days per month). Otherwise the incidence of fog is generally low on these coasts from July to December.

1.188

1 Fog is infrequent in Marmara Denizi; highest incidence is in winter when it occurs generally on 1 to 2 days per month and locally on the S shores of the central part of Marmara Denizi on around 4 days per month in November.

Fog is most likely in the early morning, dispersing in the forenoon.

In summer fog is rare.

Air temperature

1.189

1 There is a very large seasonal temperature change from summer to winter in this region. The climate varies from virtually tropical conditions in most parts in summer to almost arctic conditions in the N in winter.

2 **Summer** maximum temperatures are reached in July and August when average temperatures vary little throughout the region and mean daily temperatures range between maxima of 25 to 30° C and minima of 17 to 19° C. Extreme highest temperatures recorded in the coastal areas are generally around 38 to 41° C; but over the open sea, where the sea surface temperature has a significant modifying influence, extreme maximum temperatures are more moderate and generally around 27 to 32° C.

1.190

1 **Winter** minimum temperatures occur in January or February with lowest values on the N and NW coasts; here mean daily temperatures remain close to or below freezing point with daily minima of -5 to -10° C. Extreme minima of between -25 to -30° C have been recorded, and in the N coast of Sea of Azov, which is the coldest locality of all, -33° C.

2 Temperatures rise progressively farther S but even in the Black Sea daily maxima of 5 to 10° C and minima of 1 to 2° C are normal.

The S and SE coasts of Kryms'kyy Pivostriv are noted for relatively mild winters; the mean daily minimum temperature remains marginally above 0° C.

Highest average winter temperatures are over the open sea where average values of 7 to 8° C are usual.

3 **Frost** may occur in all parts around the Black Sea in winter. In the N the first frost usually occurs in October and the last in April and from December to March frosts are frequent; at many stations on the N coast and especially in Sea of Azov frost can be expected on almost every day in January. Frosts are much less frequent around S Kryms'kyy Pivostriv than elsewhere in the N.

4 In the S of the Black Sea frosts usually occur from December to March but there may be occasional instances in November and April. Frost is much less frequent than in the N and even in mid-winter it is rare for the temperature to remain below freezing point all day.

On the W and E coasts occurrences of frost range between those given above for the N and S coasts, according to latitude. On average, the W coast experiences more frost than the E coast.

1.191

1 **Spring and autumn** are periods of rapid temperature adjustment. The largest changes are in April/May and in October/November and are effected in a series of irregular and fluctuating rises and falls.

Relative humidity

1.192

1 **Winters** highest humidities are recorded on the N and W Black Sea coasts and in Sea of Azov; cold ground and cold sea cause high values of around 90 per cent, but humidities are usually lower by afternoon and average about 80 per cent.

The S coasts of Kryms'kyy Pivostriv and Marmara Denizi are rather less humid, with average winter early morning values of around 82 per cent and falling to 71 per cent in the afternoon.

2 On the E and S coasts of the Black Sea the air is drier with early morning humidity around 75 per cent, which is probably due to offshore winds at night where high ground rises close inland. Afternoon values are only slightly less at about 70 per cent.

1.193

1 **Summer** distribution of relative humidity is almost the reverse of the winter pattern. Lowest humidities are found on the coast N including Sea of Azov and in the NE as far S as Novorossiysk; early morning values are about 70 to 75 per cent whilst afternoons are generally hot and dry with humidities of 50 to 60 per cent or even lower. On the W coast similar values are normal in the N, but farther S and in Marmara Denizi humidities are about 5 per cent higher.

2 On the S and SE coasts rather more humid conditions are usual with values slightly higher than those recorded in winter. In the early morning humidity is around 80 to 85 per cent and this falls to about 75 per cent in an afternoon.

1.194

1 **Spring and autumn** produce little variations in morning values of relative humidity throughout the region (typically around 80 per cent), although in the afternoon humidities become drier in the N (55 to 65 per cent) than in the S (65 to 75 per cent).

Climatic tables

1.195

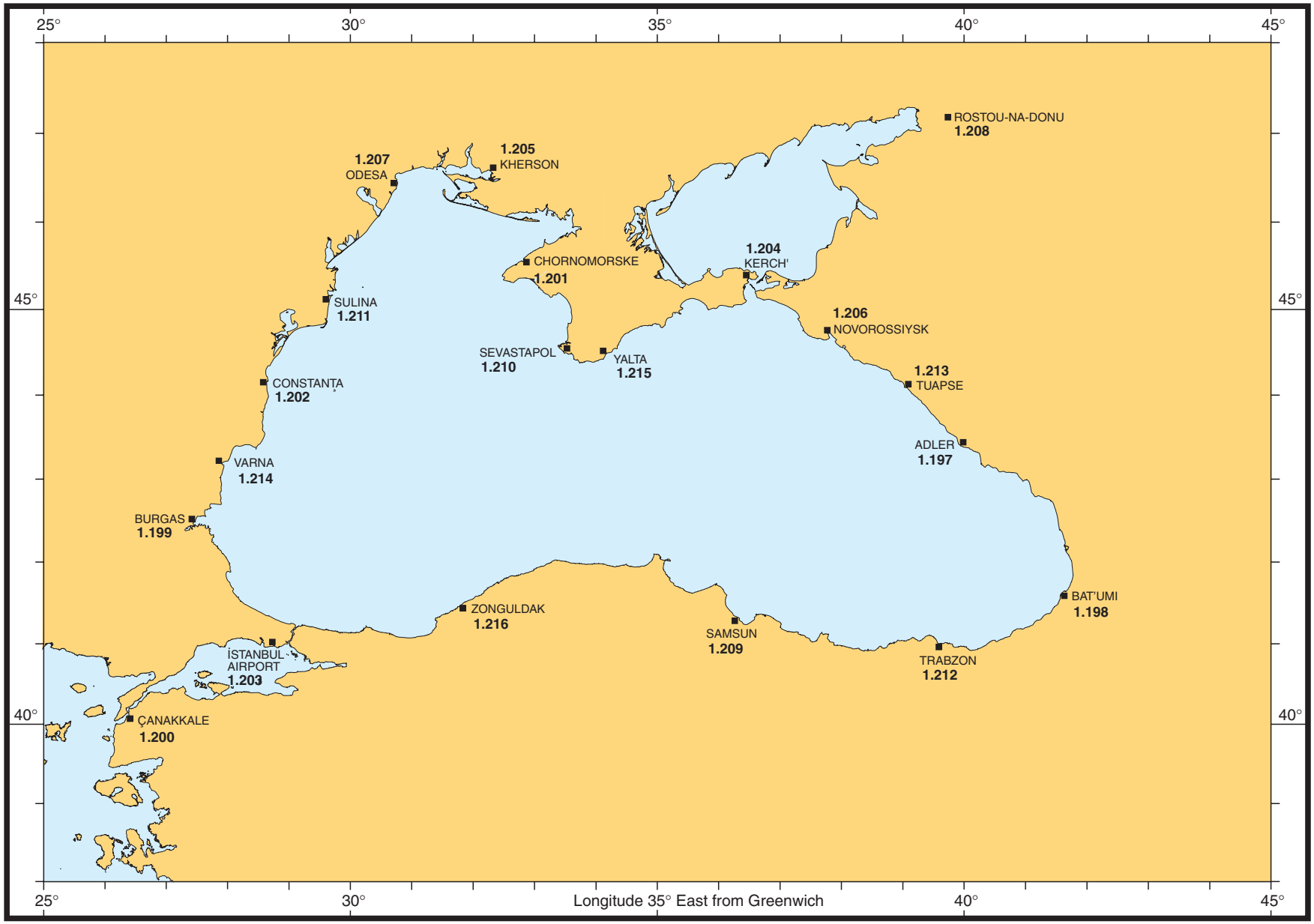
1 The tables which follow give data for a number of coastal stations for which regular observations are available for many years.

These data refer to the specific location of the observing station and may not be representative of conditions to be expected at sea or in the approaches to ports in the vicinity; topography has an important effect on local weather conditions and variations can occur within a short distance.

2 Differences between conditions at sea and at coastal stations can be considerable in terms of wind, cloud, precipitation, visibility and temperature. See *The Mariners Handbook.*

1.196

1 **Closed ports.** Some of the tables which follow refer to ports which are not open to international trade. They are included here so as to provide a more comprehensive record of conditions to be expected in all parts of the Black Sea and Sea of Azov.



Location of climatic stations (1.195)

1.197

WMO No 37171

ADLER (43°26′N, 39°54′E) Height above MSL – 13 m

Climatic Table compiled from 17 to 30 years observations, 1960 to 1999

Month	Average pressure at MSL	Temperatures				Average humidity		Average cloud cover		Precipitation		Wind distribution – Percentage of observations from																Mean wind speed		Number of days with		
												0900									1500											
		Mean daily max.	Mean daily min.	Mean highest in each month	Mean lowest in each month	0900	1500	0900	1500	Average fall	No. of days with 1 mm or more	N	NE	E	SE	S	SW	W	NW	Calm	N	NE	E	SE	S	SW	W	NW	Calm	0900	1500	Gale	Fog	Thunder
	hPa	°C	°C	°C	°C	%	%	Oktas		mm																				Knots				
January	1021	9	2	15	-5	81	70	7	6	185	13	4	38	38	8	1	1	2	5	3	3	9	15	27	12	7	16	10	3	8	7	⊕	1	2
February	1019	9	2	18	-4	77	66	6	6	117	10	2	37	39	8	1	1	3	5	4	1	6	8	30	16	11	18	9	2	7	8	⊕	1	1
March	1018	12	4	21	-3	75	66	6	6	116	11	4	21	36	14	5	4	5	6	7	1	2	5	22	16	13	29	10	2	6	8	0	1	1
April	1015	16	8	26	2	76	69	6	6	113	11	2	10	20	23	9	8	12	7	8	1	2	4	21	10	14	31	13	2	6	8	0	2	2
May	1015	20	12	29	5	77	70	6	5	90	8	1	11	14	21	9	12	17	7	9	2	3	2	13	11	13	38	17	2	5	8	⊕	1	3
June	1012	24	16	29	10	75	71	5	4	100	7	3	8	15	17	14	13	17	5	8	1	2	3	9	7	15	44	17	2	5	8	⊕	⊕	8
July	1011	27	19	31	14	75	71	4	4	93	6	3	17	18	17	9	10	15	5	7	0	2	2	9	13	16	43	13	1	5	8	⊕	⊕	8
August	1012	27	19	30	14	72	69	3	3	112	6	2	35	26	7	2	5	10	4	9	1	2	2	7	11	19	46	11	1	5	8	⊕	1	8
September	1015	24	15	29	10	71	65	4	4	134	7	5	42	31	4	1	1	2	5	8	3	2	4	10	10	15	38	17	⊕	6	8	⊕	⊕	8
October	1019	20	11	26	3	75	66	5	5	133	9	4	41	40	4	1	1	2	5	4	3	5	7	15	12	13	30	12	2	7	7	⊕	⊕	4
November	1020	15	6	22	0	78	70	6	6	177	11	4	38	39	5	2	1	2	3	5	4	9	14	20	13	7	18	12	3	7	7	⊕	⊕	4
December	1020	11	4	18	-3	80	72	6	6	203	14	3	36	46	6	1	1	2	3	3	3	11	17	28	10	5	15	7	4	7	7	⊕	1	3
Means	1016	18	10	32*	-6§	76	69	5	5	–	–	3	27	30	11	5	5	8	5	6	2	5	7	17	12	12	31	12	2	6	8	–	–	–
Totals	–	–	–	–	–	–	–	–	–	1573	113	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	⊕	8	52
Extreme values	–	–	–	35†	-11‡	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
No. of years observations	17	17				17		17		30		17									17									17		17	17	17

* Mean of highest each year
§ Mean of lowest each year

† Highest recorded temperature
‡ Lowest recorded temperature

⊕ Rare
⊖ All observations

1.198

WMO No 37484

BAT'UMI (41°39′N, 41°38′E) Height above MSL – 6 m

Climatic Table compiled from 17 to 45 years observations, 1940 to 1999

Month	Average pressure at MSL	Temperatures				Average humidity		Average cloud cover		Precipitation		Wind distribution – Percentage of observations from																Mean wind speed		Number of days with		
												0800									1400											
		Mean daily max.	Mean daily min.	Mean highest in each month	Mean lowest in each month	0800	1400	0800	1400	Average fall	No. of days with 1 mm or more	N	NE	E	SE	S	SW	W	NW	Calm	N	NE	E	SE	S	SW	W	NW	Calm	0800	1400	Gale	Fog	Thunder
	hPa	°C	°C	°C	°C	%	%	Oktas		mm																				Knots				
January	1021	9	4	15	-1	71	67	6	6	234	14	⊕	1	7	70	4	8	5	2	4	4	6	4	31	3	20	11	5	15	13	8	⊕	1	2
February	1020	10	3	19	-2	70	66	6	6	191	11	1	1	8	62	4	15	3	1	6	7	8	3	22	4	20	17	9	11	13	7	⊕	1	1
March	1018	12	5	22	-1	71	67	6	6	142	12	1	3	11	44	5	18	4	3	12	12	8	2	5	4	24	25	12	8	10	7	⊕	2	⊕
April	1015	16	9	26	4	72	69	6	5	125	13	8	4	5	25	6	24	14	7	7	13	7	2	2	2	26	27	17	5	8	7	⊕	2	1
May	1015	19	13	28	6	74	70	5	5	84	9	8	4	5	15	3	24	20	12	9	12	4	1	4	1	24	29	22	3	7	7	⊕	1	2
June	1013	23	17	29	13	73	71	5	4	168	10	8	3	2	20	5	25	16	9	11	8	1	⊕	1	2	26	35	24	2	6	7	⊕	⊕	7
July	1012	25	20	29	16	75	72	5	5	168	11	4	1	5	26	8	25	15	6	11	3	1	1	4	2	28	40	19	3	6	7	⊕	1	6
August	1012	26	20	29	17	74	72	5	4	241	12	2	⊕	2	54	8	16	6	1	10	3	1	⊕	4	3	30	43	15	2	7	7	⊕	1	8
September	1016	23	16	28	12	72	70	4	4	312	12	1	1	5	72	5	10	3	1	3	7	1	1	7	4	21	36	16	7	9	6	⊕	1	5
October	1019	20	13	27	7	71	69	5	5	267	11	⊕	1	11	71	3	7	3	1	4	8	4	4	10	3	19	26	15	11	11	6	⊕	1	4
November	1019	16	9	23	3	70	67	6	5	297	12	2	1	9	75	2	5	2	1	4	9	9	5	18	4	14	14	11	16	12	6	⊕	⊕	3
December	1020	12	6	20	0	69	66	6	6	241	13	1	⊕	7	76	4	5	3	1	3	7	7	9	32	7	14	9	4	11	13	8	⊕	1	3
Means	1017	18	11	32*	-4§	72	69	5	5	–	–	3	2	6	50	5	15	8	4	7	8	5	3	11	3	22	26	14	8	10	7	–	–	–
Totals	–	–	–	–	–	–	–	–	–	2470	140	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	⊕	12	42
Extreme values	–	–	–	38†	-8‡	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
No. of years observations	17	17				17		17		45/25		17									17									17		17	17	17

* Mean of highest each year
§ Mean of lowest each year

† Highest recorded temperature
‡ Lowest recorded temperature

⊕ Rare
⊖ All observations

1.199

WMO No 15655

BURGAS (42°29′N, 27°29′E) Height above MSL – 28 m

Climatic Table compiled from 17 to 30 years observations, 1960 to 1999

Month	Average pressure at MSL	Temperatures				Average humidity		Average cloud cover		Precipitation		Wind distribution – Percentage of observations from																Mean wind speed		Number of days with		
												0800										1400										
		Mean daily max.	Mean daily min.	Mean highest in each month	Mean lowest in each month	0800	1400	0800	1400	Average fall	No. of days with 1 mm or more	N	NE	E	SE	S	SW	W	NW	Calm	N	NE	E	SE	S	SW	W	NW	Calm	0800	1400	Gale	Fog	Thunder
	hPa	°C	°C	°C	°C	%	%	Oktas		mm																				Knots				
January	1022	6	0	15	-7	87	73	6	6	41	7	9	7	2	1	1	14	31	7	23	15	7	6	2	3	13	27	6	22	6	8	1	4	⊕
February	1020	8	0	18	-8	85	68	6	5	43	8	9	7	5	2	⊕	17	22	9	31	16	12	12	2	5	17	21	6	11	6	10	1	3	1
March	1018	10	3	21	-4	85	67	6	6	40	7	12	11	6	1	2	13	22	5	28	11	18	26	5	3	10	14	3	10	7	12	1	3	1
April	1015	16	7	27	3	83	67	5	6	54	9	4	8	8	2	2	19	22	4	31	5	19	33	7	5	9	8	3	6	5	12	⊕	3	2
May	1015	21	12	30	7	80	68	5	5	42	7	5	9	6	2	2	27	18	2	30	4	17	49	8	3	4	8	2	6	5	12	1	2	5
June	1014	26	16	32	12	78	66	4	4	49	9	5	4	2	1	2	32	19	3	31	6	13	52	5	3	6	8	3	4	5	12	⊕	1	6
July	1014	28	19	33	16	75	63	2	3	33	4	7	4	⊕	1	2	31	16	7	31	7	12	62	4	2	2	5	3	4	5	14	⊕	⊕	4
August	1015	28	18	33	14	77	61	2	3	30	3	6	4	⊕	⊕	1	26	22	5	36	4	15	63	4	1	2	6	2	3	4	14	⊕	⊕	3
September	1017	24	15	31	10	81	61	4	4	37	5	7	5	2	1	1	29	24	5	27	6	14	53	4	2	5	6	4	6	5	13	⊕	1	2
October	1021	18	10	27	4	84	64	5	5	47	8	12	5	2	⊕	⊕	21	22	9	30	14	13	21	8	6	8	12	6	12	6	10	1	2	2
November	1020	12	5	20	-3	86	69	6	6	56	9	9	7	5	1	1	17	25	9	26	15	10	11	2	4	13	20	6	19	7	9	1	3	⊕
December	1021	7	2	15	-5	86	73	6	6	48	8	11	7	3	⊕	1	15	28	8	28	15	9	5	1	1	14	25	8	19	7	9	2	3	⊕
Means	1018	17	9	35*	-9§	82	67	5	5	–	–	8	6	3	1	1	22	23	6	30	10	13	33	5	3	9	13	4	10	6	11	–	–	–
Totals	–	–	–	–	–	–	–	–	–	520	84	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	8	25	26
Extreme values	–	–	–	42†	-14‡	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
No. of years observations	17	17				17		17		30		17									17									17		17	17	17

* Mean of highest each year
§ Mean of lowest each year

† Highest recorded temperature
‡ Lowest recorded temperature

⊕ Rare
⊖ All observations

1.200

WMO No 17112

CANAKKALE (40°08′N, 26°24′E) Height above MSL – 6 m

Climatic Table compiled from 17 to 30 years observations, 1960 to 1999

Month	Average pressure at MSL	Temperatures				Average humidity		Average cloud cover		Precipitation		Wind distribution – Percentage of observations from																Mean wind speed		Number of days with		
		Mean daily max.	Mean daily min.	Mean highest in each month	Mean lowest in each month	0800	1400	0800	1400	Average fall	No. of days with 1 mm or more	0800									1400											
												N	NE	E	SE	S	SW	W	NW	Calm	N	NE	E	SE	S	SW	W	NW	Calm	0800	1400	Gale	Fog	Thunder
	hPa	°C	°C	°C	°C	%	%	Oktas		mm																				Knots				
January	1021	10	4	16	-3	88	78	5	5	97	10	16	51	9	2	11	7	1	1	2	23	38	2	2	10	16	2	5	2	7	10	⊕	2	2
February	1019	10	3	17	-4	86	74	5	5	66	8	13	54	10	3	11	3	2	2	2	20	44	1	2	9	15	4	4	⊕	8	10	⊕	1	2
March	1018	12	5	19	-1	86	73	5	5	61	7	18	53	8	2	8	4	1	2	4	18	45	1	1	8	19	5	4	⊕	7	11	⊕	1	2
April	1014	17	9	23	3	88	70	4	4	47	6	18	44	7	1	8	11	2	6	4	14	31	1	1	8	30	5	9	1	6	10	⊕	⊕	3
May	1014	22	13	28	7	86	67	3	4	32	4	26	40	4	1	5	7	2	9	6	17	34	2	⊕	5	26	7	9	⊕	6	10	⊕	⊕	2
June	1013	28	17	33	12	83	60	2	3	21	2	27	48	5	2	2	5	1	6	4	23	30	3	⊕	3	24	6	10	0	5	9	⊕	0	3
July	1013	31	20	35	15	83	55	1	1	17	2	31	57	5	0	1	0	⊕	3	3	26	55	1	0	3	5	2	8	⊕	7	10	0	⊕	1
August	1013	30	20	34	16	85	56	1	1	9	1	23	66	6	⊕	1	⊕	0	1	3	29	54	3	0	1	8	2	5	0	6	11	0	⊕	1
September	1016	26	16	31	11	85	61	2	2	29	3	15	63	13	1	3	2	0	1	3	24	46	2	⊕	3	15	4	6	0	5	10	⊕	⊕	1
October	1019	20	12	27	5	86	68	4	4	48	5	17	58	11	2	4	4	0	⊕	3	24	43	2	1	5	15	4	6	⊕	6	10	⊕	1	1
November	1019	15	8	21	0	87	74	5	5	89	7	15	50	12	2	12	6	1	1	2	18	43	1	2	10	17	5	4	1	7	9	⊕	1	3
December	1020	11	5	17	-3	88	79	5	5	118	10	15	50	8	5	9	8	1	⊕	4	19	43	1	2	14	15	3	3	1	7	10	⊕	1	2
Means	1017	19	11	35*	-5§	86	68	3	4	–	–	19	53	8	2	6	5	1	3	3	21	42	2	1	6	17	4	6	1	6	10	–	–	–
Totals	–	–	–	–	–	–	–	–	–	634	65	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	⊕	7	23
Extreme values	–	–	–	38†	-8‡	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
No. of years observations	17	17				17		17		30		17									17									17		17	17	17

* Mean of highest each year
§ Mean of lowest each year

† Highest recorded temperature
‡ Lowest recorded temperature

⊕ Rare
⊖ All observations

1.201

WMO No 33924

CHORNOMORS'KE (45°31′N, 32°42′E) Height above MSL – 10 m

Climatic Table compiled from 17 years observations, 1983 to 1999

Month	Average pressure at MSL	Temperatures				Average humidity		Average cloud cover		Precipitation		Wind distribution – Percentage of observations from																Mean wind speed		Number of days with		
												0800										1400											
		Mean daily max.	Mean daily min.	Mean highest in each month	Mean lowest in each month	0800	1400	0800	1400	Average fall	No. of days with mm or more	N	NE	E	SE	S	SW	W	NW	Calm	N	NE	E	SE	S	SW	W	NW	Calm	0800	1400	Gale	Fog	Thunder
	hPa	°C	°C	°C	°C	%	%	Oktas		mm																				Knots				
January	1020	3	-1	11	-11	86	81	7	6			12	18	16	6	17	12	11	6	3	11	25	8	3	11	12	16	13	2	10	12	1	3	⊕
February	1019	3	-2	12	-11	86	78	6	6			10	17	15	9	16	12	8	9	5	14	21	7	5	14	10	15	13	2	10	12	1	3	⊕
March	1018	7	1	16	-6	85	76	6	6			9	26	14	7	15	9	6	8	6	19	22	6	3	14	8	16	11	1	10	13	⊕	4	⊕
April	1014	14	6	21	1	80	71	5	5			11	21	10	7	19	9	9	6	9	20	14	2	2	16	11	24	10	1	9	12	⊕	3	⊕
May	1014	19	11	27	4	75	68	4	4			19	15	8	5	18	8	9	8	10	15	10	6	2	12	8	29	18	⊕	8	11	⊕	2	1
June	1012	24	16	30	11	74	67	4	3			22	14	5	5	13	11	14	11	5	11	8	2	1	10	9	35	23	0	7	10	⊕	1	3
July	1013	26	19	33	14	71	63	2	2			27	22	6	2	7	6	10	16	4	18	8	1	1	4	3	32	34	0	8	10	1	1	2
August	1014	26	18	32	13	70	63	2	2			21	26	11	4	6	7	9	11	5	26	13	2	1	3	4	25	26	⊕	7	11	⊕	1	2
September	1016	21	13	38	6	74	62	3	3			11	15	18	8	17	8	8	10	6	24	12	4	2	12	8	21	17	1	8	11	⊕	1	3
October	1020	16	9	24	0	81	69	5	5			11	16	21	10	18	6	4	8	5	16	26	6	3	12	6	15	15	1	10	12	⊕	2	1
November	1020	9	3	17	-5	85	76	6	6			11	19	23	9	17	4	5	9	3	15	25	11	6	13	10	10	10	1	10	12	1	3	0
December	1020	5	0	13	-9	86	81	7	6			10	22	16	10	15	11	6	9	2	11	26	12	3	13	11	11	10	2	10	12	1	4	⊕
Means	1017	14	8	33*	-14§	79	71	5	4			15	19	13	7	15	9	8	9	5	17	17	5	3	11	8	21	17	1	9	12	_	_	_
Totals	_	_	_	_	_	_	_	_	_			_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	5	28	12
Extreme values	_	_	_	41†	-23‡	_	_	_	_			_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_
No. of years observations	17	17				17		17				17									17									17		17	17	17

* Mean of highest each year
§ Mean of lowest each year

† Highest recorded temperature
‡ Lowest recorded temperature

⊕ Rare
⊖ All observations

1.202

WMO No 15480

CONSTANŢA (44°13′N, 28°38′E) Height above MSL – 14 m

Climatic Table compiled from 17 to 30 years observations, 1960 to 1999

Month	Average pressure at MSL	Temperatures				Average humidity		Average cloud cover		Precipitation		Wind distribution – Percentage of observations from																Mean wind speed		Number of days with		
												0800									1400											
		Mean daily max.	Mean daily min.	Mean highest in each month	Mean lowest in each month	0800	1400	0800	1400	Average fall	No. of days with 1 mm or more	N	NE	E	SE	S	SW	W	NW	Calm	N	NE	E	SE	S	SW	W	NW	Calm	0800	1400	Gale	Fog	Thunder
	hPa	°C	°C	°C	°C	%	%	Oktas		mm																				Knots				
January	1022	4	-1	14	-9	89	78	6	6	30	5	19	7	3	2	7	8	34	10	11	21	9	3	3	6	8	35	11	4	9	10	⊕	7	⊕
February	1021	5	-1	14	-10	86	73	5	5	29	5	20	8	2	4	8	7	31	9	10	19	12	5	7	12	5	24	12	4	9	10	⊕	5	⊕
March	1019	8	2	19	-5	88	75	5	6	26	5	22	12	6	4	10	7	16	10	14	18	20	10	13	14	2	13	5	3	9	11	⊕	4	⊕
April	1015	14	7	23	2	87	72	5	5	30	5	13	9	6	7	14	5	23	11	12	7	14	15	21	18	2	13	6	4	7	10	⊕	3	1
May	1015	20	12	27	6	82	70	4	5	38	6	13	8	6	4	13	6	24	10	17	5	11	22	24	20	2	11	4	2	6	9	⊕	3	4
June	1014	24	17	30	11	80	66	3	4	40	6	14	6	3	4	9	6	31	12	16	7	13	18	23	18	1	13	6	2	6	9	⊕	1	7
July	1014	27	19	31	15	79	66	2	3	30	5	21	7	2	2	7	4	28	14	15	9	19	22	20	13	1	8	5	2	6	9	0	1	6
August	1015	26	19	31	13	82	66	3	3	33	3	21	6	2	2	5	5	26	14	18	9	23	24	16	13	1	7	6	2	6	9	⊕	1	4
September	1017	23	15	28	9	86	65	3	4	29	3	15	6	4	3	8	9	29	10	17	9	12	19	22	14	1	15	7	2	7	9	⊕	1	2
October	1021	17	10	25	2	89	71	5	5	31	4	23	7	4	4	7	9	22	8	17	22	13	9	14	12	2	14	9	3	8	10	⊕	2	1
November	1021	10	4	20	-4	90	76	6	6	42	6	16	8	4	5	7	8	27	11	14	20	9	6	7	10	6	26	10	5	8	10	⊕	5	⊕
December	1022	5	0	14	-9	90	80	6	6	38	6	18	9	2	2	6	7	33	10	12	24	9	3	2	10	4	33	12	4	9	10	1	6	⊕
Means	1018	15	9	32*	-12§	86	71	4	5	–	–	18	8	4	3	8	7	27	11	14	14	14	13	14	13	3	18	8	3	7	10	–	–	–
Totals	–	–	–	–	–	–	–	–	–	396	59	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	39	25
Extreme values	–	–	–	35†	-16‡	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
No. of years observations	17	17				17		17		30		17									17									17		17	17	17

* Mean of highest each year
§ Mean of lowest each year

† Highest recorded temperature
‡ Lowest recorded temperature

⊕ Rare
⊖ All observations

1.203

WMO No 17060

İSTANBUL/ATATÜRK AIRPORT (40°58′N, 28°49′E) Height above MSL – 37 m

Climatic Table compiled from 17 to 30 years observations, 1960 to 1999

Month	Average pressure at MSL	Temperatures				Average humidity		Average cloud cover		Precipitation		Wind distribution – Percentage of observations from																Mean wind speed		Number of days with		
												0800									1400											
		Mean daily max.	Mean daily min.	Mean highest in each month	Mean lowest in each month	0800	1400	0800	1400	Average fall	No. of days with 1 mm or more	N	NE	E	SE	S	SW	W	NW	Calm	N	NE	E	SE	S	SW	W	NW	Calm	0800	1400	Gale	Fog	Thunder
	hPa	°C	°C	°C	°C	%	%	Oktas		mm																				Knots				
January	1021	8	4	14	-2	82	72	6	5	99	12	27	27	5	1	6	15	5	4	9	21	23	5	3	8	26	7	4	3	9	11	⊕	2	⊕
February	1019	8	3	16	-3	82	69	5	5	67	10	29	28	3	2	7	13	3	5	11	20	24	5	3	7	25	10	4	2	9	11	⊕	2	1
March	1017	11	4	20	-1	81	66	5	5	62	9	26	31	4	3	4	11	6	5	10	20	26	4	3	7	30	7	2	1	9	10	⊕	1	⊕
April	1014	16	9	25	3	79	63	4	4	49	7	20	23	7	6	5	17	8	3	11	13	17	2	3	10	36	13	3	2	7	9	⊕	⊕	1
May	1014	21	13	28	8	77	60	3	3	31	5	16	29	8	6	4	16	6	4	10	15	23	3	2	8	37	9	2	1	7	10	⊕	1	3
June	1013	26	17	32	13	75	58	3	3	21	3	16	25	12	6	7	13	5	5	11	22	21	2	3	8	36	7	2	1	7	10	0	⊕	4
July	1012	28	20	33	16	73	54	2	2	19	3	20	52	8	3	2	4	2	4	5	23	47	2	1	3	19	3	2	⊕	10	12	⊕	⊕	2
August	1013	29	20	33	16	76	53	2	2	26	3	19	52	12	3	2	3	1	4	4	21	53	3	⊕	3	14	4	2	⊕	9	13	⊕	⊕	2
September	1016	25	17	31	12	77	54	2	3	41	4	20	39	14	2	3	4	3	6	9	15	38	2	2	9	26	5	3	1	7	11	⊕	⊕	2
October	1019	20	13	26	8	82	64	4	4	71	7	28	34	3	1	3	9	3	7	12	19	34	3	2	7	26	5	3	1	8	11	⊕	1	2
November	1019	14	9	22	2	82	69	5	5	89	9	30	25	6	2	7	12	3	7	10	23	22	5	5	8	23	6	3	3	8	11	⊕	2	2
December	1020	10	6	16	-1	83	74	6	5	122	12	27	25	5	3	9	15	4	4	7	24	22	6	5	10	22	4	4	4	9	11	⊕	2	1
Means	1016	18	11	34*	-3§	79	63	4	4	_	_	23	33	7	3	5	11	4	5	9	20	29	3	3	7	27	6	3	2	8	11	_	_	_
Totals	_	_	_	_	_	_	_	_	_	697	84	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	⊕	11	20
Extreme values	_	_	_	_	38†	-9‡	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_
No. of years observations	17	17				17		17		30		17									17									17		17	17	17

* Mean of highest each year
§ Mean of lowest each year

† Highest recorded temperature
‡ Lowest recorded temperature

⊕ Rare
⊖ All observations

1.204

WMO No 33983

KERCH' (45°24′N, 36°25′E) Height above MSL - 49 m

Climatic Table compiled from 17 to 39 years observations, 1959 to 1999

Month	Average pressure at MSL	Temperatures				Average humidity		Average cloud cover		Precipitation		Wind distribution - Percentage of observations from																Mean wind speed		Number of days with		
		Mean daily max.	Mean daily min.	Mean highest in each month	Mean lowest in each month	0900	1500	0900	1500	Average fall	No. of days with 1 mm or more	0900									1500											
												N	NE	E	SE	S	SW	W	NW	Calm	N	NE	E	SE	S	SW	W	NW	Calm	0900	1500	Gale	Fog	Thunder
	hPa	°C	°C	°C	°C	%	%	Oktas		mm																				Knots				
January	1020	3	-2	11	-11	88	80	7	6	34	8	10	17	7	6	9	11	16	13	13	13	18	5	6	13	10	16	14	5	10	12	⊕	5	⊕
February	1020	3	-3	12	-12	87	76	6	6	32	6	8	19	8	7	8	11	12	11	16	12	20	7	9	12	8	16	11	5	9	12	⊕	4	⊕
March	1018	7	0	16	-7	85	71	6	6	35	6	10	24	12	9	9	7	10	8	13	15	26	8	14	13	4	9	8	2	10	13	⊕	4	⊕
April	1015	14	6	21	0	79	64	6	5	31	7	8	19	12	15	13	8	8	8	10	15	18	7	20	16	7	6	9	3	10	12	0	4	⊕
May	1014	20	11	27	4	72	61	5	5	34	5	8	20	9	14	13	8	10	10	9	19	17	7	19	17	4	6	10	3	9	11	⊕	2	2
June	1012	25	15	30	9	69	58	4	4	51	6	8	15	7	8	12	12	12	16	9	19	15	4	17	13	6	9	14	4	9	11	⊕	1	6
July	1012	28	18	32	13	63	51	3	3	49	6	20	20	6	4	5	7	12	18	8	32	15	3	8	6	6	9	18	2	9	12	⊕	⊕	5
August	1013	27	18	32	13	64	51	3	3	44	6	19	26	7	2	4	6	13	14	9	27	23	6	8	3	4	8	19	2	9	12	⊕	⊕	5
September	1016	22	13	28	6	72	56	4	4	33	6	9	14	13	4	5	11	15	11	17	18	19	7	11	9	4	11	17	3	8	12	⊕	1	4
October	1020	16	8	23	0	80	64	5	5	34	5	9	21	9	5	9	8	10	10	18	13	25	8	11	9	5	12	15	2	9	12	⊕	3	1
November	1020	8	3	17	-5	87	75	6	6	35	7	7	23	9	4	9	7	12	9	20	11	24	8	8	11	7	15	10	6	9	11	⊕	4	⊕
December	1020	4	0	13	-9	88	81	7	7	40	8	13	20	7	5	9	8	13	9	16	14	22	5	6	13	9	14	11	5	9	12	⊕	4	⊕
Means	1017	15	7	34*	-14§	78	66	5	5	_	_	11	20	9	7	9	8	12	11	13	18	20	6	12	11	6	11	13	3	9	12	_	_	_
Totals	_	_	_	_	_	_	_	_	_	442	76	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	⊕	32	23
Extreme values	_	_	_	38†	-23‡	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_
No. of years observations	17	17				17		17		39/11		17									17									17		17	17	17

* Mean of highest each year
§ Mean of lowest each year

† Highest recorded temperature
‡ Lowest recorded temperature

⊕ Rare
⊖ All observations

1.205

WMO No 33902

KHERSON (46°38′N, 32°34′E) Height above MSL – 54 m

Climatic Table compiled from 17 to 30 years observations, 1960 to 1999

Month	Average pressure at MSL	Temperatures				Average humidity		Average cloud cover		Precipitation		Wind distribution – Percentage of observations from																Mean wind speed		Number of days with		
												0800										1400										
		Mean daily max.	Mean daily min.	Mean highest in each month	Mean lowest in each month	0800	1400	0800	1400	Average fall	No. of days with mm or more	N	NE	E	SE	S	SW	W	NW	Calm	N	NE	E	SE	S	SW	W	NW	Calm	0800	1400	Gale	Fog	Thunder
	hPa	°C	°C	°C	°C	%	%	Oktas		mm																				Knots				
January	1020	1	-4	8	-16	90	79	6	6	33		11	15	10	10	11	10	14	12	8	13	13	11	5	9	15	15	17	2	7	9	0	8	⊕
February	1020	1	-5	11	-15	89	72	6	6	30		10	14	18	9	11	9	11	11	7	12	15	14	8	8	12	14	14	4	7	9	⊕	7	⊕
March	1018	7	-1	17	-9	87	65	6	6	26		12	23	17	9	7	9	7	9	8	11	21	15	6	11	12	9	9	5	8	10	⊕	5	⊕
April	1014	16	5	23	-2	78	53	6	6	33		10	20	21	9	10	10	8	7	5	8	15	18	10	13	16	8	9	3	8	10	⊕	4	1
May	1014	22	10	29	3	68	47	4	5	43		15	19	15	8	12	7	6	10	10	13	12	13	8	15	15	9	11	4	7	9	⊕	2	3
June	1012	26	15	32	9	70	48	4	6	45		17	17	9	7	11	10	7	12	12	14	9	10	6	12	20	12	15	4	6	9	⊕	3	7
July	1012	29	16	35	11	65	43	3	5	49		24	18	5	6	8	7	7	15	9	20	13	8	5	8	13	11	19	3	6	8	⊕	1	4
August	1014	28	16	36	10	67	42	3	4	38		19	26	12	5	6	5	6	12	9	18	16	13	6	5	11	8	20	4	6	8	⊕	1	3
September	1016	22	11	29	3	78	49	4	5	40		14	15	12	10	9	6	8	14	12	13	9	12	8	11	16	12	15	4	6	8	0	3	2
October	1020	15	6	24	-4	85	56	5	5	28		14	19	14	10	7	4	9	14	9	15	17	13	8	9	12	9	14	4	6	9	⊕	4	1
November	1020	6	0	16	-9	90	72	6	6	26		13	17	16	13	7	5	12	11	6	15	16	16	10	9	9	12	11	2	7	9	⊕	7	⊕
December	1020	2	-3	10	-14	90	80	6	6	40		15	16	13	8	11	9	11	8	10	14	17	12	9	6	13	12	11	6	7	9	⊕	9	⊕
Means	1017	15	5	35*	-18§	80	59	5	5	–	–	14	18	13	9	9	8	9	11	9	14	14	13	7	10	13	11	14	4	7	9	–	–	–
Totals	–	–	–	–	–	–	–	–	–	441		–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	⊕	54	21
Extreme values	–	–	–	40†	-25‡	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
No. of years observations	17	17				17		17		30		17									17									17		17	17	17

* Mean of highest each year
§ Mean of lowest each year

† Highest recorded temperature
‡ Lowest recorded temperature

⊕ Rare
⊖ All observations

1.206

WMO No

NOVOROSSIYSK (44°44′N, 37°49′E) Height above MSL – 37 m

Climatic Table compiled from 10 to 80 years observations, 1881 to 1963

Month	Average pressure at MSL	Temperatures				Average humidity		Average cloud cover		Precipitation		Wind distribution – Percentage of observations from																Mean wind speed		Number of days with		
		Mean daily max.	Mean daily min.	Mean highest in each month	Mean lowest in each month	0900	1500	0900	1500	Average fall	No. of days with 1 mm or more	0900									1500											
												N	NE	E	SE	S	SW	W	NW	Calm	N	NE	E	SE	S	SW	W	NW	Calm	0900	1500	Gale	Fog	Thunder
	hPa	°C	°C	°C	°C	%	%	Oktas		mm																				Knots				
January	1019	6	-1	14	-11	76	69	6	6	79	11	12	22	5	13	6	5	8	8	21	9	24	4	23	14	6	5	9	6	12	14	5	1	⊕
February	1018	6	-3	14	-10	76	68	6	6	66	9	12	25	6	12	7	4	3	10	21	12	24	5	21	12	8	4	9	5	12	15	4	2	⊕
March	1017	9	2	18	-6	76	65	6	6	61	9	9	24	4	13	9	4	5	10	22	11	18	5	32	18	5	4	5	2	12	14	4	2	0
April	1015	15	7	23	1	74	65	6	5	48	8	6	21	9	16	8	6	5	7	22	7	16	5	43	17	5	2	3	2	10	12	3	3	⊕
May	1015	20	12	27	6	77	67	5	5	41	7	3	16	7	18	10	5	4	4	33	4	13	6	49	17	3	2	1	5	9	9	2	3	1
June	1013	25	16	30	11	75	66	4	4	53	7	6	14	4	19	10	5	7	6	29	6	12	5	47	16	6	3	5	0	6	10	1	1	1
July	1011	28	19	34	14	71	57	3	4	61	6	7	27	5	9	6	2	3	6	35	9	20	8	35	15	4	2	5	2	6	10	1	1	2
August	1012	28	19	34	14	66	53	3	3	41	5	9	26	6	6	4	4	7	6	32	7	19	4	31	17	8	5	7	2	6	9	2	2	1
September	1016	24	15	30	8	68	54	3	3	53	5	10	30	7	3	2	3	4	9	32	12	26	6	21	18	4	5	8	0	9	11	3	2	1
October	1019	18	10	25	-3	75	60	4	4	51	6	7	25	7	10	4	3	3	8	33	9	20	4	27	21	5	3	7	4	9	12	3	3	1
November	1020	13	5	21	-4	77	67	6	5	71	9	8	31	6	12	4	3	3	9	24	8	29	6	19	13	5	6	8	6	12	14	4	3	⊕
December	1019	9	1	16	-9	77	70	6	6	86	11	10	26	4	12	11	6	4	7	20	7	25	5	21	16	7	4	8	7	12	13	4	2	⊕
Means	1016	17	9	35*	-15§	74	63	5	5	–	–	8	24	6	12	7	4	5	7	27	8	21	5	31	16	6	4	6	3	10	12	–	–	–
Totals	–	–	–	–	–	–	–	–	–	711	93	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	36	25	7
Extreme values	–	–	–	39†	-24‡	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
No. of years observations	37-39	80				10		11		59/21		10									10									10		36	14	14

* Mean of highest each year
§ Mean of lowest each year

† Highest recorded temperature
‡ Lowest recorded temperature

⊕ Rare
⊖ All observations

1.207

WMO No 33837

ODESA (46°26′N, 30°46′E) Height above MSL – 42 m

Climatic Table compiled from 17 to 30 years observations, 1960 to 1999

Month	Average pressure at MSL	Temperatures				Average humidity		Average cloud cover		Precipitation		Wind distribution – Percentage of observations from																Mean wind speed		Number of days with		
												0800									1400											
		Mean daily max.	Mean daily min.	Mean highest in each month	Mean lowest in each month	0800	1400	0800	1400	Average fall	No. of days with 1 mm or more	N	NE	E	SE	S	SW	W	NW	Calm	N	NE	E	SE	S	SW	W	NW	Calm	0800	1400	Gale	Fog	Thunder
	hPa	°C	°C	°C	°C	%	%	Oktas		mm																				Knots				
January	1021	2	-3	9	-12	86	77	6	6	42	8	19	13	7	3	7	10	19	18	4	23	12	8	4	10	9	15	18	2	7	8	⊕	7	⊕
February	1020	2	-3	11	-12	85	74	6	6	41	6	17	10	14	3	7	10	17	17	5	19	13	13	7	13	8	12	15	1	8	9	⊕	6	⊕
March	1019	6	0	15	-8	84	72	6	6	31	6	19	18	15	5	9	6	11	14	5	18	17	14	10	19	6	7	7	1	8	9	⊕	6	⊕
April	1015	13	6	21	0	79	66	6	6	34	6	20	18	11	7	11	8	8	13	5	9	9	14	15	32	6	4	9	1	7	9	⊕	5	1
May	1015	20	11	27	5	71	61	5	5	39	6	20	19	12	6	16	6	6	10	5	7	10	10	17	42	4	3	5	1	6	8	⊕	3	4
June	1013	24	16	30	10	72	61	4	5	42	6	24	15	7	6	14	6	7	18	3	10	8	8	13	36	5	4	13	1	6	8	⊕	1	7
July	1013	27	18	33	13	66	52	3	4	49	5	32	17	6	3	9	3	7	21	3	18	7	7	12	32	4	7	13	1	6	8	⊕	1	6
August	1015	26	17	32	13	67	53	3	4	34	4	27	18	11	4	5	5	8	18	3	14	10	12	19	26	4	4	10	1	6	7	⊕	1	4
September	1017	21	13	27	6	74	58	4	4	36	4	18	13	9	4	9	9	11	20	5	13	7	13	17	25	5	6	15	⊕	6	8	0	3	2
October	1021	15	8	23	0	81	64	5	5	26	4	17	16	10	5	10	5	15	17	3	18	15	15	8	18	6	7	12	1	7	8	⊕	3	1
November	1021	7	2	16	-6	86	74	6	6	42	6	17	13	12	5	9	8	17	16	4	16	13	15	8	11	9	12	15	2	8	9	⊕	5	⊕
December	1021	3	-2	11	-12	87	79	7	6	48	7	19	14	7	4	8	11	15	17	6	20	14	9	5	9	11	14	17	2	7	8	⊕	8	⊕
Means	1018	14	7	33*	-15§	79	66	5	5	–	–	21	15	10	5	9	7	12	17	4	16	11	12	11	23	6	8	12	1	7	8	–	–	–
Totals	–	–	–	–	–	–	–	–	–	464	68	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	⊕	49	25
Extreme values	–	–	–	37†	-24‡	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
No. of years observations	17	17				17		17		30		17									17									17		17	17	17

* Mean of highest each year
§ Mean of lowest each year

† Highest recorded temperature
‡ Lowest recorded temperature

⊕ Rare
⊖ All observations

1.208

WMO No 34731

ROSTOV-NA-DONU (47°16′N, 39°49′E) Height above MSL – 78 m

Climatic Table compiled from 17 to 30 years observations, 1960 to 1999

Month	Average pressure at MSL	Temperatures				Average humidity		Average cloud cover		Precipitation		Wind distribution – Percentage of observations from																Mean wind speed		Number of days with		
												0900									1500											
		Mean daily max.	Mean daily min.	Mean highest in each month	Mean lowest in each month	0900	1500	0900	1500	Average fall	No. of days with 1 mm or more	N	NE	E	SE	S	SW	W	NW	Calm	N	NE	E	SE	S	SW	W	NW	Calm	0900	1500	Gale	Fog	Thunder
	hPa	°C	°C	°C	°C	%	%	Oktas		mm																				Knots				
January	1021	-1	-5	8	-17	86	79	7	6	56	9	6	6	27	4	4	13	22	9	10	4	8	26	6	5	10	27	11	4	10	12	1	11	0
February	1022	-1	-6	8	-16	86	73	6	6	44	7	5	11	35	5	4	9	16	7	9	5	11	33	7	4	10	22	7	3	11	13	⊕	8	⊕
March	1020	5	-2	15	-10	83	65	6	5	38	7	5	10	47	4	4	10	12	6	4	3	10	40	9	5	8	17	5	4	12	14	⊕	6	⊕
April	1016	15	6	23	0	74	55	5	6	47	7	5	7	43	8	2	14	10	5	6	2	6	35	12	5	10	19	7	4	11	13	⊕	3	1
May	1015	21	12	28	5	67	51	5	5	55	7	5	10	36	8	5	10	10	7	9	5	6	30	11	5	11	18	6	8	9	11	0	1	5
June	1012	25	16	32	10	70	53	4	5	59	8	6	9	23	4	5	13	14	9	16	6	4	17	9	5	12	24	10	12	7	10	⊕	2	10
July	1012	28	18	34	13	64	47	3	4	56	6	12	13	27	4	4	7	7	11	15	11	5	21	7	4	7	19	15	11	7	9	0	1	7
August	1013	28	17	31	12	63	43	3	3	38	5	8	16	33	6	3	8	6	10	10	10	8	27	8	3	9	18	9	7	8	10	0	1	5
September	1016	21	12	29	5	75	53	4	4	38	5	8	9	30	7	3	13	10	10	10	5	7	19	12	4	10	25	13	6	8	11	0	3	3
October	1021	14	6	23	-3	79	60	5	5	33	5	5	10	38	5	2	10	12	8	10	5	7	32	8	4	6	23	11	4	10	12	⊕	4	⊕
November	1022	5	0	14	-9	87	77	7	6	55	9	4	14	34	7	4	9	13	9	7	5	12	32	8	5	6	18	11	4	10	11	⊕	9	⊕
December	1021	-1	-4	8	-16	88	81	7	7	77	11	5	13	30	7	3	10	15	8	8	5	14	26	9	4	11	18	9	3	10	12	⊕	13	⊕
Means	1018	13	6	35*	-19§	77	61	5	5	–	–	6	11	34	6	4	10	12	8	9	5	8	28	9	4	9	21	10	6	9	12	–	–	–
Totals	–	–	–	–	–	–	–	–	–	596	86	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	62	31
Extreme values	–	–	–	39†	-26‡	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
No. of years observations	17	17				17		17		30		17									17									17		17	17	17

* Mean of highest each year
§ Mean of lowest each year

† Highest recorded temperature
‡ Lowest recorded temperature

⊕ Rare
⊖ All observations

1.209

WMO No 17030

SAMSUN (41°17′N, 36°18′E) Height above MSL – 4 m

Climatic Table compiled from 17 to 30 years observations, 1960 to 1999

Month	Average pressure at MSL	Temperatures				Average humidity		Average cloud cover		Precipitation		Wind distribution – Percentage of observations from																Mean wind speed		Number of days with		
		Mean daily max.	Mean daily min.	Mean highest in each month	Mean lowest in each month	0800	1400	0800	1400	Average fall	No. of days with 1 mm or more	0800									1400											
												N	NE	E	SE	S	SW	W	NW	Calm	N	NE	E	SE	S	SW	W	NW	Calm	0800	1400	Gale	Fog	Thunder
	hPa	°C	°C	°C	°C	%	%	Oktas		mm																				Knots				
January	1021	10	5	18	-1	71	66	6	6	61	8	7	1	⊕	3	18	38	15	12	7	30	8	11	3	8	16	9	12	4	6	7	⊕	1	⊕
February	1020	10	3	21	-3	72	66	6	6	50	8	10	1	2	5	19	31	13	11	9	29	14	13	3	6	14	9	12	1	6	7	0	1	0
March	1018	11	4	23	-1	76	71	5	6	56	9	14	4	5	5	16	22	7	13	15	34	20	20	4	3	5	5	9	1	4	6	0	2	⊕
April	1015	15	8	25	3	79	76	5	5	62	10	22	9	19	9	11	10	6	7	7	33	31	18	2	1	4	3	6	1	4	5	⊕	3	2
May	1015	18	12	27	6	80	78	5	5	49	8	27	16	23	6	6	5	3	7	6	33	31	22	2	1	2	1	8	1	3	5	⊕	2	5
June	1013	23	16	30	12	75	75	4	4	45	5	28	15	21	4	6	4	4	12	7	38	33	19	⊕	1	0	2	7	⊕	4	6	⊕	⊕	7
July	1012	26	19	29	16	70	71	3	3	29	4	31	12	15	3	6	6	6	16	5	44	29	14	⊕	⊕	1	3	9	0	4	7	⊕	0	2
August	1013	27	19	29	16	70	70	3	3	34	4	22	5	9	4	12	14	8	15	10	43	31	17	⊕	0	1	2	5	⊕	3	7	0	0	3
September	1016	23	16	29	12	74	70	4	3	50	5	12	2	5	5	20	26	8	11	11	36	30	24	⊕	⊕	1	1	7	⊕	3	6	0	⊕	3
October	1019	19	13	27	7	77	72	5	4	85	8	8	1	1	5	16	31	12	14	13	29	22	24	2	2	3	5	12	1	4	5	⊕	⊕	2
November	1020	15	9	24	3	73	68	5	5	89	8	6	2	2	3	19	37	12	10	9	28	15	16	5	7	8	6	13	4	5	5	⊕	⊕	1
December	1020	12	6	21	0	71	66	6	6	82	9	9	⊕	1	2	19	35	18	9	7	23	8	9	5	8	18	12	13	5	6	6	⊕	⊕	⊕
Means	1017	17	11	32*	-3§	74	71	5	5	–	–	17	6	9	4	14	21	9	11	9	33	23	17	2	3	6	5	9	2	4	6	–	–	–
Totals	–	–	–	–	–	–	–	–	–	692	86	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	⊕	9	24
Extreme values	–	–	–	37†	-7‡	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
No. of years observations	17	17				17		17		30		17									17									17		17	17	17

* Mean of highest each year
§ Mean of lowest each year

† Highest recorded temperature
‡ Lowest recorded temperature

⊕ Rare
⊖ All observations

1.210

WMO No

SEVASTOPOL' (44°37′N, 33°31′E) Height above MSL – 23 m

Climatic Table compiled from 7 to 52 years observations, 1870 to 1937

Month	Average pressure at MSL	Temperatures				Average humidity		Average cloud cover		Precipitation		Wind distribution – Percentage of observations from																Mean wind speed		Number of days with		
		Mean daily max.	Mean daily min.	Mean highest in each month	Mean lowest in each month	0800	1400	0800	1400	Average fall	No. of days with 1 mm or more	0800									1400											
												N	NE	E	SE	S	SW	W	NW	Calm	N	NE	E	SE	S	SW	W	NW	Calm	0800	1400	Gale	Fog	Thunder
	hPa	°C	°C	°C	°C	%	%	Oktas		mm																				Knots				
January	1019	4	-1	13	-11	82	70	6	6	33	9	13	31	15	10	12	6	3	2	8	21	22	4	9	10	8	8	13	5	9	12	1	1	0
February	1018	5	0	14	-8	84	70	6	6	28	5	14	30	13	6	14	4	5	6	8	21	23	3	6	15	8	8	12	4	10	13	1	1	0
March	1016	8	2	18	-5	79	64	5	5	28	7	9	27	19	10	15	2	5	5	8	15	11	1	6	18	10	16	20	3	9	13	1	1	0
April	1015	13	6	23	1	75	57	5	4	25	6	8	24	17	10	14	4	5	6	12	8	5	1	9	22	11	20	22	2	8	13	1	1	0
May	1014	18	11	27	7	72	56	4	3	20	4	8	25	22	6	12	4	4	5	14	8	6	2	6	20	13	22	21	2	7	12	⊕	⊕	⊕
June	1013	23	16	29	12	71	55	3	3	28	5	7	34	22	4	10	4	3	6	10	5	3	1	4	16	16	26	29	0	8	12	⊕	⊕	2
July	1011	26	18	32	15	68	52	2	2	28	4	8	40	29	3	4	1	2	3	10	5	4	1	2	6	7	33	42	0	7	12	⊕	0	1
August	1013	26	18	32	14	70	51	2	2	23	4	6	37	28	3	4	1	3	6	12	8	4	1	1	9	10	24	42	1	7	13	⊕	0	1
September	1017	22	14	28	8	73	52	3	3	33	5	5	42	32	5	5	2	1	2	6	16	8	1	2	9	6	18	39	1	7	13	1	0	1
October	1019	17	10	24	3	80	62	4	3	38	6	7	29	27	11	14	2	0	2	8	17	8	2	9	17	8	14	24	1	8	12	1	⊕	1
November	1019	10	4	19	-2	81	67	5	5	38	7	7	30	25	10	10	3	1	2	12	20	18	2	6	14	8	9	17	5	9	11	1	1	⊕
December	1019	6	1	16	-8	80	71	6	6	41	11	11	31	20	8	12	5	3	2	8	18	25	5	8	13	9	7	8	7	9	11	1	1	0
Means	1016	15	8	33*	-13§	76	61	4	4	–	–	9	32	22	7	10	3	3	4	10	13	11	2	6	14	10	17	24	3	8	12	–	–	–
Totals	–	–	–	–	–	–	–	–	–	363	73	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	8	7	6
Extreme values	–	–	–	37†	-20‡	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
No. of years observations	49-52	19/43				7		20		43/11		10									10									10		10	10	12

* Mean of highest each year
§ Mean of lowest each year

† Highest recorded temperature
‡ Lowest recorded temperature

⊕ Rare
⊖ All observations

1.211

WMO No 15360

SULINA (45°09′N, 29°40′E) Height above MSL – 9 m

Climatic Table compiled from 17 to 30 years observations, 1960 to 1999

Month	Average pressure at MSL	Temperatures				Average humidity		Average cloud cover		Precipitation		Wind distribution – Percentage of observations from																Mean wind speed		Number of days with		
		Mean daily max.	Mean daily min.	Mean highest in each month	Mean lowest in each month	0800	1400	0800	1400	Average fall	No. of days with 1 mm or more	0800									1400											
												N	NE	E	SE	S	SW	W	NW	Calm	N	NE	E	SE	S	SW	W	NW	Calm	0800	1400	Gale	Fog	Thunder
	hPa	°C	°C	°C	°C	%	%	Oktas		mm																				Knots				
January	1021	3	-1	9	-8	91	83	6	6	19	4	26	8	5	3	12	10	19	17	⊕	29	12	4	4	13	6	17	14	1	13	14	1	5	0
February	1019	3	-1	9	-9	90	80	6	6	22	5	26	8	8	4	14	8	18	14	0	24	16	7	6	18	5	12	11	0	14	14	2	4	⊕
March	1018	6	2	13	-5	90	81	6	6	15	4	29	18	7	5	16	8	7	11	⊕	24	22	11	8	21	3	5	7	0	14	15	3	4	⊕
April	1014	12	8	19	3	87	79	5	5	19	4	25	11	13	7	18	7	10	9	⊕	12	17	16	12	28	3	6	6	⊕	12	14	1	2	1
May	1014	18	14	24	8	85	76	4	4	26	4	23	17	10	5	17	7	12	8	1	8	20	19	11	31	2	4	5	⊕	12	13	1	1	2
June	1013	23	18	28	13	85	75	4	4	29	4	30	11	5	4	20	6	12	11	1	12	13	14	13	32	2	8	5	⊕	12	12	⊕	⊕	5
July	1013	26	20	30	14	86	71	2	3	26	3	41	13	5	2	10	3	12	13	⊕	16	19	18	8	22	1	8	7	1	11	11	⊕	⊕	3
August	1014	25	20	29	13	88	72	2	3	28	3	42	11	6	2	8	5	15	10	1	17	23	21	10	19	1	7	3	⊕	11	11	⊕	1	3
September	1016	21	16	26	11	87	72	3	4	33	3	26	8	9	5	13	5	18	16	1	16	14	15	11	23	4	9	8	0	12	13	1	1	2
October	1020	15	11	21	4	88	75	5	5	16	3	32	9	8	4	14	6	12	13	1	27	17	10	7	20	3	7	7	0	13	14	1	2	1
November	1020	9	5	16	-2	90	80	6	6	22	4	28	7	9	5	12	7	17	12	1	26	15	8	7	18	5	9	11	⊕	14	15	2	3	⊕
December	1020	4	0	11	-7	90	83	6	6	26	5	26	9	6	2	13	9	22	13	1	29	10	6	2	14	9	16	14	⊕	14	15	2	5	⊕
Means	1017	14	9	30*	-11§	88	77	5	5	–	–	30	11	7	4	14	7	14	12	1	20	17	12	8	22	4	9	8	⊕	13	13	–	–	–
Totals	–	–	–	–	–	–	–	–	–	281	46	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	14	28	17
Extreme values	–	–	–	–	34†	-18‡	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
No. of years observations	17	17				17		17		30		17									17									17		17	17	17

* Mean of highest each year
§ Mean of lowest each year

† Highest recorded temperature
‡ Lowest recorded temperature

⊕ Rare
⊖ All observations

1.212

WMO No 17038

TRABZON (41°00′N, 39°43′E) Height above MSL – 34 m

Climatic Table compiled from 17 to 38 years observations, 1950 to 1999

Month	Average pressure at MSL	Temperatures				Average humidity		Average cloud cover		Precipitation		Wind distribution – Percentage of observations from																Mean wind speed		Number of days with		
		Mean daily max.	Mean daily min.	Mean highest in each month	Mean lowest in each month	0800	1400	0800	1400	Average fall	No. of days with 1 mm or more	0800									1400											
												N	NE	E	SE	S	SW	W	NW	Calm	N	NE	E	SE	S	SW	W	NW	Calm	0800	1400	Gale	Fog	Thunder
	hPa	°C	°C	°C	°C	%	%	Oktas		mm																				Knots				
January	1021	10	5	19	0	71	71	5	5	90	13	⊕	1	1	7	17	31	8	6	30	6	12	21	8	1	5	11	21	15	4	5	⊕	1	⊕
February	1020	8	4	21	-1	72	70	5	5	70	13	⊕	⊕	3	8	11	31	6	5	35	7	16	23	6	3	5	9	22	9	4	6	⊕	2	0
March	1018	12	5	23	0	74	72	5	5	59	14	3	4	12	9	8	15	6	8	35	8	17	24	7	1	2	10	22	8	4	6	⊕	2	⊕
April	1015	15	9	27	4	75	75	5	5	55	13	5	14	23	6	5	4	4	13	26	11	19	31	8	⊕	1	6	16	8	4	5	⊕	3	1
May	1015	19	12	28	7	77	75	5	5	52	13	10	19	22	6	1	3	8	13	19	11	22	30	2	⊕	1	8	18	7	4	5	⊕	2	3
June	1013	24	17	29	13	74	73	4	4	49	10	12	20	16	2	1	4	8	18	18	11	26	16	3	1	4	10	24	5	4	5	⊕	⊕	5
July	1012	26	20	29	17	72	71	5	5	37	8	10	17	11	3	4	10	8	16	22	18	15	10	2	1	2	11	37	3	4	6	⊕	0	3
August	1012	27	20	30	17	72	71	4	5	46	8	9	15	9	3	6	15	9	12	23	16	18	11	1	1	3	13	33	4	3	6	⊕	⊕	4
September	1016	24	17	28	13	72	72	4	4	81	11	5	11	12	4	5	25	10	5	24	13	21	18	3	2	5	10	24	4	4	6	⊕	⊕	3
October	1019	20	14	26	8	73	71	5	5	106	12	1	3	6	7	10	22	8	4	38	11	18	24	5	2	3	9	20	8	3	5	⊕	⊕	2
November	1020	15	9	25	4	72	71	5	5	98	12	1	1	1	6	14	33	6	4	35	5	10	23	7	2	8	10	15	20	3	5	⊕	⊕	1
December	1020	12	6	22	1	71	70	5	5	79	12	1	1	1	4	14	41	7	5	26	5	8	22	12	2	5	9	20	17	4	5	⊕	⊕	⊕
Means	1017	18	11	30*	-2§	73	72	5	5	–	–	5	9	10	5	8	19	7	9	28	10	17	21	5	1	4	10	23	9	4	5	–	–	–
Totals	–	–	–	–	–	–	–	–	–	822	139	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	⊕	10	22
Extreme values	–	–	–	32†	-5‡	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
No. of years observations	17	17				17		17		38		17									17									17		17	17	17

* Mean of highest each year
§ Mean of lowest each year

† Highest recorded temperature
‡ Lowest recorded temperature

⊕ Rare
⊖ All observations

1.213

WMO No 37018

TUAPSE (44°06′N, 39°04′E) Height above MSL – 41 m

Climatic Table compiled from 17 to 30 years observations, 1960 to 1999

Month	Average pressure at MSL	Temperatures				Average humidity		Average cloud cover		Precipitation		Wind distribution – Percentage of observations from																Mean wind speed		Number of days with		
												0900									1500											
		Mean daily max.	Mean daily min.	Mean highest in each month	Mean lowest in each month	0900	1500	0900	1500	Average fall	No. of days with 1 mm or more	N	NE	E	SE	S	SW	W	NW	Calm	N	NE	E	SE	S	SW	W	NW	Calm	0900	1500	Gale	Fog	Thunder
	hPa	°C	°C	°C	°C	%	%	Oktas		mm																				Knots				
January	1020	7	3	14	-6	76	70	6	7	159	13	9	37	9	16	15	7	3	4	1	3	25	5	18	24	14	8	3	⊕	9	10	⊕	1	1
February	1019	8	2	15	-6	71	64	6	6	117	10	7	47	9	15	12	4	4	2	1	4	18	4	15	29	16	10	4	⊕	9	9	⊕	1	1
March	1018	11	4	20	-2	71	64	5	6	99	10	6	42	11	12	14	7	4	2	1	3	14	3	8	29	27	14	3	0	7	8	0	2	1
April	1015	16	9	25	3	74	68	6	6	93	10	5	25	10	14	22	13	7	2	1	3	7	2	13	27	29	14	5	⊕	6	7	⊕	2	1
May	1014	20	13	29	7	75	69	5	5	73	7	3	21	6	11	31	19	7	2	0	4	5	2	9	30	29	19	4	0	5	6	0	1	2
June	1012	24	17	31	12	74	69	5	5	93	7	4	19	6	14	29	21	6	2	0	4	7	1	7	24	32	17	8	0	5	7	⊕	1	6
July	1011	28	19	33	15	70	66	4	4	79	6	6	30	11	11	21	13	5	3	⊕	3	9	2	6	20	31	22	8	0	5	7	⊕	⊕	7
August	1012	28	19	32	15	69	63	3	3	103	6	3	52	15	9	10	5	4	1	⊕	3	10	3	4	17	34	22	7	⊕	5	6	⊕	⊕	7
September	1015	25	15	31	10	72	62	4	4	133	8	5	59	14	6	6	4	4	2	⊕	6	11	1	5	17	35	19	6	⊕	6	7	⊕	1	6
October	1019	19	11	27	3	73	62	4	4	98	8	7	63	12	5	4	4	4	1	⊕	5	19	3	7	16	23	21	4	⊕	7	7	0	1	3
November	1019	13	7	20	-1	74	67	6	6	154	11	10	49	6	11	14	5	3	2	⊕	6	25	5	11	24	14	11	4	⊕	9	8	⊕	1	2
December	1020	9	4	16	-5	75	70	6	6	194	14	9	46	7	15	13	6	3	2	⊕	4	29	4	18	20	14	7	3	1	10	10	⊕	⊕	1
Means	1016	17	10	34*	-9§	73	66	5	5	–	–	6	40	10	12	16	9	5	2	⊕	4	15	3	10	23	25	15	5	⊕	7	8	–	–	–
Totals	–	–	–	–	–	–	–	–	–	1395	110	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	⊕	11	38
Extreme values	–	–	–	38†	-17‡	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
No. of years observations	17	17				17		17		30		17									17									17		17	17	17

* Mean of highest each year
§ Mean of lowest each year

† Highest recorded temperature
‡ Lowest recorded temperature

⊕ Rare
⊖ All observations

1.214

WMO No 15552

VARNA (43°12′N, 27°55′E) Height above MSL – 43 m

Climatic Table compiled from 17 to 30 years observations, 1960 to 1999

Month	Average pressure at MSL	Temperatures				Average humidity		Average cloud cover		Precipitation		Wind distribution – Percentage of observations from																Mean wind speed		Number of days with		
												0800									1400											
		Mean daily max.	Mean daily min.	Mean highest in each month	Mean lowest in each month	0800	1400	0800	1400	Average fall	No. of days with 1 mm or more	N	NE	E	SE	S	SW	W	NW	Calm	N	NE	E	SE	S	SW	W	NW	Calm	0800	1400	Gale	Fog	Thunder
	hPa	°C	°C	°C	°C	%	%	Oktas		mm																				Knots				
January	1022	6	0	16	-8	85	73	5	5	33	6	16	6	2	1	⊕	1	23	21	29	17	8	5	3	1	4	29	15	19	7	8	1	3	⊕
February	1020	7	-1	17	-9	84	69	5	5	41	6	20	5	5	1	2	2	18	17	31	16	11	9	5	3	4	18	11	22	7	8	1	3	⊕
March	1018	9	2	19	-4	82	69	6	6	34	5	23	9	4	1	⊕	2	13	12	38	18	13	21	9	1	3	9	7	19	6	8	1	3	⊕
April	1014	15	7	23	2	79	70	5	6	44	5	13	7	7	3	1	2	15	14	39	6	10	30	11	2	3	11	7	21	5	7	1	3	2
May	1015	20	11	28	5	76	69	4	5	40	5	12	7	9	2	⊕	2	16	10	42	5	10	36	13	3	2	7	4	19	4	6	⊕	2	4
June	1013	25	16	30	11	75	66	4	5	46	7	14	5	7	2	1	1	22	10	38	8	7	32	13	4	2	11	7	17	5	6	⊕	1	8
July	1014	28	18	32	14	72	63	2	4	37	5	19	5	5	2	1	2	16	12	38	7	6	36	13	3	1	7	7	20	5	6	0	1	6
August	1015	28	18	33	13	73	60	2	3	32	5	19	7	4	1	1	3	15	11	40	9	8	35	16	3	1	6	5	18	5	6	⊕	1	4
September	1017	24	14	30	9	79	61	3	4	31	4	14	7	5	2	1	1	18	11	40	8	7	34	14	4	3	12	5	14	5	6	⊕	1	3
October	1020	18	9	26	3	81	65	4	5	36	5	25	5	4	2	⊕	1	12	16	34	18	9	21	10	3	3	11	8	16	6	7	1	2	1
November	1020	11	5	21	-4	83	69	5	5	50	8	18	7	5	2	1	2	16	17	31	14	10	11	6	1	4	19	11	22	7	7	1	2	⊕
December	1021	7	1	16	-8	84	73	5	5	42	5	20	7	3	1	1	1	22	20	25	20	8	4	2	3	2	27	14	21	8	9	1	2	⊕
Means	1018	17	8	33*	-13§	79	67	4	5	–	–	18	6	5	2	1	2	17	14	35	12	9	23	10	2	3	14	8	19	6	7	–	–	–
Totals	–	–	–	–	–	–	–	–	–	471	66	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	7	24	28
Extreme values	–	–	–	40†	-20‡	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
No. of years observations	17	17				17		17		30		17									17									17		17	17	17

* Mean of highest each year
§ Mean of lowest each year

† Highest recorded temperature
‡ Lowest recorded temperature

⊕ Rare
⊖ All observations

1.215

WMO No 33990

YALTA (44°29′N, 34°10′E) Height above MSL – 72 m

Climatic Table compiled from 17 to 30 years observations, 1960 to 1999

Month	Average pressure at MSL	Temperatures				Average humidity		Average cloud cover		Precipitation		Wind distribution – Percentage of observations from																Mean wind speed		Number of days with		
		Mean daily max.	Mean daily min.	Mean highest in each month	Mean lowest in each month	0800	1400	0800	1400	Average fall	No. of days with 1 mm or more	0800									1400											
												N	NE	E	SE	S	SW	W	NW	Calm	N	NE	E	SE	S	SW	W	NW	Calm	0800	1400	Gale	Fog	Thunder
	hPa	°C	°C	°C	°C	%	%	Oktas		mm																				Knots				
January	1020	7	2	14	-6	76	72	6	6	83	10	11	11	8	4	6	8	26	24	4	8	16	21	11	14	11	7	9	3	4	4	⊕	1	⊕
February	1019	6	1	14	-5	73	68	6	6	64	8	11	11	8	5	4	12	21	22	7	5	19	25	15	11	13	4	8	2	4	5	⊕	2	⊕
March	1018	9	3	16	-2	72	70	6	6	45	7	10	20	20	8	8	7	7	11	9	5	20	33	15	10	8	3	5	2	3	5	0	2	⊕
April	1014	14	8	22	3	70	69	5	6	35	5	8	23	25	15	9	7	5	4	6	7	18	28	19	11	8	5	3	1	3	5	⊕	2	1
May	1014	19	12	27	6	67	67	5	5	35	5	4	23	32	17	8	6	2	3	5	8	20	28	21	9	6	3	4	1	4	4	0	2	3
June	1012	24	17	28	12	67	66	4	5	45	5	9	19	31	15	9	5	4	4	5	8	11	23	24	13	9	5	5	2	3	4	⊕	1	7
July	1012	28	20	33	15	57	59	2	4	36	4	5	25	28	15	7	4	3	6	7	6	10	26	26	12	7	6	6	2	4	4	0	⊕	5
August	1013	28	20	32	15	57	59	3	4	35	4	6	29	30	11	5	4	4	4	6	6	13	27	26	13	5	4	5	1	4	4	⊕	⊕	6
September	1016	23	15	28	11	60	60	3	4	43	4	10	27	25	10	5	5	5	7	7	4	13	31	22	10	7	3	7	1	4	5	⊕	⊕	3
October	1020	17	11	24	4	67	67	5	5	38	5	17	22	11	6	5	4	10	13	10	5	24	24	17	9	6	4	7	3	3	4	0	⊕	1
November	1019	11	6	19	-1	74	71	6	6	68	8	14	12	8	4	5	11	20	20	6	8	24	21	11	8	8	8	8	4	3	5	⊕	1	⊕
December	1019	8	3	15	-3	75	72	6	6	95	11	9	11	8	2	4	13	29	19	4	6	21	16	10	10	16	8	10	5	4	5	0	1	⊕
Means	1016	16	10	34*	-7§	68	67	5	5	–	–	10	19	20	9	6	7	12	11	6	6	18	25	18	11	9	5	6	2	4	5	–	–	–
Totals	–	–	–	–	–	–	–	–	–	622	76	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	⊕	12	26
Extreme values	–	–	–	39†	-16‡	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
No. of years observations	17	17				17		17		30		17									17									17		17	17	17

* Mean of highest each year
§ Mean of lowest each year

† Highest recorded temperature
‡ Lowest recorded temperature

⊕ Rare
⊖ All observations

1.216

WMO No 17022

ZONGULDAK (41°27′N, 31°48′E) Height above MSL – 137 m

Climatic Table compiled from 17 to 30 years observations, 1960 to 1999

Month	Average pressure at MSL	Temperatures				Average humidity		Average cloud cover		Precipitation		Wind distribution – Percentage of observations from																Mean wind speed		Number of days with		
		Mean daily max.	Mean daily min.	Mean highest in each month	Mean lowest in each month	0800	1400	0800	1400	Average fall	No. of days with 1 mm or more	0800									1400											
												N	NE	E	SE	S	SW	W	NW	Calm	N	NE	E	SE	S	SW	W	NW	Calm	0800	1400	Gale	Fog	Thunder
	hPa	°C	°C	°C	°C	%	%	Oktas		mm																				Knots				
January	1020	8	4	18	-2	70	67	5	5	137	14	9	3	17	24	24	6	11	4	4	25	4	7	4	9	6	27	16	2	5	5	0	4	1
February	1019	8	3	19	-2	69	66	5	5	92	12	8	3	20	22	26	5	8	5	3	29	4	4	5	7	3	28	20	1	5	6	⊕	4	⊕
March	1018	10	5	21	-1	71	66	5	5	90	10	12	3	20	17	20	8	13	5	3	34	4	2	1	3	3	30	20	⊕	5	6	⊕	5	⊕
April	1014	15	9	26	3	69	65	5	5	65	9	14	1	14	13	13	10	22	10	3	31	4	3	1	1	3	32	25	1	4	5	⊕	6	2
May	1014	19	13	28	6	70	65	4	4	55	7	22	3	14	11	12	6	16	13	2	37	2	3	1	1	3	27	27	⊕	4	5	⊕	4	4
June	1013	23	16	30	12	69	66	3	3	61	6	20	4	14	11	11	7	20	12	2	41	1	1	1	1	3	26	26	0	3	6	⊕	1	6
July	1013	25	18	29	15	72	67	3	2	80	5	22	5	21	12	12	5	13	8	3	55	2	⊕	1	1	3	17	22	0	3	6	⊕	⊕	6
August	1013	25	18	30	14	73	66	2	2	81	6	9	3	32	22	11	4	5	4	9	58	4	⊕	⊕	1	2	15	19	⊕	3	6	⊕	⊕	4
September	1016	22	15	28	11	71	65	3	3	93	6	2	2	36	29	18	4	3	2	5	49	3	1	2	3	3	15	25	⊕	3	5	⊕	⊕	3
October	1019	18	12	26	7	74	68	4	4	139	9	5	2	27	34	20	3	3	2	3	39	6	2	2	5	4	19	21	1	4	5	⊕	1	3
November	1019	14	9	21	3	70	66	5	5	142	11	7	3	23	25	26	6	6	2	2	27	5	6	5	11	3	22	20	2	5	5	⊕	1	2
December	1020	10	6	19	-1	70	67	5	5	159	14	6	3	17	24	27	7	8	6	2	28	5	8	6	8	8	22	12	3	5	5	0	2	1
Means	1016	16	11	32*	-4§	71	66	4	4	–	–	12	3	21	20	18	6	11	6	3	38	4	3	2	4	4	23	21	1	4	5	–	–	–
Totals	–	–	–	–	–	–	–	–	–	1194	109	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	⊕	28	32
Extreme values	–	–	–	36†	-7‡	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
No. of years observations	17	17				17		17		30		17									17									17		17	17	17

* Mean of highest each year
§ Mean of lowest each year

† Highest recorded temperature
‡ Lowest recorded temperature

⊕ Rare
⊖ All observations

1.217

METEOROLOGICAL CONVERSION TABLE AND SCALES

Fahrenheit to Celsius

°Fahrenheit

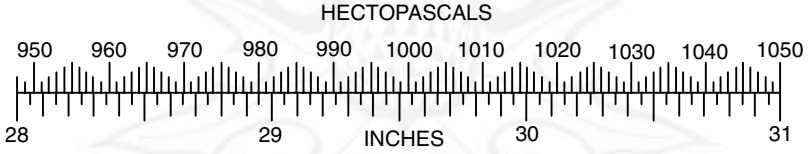
	0	1	2	3	4	5	6	7	8	9
°F				Degrees Celsius						
−100	−73·3	−73·9	−74·4	−75·0	−75·6	−76·1	−76·7	−77·2	−77·8	−78·3
−90	−67·8	−68·3	−68·9	−69·4	−70·0	−70·6	−71·1	−71·7	−72·2	−72·8
−80	−62·2	−62·8	−63·3	−63·9	−64·4	−65·0	−65·6	−66·1	−66·7	−67·2
−70	−56·7	−57·2	−57·8	−58·3	−58·9	−59·4	−60·0	−60·6	−61·1	−61·7
−60	−51·1	−51·7	−52·2	−52·8	−53·3	−53·9	−54·4	−55·0	−55·6	−56·1
−50	−45·6	−46·1	−46·7	−47·2	−47·8	−48·3	−48·9	−49·4	−50·0	−50·6
−40	−40·0	−40·6	−41·1	−41·7	−42·2	−42·8	−43·3	−43·9	−44·4	−45·0
−30	−34·4	−35·0	−35·6	−36·1	−36·7	−37·2	−37·8	−38·3	−38·9	−39·4
−20	−28·9	−29·4	−30·0	−30·6	−31·1	−31·7	−32·2	−32·8	−33·3	−33·9
−10	−23·3	−23·9	−24·4	−25·0	−25·6	−26·1	−26·7	−27·2	−27·8	−28·3
−0	−17·8	−18·3	−18·9	−19·4	−20·0	−20·6	−21·1	−21·7	−22·2	−22·8
+0	−17·8	−17·2	−16·7	−16·1	−15·6	−15·0	−14·4	−13·9	−13·3	−12·8
10	−12·2	−11·7	−11·1	−10·6	−10·0	−9·4	−8·9	−8·3	−7·8	−7·2
20	−6·7	−6·1	−5·6	−5·0	−4·4	−3·9	−3·3	−2·8	−2·2	−1·7
30	−1·1	−0·6	0	+0·6	+1·1	+1·7	+2·2	+2·8	+3·3	+3·9
40	+4·4	+5·0	+5·6	6·1	6·7	7·2	7·8	8·3	8·9	9·4
50	10·0	10·6	11·1	11·7	12·2	12·8	13·3	13·9	14·4	15·0
60	15·6	16·1	16·7	17·2	17·8	18·3	18·9	19·4	20·0	20·6
70	21·1	21·7	22·2	22·8	23·3	23·9	24·4	25·0	25·6	26·1
80	26·7	27·2	27·8	28·3	28·9	29·4	30·0	30·6	31·1	31·7
90	32·2	32·8	33·3	33·9	34·4	35·0	35·6	36·1	36·7	37·2
100	37·8	38·3	38·9	39·4	40·0	40·6	41·1	41·7	42·2	42·8
110	43·3	43·9	44·4	45·0	45·6	46·1	46·7	47·2	47·8	48·3
120	48·9	49·4	50·0	50·6	51·1	51·7	52·2	52·8	53·3	53·9

Celsius to Fahrenheit

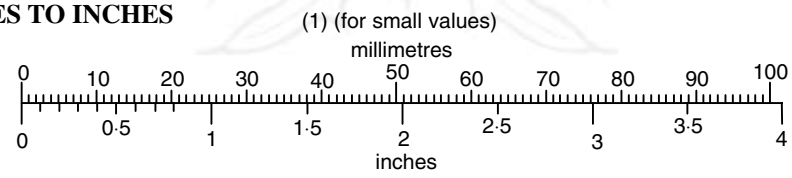
°Celsius

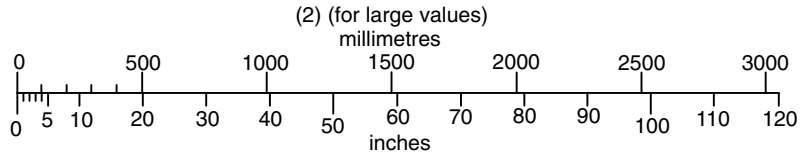
	0	1	2	3	4	5	6	7	8	9
°C				Degrees Fahrenheit						
−70	−94·0	−95·8	−97·6	−99·4	−101·2	−103·0	−104·8	−106·6	−108·4	−110·2
−60	−76·0	−77·8	−79·6	−81·4	−83·2	−85·0	−86·8	−88·6	−90·4	−92·2
−50	−58·0	−59·8	−61·6	−63·4	−65·2	−67·0	−68·8	−70·6	−72·4	−74·2
−40	−40·0	−41·8	−43·6	−45·4	−47·2	−49·0	−50·8	−52·6	−54·4	−56·2
−30	−22·0	−23·8	−25·6	−27·4	−29·2	−31·0	−32·8	−34·6	−36·4	−38·2
−20	−4·0	−5·8	−7·6	−9·4	−11·2	−13·0	−14·8	−16·6	18·4	−20·2
−10	+14·0	+12·2	+10·4	+8·6	+6·8	+5·0	+3·2	+1·4	−0·4	−2·2
−0	32·0	30·2	28·4	26·6	24·8	23·0	21·2	19·4	+17·6	+15·8
+0	32·0	33·8	35·6	37·4	39·2	41·0	42·8	44·6	46·4	48·2
10	50·0	51·8	53·6	55·4	57·2	59·0	60·8	62·6	64·4	66·2
20	68·0	69·8	71·6	73·4	75·2	77·0	78·8	80·6	82·4	84·2
30	86·0	87·8	89·6	91·4	93·2	95·0	96·8	98·6	100·4	102·2
40	104·0	105·8	107·6	109·4	111·2	113·0	114·8	116·6	118·4	120·2
50	122·0	123·8	125·6	127·4	129·2	131·0	132·8	134·6	136·4	138·2

HECTOPASCALS TO INCHES

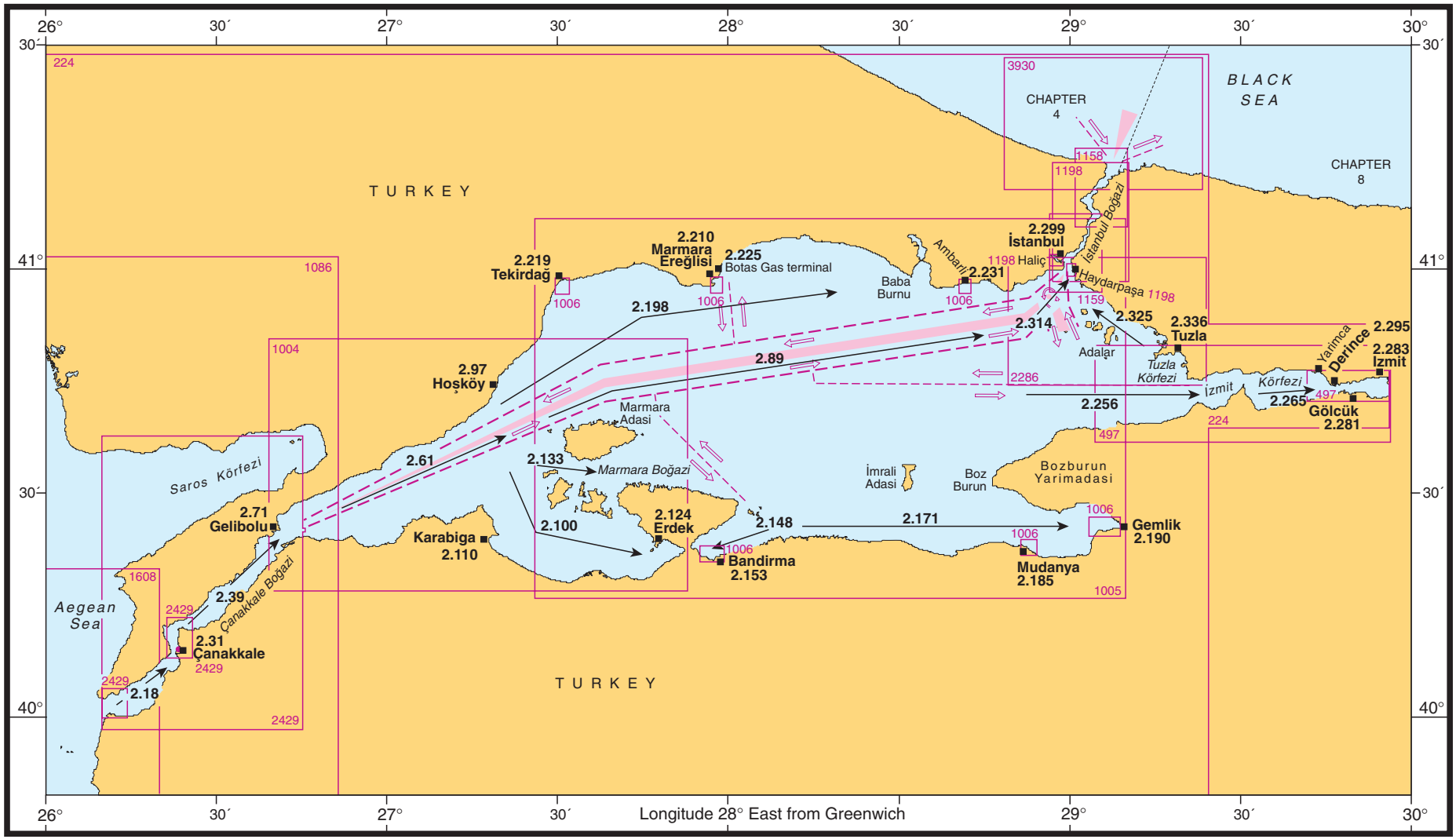


MILLIMETRES TO INCHES





Chapter 2 - Marmara Denizi



December 2003

CHAPTER 2

MARMARA DENIZI

GENERAL INFORMATION

Chart 224

Scope of chapter

2.1

1 This chapter covers Marmara Denizi (Sea of Marmara), the stretch of water that links the Mediterranean to the Black Sea. Marmara Denizi includes İzmit Körfezi (2.265) and the straits of Çanakkale Boğazı (Dardanelles) (2.14) and İstanbul Boğazı (Bosporus) (2.366).

Harbours

2.2

1 Amongst the harbours described in this chapter are the ports of:

Çanakkale (40°09′N, 26°24′E) (2.31).
Gelibolu (40°25′N, 26°40′E) (2.71).
Karabiga (40°24′N, 27°18′E) (2.110).
Erdek (40°24′N, 27°47′E) (2.123).
Bandırma (40°21′N, 27°58′E) (2.153).
Mudanya (40°23′N, 28°52′E) (2.185).

2 Gemlik (40°26′N, 29°09′E) (2.190).
Martas (40°58′N, 27°56′E) (2.209).
Tekirdağ (40°59′N, 27°31′E) (2.219).
Botaş (41°00′N, 27°59′E) (2.225).
Ambarlı (40°58′N, 28°41′E) (2.231).
Diliskelesi (40°46′N, 29°32′E) (2.285).
Yarımca—Tütüçiftlik industrial complex (40°45′N, 29°46′E) (2.291).
Derince (40°45′N, 29°50′E) (2.295).
Port of İstanbul (41°01′N, 29°00′E) (2.299).

Ports of entry

2.3

1 Çanakkale, Bandırma and İstanbul are ports of entry for vessels visiting Turkey.

Conservation

2.4

1 The Turkish Authorities have designated areas where diving and underwater activities are prohibited in order to preserve cultural and natural conditions.

Regulations for the passage of vessels through Marmara Denizi

Montreux Convention

2.5

1 The Montreux Convention, establishing the Regime of the Straits, was signed at Montreux on 20 July 1936. See Appendix I.

Traffic separation schemes

2.6

1 Traffic regulations, including traffic separation schemes for the N approach to İstanbul Boğazı, S approach to İstanbul Boğazı and the Sea of Marmara, Çanakkale Boğazı and the S approach to Çanakkale Boğazı are in force for passage through Marmara Denizi. These schemes have been approved by IMO and Rule 10 of the *International Regulations for Preventing Collisions at Sea (1972)* applies.

2 Turkish regulations require that all vessels navigating in the Marmara Denizi region to continuously monitor the broadcasts of the Turkish Straits Reporting System (TÜBRAP) and follow the station's instructions concerning the safety of navigation, life, property and the environment.

Signalling requirements

2.7

1 To enable vessels to pass through the Turkish Straits (2.8), details of the vessel and its cargo must be passed to the relevant traffic control centre at the planning stage of the voyage. This information is used for planning and safety purposes.

2 Vessels 150–200 m in length or whose draught is between 10 and 15 m shall submit SP–1 reports at least 24 hours prior to their entry into the straits.

Vessels 200–300 m in length or whose draught exceeds 15 m shall submit SP–1 reports at least 48 hours prior to entry.

Vessels over 300 m in length shall submit SP–1 reports at least 72 hours before entry.

3 Nuclear powered vessels (except military vessels) and those carrying nuclear cargo or waste and/or hazardous/dangerous cargo or waste, which intend passing through the straits must obtain permission from the Undersecretariat for Maritime Affairs at the planning stage of the passage and at least 72 hours prior to entry of the straits. Passage conditions will be laid down by the Administration to ensure safe passage. These vessels must comply with current IMO regulations for the transport of their particular cargo and shall exhibit Flag "B" by day and an all round red light at night.

4 **TÜBRAP**

Sailing Plan 1. Owners, Masters or Agents of vessels carrying dangerous cargo or which are over 500 grt shall submit report SP–1 at least 24 hours prior to entering the straits including requests for a pilot and details of any defects on board.

Vessels carrying dangerous cargo or which are over 500 grt and are departing from ports in İstanbul, Çanakkale or the Marmara region shall submit these reports 6 hours before departure.

5 **Sailing Plan 2.** Shall be submitted by VHF 2 hours before arrival at the entrance to the straits or when 20 miles from the entrance, whichever comes first. For vessels departing from İstanbul or Çanakkale, the report should be made 2 hours before departure by VHF or in writing.

6 All vessels longer than 20 metres are required to submit a position report to the appropriate traffic control station when 5 miles from the entrance to the Straits and also a call report when passing the following points: Mehmetçik (2.22), Çanakkale (2.31), Gelibolu (2.71), Ahirkapi (2.319), Kandilli (2.384) and Türkeli Feneri (2.374).

See *Admiralty List of Radio Signals Volume 6(3)* for full details of reports required.

Navigation Regulations in Çanakkale Boğazı and İstanbul Boğazı

2.8

1 The following rules are extracted from the *Maritime Traffic Regulations in the Turkish Straits (Turkish Publication 9000; The Strait of İstanbul, Sea of Marmara and the Strait of Çanakkale Routeing Guide).*

2 **Definitions.**

Turkish Straits: Strait of İstanbul, Strait of Çanakkale and the route from the Sea of Marmara and the coastline surrounding this area.

Large Vessel is over 200 m in length.

Deep Draught Vessel has a draught of 15 m or more.

3 **Maximum Speed.** The speed for vessels in the Straits is 10 kn over the ground. This speed may be exceeded if steerage way speed cannot be reached by informing the traffic control stations and taking care to avoid collisions and creating waves harmful to the surroundings.

Safe Air Draught. Vessels having an air draught of 58 m or more are prohibited from transiting İstanbul Boğazı. Vessels having an air draught of between 54 and 58 m are required to have the assistance of a tug or tugs as determined by the Port Authority to ensure that they keep their course.

4 **Distance between vessels.** Vessels passing through the Straits shall maintain a distance of at least 8 cables between each other.

Helming Light. If the bridge of a vessel is more than 150 m from the bow, a coloured light, visible from the bridge, shall be carried to allow visual appreciation of the movement of the bow when manoeuvring.

5 **Overtaking.** Vessels navigating in the Straits shall not overtake vessels proceeding before them except due to necessity.

If for any reason a vessel needs to reduce speed while navigating in the Straits, she shall first inform the vessels following her.

6 When a vessel needs to overtake a slower vessel in front of her, she shall first obtain a traffic report from the traffic control station, and if the situation is clear, shall inform the vessel to be overtaken. The overtaking shall if possible take place on one course.

Overtaking is prohibited between Kilitbahir Burnu and Nara Burnu in Çanakkale Boğazı (2.46) and the latitudes of Kanlica (41°06′·3N) and Vaniköy (41°03′·8N) in İstanbul Boğazı (2.376).

7 **Transit by day.** Vessels with a draught of 15 m or more and vessels 200 m LOA or more are recommended to navigate the straits by day.

A vessel navigating under her own power at a low speed must keep as far to the starboard side of her own traffic lane as possible and permit faster vessels to overtake her.

8 **Accidents and Breakdowns.** Vessels whose direct transit through the Straits has been interrupted due to accidents, breakdowns or compulsory anchoring shall immediately inform the traffic control station and request advice and instructions. After measures are taken by the relevant Port Authority for the safety of the vessel and area, the vessel shall take a pilot for the remainder of the passage.

9 Vessels which have to leave the traffic separation scheme to berth, moor to a buoy, anchor, turn back or due to breakdowns and other exceptional circumstances must inform the traffic control station and any other vessels which may be in the vicinity.

10 **One-way Traffic.** A vessel that is not able to comply with the requirements of the traffic separation scheme shall inform the Traffic Control Station well in advance. In such circumstance the Administration may temporarily suspend the particular traffic separation scheme, or sections of it, and inform the vessels sailing in the area and advise them which vessels cannot comply with the traffic separation scheme. The Administration may also temporarily suspend two-way traffic and regulate one-way traffic to maintain a safe distance between vessels.

11 **Waiting Areas.** When traffic in the Straits has to be temporarily suspended, vessels shall await the opening of Strait of İstanbul to maritime traffic in the Kilyos anchorage area on the Black Sea side and in the Ahirkape-Yeşilköy anchorage area in the Sea of Marmara; the opening of the Strait of Çanakkale in the Gelibolu-Sarköy area in the Sea of Marmara, and the SW of Bozcaada (See *Mediterranean Pilot Vol IV*) in the Aegean Sea, and in the anchorages situated in Karanlık harbour within the Strait of Çanakkale. Vessels should not anchor within 2½ cables of the shore when in these areas..

12 **Crossing Traffic.** Inter-city ferries and other shuttle boats crossing between the two sides of İstanbul Boğazı and Çanakkale Boğazı shall keep out of the way of vessels proceeding from N to S and from S to N in the traffic separation lanes, as much as possible by avoiding crossing situations. Nevertheless, if there is a risk of collision they shall take all the necessary precautions as required by the *International Regulations for Preventing Collisions at Sea (1972).*

Fishing and proceeding under sail or oars are prohibited throughout the traffic separation scheme.

13 **Currents.** When the surface current in the Strait of İstanbul exceeds 4 knots, or the northerly surface currents are caused by southerly winds, vessels carrying dangerous cargoes, large vessels and deep draught vessels with a manoeuvring speed of 10 knots or less, are not to enter the Straits, but wait until current speeds are 4 knots or less, or northerly currents have stopped. Vessels other than those mentioned above may proceed on passage with the use of tugs whose numbers and power will be determined by the Traffic Control Centre.

14 When the surface current in the Strait of İstanbul exceeds 6 knots or when strong northerly currents are caused by southerly winds, large vessels and deep draught vessels, whatever their speed, are not to enter the Straits but wait until current speeds are less than 6 knots, or the strong northerly currents have stopped.

15 At the Strait of Çanakkale, vessels, the difference between whose speed and the surface current is less than 4 knots, are not to enter the Strait, but wait for the current speed to diminish. Vessels, the difference between whose speed and the slowest surface current is less than 4 knots must use tugs for the passage through the Straits, the number of which will be determined by the Administration according to the tonnage of the vessel.

Information on the strength and direction of the currents will be provided by the Traffic Control Centre to the vessels concerned.

16 **Visibility.** Whenever visibility is 2 miles or less in any part of the Straits, vessels passing through the Straits must keep their radar turned on constantly to provide a radar picture. On vessels with two radars, one of them be assigned for the Pilot's use.

When visibility in the Straits is 1 mile or less, maritime traffic will be permitted in one direction only. Vessels carrying dangerous cargoes and large vessels shall not enter the Straits.

When visibility in the Straits is less than 5 cables, the traffic flow in the Straits will be closed in both directions.

17 When visibility in the Straits is suitable for navigation, the arrangement and order of entering the Straits will be determined and notified to waiting vessels and persons concerned by the Traffic Control Centre.

Quarantine regulations

2.9

1 Health inspections in Çanakkale Boğazı may be carried out at the entrance from the Aegean Sea just before the pilot embarkation position or after leaving the Strait and passing the pilot disembarkation position, at locations which will not affect navigational safety.

2 Health inspections in İstanbul Boğazı may be carried out just before pilot embarkation positions, at locations which will not affect navigational safety.

Pilotage

2.10

1 Pilotage through Çanakkale Boğazı and İstanbul Boğazı is not compulsory except in the circumstances listed below. However, the constricted passages of Çanakkale Boğazı and İstanbul Boğazı which contain a high density of traffic, strong currents and a multitude of shore lights which tend to obscure navigational aids and vessels with low powered anchor lights, can make navigation hazardous. In view of these navigational problems and the increasing number of accidents with their consequent risks to life, property and the environment, the Turkish authorities most strongly advise the use of a pilot when transiting these waterways. This advice particularly applies to large vessels, and for other vessels at night, in bad weather or low visibility.

2.11

1 **Pilotage is compulsory** for all foreign vessels passing through Çanakkale Boğazı and İstanbul Boğazı that are bound for or leaving Turkish ports situated in Marmara Denizi. Vessels carrying LNG are required to carry two pilots during the passage through Çanakkale Boğazi.

2.12

1 Due to heavy demand for pilots, 24 hours prior notice should be given.

Vessels transiting Marmara Denizi from the Black Sea to the Aegean should inform the authorities whether a pilot is required for İstanbul Boğazı only, or for İstanbul Boğazı and Çanakkale Boğazı.

See *Admiralty List of Radio Signals Volume 6(3)* for details.

2.13

1 **Pilot stations**. The following pilot stations are situated in Marmara Denizi:

Çanakkale Boğazı:	
Mehmetçik (2.20)	40°02′·6N, 26°11′·4E
Gelibolu (2.64)	40°25′N, 26°41′E
İzmit Körfezi:	
Darica (2.269) (For all ports)	40°45′N, 29°24′E
İstanbul Boğazı:	
İstanbul (2.305)	41°00′·7N, 29°00′·6E
Kavak (2.396)	41°10′·6N, 29°04′·4E

2 Pilots board as follows:

N entrance of Çanakkale Boğazı: 3 miles NE of Gelibolu Light (40°24′·6N, 27°41′·0E) and pilots disembark in position 2·5 miles ENE of Gelibolu Light.

S entrance of Çanakkale Boğazı: 3 miles SW of Mehmetçik Light (40°02′·7N, 26°10′·5E) and pilots disembark in position 2½ miles WSW of Mehmetçik Light.

3 **İzmit Körfezi**: 7 cables S of Yelkenkaya Burnu Light (40°45′N, 29°21′E).

N entrance of İstanbul Boğazı: 3 miles NNE of Çali Light (41°12′·3N, 29°06′·7E) and pilots disembark in position 3 miles NE of Fil Light (41°12·2N, 29°07′·0E).

4 **S entrance of İstanbul Boğazı**: 5 miles S of Ahirkapi Light (41°00′·4N, 28°59′·2E) and pilots disembark in position 5 miles SW of Ahirkapi Light.

All pilot stations are equipped with VHF and listen on Channel 16.

See *Admiralty List of Radio Signals Volume 6(3)* for details.

ÇANAKKALE BOĞAZI

GENERAL INFORMATION

Charts 1608, 2429, 1004

Topography

2.14

1 Çanakkale Boğazı leads NE from the Aegean. The NW shore of this strait is formed by the SE side of Gelibolu Yarımadası and its SE shore is part of Asiatic Turkey.

There is a marked difference in the conformation of the two shores of the strait; its NW side is, for the greater part, steep-to, but its SE side is fringed, almost throughout its length, by a shallow bank which extends over 5 cables offshore in some places.

2 The NW side is, in general, high and broken with steep ravines. The hills are mostly covered with scrub. The SE side is comparatively flat and within it a wide plain, which is watered by numerous springs and is fertile and well cultivated, extends 30 miles SE.

Natural conditions

2.15

1 **Currents.** See information on the chart and (2.21), (2.41) and (2.65).

2.16

1 **Wind and weather.** Winds from N and NE are the most frequent. In July and August this N or NE wind, known as the "*meltem*", blows with great persistence during the day. In some years it begins in late June and may continue until September.

2 From October to March, winds blow from between SE and W and occur rather frequently in some years; these winds are often strong and squally and may sometimes reach gale force. When strong they are usually accompanied by low cloud and rain, and when light, there may be fog.

Navigation rules in Çanakkale Boğazı

2.17

1 See 2.8.

ÇANAKKALE BOĞAZI — SOUTH WEST ENTRANCE TO NARA GEÇIDI

General information

Charts 1608, 2429

Route

2.18

1 From the SW entrance (40°01′N, 26°10′E), which is 2 miles in width, the route leads 13 miles ENE and then NE to the S entrance of Nara Geçidi.

Traffic regulations

2.19

1 **Anchoring, landing, diving and fishing** are prohibited in an area at the SW entrance to Çanakkale Boğazı. The limits of this area are shown on the chart.

Entry is prohibited in an area, shown on the chart, which lies off Kumkale Burnu (2.24). An additional area into which entry is prohibited lies off Umurbey Iskelesi (2.57).

2 **Anchoring is** prohibited in the area, shown on the chart, at the S end of Nara Geçidi, between Çanakkale (40°09′N, 26°24′E) and Kilitbahir (2.24).

Pilotage

2.20

1 See 2.10 to 2.13.

Currents

2.21

1 **South west entrance.** The WSW current occupies the full width of the strait between Kumkale Burnu (2.24) and Seddülbahir. The average rate is about 1½ kn, but can reach about 3 kn, particularly on the Asiatic side.

2 **Kumkale Burnu to Nara Geçidi.** Apart from the vicinity of Kepez Burnu (40°06′N, 26°22′E) (2.30), where the current fills the width of the strait, the main current lies nearer to the NW side, flowing at a rate of between 2 and 3½ kn. The higher rate is usually found in the approaches to Nara Geçidi and the lower rate between Abide Burnu (2.24) and Karanfil Burnu (2.24).

3 **Eddies.** A large eddy system stretches along the SE shore from Kumkale Burnu to the N entrance of Kepez Koyu. This counter current has a strength of over ½ kn up to a mile offshore, abreast Kumbağı Burnu (40°05′N, 26°22′E), an almost constant eddy also occupies Sarısığlar Liman (2.30).

4 Relatively minor eddies are found on the NW shore, the widest being that which fills Anıt Limanı. Eddies are also found in the bights immediately NE of Abide Burnu and SW of Karanfil Burnu. A narrow eddy extends about 2½ miles SW from Kilitbahir (2.24) about 1½ cables offshore at its widest.

Principal marks

2.22

1 **Landmarks**

Mehmetçik Burnu Lighthouse (white stone tower and dwelling, 25 m in height) (40°03′N, 26°10′E), fitted with a radar reflector and may be identified by the white cliffs of Mehmetçik Burnu.

2 Memorial (2½ cables ENE of Mehmetçik Burnu Light). This obelisk which stands on the highest point of the S end of the peninsula, is the British War Memorial to those who fell during the Gallipoli campaign of 1915.

Memorial (40°03′·5N, 26°12′·7E). This monument, consisting of a white 8-sided tower, 22 m in height, is the French War Memorial.

3 Memorial (40°03′N, 26°13′E). This monument, consisting of four square pillars topped by a flat stone roof is the Turkish War Memorial and is the most prominent object visible from seaward when approaching Çanakkale Boğazı.

Alçi Tepesi (40°06′N, 26°15′E), which first appears as an isolated conical peak.

4 Monument (40°08′N, 26°21′E), which is small but conspicuous.

Çanakkale Kalesi (40°09′N, 26°24′E). A massive quadrangular stone fort with a central keep that is floodlit at night.

5 **Major lights:**

Mehmetçik Burnu Light — as above.

Kumkale Burnu Light (white concrete tower, 4 m in height) (40°01′N, 26°12′E)

Kilitbahir Light (white metal framework tower, 4 m in height) (40°09′N, 26°23′E).

Other navigational aids

2.23

1 **Racon:**

Mehmetçik Burnu Light — as above.

See *Admiralty List of Radio Signals Volume 2* for details.

Directions

(continued from Mediterranean Pilot Vol IV)

2.24

1 From the vicinity of 40°01′N, 26°10′E the NE-bound lane of the traffic separation scheme leads for about 13 miles through Çanakkale Boğazı to the S end of Nara Geçidi, passing (with positions from Kanlıdere Burnu Light (40°06′N, 26°22′E)):

2 S of Mehmetçik Burnu (9¼ miles WSW). The middle of three steep white points at the SW end of Gelibolu Yarımadası. A light (2.22) and signal station stand on the headland. Thence:

3 N of Kumkale Burnu Light (9¼ miles SW) (2.22) which stands on the W battery of a fort situated on this low salient point. There is a signal station on the headland. A conspicuous tower stands on the point close SE of the light structure. Thence:

4 S of Abide Burnu (7¼ miles WSW) a bold steep white point. The ruins of a battery, and a cemetery with the Turkish War Memorial (2.22) stand on this headland. Thence:

SE of Karanfil Burnu Light (white metal framework tower, 10 m in height) (1¾ miles WNW). Thence:

NW of Kanlıdere Burnu Light (round stone tower and dwelling, 10 m in height), Kepez bank extends up to 3 cables offshore close S of the headland. Thence:

W of Sarısığlar Light (2¾ miles NE) (2.30), thence:

5 E of Kilitbahir Light (3 miles NNE) (2.22) which is situated on the E angle of Namazgâh fort, 2 cables S of Kilitbahir Kalesi (2.44). Harman Kayası, a rock over which the exact depth is unknown, lies on the edge of a bank 2 cables SW. This rock is marked by a buoy (conical, spherical topmark, red, white and black). Thence:

6 W of Çimenlik Kalesi Light (white metal framework mast, 14 m in height) (3½ miles NNE). The light stands on the NW extremity of the fort.

Çanakkale Boğazi – Mehmetçik Burnu Lt and British War Memorial (2.22.1)

(Original dated 2000)

(Photograph – Crown Copyright)

Çanakkale Boğazi – French and Turkish War memorials from S (2.22.2)

(Original dated 2000)

(Photograph – Crown Copyright)

Çanakkale Boğazi – Monument SW of Kilitbahir from SE (2.22.3)

(Original dated 2003)

(Photograph – A. McDonald mv Doulos)

Çanakkale Boğazi – Kilitbahir Lt & Forts (ru) (2.24)

(Photograph – A. McDonald mv Doulos) *(Original dated 2003)*

7 **Caution.** When closely skirting Kanlıdere Burnu to avoid the strength of the current, caution is necessary as Kepez Bank is steep-to and vessels have frequently stranded there.

2.25

1 **Useful marks:**

Radar mast (39°59′·4N, 26°10′·8E).

Radar mast (40°05′·2N, 26°22′·2E).

(Directions continue for the NE part of Çanakkale Boğazi at 2.46)

Anchorages and harbours

Anıt Limanı

2.26

1 Anıt Limanı is entered between Kale Burnu (40°03′N, 26°11′E) and Abide Burnu (1¼ miles ENE) (2.24). A large part of the bay is encumbered by a bank with depths of less than 5 m, which extends up to 5 cables offshore on the W side of the bay.

2 Anıt Limanı Light (white concrete tower, 5 m in height), fitted with a radar reflector, stands near the SE edge of the bank.

Mooring buoys lie at the head of the bay.

Anchorage for small craft in the NE corner of the bay in depths of 2 to 5 m, mud.

Seddülbahir

2.27

1 A small protected basin, which is used by pilots, lies close NE of Kale Burnu. Lights (metal columns) mark the entrance and other lights (concrete towers and columns, 4 m in height) mark a rocky patch ¾ cable ESE.

Local knowledge is required to enter the basin.

İntepe Limanı

2.28

1 İntepe Limanı lies 5 miles ENE of Kumkale Burnu.

Anchorage, the limits of which are shown on the chart, may be obtained in depths of 20 to 68 m. A rock, with a depth of 6·1 m over it, and a mooring buoy lie in the SW corner of the anchorage.

2 **Landing** is possible in one or two indentations in the coast and the remains of a pier lie about 2 miles NNE of the village of İntepe.

Caution. This bight does not provide safe anchorage during strong N winds, but winds are often lighter here than the opposite side of the channel.

Kepez Koyu

2.29

1 Kepez Koyu is entered immediately S of Kanlıdere Burnu (2.24).

Anchorage is obtainable, as shown on the chart, 3½ cables S of Kanlıdere Burnu Light (2.24) within the 10 m depth contour.

Sarisiğlar Liman

2.30

1 **Topography.** Sarisiğlar Limanı is entered between Kepez Burnu (40°06′N, 26°22′E) and Sari Çayı (2½ miles NNE). The town of Çanakkale lies to the N of this river.

2 The shores of the bay are fringed by a sand and mud bank which, with depths of 5 m over it, extends up to 5 cables offshore in the S part of the bay and becomes narrower in the N part, where its edge is marked by a light-beacon (W cardinal) abreast Hamidiye Fort.

A jetty lies 3½ cables E of Kepez Burnu at the entrance to Kepez River.

3 **Anchorage** may be obtained in the middle of the bay in depths of 24 m and closer inshore in depths of about 9 m. Vessels carrying dangerous cargoes may anchor in this bay with the permission of the harbour authorities.

Caution. A wreck, with a depth of 7·6 m over it, lies 1½ miles NE of Kepez Burnu.

Çanakkale

Chart 2429, plan of Çanakkale

General information

2.31

1 **Position.** Çanakkale (40°09′N, 26°24′E) is situated at the S end of Nara Geçidi on a promontory that extends from the Asiatic shore between the mouth of the Sarı Çayı and Dardan Limanı.

2 **Topography.** The town stands on the N bank of Sarı Çayı, a river which in the winter carries a lot of sand and mud and gives a yellowish colour to the strait. Behind the town the land forms a plain, but about 3 miles inland, mountains on either side of the river rise to heights of about 460 m.

The port is situated on the N side of the town on the S shore of Dardan Limanı. This bay is also part of the inner harbour area.

3 **Function.** Çanakkale, which in 2000 had a population of 75 800, is a small commercial port and seat of local government.

Traffic. In 2002 the port was used by 68 vessels with a total deadweight of 1 062 524 tonnes.

It is a port of entry.

2.32

1 **Port limits:**

Outer harbour. The NE limit of Çanakkale outer harbour lies between Gocuk Burnu (40°17′N, 26°34′E) and Karakova Burnu (2½ miles NNE), as shown on the chart. The W limit of the outer harbour is to seaward of the entrance to Çanakkale Boğazı and is described in *Mediterranean Pilot Vol IV.*

2 **Inner harbour.** The inner harbour consists of the waters of Dardan Limanı. Its W limit is a line between Çimenlik Kalesi Light and Mecidiye Tabya Burnu (1 mile NNE).

Port Authority of Çanakkale, Başkanlığı Çanakkale.

Limiting conditions

2.33

1 **Longest and deepest berth.** Beton Sehir İskelesi. See 2.35.

Maximum size of vessel. 109 m LOA.

Climatic table. See 1.200.

Arrival information

2.34

1 **Port radio.** See *Admiralty List of Radio Signals Volume 6(3)* for details.

Notice of ETA. 24 hours in advance. Vessels with dangerous cargoes, 48 hours in advance.

Anchorage. Vessels of less than 100 grt may anchor in the inner harbour. Larger vessels should anchor in Poyraz Koyu (2.54).

2 **Pilotage** is compulsory for all foreign vessels. Pilots board off Mehmetçik Burnu or in bad weather off Kepez Koyu or Gelibolu as appropriate. See 2.10.

Tugs are available and their use is compulsory for vessels over 1500 grt. Ship's lines are used.

Harbour layout and berths

2.35

1 **Layout.** A commercial pier, ferry terminal, fishing shelter and yacht harbour are situated on the SE shore of Dardan Limanı.

Main alongside berth. Beton Sehir İskelesi, 3 cables NNE of Çimenlik Kalesi Light, is 90 m long and has depths alongside of 6 to 7 m.

2 Gümrük İskelesi and Çimento İskelesi, two piers, lie 0·6 and 1·3 cables SW of Beton Sehir İskelesi respectively.

Anchorage and moorings are available in Dardan Limanı.

Port services

2.36

1 **Repairs:** minor repairs can be carried out.

Other facilities: hospitals; Ro-Ro berth.

Supplies: fuel oil by barge or road tanker; fresh water; provisions.

Communications: ferry to Eceabat (2.53) and airport 2 km.

Small craft

2.37

1 A harbour for small craft and yachts is situated to the N of the commercial port on the S side of Dardan Limanı. It is protected by a breakwater at the head of which stands a light (metal pylon, 4 m in height).

2 **Berths.** Stern or bow-to the yacht pier. Bottom is mud, good holding.

Repairs: minor repairs can be carried out.

Supplies: fuel; fresh water; provisions.

Other names

2.38

1 Karakulak Burnu (40°04′N, 26°21′E).

Pirnali Burnu (40°03′N, 26°21′E).

ÇANAKKALE BOĞAZI — NORTH-EAST PART INCLUDING NARA GEÇIDI

General information

Chart 2429 and plan of Nara Geçidi

Route

2.39

1 The route through the NE part of Çanakkale Boğazı leads N for 4 miles through Nara Geçidi and then NE for 18 miles to Gelibolu Geçidi.

Pilotage and traffic regulations

2.40

1 See 2.10 and 2.8 respectively.

Entry is prohibited into an area close inshore, as shown on the chart, between Çanakkale and Nara Burnu.

Currents

2.41

1 **Nara Geçidi.** At the S entrance to Nara Geçidi between Çanakkale and Kilitbahir, the current fills the width of the strait, where it runs less strongly in the middle than the sides. Off Çanakkale the current has reached a rate of 5 kn.

2 At the N entrance to Nara Geçidi, off Nara Burnu (2.46), the current sets WSW across the bank. It occupies the width of the strait to begin with but misses Poyraz Koyu (2.54) where it leaves a small eddy. On striking the W shore near Eceabat (2.53) it is deflected SSW towards Çanakkale, leaving three eddies along the E shore, the N in Nağra Limanı (2.52) and the S in Dardan Limanı (2.31).

2.42

1 **Nara Burnu to Uzun Burun.** Between Nara Burnu and Uzun Burun (6 miles NE), the main current has a rate of about 1½ kn. Along the SE shore an eddy, which extends 1 mile offshore, lies in the bight NE of Kayaüstü (2.56) resulting in a counter current 3 to 5 cables off the mouth of Yapildak Deresi, which can occasionally exceed ½ kn.

Along the NW shore there is a small eddy in Akbaş Limanı.

2.43

1 **Uzun Burun to Dalyan Burnu.** Between Uzun Burun and Dalyan Burnu (10 miles NE) (2.48), the current, which sets at about 1½ kn, usually keeps close along the NW shore, filling the bight NE of Uzun Burun.

2 Along the SE shore a large eddy system occupies the bight SW of Gocuk Burnu, the counter current being considerable off Kunduzkaya Burnu and weakening towards Gocuk Burnu. A weak and irregular eddy may also be found in Lapseki Limanı (2.59).

Along the NW shore the only eddy of note is that which fills Cumali Liman (2.58).

Principal marks

2.44

1 **Landmarks:**

Maltepe (40°14′N, 26°21′E). A conical hill with the appearance of a large tumulus.

Kilitbahir Kalesi (40°09′N, 26°23′E), a stone fortress with a tall central keep standing on sloping ground, which rises directly from the strait.

Bakacak Tepesi (40°15′N, 26°27′E) which from most directions appears as a distinctive cone.

2 **Major light:**

Gelibolu Light (40°25′N, 26°41′E) (2.66).

Other navigational aids

2.45

1 **Racon:**

Gelibolu Light — as above.

See *Admiralty List of Radio Signals Volume 2* for details.

Directions

(continued from 2.24)

Nara Geçidi

2.46

1 From a position between Kilitbahir Light and Çimenlik Kalesi Light (2.24) at the S entrance of Nara Geçidi, the N-bound lane of the traffic separation scheme leads for about 3 miles to the N part of the narrows, passing (with positions from Nara Burnu Light (40°12′N, 26°24′E)):

2 E of Kilitbahir Kalesi (3¼ miles SSW), thence:

E of Değirmen Burnu (2½ miles SSW), a small but prominent earthwork which stands close to the water's edge. Thence:

3 W of Mecidiye Tabya Burnu (2 miles S). A fort stands on the point. Thence:

W of Kösetabya mole (1¼ miles S). A ruined stone fort stands within the root of the mole. Thence:

E of Eceabat (2 miles WSW), thence:

4 W of Nara Burnu Light (white metal framework tower, 6 m in height) which stands on the bank off Nara Burnu, a long low sandy point which is distinguished by Nağra Kalesi, a large square fort standing within it. A light-buoy (W cardinal) 3 cables W of the light, marks a 10 m shoal near the extremity of the bank that extends from the point. The bank appears to extend farther W, but this appearance is due to discolouration. See 2.41.

Thence the track leads NE for about 1½ miles through the N entrance of Nara Geçidi, passing (with positions from Nara Burnu Light):

5 SE of Poyraz Burnu Light (white concrete tower, 6 m in height) (1¼ miles WNW).

Useful marks:

2.47

1 **Eceabat Leading Lights:**

Front light (white diamond on framework tower, 11 m in height) (2¼ miles WSW from Nara Burnu Light).

Rear light (similar structure, 13 m in height) (132 m from front light).

The alignment (242°) of these lights leads through the SW-bound traffic lane very close to the separation line, as shown on the chart.

2 Radar mast (40°12′·4N, 26°22′·2E).

North east part of Çanakkale Boğazı

2.48

1 From the N entrance to Nara Geçidi the NE-bound lane of the traffic separation scheme leads for about 17 miles to the SW end of Gelibolu Geçidi, passing (with positions from Gocuk Burnu (40°17′N, 26°34′E)):

SE of Akbaş Burnu Light (white concrete tower, 5 m in height) (7½ miles SW) which stands at the water's edge at the foot of Akbaş Burnu, a steep, bluff point. A war cemetery stands on the N side of Akbaş Limanı (2.55). Thence:

2 NW of Kayaüstü Burnu (low, white and rocky point) (7¼ miles SW). Dalyan Bankı with depths of less than 5 m over it and which is composed of oyster shells, extends up to 5 cables offshore in the vicinity of this point. Thence:

NW of Kabageven Burnu (6½ miles SW), which is a low point formed of white rock. The coast in this vicinity is low and, in places, swampy in winter. Thence:

3 SE of Uzun Burun Light (white metal framework tower) (3¾ miles WSW) standing on a very low point, which is fringed by a narrow bank with depths of less than 5 m over it. Thence:

NW of Kunduzkaya Burnu (1¾ miles SSW) (2.49), thence:

NW of Gocuk Burnu Light (white metal mast on white square tower, 9 m in height) which stands on a low, flat, rounded headland. Thence:

4 SE of Karakova Burnu Light (white metal column, 10 m in height) (2½ miles NNE) standing close to the water's edge close NE of Karakova Burnu, which is a low sandy point. Thence:

5 SE of Kanarva Burnu Light (white concrete tower, 4 m in height) (5¼ miles NNE) standing on a small island which lies about 90 m offshore, close S of Kanarva Burnu, a low point. Within this point lies a plain at the entrance to two valleys between which stands Akyar Tepesi, with white and yellow chalk cliffs. Thence:

6 W of Dalyan Burnu (7½ miles NE), which forms the W extremity of a low plain extending from the foot of the hills inland.

2.49

1 **Useful marks:**

Kunduzkaya Burnu (40°15′N, 26°33′E), which is a headland of white rock, 21 m high, that is the only rocky point in the vicinity.

A prominent mosque and minaret standing in Lapseki (2.59).

2 Radar mast (40°16′·7N, 26°34′·4E).

(Directions continue for Gelibolu Geçidi and the NE approaches to Çanakkale Boğazi at 2.67)

Anchorages and harbours

Kilitbahir

2.50

1 A mole with an elbow forms a small harbour (40°09′N, 26°23′E). There is a boat camber, with depths of about 1·5 m, near the castle.

Kösetabya

2.51

1 A small harbour is formed by an angled mole which extends 165 m N from the point near the fortress at Kösetabya (40°11′N, 26°24′E). Two dolphins, from which lights are exhibited, stand about 50 m N and S of the head of the mole.

Nağra Limanı

2.52

1 Nağra Limanı is entered between Kösetabya (2.51) and Nara Burnu, about 1 mile N. On the shore of the bay, a short distance E of Nara Burnu, is a large yellow building

and about 5 cables SE of the same point is an old redoubt, which can be seen from the bay, and is a good mark.

Piers. There are a number of piers in the N part of the bay. Two of these piers have depths of about 5 m off their outer ends.

2 **Anchorage and moorings.** Good anchorage can be obtained in depths of 18 to 29 m, between 2 and 4 cables offshore. The best berth is about 7½ cables S of Nara Burnu.

There are several mooring buoys in the S part of Nağra Limanı.

3 **Currents.** The whole of Nağra Limanı lies within the N-going counter-current. The main current sets strongly WSW over the outer end of the bank off Nara Burnu.

Eceabat

2.53

1 **General information.** Eceabat (40°11′N, 26°22′E) harbour consists of N and S breakwaters which protect a central pile pier. It is the European terminal for the ferry service with Çanakkale.

2 **Berths.** The ferry uses the central pier. Yachts can berth bow-to near the extremity of the N breakwater. Farther in, the harbour is shallow and encumbered with underwater debris. The harbour is uncomfortable with prevailing winds which set up a surge inside.

Lights (grey framework towers, 3 m in height) are exhibited from the head of each breakwater.

3 **Anchorage** is obtainable about 2 cables offshore in depths of 31 m, however, this anchorage is not recommended as currents in the vicinity are variable.

Poyraz Koyu

2.54

1 Poyraz Koyu is entered between 4 and 9 cables NE of the N end of Eceabat. The bare slopes of Kakma Dağı (130 m high) and Poyraz Tepesi (143 m high) rise steeply from the SW and NE shores, respectively, of the bight.

Jetties. There are a number of jetties at the head of the bight.

Akbaş Limanı

2.55

1 Akbaş Limanı is entered between Akbaş Burnu (40°13′N, 26°25′E) (2.48) and a low point about 7 cables NE. Its N shore, through which Kayaaltı Dere enters the bay, is low and sandy.

Kayaüstü Burnu to Kunduzkaya Burnu

2.56

1 **Anchorage** is obtainable, sheltered from S winds, off the coast between Kayaüstü Burnu (40°12′N, 26°27′E) (2.48) and Kunduzkaya Burnu (5½ miles NE) (2.49) clear of a submarine cable which lands at Kayaüstü Burnu and a wreck 2 miles ENE of the same point.

Saltık Limanı

2.57

1 Saltık Limanı is entered between Kunduzkaya Burnu (40°15′N, 26°33′E) and a low sandy point 7 cables NNE. Umurbey İskelesi is situated at the head of the bight.

Pier. A pier with a depth of 5·5 m at its outer end extends from the N shore of the bight, about 1¾ cables S of the NE entrance point. A light is exhibited at the pierhead. Entry into the area shown on the chart surrounding the pier and adjacent waters is prohibited without the permission of the naval authorities.

2 **Anchorage** is obtainable. A good berth, in addition to that shown on the chart, is in depths of 25 m, mud, with Gocuk Burnu Light just open NNW of the low sandy NE entrance point.

Caution. Vessels should be careful not to proceed too far into Saltık Limanı as depths of less than 5 m extend up to 2½ cables from its head and then increase abruptly to 13 m.

Cumalı Limanı

2.58

1 Cumalı Limanı is entered close S of Karakova Burnu (2.48). The W side of the bay is moderately high, but its N and E sides are low. A bank with depths of less than 5 m extends 2 cables from the head of the bay.

2 **Shipyard.** A small shipyard is situated in the bay.

Anchorage. Good anchorage, protected from NE winds, can be obtained in the middle of the bay in depths of 13 to 16 m, 3 cables offshore.

Lapseki Limanı

2.59

1 Lapseki Limanı is entered close S of Dalyan Burnu (40°22′N, 26°41′E) (2.48). The town of Lapseki stands on slightly rising ground on the S shore of the bay and is the Asiatic terminal of the ferry service to Gelibolu.

A jetty used by the ferry extends from the S shore of Lapseki Limanı.

2 Lights (concrete towers, 6 m in height) are exhibited at the entrance to a fishing harbour 6 cables NE of the jetty.

3 **Anchorage.** Good anchorage, sheltered from NE winds is obtainable, but caution is necessary as a bank with depths of less than 5 m fronts the head of the bay and extends as much as 3 cables from the E and S shore. The NE shore is steep-to, a light-buoy (W cardinal) is moored 1½ cables W of Dalyan Burnu.

The best berth is in depths of 34 m about 6 cables SSW of Dalyan Burnu. In this position there is slack water and good protection from the swell from Marmara Denizi.

Other names

2.60

1 Cam Burnu (40°10′N, 26°22′E).
Kümren Burnu (40°14′·5N, 26°32′·6E).
Musa Bankı (40°13′N, 26°31′E).

NORTH-EAST APPROACHES TO ÇANAKKALE BOĞAZI INCLUDING GELIBOLU GEÇIDI

General information

Charts 2429, 1004

Route

2.61

1 The route through the NE approaches to Çanakkale Boğazi leads from the S end of Gelibolu Geçidi (40°23′N, 26°40′E) to the vicinity of 40°35′N, 27°17′E, 30 miles ENE.

Regulations

2.62

1 **Anchoring and fishing** are prohibited in the E part of Gelibolu Geçidi within the area shown on the chart.

Landing is prohibited between the mouth of Koyun Deresi (40°28′N, 26°44′E) and the mouth of Eğrek (Sazlı) Deresi, 12 miles ENE.

Fish weirs

2.63

1 Coastal traffic should keep a good lookout between Şarköy (40°37′N, 27°07′E) and Hoşköy (11 miles NE), due to the presence of numerous fish weirs.

Çanakkale Boğazi – Gelibolu Lt, Control Sta & Çankaya Br. SS (2.67)
(Original dated 2003)
(Photograph – A. McDonald mv Doulos)

Pilotage and traffic regulations

2.64

1 See 2.8 and 2.10–2.13.

Currents

2.65

1 **Gelibolu Geçidi.** The current through Gelibolu Geçidi normally runs at a rate of between 1 and 1½ kn and is strongest in mid-channel.

The eddy which occupies Gelibolu Limanı is most extensive on the NW shore of Çanakkale Boğazi. There is a smaller eddy in Bağçeşme Limanı (2.71), NE of the town and in Çardak Limanı (2.77) on the SE shore 2½ miles SSE of the town.

2 **Çankaya Burnu to Hoşköy Burnu.** The current along the coast between Çankaya Burnu (40°25′N, 26°42′E) and Höşkoy Burnu (34 miles ENE) sets predominantly between SW and W at ½ to 1 kn, occasionally reaching a strength of 1¼ kn. It may sometimes, especially W of Eriklice Burnu (2.69), set towards the coast.

Principal marks

2.66

1 **Landmarks:**

Radio mast (black and white framework) (40°28′N, 26°43′E) which stands 5 cables inland on a hill.

Doluca Tepesi (40°41′N, 27°11′E), which is a peak 689 m high that has a remarkable shape and is comparatively isolated. A tower stands on its summit.

Karaburun (40°28′N, 27°17′E). This headland is very prominent.

2 **Major lights:**

Gelibolu Light (white stone tower and dwelling, 9 m in height) (40°28′N, 26°41′E).

Hoşköy Light (40°42′N, 27°18′E) (2.94).

Directions

(continued from 2.48)

Gelibolu Geçidi

2.67

1 From a position W of Dalyan Burnu (40°22′N, 26°41′E) the NE-bound lane of the traffic separation scheme leads through Gelibolu Geçidi for about 6 miles, passing (with positions from Gelibolu Light (40°25′N, 26°41′E)):

2 NW of Çardak Bankı (1½ miles SE) a shoal with depths of between 6·2 and 8·5 m over it, which is steep-to and extends 4 cables NNW and 7 cables NE of Çardak Burnu Light (white metal mast on dwelling, 9 m in height). A 6·2 m depth on this bank lies 5 cables N of the light, and a light-beacon (W cardinal, 5 m in height) is situated 4 cables N of the light. Thence:

3 SE of Gelibolu Light, which stands on the E side of the promontory on which the town of Gelibolu (2.71) is built. The shore of this promontory is rocky. Thence:

4 SE of Çankaya Burnu (1 mile NE). A rocky point about 25 m high, which forms the NE entrance point to Bağçeşme Limanı. Foul ground, over which the sea is usually discoloured, extends about 1 cable S from Çankaya Burnu. A signal station stands on the point. Thence:

5 NW of Zincirbozan Light (white concrete tower, 10 m in height) (3½ miles ENE) marking the N edge of Zincirbozan Bankı, a shoal with depths of less than 9 m over it, which extends about 11 cables offshore. Near its N edge there are several patches with depths of between 5·5 and 7·3 m, outside which, depths increase rapidly from 9 m to between 27 and 46 m. Its NW edge is steep-to.

2.68

1 **Useful marks:**

Domed mosque (40°22′·4N, 26°43′·0E) in Cardak.

Radar mast (40°24′·2N, 26°46′·3E).

North east approaches to Gelibolu Geçidi

2.69

1 From a position NW of Zincirbozan Light, the ENE bound lane of the traffic separation scheme leads for 25 miles through the NE approaches to Gelibolu Geçidi, passing (with positions from İnce Burun Light (40°33′N, 27°00′E)):

NNW of Eskifener Tepesi (13½ miles SW), an isolated hill 29 m high on which stand the ruins of a lighthouse. A cliff forms its seaward face. Thence:

2 SSE of Doğanarslan Bankı (7¼ miles WSW), marked by a light-beacon (S cardinal). This shoal consists of sand and rock and has depths of less than 5·5 m over it. The shoal extends 6½ cables from the coast and in 1966 a rock with a depth of 1·8 m over it was reported near the outer edge of the bank, 6½ cables SSE of Doğanarslan Burnu. This headland consists of yellow sloping cliffs, 29 m high, and can only be distinguished as a point from close inshore. Thence:

3 NNW of Kavaklı Burnu (10 miles SSW), a point 21 m high. Bozburun Bankı, with depths of 5 m over it, lies about 1 mile WNW of Kavaklı Burnu and up to 6 cables offshore. Thence:

NNW of Bodrum Burnu (8¼ miles SSE), which is a white rocky point, 25 m high, forming the N entrance point to Kemer Limanı (2.78). Thence:

4 SSE of İnce Burnu Light (white concrete tower, 10 m in height) which stands on İnce Burnu, a cliffy point, 20 m high. A bank with depths of less than 9 m extends 5 cables S from the point. A 5·5 m rocky patch lies close to its outer edge 6 cables WSW of the light. Thence:

5 NNW of Aksaz Burnu (9½ miles SE) which is a bold and cliffy headland, thence:

SSE of Eriklice Burnu (9½ miles ENE), which is a low and sandy point. A coastal bank with depths of less than 6 m extends about 2 cables from the point and a 1·8 m patch lies close within the edge of the bank 3 cables E of the town of Eriklice. Thence:

6 NNW of Karaburun Light (white concrete tower, 10 m in height) (14 miles ESE) which stands on Karaburun (2.66), a headland that is clear of dangers except for a few above-water rocks which extend about ½ cable NE.

2.70

1 **Useful mark:**

A mosque (40°25′·2N, 27°04′·0E) on the beach at Kemer.

(Directions continue for the central route through Marmara Denizi at 2.96, for Marmara Boğazi and approaches at 2.136, for Erdek Körfezi at 2.105, and for the coastal waters in the NW part of Marmara Denizi at 2.205)

Gelibolu

General information

2.71

1 **Position.** The town of Gelibolu (40°25′N, 26°40′E) stands on a promontory and extends along the shores of Gelibolu Limanı and Bağçeşme Limanı, two bays which lie S and N respectively, of this promontory.

2 **Function.** Gelibolu, which in 2000 had a population of 23 100, is the largest town on the European shore of Çanakkale Boğazı and is the seat of local government. It has a small port and is the European terminal for the ferry service with Lapseki (2.59).

Traffic. In 2002 the port was used by 9 vessels with a total deadweight of 38 712 tonnes.

Anchorages

2.72

1 **Gelibolu Limanı.** The shores of the bay consist for the most part of yellow cliffs about 24 m high, with small ravines within them and cultivated slopes further inland. The SW part of the bay is fringed by a rocky flat, nearly awash in places, which extends as much as 3 cables offshore. This bay is well protected from all winds except those between S and E and these winds raise little sea.

2 **Berth.** The best berth, which is shown on the chart, is found in the N part of the bay in depths of 20 m, good holding ground, with the S extremity of the Gelibolu promontory bearing 090°, distant about 6 cables.

A stranded wreck lies 5 cables W of the anchorage.

3 **Small craft** may anchor nearer the town observing that the shorebank extends about 1½ cables from the N shore of the bay.

The swell from Marmara Denizi sets around the S extremity of the promontory at times.

2.73

1 **Bağçeşme Limanı.** The W shore of the bay consists of a sandy beach about 4 cables long with rocky points at either end.

Anchorage is obtainable in depths of about 24 m, 2½ cables offshore with Geribolu Light bearing 220°, as shown on the chart. This berth gives no protection from NE winds and a considerable swell may set in. The holding ground is not as good as Geribolu Limanı.

Port layout and berths

2.74

1 An L-shaped pier extends about 75 m S and 150 m W from the N shore of Geribolu Limanı, from a position 2½ cables WNW of the S extremity of Geribolu promontory.

An outer and inner camber are situated close E of the base of the pier. The outer camber, which is the fishing harbour, has an entrance 20 m wide and depths of 1·8 m.

2 **Berths.** The following berths are available:

Ferry berth; the E face of the inner arm of the pier.

Cargo berths; the outer and inner faces of the outer arm of the pier.

Port services

2.75

1 **Facilities and communications:**

Minor repairs; fresh water; provisions; ferry to Lapseki.

Small craft

2.76

1 **Berths:**

Stern-to the W face of the inner arm of the pier in a depth of 2 m.

Bow-to within the fishing harbour entrance in a depth of 1·5 m.

2 **Cautions:**

Depths to the N of the outer arm of the pier decrease from between 3 and 4 m to less than 1 m on the N side of the harbour.

3 The entrance to the fishing harbour is narrow and bordered by underwater rocks.

Swell from the ferry, which berths near the fishing harbour entrance may cause small craft with a draught of more than 1·5 m to ground when berthed in the outer camber.

Anchorages and harbours

Çardak Limanı

2.77

1 Çardak Limanı is entered between Dalyan Burnu (40°22′N, 26°41′E) and Çardak Burnu about 1½ miles NE. The S side of the bight is fronted by a bank which, with depths of less than 5 m, extends up to 3½ cables offshore. Çardak Burnu is steep-to on its SW side.

Kemer Körfezı

2.78

1 Kemer Körfezi (40°25′N, 27°04′E), a bight at the NE end of Güreş Limanı, is entered S of Bodrum Burnu (2.69). A small fishing harbour has been built in the bay.

2 Kemer Körfezi offers the only good anchorage in Güreş Limanı, as elsewhere the prevailing NE winds blow directly onshore and the holding ground is bad.

The town of Kemer stands on the shore of the bight under a high cliff, close S of Bodrum Burnu. Kemer Cayı, a river which is wide and deep, enters the sea S of the town. In summer a bar forms across its mouth.

Anchorage. Kemer Körfezi provides shelter from NE winds in its inner part and anchorage, which is shown on the chart, may be obtained 2½ cables offshore in depths of 22 m, mud, with Bodrum Burnu bearing 000°.

3 **Caution.** A wreck, dangerous to navigation, lies about 4 cables offshore abreast the town.

Büyükada

2.79

1 Büyükada (40°27′N, 27°07′E), a marble islet, 35 m high, is connected to the mainland by a shoal ridge on which stands Kücükada, 3¼ miles ENE of Bodrum Burnu. Yumurtaada, another marble islet 38 m high, which has a whiter appearance, lies 1 mile WSW of Büyükada.

2 **Anchorage,** as shown on the chart, which is sheltered from S and E winds, is obtainable about 4 cables W of Büyükada, in depths of 24 m.

Berth. A jetty (IÇDAŞ) extends about 100 m NNE from the shore 7 cables ESE of Büyükada.

Şahmelek Limani

2.80

1 Şahmelek Limanı is entered between Korkmaz Burnu (40°27′N, 27°10′E), and Şahmelek Burnu, 1½ miles farther E. Within the bay the country is hilly and partly covered with brushwood. A rock awash lies 2 cables SW of the E entrance point.

Anchorage may be obtained in depths of about 24 m. There is sheltered landing in the E part of the bay, but NE winds raise a good deal of swell within the anchorage.

Ince Burnu

2.81

1 **Passenger and dry cargo anchorage.** Anchorage, the limits of which are shown on the chart, may be obtained,in depths of up to 32 m between Doğanarslan Bankı (2.69) and Ince Burnu (7¼ miles ENE).

Explosives anchorage. Anchorage, the limits of which are shown on the chart, may be obtained in depths of up to 47 m between Ince Burnu and Eriklice Burnu (9¾ miles ENE) (2.69).

Sarköy

2.82

1 The village of Sarköy (40°37′N, 27°07′E), which stands on a low plain close to the coast, has a small fishing harbour which is protected by two moles. There are depths of 3 m at the entrance to the harbour.

Berths. An alongside berth is available, depth 2 m, at a quay which extends from the E mole.

Caution. A dangerous wreck lies 1 cable S of the E mole.

Mürefte

2.83

1 The town of Mürefte (40°40′N, 27°15′E), which is the seat of local government, is situated close NNE of Mürefte Burnu, a low sandy point that can be identified by some mills near its extremity. A shoal, which has not been examined and with a depth of 6·4 m over it was reported (1924) in a position about 7½ cables SSW of Mürefte Burnu and 6 cables offshore.

Fish weirs. See 2.63.

Other name

2.84

1 Armutlu Burnu (40°24′N, 27°01′E).

CENTRAL PART OF MARMARA DENIZI INCLUDING ERDEK KÖRFEZI AND ÍZMIT KÖRFEZI

GENERAL INFORMATION

Charts 224, 1004, 1005

Area covered

2.85

1 The area covered by this section includes:

Passage between the N entrance of Çanakkale Boğazı and the S entrance of İstanbul Boğazı (2.89).
Erdek Körfezi (2.100).
Marmara Boğazı (2.133).
Gemlik Körfezi (2.174).
İzmit Körfezi (2.265).

Topography

2.86

1 The central part of Marmara Denizi is bordered almost entirely by high and mountainous land.

Measured distance

2.87

1 See 2.271.

Natural conditions

2.88

1 **Currents.** The general set of the current in the central part of Marmara Denizi is W towards the N entrance of Çanakkale Boğazı, but there are a few variations caused by the islands and curves of the coast. The currents are in general much weaker than in İstanbul Boğazı and Çanakkale Boğazı, the mean rate being ½ to ¾ kn.

2 As it enters the central part of Marmara Denizi from İstanbul Boğazı, the water fans out and slows, forming three branch currents. The S branch sets towards Adalar (2.326) and through the channels between the islands, towards İzmit Körfezi. A rather complex system lies between this branch and the E shore. The central branch flows S past Boz Burun (40°31′N, 28°47′E) to meet the S shore between Bandırma Limanı and Gemlik Körfezi. The N branch takes a general SW direction passing N of Marmara Adası (2.133) and along the European shore where it is mostly rather weak. Some eddies and counter currents may be expected in the W approaches to İstanbul Boğazı.

See current diagram 1.145(1)–(5).

3 **Wind and weather.** Winds from the NE are most frequent but are occasionally interrupted by winds from the S. If strong, these S winds often bring rain and squally weather. The NE wind is more regular in the NE part, rather than the S or W parts of the area. Sometimes, even when the breeze is fresh, it will not be felt on the S shore.

4 **Local magnetic anomaly.** Local deflection of the compass has been reported (1963) to occur in the vicinity of İmrali Adası (40°33′N, 28°32′E) (2.173) and in the channel S of the island.

MARMARA DENIZI — CENTRAL ROUTE

General information

Charts 224, 1004, 1005

Route

2.89

1 Through traffic should remain in the appropriate traffic lane within the traffic separation scheme, shown on the charts, for the transit of Marmara Denizi. This passes N of Marmara Adası. Recommended routes are shown for vessels joining/leaving the traffic separation scheme to/from İzmit Körfezi, Marmara Ereğlisi and Bandırma Körfezi.

Topography

2.90

1 Marmara Adası, which is about 10 miles long, is mountainous throughout with a double range extending across it in an E and W direction. The N part of the island is composed of white marble with scarcely any soil on it. The valleys in this part of the island have steep sides devoid of vegetation or cultivation except at their bottoms.

2 The celebrated marble quarries are in the NE part of the island where the debris from them has formed a steep white slope on the shores of Mermercık Limanı (2.99) which is prominent from the N.

For the S part of Marmara Adası see 2.134.

Submarine exercise areas

2.91

1 The general position of submarine exercise areas is shown on the charts. See 1.9.

Regulations

2.92

1 **İmrali Adası** (40°33′N, 28°32′E). This island is a penal settlement and a prohibited entry area extending about 3 miles offshore, as shown on the chart, surrounds it.

Natural conditions

2.93

1 See 2.88.

Principal Marks

2.94

1 **Major lights:**

Hoşköy Light (white concrete tower and dwelling, 22 m in height) (40°42′N, 27°18′E).
Kargaburun Light (40°58′N, 27°52′E) (2.204).
Ereğli Light (40°58′N, 27°58′E) (2.204).
Yeşilköy Burnu Light (40°58′N, 28°50′E) (2.318).
Ahırkapı Light (41°00′N, 28°59′E) (2.318).
Fenerbahçe Light (40°58′N, 29°02′E) (2.318).

Other navigational aids

2.95

1 **Racon:**

Hayırsızada Light (40°39′N, 27°29′E).

See *Admiralty List of Radio Signals Volume 2* for details.

Directions

(continued from 2.69)

2.96

1 From the vicinity of 40°36′N, 27°15′E the traffic separation scheme leads ENE and then E to the S approaches to İstanbul Boğazı passing:

SSE of Hoşköy Light (40°42′N, 27°18′E) (2.94), thence:

2 NNW of Hayırsızada Light (white metal framework tower, 8 m in height) (40°39′N, 27°29′E) which stands on the N summit of Hayırsızada, a barren islet of a grey colour, 330 m high. Thence:

N of Domuz Burnu Light (white metal framework tower, 4 m in height) (40°40′N, 27°38′E), thence:

3 N of Asmalıada Light (white metal framework tower and dwelling, 9 m in height) (40°38′N, 27°45′E) which stands on Asmalıada, a marble islet 30 m high. The islet is steep-to on all sides except the W, where a sunken ledge with some rocks awash, extends about 2 cables offshore.

(Directions continue for Bandırma Körfezi at 2.151)

Thence the TSS leads S of Adar Burnu (40°58′N, 27°58′E). Ereğli Light stands on this headland. Thence:

4 N of Martı Burnu, the NW point of İmrali Adası. Martı Burnu Light (white concrete tower, 5 m in height) (40°34′N, 28°31′E) stands on the headland and Bahri Tepesi, the highest peak on the island (sharp cone, 217 m high), on which stands the buildings of Agios, is situated about 1 mile E of the same point. Thence:

5 S of Değirmen Burnu Light (white concrete tower, 8 m in height) (40°58′N, 28°37′E). The light stands about 2 miles W of some prominent white marl cliffs. Thence:

S of Yeşilköy Burnu Light (40°58′N, 28°50′E) (2.205).

(Directions continue for the SW approaches to İstanbul Boğazı at 2.319 and for the approaches to İzmit Körfezi at 2.261)

Anchorages and harbours

Hoşköy

2.97

1 The town of Hoşköy (40°43′N, 27°19′E) lies close SW of Hoşköy Deresi, a deep ravine which is normally dry, but after heavy rain is converted into a roaring torrent.

Harbour. There is a small fishing harbour at Hoşköy, protected by an angled mole.

Caution. A dangerous wreck, the position of which is approximate, lies about 4 cables ENE of Hoşköy Light (2.94).

Saraylar Limanı

2.98

1 Saraylar Limanı is entered between Yalancıpalataya Burnu (40°40′N, 27°40′E) and a headland 5 cables ESE. The village of Saraylar stands at the head of the bay.

2 **Port.** A mole, used for the export of marble from the local quarries, extends from the W shore 4 cables S of Yalancıpalataya Burnu. A light (concrete tower, 5 m in height) stands at the head of the mole.

A small fishing harbour, protected by an unlit breakwater, fronts the village. The breakwater extends N from the shore for about 150 m from a point close E of the village.

3 Alongside berths are available at the marble loading mole, but noise and dust may make this berth uncomfortable.

Smaller craft can berth stern-to within the fishing harbour in depths of between 2 and 4 m. There is also a ferry berth on the S side of this harbour.

Traffic. In 2002 the port was used by 2 vessels with a total deadweight of 2753 tonnes.

4 **Anchorage**, sheltered from the NE winds, is available in a bay in the E part of the harbour, in depths of between 9 and 11 m. Anchorage is also obtainable off or close E of the village.

Supplies: fuel in drums (not always available); provisions and limited supplies of water from private sources.

Mermercık Limanı

2.99

1 Mermercık Limanı is entered close E of Saraylar Limanı and is entirely open to winds from the NE. Işik Adaları, 43 m high, lies off the W entrance point to this bay and is

separated from the main island by a channel about 1 cable wide. This channel is only suitable for small craft.

ERDEK KÖRFEZI

General information

Charts 1004, 1005

Route

2.100

1 The track from the NE approaches of Çanakkale Boğazı into Erdek Körfezi leads from the vicinity of 40°36′N, 27°15′E to the head of Erdek Limanı, 32 miles ESE.

Topography

2.101

1 **West shore.** Between Karaburun (40°29′N, 27°17′E) and Kale Burnu, 4½ miles SSE, the shore is high, cliffy and clear of dangers outside of 2 cables offshore.

2 **South shore.** Between Karabiga Limanı (40°24′N, 27°19′E) (2.110) and Karakuşluk Burnu (19 miles ESE) the shore of the gulf is low and in places marshy, with the hills rising some distance within it. Further E the shore is cliffy and steep.

Gönen Çayı enters the sea through a broad delta 4 miles W of Karakuşluk Burnu. This delta has formed a bank, which is steep-to and has depths of less than 5 m over it. This bank extends 1 mile offshore on the W side of the delta and 6 cables offshore on the E side.

3 **North-east shore** is formed by the SW coast of Kapidağ Yarımadası and is generally low, sandy and backed by a plain to the SE of Fatya Burnu (40°26′N, 27°45′E) (2.105). The shore is more steep-to to the NW of this point.

2.102

1 A group of four islands and some islets lie on the N side of Erdek Körfezi. The surfaces of these islands are very broken and their shores are rocky except at the head of some of the small bays where there are sandy beaches.

2 **Ekinlik Adası** is the most NW island in the group. The summit of the island, which has rounded sides and a flat top, rises near the W end of the island to a height of 161 m. The central and E parts of the island are lower. The village of Ekinlik (2.114) is situated midway along the S coast of the island.

3 **Türkeli Adası** is separated from Ekinlik Adası by Ekinlik Geçidi (2.107). The surface of the island is broken and its hills are craggy and bare. The coasts of the island are mostly rocky and foul ground extends from about ½ to 1½ cables offshore in several places. Between Ekinlik Burnu (40°32′N, 27°31′E) and the village of Türkeli, 2 miles SSW, a bank on which depths are 5 m and less, extends up to 4 cables offshore.

4 **Paşalimanı Adası and Koyun Adası** lie ESE of Türkeli Adası and are separated from this island by Yiğitler Geçidi (2.108) and from the mainland by Narliköy Geçidi (2.109).

Koyun Adası, a narrow grass covered island, forms the W side of Paşa Limanı (2.116). The island rises in rounded hillocks to elevations of 90 m at its S end and 129 m near its N extremity; the former hill is covered with large white boulders.

5 Paşalimanı Adası, which is the largest island in the group, is cultivated and has a good harbour. The surface of the island is varied, the hills being mostly rounded. the highest hill is Kukumav Tepesi in the N part of the island. There are several villages on the island.

Currents

2.103

1 The current sets E along the N side of Erdek Körfezi, trending with the coast, eventually to flow W along the S side of the gulf towards Çanakkale Boğazı.

Principal marks

2.104

1 **Landmark:**

Kukumav Tepesi (40°30′N, 27°37′E), a symmetrical cone, situated near the N extremity of Paşalimanı Adası.

Directions

(continued from 2.69)

2.105

1 From the vicinity of 40°36′N, 27°15′E the track through Erdek Körfezi to Erdek Limanı (2.123) leads generally SE and then ESE for about 29 miles, passing:

2 NE of Karaburun Light (40°29′N, 27°17′E) (2.69), thence:

SW of Dutliman Burnu (40°32′N, 27°28′E) the SW extremity of Ekinlik Adası. Thence:

SW of Ekinlik Feneri Light (white concrete tower, 10 m in height) (40°31′N, 27°29′E) which stands on the W side of a rock (2.107). Thence:

3 NE of Kale Burnu Light (white metal tripod, 8 m in height) (40°25′N, 27°20′E) which stands on Kale Burnu, a low cliff, 17 m high and is the extremity of a promontory that forms the N side of Karabiga Limanı (2.110). Within Kale Burnu are the remains of some fine Byzantine walls, the ruined towers of which are prominent from seaward. Except for some rocks awash, which extend about ¼ cable offshore, this point is free of dangers. Thence:

4 SSW of Ince Burnu (40°28′N, 27°29′E), the S extremity of Türkeli Adası. Thence:

SSW of Mermer Burnu (40°28′N, 27°35′E), the SW extremity of Paşalimanı Adası. Thence:

SSW of Fatya Burnu (40°26′N, 27°45′E), a cliffy headland which rises steeply to Fener Tepesi. Thence:

NNE of Karakuşluk Burnu (40°19′N, 27°43′E), a bold and cliffy headland.

Side channels

2.106

1 Three channels lead N from Erdek Körfezi to Marmara Boğazı.

Ekinlik Geçidi

2.107

1 Ekinlik Geçidi leads NE between Ekinlik Adası and Türkeli Adası and is about 7½ cables wide at its narrowest part. The NE part of the channel is obstructed by a bar over which there are depths of 7 m in the fairway. A light-buoy (S cardinal) marks the SE limit of shoal water that extends from the E end of Ekenlik Adası. The channel is narrowed to a width of of about 5 cables by banks which, with depths of less than 5 m, extend from either side.

2 Ekinlik Feneri, a rock which is surrounded by an underwater rocky flat that extends 2 cables NE and ½ cable NW, lies in the approaches to this channel. A light (2.105) stands on the rock and a 9·8 m rocky patch lies 3½ cables ENE.

3 **Currents** set W towards Ekinlik Adası. An eddy or counter current has been observed to set at a rate of 1½ kn.

Anchorage. See 2.114.

(Directions for Marmara Boğazi are given at 2.136)

Yiğitler Geçidi

2.108

1 From the vicinity of 40°28′N, 27°32′E, Yiğitler Geçidi which is about 1 mile wide at its narrowest point, leads NNE for about 5 miles, through waters clear of dangers, between Türkeli Adası to the W and Paşalimanı Adası and Koyun Adası to the E, passing (with positions from Büyükliman Burnu (40°29′N, 27°32′E)):

2 WNW of Yerada Adası (2 miles SE). The islet has a smooth grassy summit 38 m high and is almost surrounded by a bank with depths of less than 5 m, which extends as much as 1½ cables offshore in places. The islet is separated from Mermer Burnu, the SW extremity of Paşalimanı Adası, by a channel with a least depth of 16 m in the fairway. Banks with depths of less than 5 m over them extend about ¾ cable from either side of this channel. A shoal ridge on which there are above-water rocks connects Yerada Adası with Kuş Adası (9 m high), an islet 3 cables SSW. Thence:

3 WNW of Kum Burnu (2 miles ESE) which forms the S side of Geçiy Topuğu, the W entrance to Paşa Limanı (2.116). Thence:

ESE of Büyükliman Burnu, the S entrance point to Küçükliman. See caution below. Thence:

ESE of Marmara Burnu (1¾ miles NNE). This headland and the N point of Mamalı Ada, both of which are steep-to, form the N entrance points to Koyun Adası.

4 **Caution.** A line of rocks extends 3 cables NE of Büyükliman Burnu. Depths of less than 9 m extend about 2 cables off Büyükliman Burnu and the SW extremity of Koyun Adası.

Current. The current usually sets S through Yiğitler Geçidi.

(Directions for Marmara Boğazi are given at 2.136)

Narlıköy Geçidi

2.109

1 From the vicinity of 40°27′N, 27°42′E, the track leads NNW for about 4 miles, through waters clear of charted dangers, between Paşalimanı Adası to the W and the W extremity of Kapidağ Yarımadası to the E, passing (with positions from Paşalimanı Adası Light (40°28′N, 27°40′E)):

2 WSW of Maymun Burnu (2¼ miles E) which forms the N entrance point of Ocaklar Limanı (2.120). Thence:

ENE of Paşalimanı Adası Light (white metal framework tower on concrete base, 7 m in height) standing 4 cables SE of Tuzla Burnu which forms the S entrance to Kalem Limanı. Thence:

3 WSW of Balyoz Burnu Light (white metal framework tower, 12 m in height) (2 miles NNE), which stands on a bold cliffy headland, 30 m high.

Current. The current has been observed to set S through Narlıköy Geçidi at a maximum rate of 2½ kn.

(Directions for Marmara Boğazi are given at 2.136)

Karabiga Limanı

General information

2.110

1 **Position and topography.** Karabiga Limanı is entered between Kale Burnu (40°25′N, 27°20′E) (2.105) and the mouth of Kocabaş Cayı, 2 miles SW. The shore of the bay is nearly all sandy beach. Çar Tepesi, a rounded hill with a double summit, stands 2 miles WSW of Kale Burnu and is separated from the sea by a narrow strip of flat ground.

The town and harbour of Karabiga is situated at the head of the bay.

2.111

1 **Function.** Harbour for fishing vessels and coasters. Export of marble that is mined locally.

Traffic. In 2002 the port was used by 13 vessels with a total deadweight of 127 420 tonnes.

Port limits. The port area consists of the waters that lie within lines drawn S from Kale Burnu and E from the summit of Çar Tepesi.

Harbour

2.112

1 **Port layout.** The port is protected by breakwaters which extend 250 m S and 100 m E from positions on the shore, 1¼ miles WSW and 1½ miles SW of Kale Burnu, respectively. Lights (concrete columns) are exhibited from the head of each breakwater.

Within the breakwaters there are jetties for coasters, a small inner fishing harbour and a pier.

2 **Alongside berths** with a total length of over 200 m and depths of up to 4 m are available.

Anchorage may be obtained, as shown on the chart, in the NW part of the bay, in 11 m of water, with good holding ground, but the bay is open to NE and E winds.

Explosives anchorage, the limits of which are shown on the chart, lies SE of the harbour entrance.

Port services

2.113

1 **Repairs.** Minor mechanical repairs only.

Supplies: Fuel for small craft; fresh water and provisions available.

Anchorages and harbours on the north side of Erdek Körfezi

Chart 1004

Ekinlik Limanı

2.114

1 Anchorage, which is shown on the chart, may be obtained in Ekinlik roads (40°32′N, 27°29′E), S of Ekinlik village, in depths of between 11 and 18 m, sand and mud.

2 There is a slight swell at the anchorage during NE winds, but not sufficient to affect a well found vessel. The berth is about 4 cables WSW of a 4·1 m shoal and a submarine cable which is laid across the NE part of Ekinlik Geçidi.

In SE gales, Ekinlik roads provides no protection and in these conditions, vessels should make use of Paşa Limanı (2.116).

3 **Caution.** Power cables are laid between Ekinlik Adası, Türkeli Adası, Paşalimanı Adası and the mainland. See 1.28.

Türkeli Adası

2.115

1 **Anchorage,** with some shelter from NE winds, may be obtained off the village of Türkeli (40°31′N, 27°30′E) on the W side of the island or in Kumburnu Limanı on the SE side of the island, however, better or more convenient anchorage may be obtained in Ekinlik roads or Paşa Limanı. It has been reported that tourist facilities are being developed on the W side of the island and works were in progress (2001) about 4 cables W of the N end of the island.

2 **Fishing harbour.** There is a small fishing harbour in the N part of Küçükliman on the E side of the island. It has depths of 3 m and is suitable for yachts. Limited provisions are available from the village of Yiğitler, 2 cables S.

Development. Works were in progress (2001) in the harbour.

Chart 1004 (see 1.16)

Paşa Limanı

2.116

1 Paşa Limanı (40°30′N, 27°36′E), on the NW side of Paşalimanı Adası, is sheltered from all winds and provides anchorage for several vessels in its S part. Depths are between 12 and 18 m, mud, good holding ground.

The villages of Paşalimanı and Harmanlı are situated on the SE shore of the bay. There is a small pier used by ferries and local craft at the village of Paşalimanı.

2 **Approaches.** Paşa Limanı may be approached by a W passage, known as Geçit Topuğu and a N passage from Marmara Boğazi (2.133). Geçit Topuğu is restricted by banks, which extend from the shore on either side of the entrance and by two shoals. The N passage is clear of dangers.

Local knowledge is required for Geçit Topuğu.

2.117

1 **Directions for Geçit Topuğu.** The alignment (079°) of a tall building in the NW part of Paşalimanı village and a ruined windmill on a ridge above the village leads through Geçit Topuğu, with a least depth of 12·8 m, passing (with positions from Kum Burnu (40°29′N, 27°35′E)):

2 Between two buoys (port and starboard hand) moored S of a group of rocks which lies off the S point of Koyun Adası (5 cables N) (2.102). Thence:

N of Kum Burnu, thence:

3 S of a 5·5 m shoal (3 cables NNE), marked by a light-buoy (isolated danger). The shoal lies midway between Kum Burnu and Hasir Adası. Hasir Adası, the S island of Hacı Adaları, is an islet 14 m high, lying 8 cables NNE of Kum Burnu. Thence:

4 N of Ortalık Bankı (4½ cables ENE). This bank, which has a least charted depth of 1·8 m, affords some protection to the S part of the harbour from SW gales.

Caution. The construction of houses in the N part of the village may make the leading line difficult to identify.

2.118

1 **Directions for the North passage.** The alignment (187°) of the E side of Hasır Adası (2.117) and Tastepe, a well defined hill 115 m high, (1½ miles S), leads through the middle of the N entrance channel and clear of the rocky ledge that extends 2 cables SW from Kablo Burnu, the NW extremity of Paşalimanı Adası.

Balıklı

2.119

1 **Anchorage**, which provides good protection from the prevailing winds, may be obtained off the village of Balıklı (40°28′N, 27°38′E) in depths of 3 to 5 m, hard sand. The village has a short pier that is used by local fishing craft.

Limited provisions are available.

Ocakalr Limanı

2.120

1 **Anchorage** may be obtained in this bay (40°27′N, 27°45′E) in a depth of about 14 m, but with NE winds, heavy squalls occasionally blow down the ravines even when there is only a moderate wind on the N side of Kapidağ Yarımadası.

Best anchorage for small craft is in the NE corner of the bay, in depths of between 3 and 5 m, sand. Local craft moor off the village of Ocaklar in the SE corner of the bay.

Narlıköy

2.121

1 **Fair anchorage**, which provides shelter from NE winds, may be obtained S of the village of Narlıköy (40°29′N, 27°41′E) in depths of about 29 m.

There is a short pier at the village, which is used by ferries and local fishing boats.

Balyoz Burnu

2.122

1 **Anchorage.** The best anchorage in the area, which is well sheltered from the NE and has good holding ground, is available S of Balyoz Burnu (40°30′N, 27°41′E).

The best berth is in depths of about 24 m, clear of the power and telegraph cables shown on the chart.

Erdek Limanı

Chart 1004

General information

2.123

1 **Position and topography.** Erdek Limanı is situated at the head of Erdek Körfezi. The land on both sides of the bay is high. On the S side the hills rise close within the coast, but on the N side there is a cultivated plain between the foot of the mountains and the sea. The head of the bay lies on the W side of the isthmus connecting Kapidağ Yarımadası with the mainland. This isthmus is low lying and mainly swampy.

Outer harbour Limit. The harbour area consists of the waters that lie within a line that leads SSE from Fatya Burnu (40°26′N, 27°45′E) to Topçu Burnu (40°20′N, 27°48′E), as shown on the chart.

Erdek

2.124

1 **Position.** The attractive town of Erdek (40°24′N, 27°47′E), which in 2000 had a population of 18 600, stands 5 cables N of Muratbayırı Burnu, the W extremity of a projection that extends from the N shore of Erdek Limanı.

2 **Inner harbour limit.** The inner harbour area consists of the waters that lie within a line joining Muratbayırı Burnu and the SW extremity of Zeytinli Adası, 5 cables NW.

2.125

1 **Landmarks:**

Tavşan Adası (40°23′N, 27°47′E) a barren rocky islet 49 m high. A light (white metal framework tower, 6 m in height) stands on the NE summit of the island.

2 Muratbayırı Burnu (40°23′N, 27°48′E), which appears like an island from a distance.

Dilek Tepe (40°23′N, 27°48′E), the summit of which has a curious crust of marble overlaying other rock.

2.126

1 **Directions.** The inner harbour of Erdek may be approached direct from Erdek Körfezi through waters clear of charted dangers passing SE of Ada Bankı (8 cables N of Tavşan Adası), a shoal with a least depth of 5·8 m, or from Erdek Limanı by way of Seyitgazi Geçidi, a channel which separates Tavşan Adası from the mainland.

2 Murat Bankı, with depths of 7 m over it, lies in the N part of Seyitgazi Geçidi, and vessels are advised to keep close to the S side of the channel, which is steep-to and clear of dangers.

2.127

1 **Layout of inner harbour.** There is a small sheltered port on the S side of the town of Erdek. It is protected from the W by a mole which extends S from the SW part of the town to Zeytinli Adası, a rocky islet, 14 m high. A report (1996)

states that construction work is being carried out within the harbour.

2 **Alongside berths** are available on the inner side of the mole, which is quayed, at a pier near the base of the mole and at quays on the N side of the harbour. There is also a short angled jetty on the NE side of the port which is used by coasters. Depths of 2 to 3 m.

3 **Anchorage**. A good berth, shown on the chart, is obtainable in the inner harbour 1¾ cables SE of Zeytinli Adası, in a depth of 18 m.

Caution. Care must be taken to avoid anchoring near an outfall pipe, marked by buoys, that extends SW for 1300 m from the SE part of the bay.

2.128

1 **Facilities for small craft**: fuel near the harbour; water at quays; provisions; limited repairs only.

Çınar Limanı

2.129

1 **Position and function**. Çınar Limanı (40°23′N, 27°48′E) lies on the E side of the promontory that extends S from the N side of Erdek Limanı. A naval base is situated in the bay and anchorage in the bay and its vicinity is reserved for naval vessels. The limits of the naval anchorage area are shown on the chart.

Entry to the port is prohibited to non-naval vessels.

2 **Layout of harbour**. The harbour is protected by a breakwater that extends 1½ cables E, from a position 2½ cables N of Seyitgazi Burnu, the SE point of the promontory. A light (white concrete tower, 3 m in height) is exhibited from the head of the breakwater.

Within the harbour, two angled jetties extend from the N shore of the bay. Lights are exhibited from the head of these jetties.

Edincik

2.130

1 A tanker terminal, consisting of some oil tanks, an oil pipeline and two mooring buoys is situated about 1 cable NW of Edincik İskelesi (40°22′N, 27°52′E).

Maximum size of vessel handled. Draught 9·5 m.

Density of water. 1·025 g/m^3.

Local pilot and mooring launch available.

2 **Berthing** daylight hours only. Unberthing 24 hours a day. Tankers berth with both anchors out and vessel secured fore and aft to mooring buoys.

Ore loading terminal. There is an ore loading terminal on the shore below Edincik capable of handling vessels of up to 5000 dwt.

Pilotage is compulsory. The pilot comes from Bandırma (2.153).

Anchorages

2.131

1 The head of Erdek Limanı provides a capacious anchorage and is calm in all except SW winds. The holding ground is good everywhere, especially in the greater depths of the NW part. SW gales are rare in winter, but when they do occur, are heavy.

2 **Explosives anchorage**. Vessels carrying explosives or inflammable cargoes are required to anchor in the SE part of Erdek Limanı. The limits of this anchorage are shown on the chart.

ETA. Vessels should give 24 hours notice.

Other names

2.132

1 Çayağzı Burnu (40°20′N, 27°38′E).
Kaba Burnu (40°27′N, 27°40′E).
Koca Burnu (40°31′N, 27°37′E).
Palamut Adası (40°30′N, 27°39′E).

MARMARA BOĞAZI AND APPROACHES

General information

Charts 1004, 1005

Route

2.133

1 The coastal route through Marmara Boğazı leads E from the vicinity of 40°36′N, 27°15′E, S of Marmara Adası, and thence along the N shore of Kapidağ Yarımadası to the vicinity of 40°32′N, 28°04′E. Traffic which is not local should remain in the traffic lane, shown on the chart, until NE of Marmara Adası, then follow the 135° Recommended route towards Bandırma Körfezi.

Topography

2.134

1 **Marmara Adası.** The S part of Marmara Adası is composed of slate with occasional patches of granite. The valleys and lower slopes are cultivated. The mountains in this part of the island are higher than those in the N of the island and attain their highest elevation of 699 m in Büyükçayır Tepesi, 2 miles NE of the village of Marmara (2.137). The summit of this mountain is a long ridge which shows as a peak only when seen from the NE or SW.

2 **Kapidağ Yarımadası.** The N slopes of this peninsular, which reaches its highest elevation of 791 m in Adamkaya Tepesi (40°28′N, 27°50′E), are covered with low oak trees. These slopes are the source of many streams, which never fail in supplying water to the lower parts of the valley, all of which are fertile. Villages are scattered round the shores of the peninsular.

3 Between Gündoğrusu Limanı (40°31′N, 27°47′E) and Kapsül Burnu (12 miles E) (2.151), the coast is steep and cliffy and the mountain spurs, which rise abruptly from the sea, are covered with trees and bushes.

Principal marks

2.135

1 **Landmarks:**

Minaret (white) (40°35′N, 27°36′E) which stands at the E end of the village of Gündoğu in the NE part of Beyaz Limanı.

Minaret (40°36′N, 27°40′E) which stands at the head of Topağaç Limanı (2.139).

Directions

(continued from 2.69)

2.136

1 From the vicinity of 40°36′N, 27°15′E, the route leads generally E through waters clear of charted dangers, passing (with positions from Asmalıada Light (40°38′N, 27°45′E)):

2 S of Hayırsızada Light (12½ miles W) (2.96), thence:
N of Ekinlik Adası (13½ miles WSW) (2.102), thence:
S of Marmara Breakwater Head Light (white concrete tower, 8 m in height) (9½ miles WSW), thence:.

3 S of Aba Burnu Light (white metal column, 6 m in height) (9 miles WSW) which stands on the W entrance point of Beyaz Liman, 7½ cables SE of Marmara village. Thence:

4 N of Mamalı Adası (10 miles SW), an islet 42 m high which is separated from Koyun Adası (2.102) by a

shallow and narrow opening and lies on the W side of the approaches to the N entrance to Paşa Limanı (2.116). Thence:

S of Laz Kayası (4 miles SW). A rock with a depth of 2·7 m over it. Thence:

N of Balyoz Burnu Light (9 miles SSW) (2.109), thence:

S of Asmalıada Light (2.96).

Thence to a position about 7 miles NW of Kapsül Burnu Light (16 miles SE) (2.151).

(Directions continue for Bandırma Körfezi at 2.151, and for the coastal waters in the S part of Marmara Denizi at 2.179)

Anchorages and harbours on the S coast of Marmara Adası

Marmara

2.137

1 **General information**. The village of Marmara (40°35′N, 27°34′E) sits in a wooded valley under the slopes of the mountains behind and is very readily identified from seaward. It is a fishing harbour and is used by trading coasters. It is a small, but growing, tourist resort.

There is a ferry service to Erdek (2.124).

2 **Harbour layout**. The harbour, which lies at the E end of the village, is protected by two moles. The W mole extends about 100 m S from the shore and then 200 m ESE. The E mole and pier extends about 40 m from the shore opposite the extremity of the W mole, providing a harbour entrance about 60 m in width.

3 **Lights** (concrete towers) are exhibited from the head of each mole. The white tower at the extremity of the W mole is easily distinguished from seaward.

Berths. Alongside berths are available on the inner side of the W mole, with depths of between 2·5 and 4 m. Small craft can berth, stern-to, to the quay on the N side of the harbour.

4 Care should be taken berthing on the N side of the harbour as stone rubble extends underwater from the shore in places.

Anchorage. The coast is steep-to and there is little room for anchorage off the village.

5 **Facilities for small craft**: fuel on the quay; water is in short supply; provisions available.

Caution. Power cables are laid across Marmara Boğazi between Marmara Adası and both the mainland and Türkeli Adası. See 1.28.

Beyez Liman

2.138

1 **Anchorage.** An anchorage area is situated, as shown on the chart, 5 cables SE of Aba Burnu Light.

Topağaç Limanı

2.139

1 Topağaç Limanı (40°36′N, 27°40′E) provides the best shelter on the S coast of Marmara Adası.

A harbour, protected by two moles, is situated in the E part of the bay.

Anchorage may be obtained in depths of about 27 m in the E part of the bay. Care should be taken to avoid Laz Kayası (2.136).

Asmalı

2.140

1 Asmalı (40°37′N, 27°42′E) has a small harbour used by ferries and fishing vessels. A light (metal column, 3 m in height) is exhibited at the entrance.

Anchorage may be obtained off the harbour.

Other anchorages

2.141

1 Anchorage may be obtained in any of the small bays on the S coast of Marmara Adası but, during N winds, heavy squalls, which may vary considerably in direction, come off the land. In general, the coast is steep-to with little room for anchorage.

Anchorages and harbours on the N coast of Kapidağ Yarımadası

İlhanköy

2.142

1 The village of İlhanköy (40°30′N, 27°42′E) has a small harbour protected by two breakwaters. This harbour, which has depths of between 2 and 5 m, provides shelter from the NE.

Büyük Akça Koyu

2.143

1 Büyük Akça Koyu (40°31′N, 27°44′E) is entered about 1 mile E of Akça Adası, an island which is situated on a bank that extends nearly 1 mile N from the shore of Kapidağ Yarımadası. This bay does not provide good anchorage as it is open NE and its E side is foul.

Doğanlar Koyu

2.144

1 Doğanlar Koyu, which is entered close W of Doğanlar Burnu (40°32′N, 27°45′E), provides the best anchorage on the N coast of Kapidağ Yarımadası. It is open N, but some shelter from NE winds may be obtained on its E side in depths of 24 m, mud, with the E entrance point bearing 012°. Doğanlar village is situated in a valley about 1 km within the head of the bay.

Gündoğrusu Limanı

2.145

1 Gündoğrusu Limanı (40°31′N, 27°47′E), which is entered close E of Turanköy Burnu, lies 2 miles E of Doğanlar Koyu. The bay is open N and its sides are steep-to, rising precipitously from the sea with no off-lying dangers. From a sandy beach at the head of the bay, a fertile valley which is almost flat, extends inland for about 1 km whence it is hemmed in by steep mountain spurs. The village of Turan stands at the head of the bay.

2 **Anchorage** with good holding ground in depths of between 18 and 36 m, may be found anywhere inside a line joining the entrance points. the best anchorage is towards the SE corner in depths of 26 m, mud and sand, with a chapel on a spur, N of Turan, bearing about 245°.

NE winds of any strength raise some sea at this anchorage, and, despite its size, Gündoğrusu Limanı does not provide as good an anchorage as Doğanlar Koyu.

Other anchorages

2.146

1 Anchorage is obtainable nearly anywhere between Gündoğrusu Limanı and Kapsül Burnu, in depths of between 22 and 36 m, about 2 cables offshore over a bottom varying between mud, sand and gravel; the better holding ground being in greater depths.

2 There are many sandy bights on this stretch of the coast but none is of sufficient size to give shelter to large vessels; boats can land and small craft obtain shelter in the E corner of these bights.

Other names

2.147

1 Ayıtaşı Burnu (40°36′N, 27°32′E).
Fener Burnu (40°38′N, 27°45′E).

BANDIRMA KÖRFEZI

General information

Chart 1005 (see 1.16)

Route

2.148

1 The passage into Bandırma Körfezi leads SW for about 12 miles from the vicinity of 40°32′N, 28°04′E to the port of Bandırma, passing either side of Mola Adaları.

Topography

2.149

1 Bandırma Körfezi is entered between Kapsül Burnu (40°29′N, 28°02′E) (2.151) and Deveboynu (7 miles SE) and lies between the SE side of Kapidağ Yarımadası and the mainland S of it. It is fully exposed to NE winds from which there is no protection except at the anchorage off Mola Adaları (2.166) and two small anchorages on the NW side of the gulf (2.168).

2 Bandırma Limanı (2.153) lies at the head of Bandırma Körfezi. The S shore of the gulf, E of the harbour, is rocky and for the most part precipitous.

2.150

1 **Mola Adaları.** A group of three islands, the W-most and largest of which lies about 2 miles SE of Kapsül Burnu. The islands are all rocky and above-water rocks lie off them in several places.

Directions

(continued from 2.96 and 2.136)

Between Kapidağ Yarımadası and Mola Adaları

2.151

1 From a position about 5½ miles NNE of Asmalıada Light (40°38′N, 27°45′E) (2.96) the route leads SE for about 27 miles to Bandırma Limanı, passing (with positions from Kapsül Burnu Light (40°29′N, 28°02′E)):

NE of Asmalıada Light (16 miles NW), thence:

2 NE of Kapsül Burnu Light (white concrete tower and dwelling, 10 m in height) (16 miles SE) which stands on Kapsül Burnu, a cliffy headland from which a sunken ledge extends about 2 cables NNE. A rock, 2 m high, stands near the outer end of the ledge. Thence:

WNW of Fener Adası Light (white metal mast on dwelling, 12 m in height) (1¾ miles SE) which stands on the the NW point of Fener Adası. This island is the largest in the group.

East of Mola Adaları

2.152

1 From the vicinity of 40°32′N, 28°04′E, the route leads generally SE for about 7 miles and then WSW for 9 miles to Bandırma Limanı, passing (with positions from Kapsül Burnu Light):

2 E of Tavşan Adası (3 miles E), thence:

SE of Mola Bankı (4 miles SE). This rock, which is awash but difficult to see, is separated from Halî Adası by a channel about 3 cables wide with depths of between 22 and 31 m. A bank, with a least charted depth of 5·5 m, extends 6 cables W and 3 cables SW from the rock.

Caution. Fener Adası Light (2.151) is obscured when passing Tavşan Adası.

Bandırma

Chart 1006, plan of Bandırma Limanı

General information

2.153

1 **Position.** The town of Bandırma (40°21′N, 27°58′E) is situated on the E side of Bandırma Limanı and stands on the slope of a hill facing W. The main port of Bandırma lies to the W of the town on the S shore of the bay.

Bagfas Iskur terminal (2.164), lies 3 miles NW of the main harbour in position 40°23′N, 27°54′·6E.

2.154

1 **Function.** Bandırma, which in 2000 had a population of 97 400, is an important commercial port and a major outlet for the Marmara region; approximately 3 million tonnes of cargo is handled annually.

It is a port of entry (2.3).

Traffic. In 2002 the port was used by 297 vessels with a total deadweight of 3 833 746 tonnes.

2.155

1 **Port limits.** The harbour area consists of all waters lying within a line joining Ense Burnu (40°24′N, 27°54′E), 4 miles NW of the town (chart 1005) and Yalı Burnu 4 miles ESE. The inner harbour consists of all waters that lie within a line joining the heads of the two moles.

Port Authority. General Directorate of Turkish State Railways (TCDD) Liman Isletmesi Mudurlugu, Bandırma-Balikeshir, Turkey.

Limiting conditions

2.156

1 **Deepest and longest berth.** No 6 is the deepest with a depth alongside of 12 m. Nos 7 and 8 are the longest with a combined length of 359 m.

Density of water. 1·016 g/m^3.

2 **Maximum size of vessel handled:**

Main harbour. Length 185 m, draught 10 m, dwt 27 270.

Bagfas Iskur terminal. Length 195 m, draught 10 m, dwt 34 800.

Arrival information

2.157

1 **Notice of ETA:**

Tourist ships 48 hours.

All other vessels 24 hours.

2.158

1 **Outer anchorage.** Anchorage is obtainable in the outer harbour except in the area off the inner harbour entrance that is bounded by lines drawn 008° from the main mole head light and 337° from the auxiliary mole head light, respectively. Attention is also drawn to the submarine pipeline, shown on the chart, which extends 5 cables N from the root of the main mole.

2.159

1 **Pilotage** is compulsory for the following vessels when entering or leaving the inner harbour or when coming alongside quays and jetties in the inner or outer harbour:

Turkish vessels of 300 grt or more.

Foreign warships and support ships of more than 1000 tonnes displacement.

All foreign registered vessels of any tonnage.

2 **Pilots**, which are available 24 hours a day, embark in the outer harbour off the inner harbour entrance.

Tugs are available. Their use is compulsory for merchant vessels of more than 500 grt and foreign warships and support vessels of more than 2000 tonnes displacement. Vessels of more than 3000 grt must use two tugs.

2.160

1 **Regulations concerning entry:**

Anchoring in the inner harbour is only permitted with the permission of the Harbour Authority.

Vessels carrying explosives, inflammable and similar dangerous materials cannot enter the inner harbour. However fuel supply vessels of small tonnage may enter the inner harbour to refuel vessels.

Directions

2.161

1 The outer harbour may be approached from seaward through waters clear of charted dangers.

The inner harbour is entered between the heads of the main and auxiliary moles. Lights (concrete towers, 8 m in height) stand at the head of each mole.

Berths

2.162

1 In the inner harbour there 14 berths for seagoing vessels with depths alongside ranging from 8·2 to 12 m.

In the outer harbour there is a berth for vessels with dangerous cargoes.

Port services

2.163

1 **Repairs:** minor repairs only; slipway.

Other facilities: ballast and slops reception available; hospital.

Supplies: fuel; fresh water; provisions.

Chart 1005

Bagfas Iskur Fertiliser Terminal

2.164

1 **General information**. Bagfas Iskur Fertiliser Terminal (40°23′N, 27°55′E) handles acid, ammonia and fertiliser cargoes.

Berths. Two berths about 125 m in length with reported depths alongside of 9·3 to 16 m.

Supplies: fuel by barge; fresh water by road tanker.

Anchorages and harbours

Çakılköy

2.165

1 The village of Çakılköy (40°28′N, 28°02′E) is situated about 7 cables SSW of Kapsül Burnu. A mole, about 4 cables in length, extends SSE from the N side of the harbour and provides protection to small craft.

Small craft facilities: fresh water; limited provisions.

Mola Adaları

2.166

1 **Good anchorage**, as shown on the chart and sheltered from NE winds may be obtained under the lee of Mola Adaları in depths of about 25 m, with the W extremity of Fener Adası bearing 333° and the S extremity of Halî Adası bearing 095°. Bottom weed over mud.

2 The bank with depths of less than 16 m, which extends SW from the W part of Fener Adası, is not so good an anchorage, the bottom being mostly sand.

Karşiyaka

2.167

1 The village of Karşiyaka (40°27′N, 28°00′E) is situated about 2¾ miles SSW of Kapsül Burnu. A mole, extends S thence WNW for about 4 cables from the N side of the harbour and provides protection to small craft.

Small craft facilities: fuel; fresh water; provisions.

Kum Limanı

2.168

1 Kum Limanı is entered between Kişla Burnu (40°25′N, 27°58′E) and Kalın Burnu, 1¼ miles SW.

Anchorage may be obtained in depths of between 20 and 33 m, mud. Kişla Burnu offers some protection from NE winds, but with winds in this direction, some swell enters the bay.

Tatlısu

2.169

1 **Anchorage,** as shown on the chart, is available in the bay off Tatlısu (40°25′N, 27°55′E) in depths of 25 m with Bakraç Burnu, 7½ cables E of the village, bearing 068°.

This anchorage provides better protection from the NE swell than Kum Limanı.

Dutliman

2.170

1 **Anchorage** for small craft is available off the village of Dutliman (40°23′N, 28°03′E). The holding ground is good.

COASTAL WATERS IN SOUTH PART OF MARMARA DENIZI

General information

Chart 1005

Route

2.171

1 The passage through the coastal waters in the S part of Marmara Denizi leads for about 50 miles from the vicinity of 40°32′N, 28°04′E to the head of Gemlik Körfezi, passing S of İmrali Adası (40°33′N, 28°32′E).

Topography

2.172

1 **South shore of Marmara Denizi.** Between Deveboynu (40°24′N, 28°09′E) and Mağara Burnu, 8½ miles E, the coast is rocky and for the most part precipitous. Within this stretch of the coast, the land rises steeply to a wooded range which culminates in Kara Tepe, 833 m high, about 2 miles inland.

2 Eastward of Mağara Burnu, the coast becomes low and sandy and the hills recede inland for about 1½ miles leaving a perfectly flat plain between them and the sea. This plain is, for the most part, inundated in the winter and on it are lagoons and swamps.

Kara Cayı (2.181) flows through the centre of this plain and the mouth of the river is about 1 cable wide. The narrow pass in the hills, through which the river flows is open when bearing 200°, and is plainly visible from seaward.

3 Between Burunucu (40°22′N, 28°40′E) and Arnavutköy Burnu, 9 miles E, the coast is cliffy and steep and the ground within it rises in ridges and spurs to the high land about 2 miles inland.

2.173

1 **İmrali Adası** lies 11 miles W of Boz Burnu (2.179). The surface of the island is much broken and a considerable part of the island is cultivated.

İmrali Cezaevi, the principal town on the island, is situated in the N part of Doğu Liman, 3 cables W of Değirmen Burnu (40°33′N, 28°33′E).

Caution. This island is a restricted area; see 2.92.

2.174

1 **Gemlik Körfezi**, which is entered between Boz Burnu (40°31′N, 28°47′E) and Arnavutköy Burnu, 9 miles SE, lies between the S shore of Bozburun Yarımadası and the mainland S.

2 The gulf is bordered by mountains. Most of them are bare or covered with stunted brushwood, but the higher peaks such as those in the centre of Bozburun Yarımadası and round the head of the gulf, are well covered in pine forests.

There are numerous villages on or near the coast. The valleys in the vicinity of the gulf are, for the most part, cultivated.

Submarine exercise area

2.175

1 A submarine exercise area is situated in Gemlik Körfezi. See 1.9.

Regulations

2.176

1 **İmrali Adası.** See 2.92.

Local magnetic anomaly

2.177

1 **İmrali Adası.** See 2.88.

Currents

2.178

1 The current trends E along the S shore and W along the N shore of Gemlik Körfezi. It sets strongly W abreast Boz Burnu (2.179) and Armutlu (2.183).

Directions

(continued from 2.136)

2.179

1 From the vicinity of 40°32′N, 28°04′E the route leads generally ESE for about 50 miles to Gemlik Limanı, passing (with positions from Boz Burnu (40°31′N, 28°47′E)):

2 SSW of Siğburun Resifi (13 miles WSW). A narrow ridge of sand and coral, with depths of less than 2 m over it. This reef extends 2 miles SSW of Siğburun, a low point that forms the S extremity of İmrali Adası. The reef is nearly always visible and the current frequently races over and round it creating overfalls, which help indicate its position. Thence:

NNE of Karacabey Light (white metal framework tower, 12 m in height) (14 miles SW), thence:

S of Boz Burnu, thence:

3 N of Arnavutköy Burnu Light (white metal framework tower, 6 m in height) (9 miles SSE). Arnavutköy Burnu shows up well from the W; a very prominent road winding round it about half way up to the summit serves also to distinguish it. The port of Mudanya (2.185) is situated about 1 mile SE of the headland. Thence:

4 S of Kapaklı Burnu (10 miles ESE). A steep-to headland which rises to a hill, 158 m high, close within it. Thence:

N of Tuzla Burnu Light (white metal framework tower, 12 m in height) (16 miles ESE) which stands on Tuzla Burnu, a low sandy headland with marshes within it, that forms the S entrance point to Gemlik Limanı (2.190).

5 **Useful Mark:**

Boz Burnu Light (white stone tower and dwelling, 9 m in height) (40°32′N, 28°47′E).

Small harbours and anchorages

Bandırma to Karacabey Boğazi

2.180

1 **Anchorage is obtainable** in depths of between 18 and 36 m about 2½ cables off the coast between Bandırma (40°21′N, 27°58′E) and the entrance to Karacabey Boğazi. The holding ground ground varies, but is generally mud. This mud is especially stiff off the village of Kurşunlu (40°24′N, 28°17′E) and to the E of this village the area for anchorage widens considerably.

There is no shelter for small craft along this stretch of the coast.

Karacabey Boğazi

2.181

1 Anchorage, in good holding ground, may be obtained on the mud bank which extends for 2 miles off the mouth of Karacabey Boğazı (40°24′N, 28°31′E). A convenient berth may be found in a depth of 13 m with the W entrance point bearing 226°.

Kara Cayı. The mouth of the river is about 1 cable wide and within the bar a depth of 1·8 m will be found at all seasons as far as Ekmekçi, about 5 miles upstream.

2 **Light**. See 2.179.

Caution. The position of the bar varies and depths on it range between 1 and 2 m. When there is a lot of water in the river, a slight wind from the N will raise a considerable sea on the bar, which then becomes dangerous.

Eşkel Limanı

2.182

1 Anchorage, in fine weather, may be obtained in Eşkel Limanı, a small bay entered SW of Burunucu (40°22′N, 28°40′E), in depths of 13 to 16 m.

Landing can be made at a small mole at all times.

Armutlu

2.183

1 **Anchorage** may be obtained off the village of Armutlu (40°31′N, 28°50′E). The best berth is in depths of about 18 m with Boz Burnu (2.179) bearing 295°. A jetty, 70 m in length and with depths of 10 m at its head, extends from the shore below the village.

Kavaklı Limanı

2.184

1 **Anchorage** may be obtained in Kavaklı Liman, a bay that lies 3 miles SSW of Tuzla Burnu (40°25′N, 29°06′E) (2.179).

Mudanya Limanı

Chart 1006, plan of Mudanya (see 1.16)

General information

2.185

1 The town of Mudanya (40°23′N, 28°52′E), which in 2000 had a population of 20 700, lies 1 mile SE of Arnavutköy Burnu (2.179) and stands on a plain closely backed by cultivated hills. It is the port for the city of Bursa, an important textile centre that lies 27 km SE.

Traffic. In 2002 the port was used by 20 vessels with a total deadweight of 54 614 tonnes.

Limiting conditions

2.186

1 The harbour, which fronts the town, is entirely open and cargo from vessels at anchor is transported by lighters which cannot be used in bad weather.

Pilots

2.187

1 Pilotage is compulsory for all vessels over 1000 grt. Pilots board 9 cables NNE of the town quay.

Harbour layout and berths

2.188

1 **Anchorages**. A general anchorage area, the limits of which are shown on the plan, lies up to 5 cables offshore between Arnavutköy Burnu and a position 3 cables SE of the town quay. The best anchorage is in 36 m mud about 2 cables E of the head of the town quay but it is indifferent and as heavy squalls come suddenly from the NW, a good lookout must be kept.

An anchorage for vessels carrying explosives and inflammable materials, the limits of which are shown on the chart and the plan, lies SE of the general anchorage area.

2 **Town quay**. A concrete jetty extends about 125 m NE and thence about 90 m NW from the shore about 11 cables ESE of Arnavutköy Burnu. Passenger vessels and vessels trading regularly with Mudanya berth alongside both sides of this jetty, the head of which is the usual landing place.

In 2000 there were depths of 6·7 to 11·3 m alongside the outer side and of 4·8 to 6·1 m alongside the inner side of the jetty head and depths of 3·8 to 6·7 m alongside the E side of the jetty.

3 A Ro-Ro berth is situated on the E side of the jetty.

A mooring buoy lies close N of the jetty to assist berthing and hauling off.

A light (mast) is exhibited from the head of the jetty.

2.189

1 **Other alongside berths.** Two small jetties lie 1 and 5 cables SE of the town quay. A 10 m wide jetty has been constructed 600 m NW of the Town Quay, from the shore in position 40°22·8′N, 28°53·1′E. It extends about 60 m NE and thence about 100 m NNW from the shore. In 2000 there were charted depths of 10·5 to 17 m alongside the outer face and of 4·9 to 17 m alongside the inner face.

2 **Mooring buoys**. Three mooring buoys provide a berth for a vessel to secure to the seaward end of oil pipelines that extend from the shore for about ¾ cable, 5½ cables SE of the town quay. Vessels secure bows to the NE to a single mooring buoy and stern to two mooring buoys. There are some tanks close SE of the root of the pipelines.

Gemlik Limanı

Charts 1005, 1006, plan of Gemlik

General information

2.190

1 The town of Gemlik (40°26′N, 29°09′E), which in 2000 had a population of of 63 700, stands at the head of Gemlik Körfezi. Göldere, the rapid but shallow outlet of İznik Gölü, 9 miles E, flows through the valley SE of the town. The hills in the vicinity are covered in trees.

Traffic. In 2002 the port was used by 303 vessels with a total deadweight of 9 745 034 tonnes.

2 **Port limits** extend SE for about 13 miles from Boz Burnu (2.179) to a position on the southern shore of Gemlik Körfezi. For anchorage within port limits see 2.194.

Port authority. Gemlik Directorate, Port of Gemlik, Liman Başkanlığı, Gemlik.

Limiting conditions

2.191

1 **Density of water**. Varies between 1·019 and 1·025 g/cm^3.

Maximum size of vessel handled: 32 000 grt at fertiliser jetty. Vessels of up to 180 m in length and with a draught of up to 12 m have used the port.

Deepest and longest berth. See 2.195.

Arrival information

2.192

1 **Pilotage** is compulsory for foreign vessels over 500 grt and Turkish vessels over 1000 grt and available 24 hours a day. Pilots board about 8 cables N of Tuzla Burnu (40°25′N, 29°06′E).

Tugs are available.

Harbour

2.193

1 **Layout**. The port consists of an inner and outer harbour. the inner harbour consists of all waters E of a line, leading approximately N and S, that passes 1 cable W of the head of the town jetty (40°26′N, 29°09′E). The outer harbour consists of the remaining waters in the port area.

2 Jetties are situated on the E shore of the bay fronting the town and along the S shore of the bay between the mouth of Göldere and Tuzla Burnu, 3 miles W.

An outfall pipeline, marked by buoys, extends 7 cables WNW from a point on the shore close S of the mouth of Göldere.

Berths

2.194

1 **Anchorage**. An anchorage area is situated, the limits of which are shown on the chart, 1½ miles WNW of the town jetty.

An anchorage area for vessels carrying explosives and inflammable materials, the limits of which are shown on the chart, lies 3 miles NNW of Tuzla Burnu (2.179).

Mooring buoy. A mooring buoy is located in the outer harbour 4½ cables NNE of Tuzla Burnu.

2.195

1 **Alongside berths:**

Town jetty. Length 170 m. Depths. In 2000 there were charted depths of 6·5 to 11 m alongside the S side and of 3·2 m to 11 m alongside the outer 74 m of the N side of the jetty. A light (grey framework tower) is exhibited from the head of the jetty.

New jetty. Situated 5 cables S of the town jetty, extending NNE from the shore. Reported to be capable of berthing vessels of 3000 grt.

2 **Tanker berth**. A short jetty extends from the shore 11 cables E of Tuzla Burnu. Tankers berth stern-to the head of the jetty with anchors down forward, mooring buoys lie each side of the jetty head. Berthing restricted to daytime only but unberthing at anytime. Maximum size of vessel: length 178 m, draught 10 m.

3 **Fertiliser berth.** Situated 7 cables E of Tuzla Burnu. The jetty has facilities for handling bulk or bagged fertiliser and liquid ammonia. General depths alongside of between 10·5 and 14 m but there is a 6·9 m patch near the centre of the jetty. Berth

accommodates vessels up to 32 000 grt with vessels always berthing port side to.

4 **Borusan Jetty.** Situated 4 cables SW of Tuzla Burnu. This jetty, which handles iron products, can accept vessels of up to 10 000 dwt with a draught of 8·5 m.

Borusan tanker berth. An oil pipeline, as shown on the chart, extends 3 cables NW from Borusan (1 mile SW of Tuzla Burnu). Two mooring buoys provide a berth for tankers to moor at the seaward end of the pipeline.

Port services

2.196

1 **Repairs**. None.

Other facilities: medical facilities available.

Supplies: fuel oil supplied by road tanker; fresh water; provisions.

Communications. Airport at Bursa 30 km S.

Other names

2.197

1 Çatalzeytin Burnu (40°22′N, 29°02′E).
Kapanca Burnu (40°23′N, 28°44′E).
Karaincir Burnu (40°28′N, 28°54′E).

COASTAL WATERS IN NORTH PART OF MARMARA DENIZI

General information

Charts 1004, 1005

Route

2.198

1 The passage from the NE approaches of Çanakkale Boğazi through the coastal waters in the N part of Marmara Denizi leads about 75 miles ENE from the vicinity of 40°36′N, 27°15′E to a position about 6 miles S of Yeşilköy Burnu (40°58′N, 28°50′E). Traffic for Botaş (41°00′N, 27°59′E) (2.225), which is not local, should remain in the traffic lane, shown on the chart, until S of Marmara Ereğlisi, then follow the 355° Recommended route.

Topography

2.199

1 **Hoşköy Burnu to Tekirdağ**. From close N of Hoşköy Burnu (40°43′N, 27°19′E) (2.97) to Kocaburun (2.205), 10 miles NE, cliffs rise directly from the sea to elevations of between 60 and 275 m. The town of Gaziköy, 2 miles NNE of Hoşköy Burnu, is prominent, being mainly built on the steep slope of a spur of the hills, about 30 m high.

2 The high cliffy coast ends about 1¼ m N of Kocaburun and thence, as far as Tekirdağ (40°59′N, 27°31′E) (2.219), the coast is comparatively low with low cliffs in places.

2.200

1 **Tekirdağ to Adar Burnu.** Between Tekirdağ and Kargaburun (2.205), 16 miles E, the coast is generally cliffy and within it the land gradually rises to elevations of between 150 and 180 m, with many streams discharging along the shore. The hills are rounded downs, either cultivated or covered in yellow weed and devoid of trees. The valleys are, for the most part, wide and fertile.

2 Between Kargaburun and Adar Burnu (2.210), 5 miles E, the coast consists mainly of sandy beaches backed by low, steep hills. A sunken rocky reef fringes this stretch of the coast, extending about 2 cables offshore.

2.201

1 **Adar Burnu to Yeşilköy Burnu.** Between Adar Burnu (40°58′N, 27°58′E) and Yeşilköy Burnu, 40 miles E, the coast is mainly low with sandy beaches and occasional cliffy points. Shoal banks on which there are some sunken rocks, extend a short distance offshore in many places.

2 Within this stretch of the coast the land rises very gradually and appears treeless, arid and uncultivated. Seen from an offing, the skyline, which is formed by the summit of the rounded downs about 200 m high, is about 5 miles inland.

3 There is usually good landing on this stretch of the coast, but the prevailing E winds of summer raise sufficient surf on the beaches W of Silivri (41°04′N, 28°15′E) (2.213) to make landing difficult except under the lee of the points.

Submarine exercise area

2.202

1 A submarine exercise area is situated in the bay that lies between Adar Burnu (40°58′N, 27°58′E) and Baba Burnu (26 miles E). See 1.9.

Current

2.203

1 **Tekirdağ to Yeşilköy Burnu.** Between Tekirdağ and Yeşilköy Burnu the main current sets mostly SW at between ½ to ¾ kn. A weak counter current sets E along the coast between Tekirdağ and Kargaburun (2.205) and off Ereğlı Limanı (2.210).

Principal marks

2.204

1 **Landmarks:**
Kargaburun radio mast (40°58′N, 27°52′E), which is marked by red obstruction lights.

2 **Major lights:**
Hoşköy Light (40°42′N, 27°18′E) (2.94).
Kargaburun Light (radio mast as above).
Ereğli Light (white metal tower and dwelling, 6 m in height) (40°58′N, 27°58′E).
Yeşilköy Burnu Light (40°58′N, 28°50′E) (2.318).

Directions

(continued from 2.69)

2.205

1 From the vicinity of 40°36′N, 27°15′E the track leads generally NE and then E, through waters clear of charted dangers, for about 75 miles to the vicinity of Yeşilköy Burnu (40°58′N, 28°50′E), passing:
SE of Hoşköy Light (40°42′N, 27°18′E) (2.94), thence:

2 SE of Kocaburun (40°51′N, 27°27′E) a bluff headland, thence:
S of Kargaburun (40°58′N, 27°52′E). A projecting spur, 17 m high, at the E end of some low earthy cliffs. Kokonar Tepesi, a conspicuous tumulus 100 m high, rises 1¼ miles NE of the headland. Thence:

3 S of Örencik Light (white tower on concrete base, 5 m in height) (40°58′N, 27°54′E), standing on a rock 0·3 m high which is situated in a rocky patch that lies about 4½ cables offshore. Thence:
S of Baba Burnu (40°59′N, 28°33′E). A cliffy headland that rises to a conical hill immediately within it. A light-buoy (special) is moored at the end of an outfall extending 1 mile SSW from Baba Burnu. Thence:

4 S of Değirmen Burnu Light (40°58′N, 28°37′E) (2.96), thence:
S of Yeşilköy Burnu Light (40°58′N, 28°50′E).

2.206

1 **Useful marks:**
Lights (concrete columns, 7 m in height) exhibited from breakwaters at Barbaros (40°54′N, 27°28′E).
(Directions for the SW approaches to İstanbul Boğazi are given at 2.319)

Anchorages and harbours

Kocaburun to Tekirdağ

2.207

1 **Anchorage** may be obtained along the coast between Kocaburun (40°51′N, 27°27′E) and Tekirdağ, 8 miles NNE. However it is not good anchorage and the prevailing NE winds make landing difficult, especially between Barbaros and Tekirdağ where a rocky ledge fronts the beach.

Chart 1005

Tekirdağ to Kargaburun

2.208

1 **Anchorage.** Good anchorage is obtainable between Tekirdağ and Kargaburun, 16 miles E. Depths shoal gradually from about 36 m, 1½ miles offshore. The nature of the bottom varies being sand, shells or muddy sand inshore and mud outside 27 m.

2 An anchorage area for Martas is centred on 40°58′·0N, 27°50′·3E.

Martas

2.209

1 **General information.** Martas (40°58′N, 27°56′E), 3 miles E of Kargaburun, is a port handling bulk and general cargo.
Anchorage. A designated anchorage area in depths of 16 to 60 m, the limits of which are shown on the chart, is situated 4 miles W of the jetty.

2 **Pilots and tugs.** Pilotage is compulsory for all foreign vessels over 50 grt and all Turkish vessels over 1000 grt. Pilots board about 1 mile from the berth. Tugs are available.
Berths. There is a single jetty extending about 250 m SSW from the shore providing 4 berths for vessels up to 250 m in length, 14 m draught and 45 000 dwt.
Supplies: fuel by road tanker; fresh water.

Ereğli Limanı

Chart 1006, plan of Marmara Ereğlisi

2.210

1 **General information.** Ereğli Limanı is entered between Adar Burnu (40°58′N, 27°58′E) and Ereğli Burnu, 8 cables NNE. Adar Burnu is the extremity of a small hilly peninsular, 56 m high, on the N slopes of which stands the town of Marmara Ereğlisi. When approaching along the coast from either E or W, the peninsular first appears as an island.

2 **Landmarks.** Ereğli Light (2.204) and a group of oil storage tanks, both of which stand on the peninsular.
Caution. A reef extends 1 cable N from the NE extremity of the peninsular. Kilkaya Light (E cardinal, 5 m in height) marks the N limit of this reef.

2.211

1 **Anchorage** may be obtained in a depth of 14 m with Adar Burnu bearing 185°, distant 4½ cables. This berth can be uncomfortable as it is exposed to the prevailing NE wind, which often blows with considerable force.
Shelter for small craft can be found in the N part of the harbour in depths of 5 m.

2.212

1 **Alongside berths.** An oil loading jetty extends 300 m from the W shore of the bay.
A pier at the customs house, 3 cables W of Adar Burnu, has depths at its outer end of about 3 m.
A small basin lies on the S side of the bay, 1½ cables E of the customs house pier.

2 A fishing harbour, protected from the NE by a breakwater and with a quay 160 m long, lies close W of the customs house pier.

Chart 1005

Silivri Koyu

2.213

1 **General information.** Silivri Koyu is entered between Karga Burnu (41°04′N, 28°13′E) and Kabla Burun (2 miles E). Foul ground extends about 2 cables from Karga Burnu and a bank on which there are depths of less than 5 m extends up to 3 cables from the shore of the bay.
A gas production platform marked by a light-buoy (S cardinal) lies 1½ miles SW of Karga Burnu.

2 The town of Silivri is situated on the E side of the bay, about 7½ cables NW of Kabla Burun. It stands on the slope of a hill, rising in precipitous earth cliffs, 50 m in height, immediately E of the town. From seaward these cliffs are prominent and ancient walls are visible on their summits.

2.214

1 **Anchorage.** The best anchorage is obtainable on a line joining the entrance points, in depths of 14 m, mud.
Small craft can anchor in the N part of the bay, in depths of 3 to 5 m, sand.

2.215

1 **Harbour.** Two breakwaters shelter the harbour from the NW, S and SW. Lights (concrete columns, 5 m in height) are exhibited from each breakwater.
A concrete jetty, 210 m in length, extends WSW abreast the town. There are depths of 4·2 m at the head of the jetty.
Facilities for small craft: minor repairs; fuel; fresh water; provisions.

Selimpaşa

2.216

1 **Anchorage** may be obtained off the village of Selimpaşa (41°03′N, 28°22′E) in depths of between 13 and 16 m, with the tower in the village bearing 008°, but care must be taken not to proceed within depths of 9 m as the edge of the bank fronting the shore is steep-to.
Harbour. There is a harbour for small craft protected by an ancient Roman mole.

2 **Caution.** The area immediately W of the mole is encumbered with dangerous rocks, and a buoy (black and red) marks a detached dangerous rock lying 5 cables SE of the mole and about 2½ cables offshore.

Güzelce

2.217

1 The village of Güzelce (41°00′N, 28°30′E) is situated about 1¾ miles NW of Babu Burnu (2.205). An L-shaped breakwater extends about 2 cables SW thence 2 cables SE from the shore and provides protection to small craft.

Büyükçekmece Koyu

2.218

1 Büyükçekmece Koyu is entered between Baba Burnu (40°59′N, 28°33′E) and Mandataş Burnu, 2½ miles ESE. At the head of the bay, close W of the village of Büyükçekmece, is the entrance to Büyükçekmece Gölü, a large lagoon in which depths are nowhere greater than 1·5 m.

A light-buoy (special) is moored at the end of an outfall extending 1 mile SSW from Baba Burnu.

2 **Anchorage.** The bay provides good and safe anchorage except in heavy SW gales. The holding ground of stiff mud is good. The best anchorage is SE of Mimarsinan, in depths of 11 m, with the S minaret in Büyükçekmece bearing 027°, 8¾ cables.

3 **Harbour.** A jetty, with depths alongside of about 3 m, and protected by a breakwater, is situated at Büyükçekmece. The jetty is used by ferries and a light (white concrete tower, 8 m in height) stands at its head.

A concrete jetty, 108 m in length and with depths of 1 to 6 m alongside, extends from the shore at Mimarsinan 1 cable N of the root of the S breakwater. A fishing harbour, protected by breakwaters, is situated in the NW part of the bay.

Tekirdağ

Chart 1006, plan of Tekirdağ

General information

2.219

1 **Position.** The town of Tekirdağ (40°59′N, 27°31′E), is built on the gentle slopes of a hill facing S and from the bay appears very imposing. There are numerous trees interspersed amongst the buildings.

2 **Function.** Tekirdağ, which in 2000 had a population of 107 200 is a commercial centre and port and is the administrative centre of the province. It handles dry, general and liquid cargoes and also containers.

Traffic. In 2002 the port was used by 224 vessels with a total deadweight of 1 639 645 tonnes.

3 **Port Authority.** Akport Tekirdag Liman Isletmesi AS, Barbaros Yolu Uzeri, Liman – Tekirdag, Turkey.

Limiting conditions

2.220

1 **Deepest and longest berth.** No 4 berth at the Container Terminal (2.223).

Density of the water is 1022 g/cm^3.

Arrival information

2.221

1 **Port radio.** See *Admiralty List of Radio Signals Volume 6(3)* for details.

2 **Pilotage** is compulsory for all foreign flag vessels over 150 grt and all Turkish merchant vessels of 1000 grt or more, and yachts, entering or leaving the harbour or anchorage**.**

Tugs are available. Their use is compulsory for all vessels over 2000 grt except warships.

Harbour

2.222

1 **General layout.** The Old Pier and a basin for small craft are situated abreast the centre of the town. The container terminal is situated about 9 cables SW of the Old Pier with the New Pier situated close SSW. A jetty used for handling grain and vegetable oils is situated 2 cables SSW of the New Pier.

Designated anchorage areas are situated E and S of the port. Winds from ESE cause a heavy swell.

2 **Development.** In 2002 works were in progress to the E of the old pier and also to enlarge the container terminal,

Berths

2.223

1 **Anchorages,** the limits of which are shown on the chart, are situated as follows:

Vessels under 1000 grt in an area centred 2½ miles ESE of the New Pier.

Vessels over 1000 grt in an area centred 2¾ miles S of the New Pier.

Vessels carrying dangerous cargoes in an area centred 5 miles E of the New Pier.

2 **Berths:**

Old Pier. Four berths. Longest is 108 m with depths alongside of 5·7 to 8·5 m.

Container Terminal. Five berths. Longest is 356 m with depths alongside of 12 m.

3 **New Pier.** Two berths. Longest is 343 m with depths alongside of 5 to 11 m.

New Jetty. Two berths. Each 150 m in length with depths alongside of 10 to 11 m.

Port services

2.224

1 **Facilities:** hospital.

Supplies: fuel available by road tanker or by barge; fresh water; provisions.

Botaş

Chart 1005 (see 1.16)

General information.

2.225

1 **Position.** Botaş Natural Gas Terminal is situated in position 40°59′·6N, 27°59′·1E, 2 miles NE of Ereğli Light. An area into which entry by unauthorised craft is prohibited lies around the terminal, as shown on the chart.

Function. The terminal has a single jetty for the handling of liquified natural gas (LNG). Diesel fuel cargoes may also be handled at the terminal, but will not be handled simultaneously with LNG.

Traffic. In 2002 the port was used by 74 vessels with a total deadweight of 4 953 492 tonnes.

2 **Port Limits and Approach** are shown on the chart.

Port Authority. Boru Hatlari Petrol Tasima AS, PO Box 17, Marmara Ereğlisi, Tekirdağ, Turkey.

Limiting conditions

2.226

1 **Density** of the water is 1022 g/cm^3.

Maximum size of vessel handled. 110 m length, 15 m draught, 130 000 m^3 capacity.

Arrival information

2.227

1 **Anchorages.** Anchorage for LNG vessels, the limits of which are shown on the chart, is within an area enclosed by a circle of ½ mile radius centred 1¼ miles SSE of the jetty. Only one vessel may anchor in this area, a second vessel may only anchor at a point indicated by the harbour authority.

Anchorage for vessels carrying diesel oil, the limits of which are shown on the chart, is within an area centred 2 miles NE of the jetty.

2 **Pilots and Tugs.** Vessels carrying LNG are required to take two pilots for the passage through Çanakkale Boğazi (Dardanelles) to Botaş. Three tugs will accompany the vessel through Çanakkale Boğazi, also a patrol boat which will enforce a 5 cable exclusion zone around the vessel.

The Botaş terminal pilot will supervise the unloading operation. The use of three tugs for berthing is compulsory.

3 **Regulations concerning entry.** LNG vessels must transit Çanakkale Boğazi in daylight, with visibility of more than 1 mile, at a maximum speed of 10 knots. Other traffic, in both directions, will be suspended.

Berths
2.228

1 **Berth.** A T-headed jetty extends 1½ cables ESE from the shore; there is a least charted depth alongside of 16·5 m.

Port services
2.229

1 **Supplies:** Fuel oil and provisions will only be supplied either before or after unloading operations. Fuel oil only supplied in the anchorage area, after gaining permission from the harbour authority.

Other names
2.230

1 Canbaz Burnu (41°04′N, 28°07′E).
Hacımuratlı Deresi (41°01′N, 27°44′E).
Uçburnu (41°01′N, 28°29′E).

AMBARLI

General information

Charts 1005, 1006 plan of Ambarlı (see 1.16)

Position
2.231

1 The port of Ambarlı (40°58′N, 28°41′E) is situated on the N shore of Marmara Denizi about 34 km W of İstanbul.

Function
2.232

1 The port is divided into two regions. Region No 1 handles general, dry, bulk and container traffic; Region No 2 handles oil and gas cargoes.

Port limits
2.233

1 These are shown on the chart and extend S from Baba Burnu (40°59′N, 28°33′E) for 2 miles, thence ESE for 8½ miles where they have a common border with the W limits of the port of İstanbul.

Approach and entry
2.234

1 From the N boundary of the W-bound TSS in position 40°54′·6N, 28°40′·9E, the port is approached along the recommended track, shown on the chart, which leads 000° for 3 miles.

Traffic
2.235

1 In 2002 the port was used by 809 vessels with a total deadweight of 22 386 602 dwt.

Port Authority
2.236

1 Altas Ambarlı Liman Tesisleri Tic AS, Angurya Ciftligi Mevkii, 34900 Yakuplu-Büyükçekmece, İstanbul.

Limiting conditions

Deepest and longest berth
2.237

1 Region No 1. The longest berth is at Mardaş, the deepest is at Soyak.
Region No 2. Total Offshore Platform (2.250).

Density of water
2.238

1 Density of the water is about 1·018 g/cm^3.

Maximum size of vessel handled
2.239

1 In Region No 1 the largest vessel handled was 273 m in length with a draught of 11 m.
In Region No 2 the largest vessel handled was 176 m in length with a draught of 9·45 m.

Arrival information

Port radio
2.240

1 See *Admiralty List of Radio Signals Volume 6(3)* for details.

Notice of ETA
2.241

1 ETA should be sent 48, 24 and 12 hours in advance. See *Admiralty List of Radio Signals Volume 6(3)*.

Outer anchorages
2.242

1 Designated anchorages are situated, with positions from Değirmen Burnu (40°58′N, 28°37′E), as follows:
Dry cargo vessels under 1600 grt; 2¾ miles NW and 2 miles SE.
Explosives anchorage; 1¼ miles SW.
Quarantine anchorage; 3¼ miles W.

2 Anchoring is prohibited within 500 m of the gas pipeline (2.243) which lands to the W of the oil berths.

Submarine pipeline
2.243

1 A gas pipeline from Pendik (2.343) lands between the cargo and oil berths. See caution at 1.29.

Pilotage
2.244

1 Pilots board about 3¼ miles SE of Değirmen Burnu Light (40°58′N, 28°37′E) close W of the recommended track (2.234). Pilotage is compulsory and available 24 hours although tankers are not normally berthed at night but can sail at any time.

Tugs
2.245

1 Tugs are available. Their use is compulsory, with the number being dependent on the size and manoeuvring capabilities of the vessel.

Harbour

General layout
2.246

1 Region No 1, containing the dry cargo handling complexes, is situated at the W end of the port and extends ENE for about 8 cables between the Soyak (40°57′·5N, 28°40′·1E) and Kumport jetties.
With the exception of the Total Offshore Platform (2.250) Region No 2, containing all the oil and gas berths, is situated

at the E end of the port and extends from the Aygaz platform for about 7 cables E to the TEK/Petrol Ofisi Platform (2.249).

Development

2.247

1 Work was in progress (2003) to extend the breakwater at the S end of the Soyuk jetty about 650 m E, and to reclaim land W of the Soyuk jetty.

Directions

Approaches

2.248

1 See 2.234.

Basins and berths

Anchorages and moorings

2.249

1 **Region No 2** (with positions from TEK/Petrol Ofisi Platform (40°58′·1N, 28°42′·4E)):

BP Amoco (1100 m W). A multi-mooring buoy berth with a depth of 12 m, handling tankers of up to 25 000 dwt.

2 Shell-BP (jetty 1100 m WNW; platform 860 m WNW and buoy berth 670 m W). The jetty handles tankers of up to 1000 dwt and draught 4 m; the platform handles tankers of up to 15 000 dwt and draught 9 m; the buoy berth handles tankers of up to 40 000 dwt with a draught of 12 m.

3 TEK/Petrol Ofisi (buoy berth 450 m WNW and platform). Buoy berth with a depth of 9·4 m, handling tankers of up to 25 000 dwt; the platform handles tankers with a maximum draught of 13 m.

Alongside berths

2.250

1 **Region No 1** (with positions from Kumport Jetty Light (40°57′·8N, 28°41′·1E)):

Kumport (350 m NW). There are 16 berths; the longest and deepest is 309 m in length with a depth of 13·5 m alongside.

Akçansa Cement (550 m NW). There are 2 berths; the longest and deepest is 310 m in length with a depth of 14 m alongside.

2 Mardaş (700 m W). There are 2 berths; the longest and deepest is 524 m in length with depths of up to 14·5 m alongside.

Armaport (900 m WSW). There are 4 berths; the longest and deepest is 305 m in length with a depth of 12 m alongside.

3 Anadolu Cement (1150 m WSW). There are 2 berths; the longest and deepest is 240 m in length with depths of 5 to 10 m alongside.

Soyak (1300 m WSW). There are 4 berths; the longest and deepest is 200 m in length with a depth of 16 m alongside.

4 **Region No 2**:

Total Offshore Platform (40°57′·6N, 28°39′·9E). There are 2 berths; the longest and deepest is 200 m in length with depths of 11 to 17 m alongside.

Aygaz Offshore Platform (40°58′·2N, 28°41′·6E). There is 1 berth handling tankers of up to 200 m in length and draught 7·2 m.

5 For the latest depths the chart and port authorities should be consulted.

Port services

Other facilities

2.251

1 Hospital facilities; oily waste disposal at some berths; Ro-Ro berths.

Supplies

2.252

1 Fuel available by barge; fresh water alongside or by barge; provisions.

Communications

2.253

1 İstanbul Airport (13 km).

Small craft

2.254

1 A small craft harbour is situated at Avcılar (40°58′·3N, 28°43′·1E).

Other names

2.255

1 Küçükkızıl Burnu (40°58′N, 28°41E).
Manda Burnu (40°58′N, 28°36′E).

APPROACHES TO İZMIT KÖRFEZI

General information

Charts 1005, 497

Route

2.256

1 Vessels should remain in the traffic lane, shown on the chart, whilst crossing Marmara Denizi until the vicinity of 40°45′N, 28°15′E. Thereafter the Recommended route, 091°, leads into the entrance to İzmit Körfezi.

Topography

2.257

1 **North shore of** Bozburun Yarımadası is backed by lofty mountains intersected by numerous valleys and passes. The highest point on the peninsula is Taz Dağı, 921 m high, 6½ miles ENE of Boz Burun (40°31′N, 28°47′E).

2 East from Boz Burun to Deveboynu Burnu (40°40′N, 29°09′E) (2.261) the coast is steep-to with no off-lying dangers. Between Deveboynu Burnu and Çatal Burun, 11 miles ENE, the coast changes in character and consists of a sandy beach backed only by low spurs, as the higher hills recede farther inland.

2.258

1 **North side of approaches to İzmit Körfezi.** See 2.319.

Submarine exercise area

2.259

1 Submarines exercise frequently within the area, as shown on the chart, N of Bozburun Yarımadası. See 1.9.

Principal marks

2.260

1 **Major lights:**

Yeşilköy Burnu Light (40°58′N, 28°50′E) (2.318).
Ahırkapı Light (41°00′N, 28°59′E) (2.318).
Fenerbahçe Light (40°58′N, 29°02′E) (2.318).
Yelkenkaya Burnu Light (white round stone tower and dwelling) (40°45′N, 29°21′E).

Directions

(continued from 2.96)

2.261

1 From the vicinity of 40°45′N, 28°55′E, the route leads E to the entrance to İzmit Körfezi passing:

S of Sivriada Light (40°53′N, 28°58′E) (2.319), thence:
N of Sivrikaya Burnu Light (white metal column, 10 m in height) (40°39′N, 29°00′E), thence:

2 S of Balıkçı Adası Light (40°49′N, 29°07′E) (2.332), thence:
N of Deveboynu Burnu (40°40′N, 29°09′E), a headland with steep cliffs 30 m high that shows up prominently from E and W. Thence:
S of Hayırsızada Light (40°47′N, 29°16′E) (2.332), thence:

3 S of Yelkenkaya Burnu (40°45′N, 29°21′E). A light (2.260) stands on this bold and moderately steep-to headland, which forms the N entrance point of İzmit Körfezi. Thence:
N of Çatal Burun (40°42′N, 29°23′E), a low sandy point that forms the S entrance point of İzmit Körfezi.

(Directions for İzmit Körfezi continue at 2.274)

Anchorages and harbours

North coast of Bozburun Yarımadası

2.262

1 There is no safe anchorage on this stretch of the coast. With S winds, vessels can find temporary anchorage off the villages of Enger (40°39′N, 29°01′E) and Koruköy (40°39′N, 29°10′E), and in the bay on the W side of Deveboynu Burnu (40°40′N, 29°09′E).

Çınarcık

2.263

1 A breakwater extends 1 cable ENE from a point on the shore 1 mile SW of Deveboynu Burnu and about 5 cables ENE of the village of Çınarcık. A light (white concrete tower) is exhibited from the end of the breakwater.

Yalova

2.264

1 Yalova (40°39′N, 29°16′E), which is the principal town in the locality, lies 1½ miles E of the mouth of the Selimandra Deresi. A stone pier with depths of 2·7 m alongside extends about 180 m from the shore abreast the centre of the town. A light is exhibited from the end of the pier.

2 **Harbour.** A small harbour, protected by two moles, lies 1 mile W of the centre of the town and close E of the mouth of the Samanlı Deresi. Lights (white reinforced concrete towers, 6 m in height) are exhibited from the head of each mole.

Caution. An unlit oil production platform lies close N of the E breakwater.

3 **Anchorage,** which is the best along this stretch of coast, can be obtained about 3½ cables NW of the harbour entrance in a depth of 34 m, mud. the holding ground is good and there is plenty of room.

4 **Designated anchorages,** the limits of which are shown on the chart, are situated off Çatal Burun (2.261) as follows:
General anchorage: centred 2½ miles WSW.
Explosives anchorage: centred 1¼ miles W.
Quarantine anchorage: centred 5 cables NW.

İZMIT KÖRFEZI

General information

Chart 497 (see 1.16)

Route

2.265

1 A recommended two-way traffic route, shown on Turkish charts, leads into İzmit Körfezi from the vicinity of 40°44′N, 29°22′E to the head of the gulf, 26 miles E.

Topography

2.266

1 İzmit Körfezi is entered between Çatal Burun (40°42′N, 29°23′E) (2.261) and Yelkenkaya Burnu (2.261), 3½ miles NNW. The shores of the gulf are, in general, very steep-to and convenient anchorage is only to be found in certain places.

2 The gulf is divided into three basins by two narrows. The E of these basins forms a good harbour, with convenient depths throughout.

The borders of the gulf alternate between tree clad mountain, valley and plain.

3 Within the head of the gulf is a plain which contains the delta of the Kilez Dere. The river enters the gulf through marshes about 1 mile S of the town of İzmit. Only shallow draught boats can enter the mouth of the river.

A number of large industrial complexes are situated on the shores of the gulf.

Port limits

2.267

1 The western limit of İzmit Körfezi Harbour, shown on the chart, is a line joining Yelkenkaya Burnu (40°45′N, 29°21′E) with Çatal Burun (40°42′N, 29°23′E).

Outer anchorage

2.268

1 A designated anchorage area, the limits of which are shown on the chart, is bounded by a line joining Darıca Burnu (40°45′N, 29°23′E), Kaba Burun (40°46′N, 29°31′E), and the coast to the N. Attention is drawn to the submarine gas pipeline, shown on the chart, which forms the E border of the area.

Pilotage and tugs

2.269

1 **Pilotage** in İzmit Körfezi is compulsory for Turkish vessels over 1000 grt and for all foreign vessels over 150 grt. Pilots board 7 cables S of Yelkenkaya Burnu Light (40°45′N, 29°21′E) (2.260).

Tugs, which are stationed at Darıca, are compulsory for all vessels over 2000 grt.

Traffic regulations

2.270

1 **Entry** to İzmit Körfezi is prohibited without the approval of the Turkish authorities.

Prohibited areas. Entry is prohibited into the following military areas, the limits of which are shown on the chart:
An area surrounding the jetty at Konca, 5 cables E of Kestane Burnu (40°43′N, 29°43′E).
Dil Burnu (40°45′N, 29°31′E) (2.274).
Gölcük (40°43′N, 29°49′E) (2.281).
Başiskele (40°43′N, 29°56′E) (2.284).

2 **Restricted area.** Permission of the Port Authority is required to enter the restricted area, shown on the chart, surrounding the IPRAŞ refinery jetties (40°45′N, 29°46′E) (2.291).

3 **Submarine exercise area.** Submarines exercise frequently within the area shown on the chart, in the central basin of İzmit Körfezi. See 1.9.

Explosives anchorage, the limits of which are shown on the chart, lies WNW of Yarımca-Tütünçiftlik Industrial complex (2.291).

4 **Pollution** (1.30). It is prohibited for all vessels entering İzmit Körfezi to discharge oily waste, bilge and sewage tank residue into the sea. Facilities are provided for their reception in the ports in İzmit Körfezi.

Measured distance and compass correction beacons
2.271

1 A measured distance, shown on the chart, is situated in the NE part of Topçu Koyu, 2 miles SW of Dil Burnu (40°45′N, 29°31′E) (2.274).

Limits: the limits of the measured distance are marked by pairs of beacons.

Distance: 1852 m.

2 Running track: 045°/225°.

A pair of beacons, 4 cables S of Dil Burnu and a third beacon close SW of the SW pair of beacons marking the measured distance, have been established for compass alignment.

Natural conditions
2.272

1 **Currents**. The currents set E along the S shore and W along the N shore.

Local weather. Very heavy squalls come down from the valleys, especially with S winds, and in thunderstorms the gusts are sudden and violent.

A short choppy sea gets up with strong W winds, the effects of which sometimes reach the head of the gulf and make boatwork unpleasant, even at İzmit.

Principal marks
2.273

1 **Major Light:**

Yelkenkaya Burnu Light (40°45′N, 29°21′E) (2.260).

Directions
(continued from 2.261)

2.274

1 From a position N of Çatal Burun (2.261) the route leads E to the head of İzmit Körfezi passing:

2 S of Darıca Burnu (40°45′N, 29°23′E). A signal station stands on the headland. Thence:

N of Dil Burnu Light (white metal framework tower, 9 m in height) (40°45′N, 29°31′E) which stands on Dil Burnu, the N extremity of a very low promontory. See caution below. A hill, 28 m high, stands about 1 mile S of the point and at first appears as an island when approaching from the W. An area into which entry is prohibited lies off Dil Burnu, as shown on the chart. Thence:

3 S of Kaba Burun Light (metal tripod on concrete base, 7 m in height) (40°46′N, 29°31′E) standing on Kaba Burun, which is steep-to. A shipyard stands close E of this point. Thence:

4 S of Zeytin Burnu Light (white metal mast, 10 m in height) (40°44′N, 29°47′E), standing on Zeytin Burnu, a low sandy spit about 1 m high, which is covered in vegetation and encloses a lagoon. Thence:

5 N of Gölcük Burnu Light (metal framework tower, white concrete base, 9 m in height) (40°44′N, 29°49′E) which stands on Gölcük Burnu, a low sandy spit, off which a shoal bank extends about ¾ cable.

6 **Caution.** An extensive bank of sand and mud, with depths of less than 5 m over it, extends 3 cables N of Dil Burnu Light. This bank is steep-to and should be approached with caution. The sand bank which, N of the point, forms the core of the bank varies in height and extent, being at times above water and at others, awash. The discolouration off the point is due to currents and does not coincide with the limits of the bank.

Anchorages and harbours

Darıca
2.275

1 **Lafarge Aslan Cement Piers.** Two berths handling cement and coal. No 2 berth, the longest and deepest, is 153 m in length with depths alongside of 14 to 26 m, and is situated 1½ miles W of Darıca Burnu (40°45′N, 29°23′E). The use of tugs is compulsory. It was reported (2003) that due to earthquake damage No 1 pier was no longer in use.

Topçu Koyu
2.276

1 Topçu Koyu is entered between Çatal Burun (40°42′N, 29°23′E) and Dil Burnu, 6½ miles ENE. Within the head of this bay, the coastal hills approach the gulf with steep slopes to seaward leaving a narrow plain between their foot and the sea.

2 **Anchorage.** Good anchorage may be obtained in depths of between 9 and 36 m, mud, from 3 to 7 cables offshore. The best berth is in the S part of the bay where boats can effect a landing. During NE winds, better shelter will be found in Kavak İskelesi (2.277).

3 **Berths.** Aksa Jetty, about 500 m in length and handling chemical tankers of up to 9 m is situated about 1¼ miles ESE of Çatal Burun. Elyaf Jetty, about 400 m in length, is situated a further 5 cables ESE and is used by chemical tankers mooring stern first to the jetty. Berthing at both jetties is in daylight only but unmooring is 24 hrs.

Supplies: fuel and fresh water are both available by barge.

Caution. Attention is drawn to the 17·7 m patch which lies 3 miles ENE of Çatal Burun.

Kavak Iskelesi
2.277

1 **Anchorage**, as shown on the chart, may be obtained off Kavak İskelesı (40°41′N, 29°34′E) in depths of between 20 to 27 m. The holding ground is very good, but NE winds raise a short, choppy sea.

Hereke
2.278

1 **General information.** Hereke (40°47′N, 29°37′E) has two complexes handling bulk, dry, and general cargoes and passengers.

Traffic. In 2002 the port was used by 3 vessels with a total deadweight of 49 438 tonnes.

Anchorage may be obtained, in depths of 36 m, in the bay facing the town. It is reported that the holding ground is not good.

2 **Berths.** Seven berths at Diler with Nos 1–3 providing 380 m of continuous berthing space with depths of 11 to 17 m alongside. One cement berth 250 m in length with depths alongside of 11 to 17 m.

Supplies: fuel by barge; fresh water alongside.

Yarımca
2.279

1 **General information.** Yarımca (40°47′N, 29°44′E), which in 2000 had an estimated population of 55 000, is a port handling chemicals, fertilizers, general and oil cargoes.

Anchorage, in convenient depths, mud, may be obtained off Yarımca.

Berths. Seven berths; No 3 Municipality Pier is the longest and deepest being 150 m in length with depths alongside of 15 to 23 m.

Facilities: medical.

Supplies: fuel by barge; fresh water; provisions.

Tütün Limanı
2.280

1 Tütün Limanı is entered close E of Zeytin Burnu (40°44′N, 29°47′E). Habaş and Opet Petroleum Platforms (200 m SSE and 600 m ESE, respectively from Zeytin Burnu Light) are connected to the shore by submarine pipelines as shown on the chart.

Anchorage is obtainable for a single vessel in the centre of the bay in depths of 14 m, mud, as shown on the chart.

Gölcük
2.281

1 The naval port and dockyard of Gölcük, which in 2000 had a population of 55 800, is entered immediately SE of Gölcük Burnu (40°44′N, 29°49′E), which is marked by a buoy (special).

The port consists of a number of basins in which there are many alongside berths.

2 Numerous mooring buoys lie in the charted restricted area NE of the port. See 2.270.

Repairs: there are several floating docks and a drydock.

Other facilities: oily waste and sewage reception.

Hacıbayram Burnu oil terminals
2.282

1 Two oil terminals lie close within Hacıbayram Burnu (40°45′N, 29°51′E).

Berths. Petrol Ofisi Jetty extending about 100 m ESE from the shore providing stern to berths for tankers up 13·5 m draught. Shell Jetty (3 cables ENE) extending about 200 m SSE from the shore providing stern to berths with depths of 8 to 9·5 m.

Facilities: oily waste disposal.

Supplies: fuel and fresh water by barge.

İzmit
2.283

1 **General information.** The town of İzmit (40°46′N, 29°55′E) stands on the face of some spurs which slope S. It is the seat of local government and, in 2000, had a population of 195 700.

Traffic. In 2002 the port was used by 233 vessels with a total deadweight of 3 527 640 tonnes.

Anchorage. Vessels anchor in the roads opposite the town, as shown on the chart, where loading takes place by barge.

2 **Alongside berth.** There is a private pier, 70 m in length and with depths of between 7 and 8·5 m, which is owned by a paper factory. This pier is only available for handling cargoes consigned to the paper factory.

Deratting (exemption certificates only), oily waste disposal facilities.

Başiskele
2.284

1 A jetty extends from the coast at Başiskele (40°43′N, 29°56′E). Entry into the area surrounding it, as shown on the chart, is prohibited without the permission of the naval authorities.

Diliskelesi

General information
2.285

1 **Position and function.** The town of Diliskelesi (40°46′N, 29°32′E), is situated close E of Kaba Burun. The port handles dry, general, liquid and container cargoes.

Traffic. In 2002 the port was used by 932 vessels with a total deadweight of 12 977 175 tonnes.

2 **Port Authority.** Sedef Gemi Endustrisi AS, Dil Iskelesi, Icmeler Mevkii, TR–41455 Gebze, Kocaeli, Turkey.

Limiting conditions
2.286

1 **Deepest and longest berth.** Nos 2–4 berth at Colakoglu Metalurji Company (2.289).

Density of the water is 1018 g/cm^3.

Arrival information
2.287

1 **Port radio.** See *Admiralty List of Radio Signals Volume 6(3)* for details.

Pilotage and tugs. See 2.269.

Harbour
2.288

1 **General layout.** The Poliport complex is situated at İzmir Kimya close W of the mouth of Ova Deresi (40°46′·0N, 29°31′·7E). The other complexes extend ENE from Ova Deresi for about 1 mile.

Berths
2.289

1 **Anchorage.** See 2.268.

Berths (with positions from Sedef Light (40°45′·9N, 29°32′·0E))**:**

Poliport (4 cables NW). Four berths handling chemical, oil and general cargoes. Longest is 131m with depths alongside of 12 m.

Colakoglu Metalurji Company (2 cables NW). Four berths handling iron and steel cargoes. Longest is 430 m with depths alongside of 12 to 25 m.

Sedef. Three berths handling containers, general cargo and Ro-Ro cargoes. Longest is 168 m with depths alongside of 10 m.

Alemdar (2 cables NE). Four berths handling chemical, general and Ro-Ro cargoes. Longest is 210 m with depths alongside of 10 to 14 m.

Altintel (5 cables NE). One berth 220 m in length with a depth alongside of 6 to 10 m, handling chemicals, general and iron and steel cargoes.

Solventas (6 cables NE). Three berths handling chemical cargoes. Longest is 235 m handling vessels of up to 12 m draught.

Kizilkaya (7 cables NE). Two berths handling general cargoes. Longest is 298 m, deepest has depths alongside of 7 to 24 m.

Upet (9 cables NE). Two berths handling petroleum products. Longest is 72 m handling vessels of up to 40 000 dwt with a maximum draught of 15 m.

Port services
2.290

1 **Facilities:** hospital; oily waste disposal.

Supplies: fuel available by barge; fresh water by barge; provisions.

Yarımca—Tütünçiftlik industrial complex

General information

2.291

1 **Position and function.** The Yarımca—Tütünçiftlik industrial complex is situated between Zeytin Burnu (40°44′N, 29°47′E) and a point on the coast 2 miles NW. The complex is divided into two parts by Ağa Deresi, a stream which enters the gulf 11 cables WNW of Zeytin Burnu. The N part of the complex consists of the PETKIM chemical works and the S part, the IPRAŞ oil refinery.

2 **Traffic.** In 2002 the port was used by 305 vessels with a total deadweight of 15 148 378 tonnes.

Anchorage for vessels waiting for a berth is reported to be available, in soft mud with fair holding ground, N of the main shipping track, about 3½ miles WNW of Zeytin Burnu.

3 **Restricted area.** Entry into the area shown on the chart surrounding IPRAŞ oil refinery jetty is prohibited without the permission of the naval authorities.

4 **Offshore installations.** Lighted production platforms, shown on the chart, are located (with positions from Zeytin Burnu (40°44′N, 29°49′E)):

Camar petroleum platform (2½ cables W)
Habas petroleum platform (1¼ cables SSE)
Opet petroleum platform (3 cables ESE)

The platforms are connected to the shore by submarine pipelines.

Berths

2.292

1 The main alongside berths are (with positions from the mouth of Ağa Deresi (2.291)):

PETKIM chemical works.

Main quay (6 cables NNW), with depths of under 5 m alongside, extends SW from the coast.

2 T-headed pier, with dolphins, extends 270 m W from the S part of the main quay. Depths 11 to 12 m at the head of the pier. Vessels of up to 40 000 tonnes can be accommodated. Used for handling of liquid chemical products.

Angled pier (1 cable NNW), with depths of 15 m at its head. Used for loading bulk urea.

2.293

1 **IPRAŞ oil refinery.**

Angled pier (2 cables SW) extends 3 cables from the coast. Vessels lie ESE on either side of the outer leg. Reported that vessels with draughts of up to 18 m can be accommodated. Outer berth for vessels of up to 100 000 dwt, inner berth for vessels of up to 40 000 dwt. Used for handling of crude oil, LPG and other petroleum products.

2 Sea berth (5 cables SSW). a berthing platform, flanked by four dolphins and connected to the shore by a pipeline, lies 4 cables offshore. The outer dolphins are marked by lights. It accommodates vessels of up to 300 000 dwt, draught 28 m and is used for the discharge of crude oil.

3 An L-shaped pier (5 cables SE) extending W from the shore can accommodate vessels of up to 80 000 tonnes. It is used for handling crude oil and other petroleum products.

Port services

2.294

1 **Facilities:** medical; oily waste disposal.

Supplies: fuel and fresh water at piers and by barge; provisions.

Derince

General information

2.295

1 The port of Derince (40°45′N, 29°50′E) is a large general purpose port in İzmit Körfezi.

Traffic. In 2002 the port was used by 272 vessels with a total deadweight of 2 891 273 tonnes.

Port Authority. Türkiye Cumhuriyeti Devlet Yolları (TCCD).

Arrival information

2.296

1 **Notice of ETA.** 24 hours before arrival.

Anchoring is prohibited near the port. The waiting anchorage is off İzmit, 4 miles E.

Harbour layout

2.297

1 The original harbour lies close W and within Derince Burnu (40°45′N, 29°50′E) and is protected by a mole that extends WSW from this point.

The new harbour extends ENE then NE for about 5 cables from Derince Burnu.

2 **Berths.** There are two berths in the old harbour and six berths in the new part of the harbour. No 3 berth in the new harbour is the largest with a length of 440 m and a depth alongside of 15 m.

Port services

2.298

1 **Repairs:** most deck and engine repairs can be carried out.

Other facilities: medical; oily waste disposal.

Supplies: fuel by barge or road tanker; fresh water; provisions.

Communications: nearest airport at İstanbul, 135 km; Ro-Ro ferry service with Brindisi.

PORT OF İSTANBUL AND APPROACHES

GENERAL INFORMATION

Charts 1005, 2286, 1159, 1198

İstanbul

2.299

1 İstanbul (41°01′N, 28°59′E), originally called Byzantium until renamed Constantinople by Constantine the Great in about AD 330, has been the capital of the Roman, Byzantine and Ottoman Empires. It was also the capital of the Turkish Republic until 1924.

2 The city was originally built on seven hills on the promontory on the S side of Haliç, formerly known as The Golden Horn. However, Metropolitan İstanbul, which in 2000 had a population of 8·8 million, also stands on the N side of Haliç and on the Asiatic shore opposite.

Function and traffic

2.300

1 The port of İstanbul is the largest and most important in Turkey. Its waters are also an important international waterway for vessels transiting between the Mediterranean and the Black Sea.

In 2002 the port was used by 5123 vessels with a total deadweight of 587 388 772 tonnes.

It is a port of entry. See 2.3.

Port limits

2.301

1 The Port of İstanbul, which is centered on the S entrance of İstanbul Boğazi, includes all of İstanbul Boğazi and its S approaches.

The S limit of the port, as shown on the chart, is a line joining Ambarli (40°58′N, 28°43′E) (2.231), a point 4 miles S, a point 20 miles ESE, thence 5½ miles NE to Pendik Burnu (2.334).

The N limit of the port, as shown on chart 3930, is Turkish territorial waters between the meridians of 28°55′E and 29°16′E.

Port Authority

2.302

1 Türkiye Denizcilik Kurumu (Turkish Maritime Corporation), Genek Mudurluk, Karaköy, İstanbul.

Natural conditions

2.303

1 **Climatic Table.** See table 1.203.

Winds and weather. Winds from N and NE are the most common, but winds from between S and SW occur frequently in some years between October and March. The latter winds, when strong, often bring rain and squally weather.

Currents. See 2.88, 2.330 and 2.373.

Density of water. Varies due to currents, but averages 1·015 g/cm^3.

Arrival information

Navigation Control Stations

2.304

1 Navigation Control Stations are situated at Türkeli Light Control Station (41°14′·1N, 29°06′·7E); Kandilli Control Station (41°04′·5N, 29°03′·4E) and Ahkarpı Traffic Control Centre (41°00′·4N, 28°59′·2E). The stations regulate traffic in the strait and provide information about traffic and weather conditions. See *Admiralty List of Radio Signals Volume 6(3)* for details.

Notice of ETA and pilotage

2.305

1 Required 48, 24 and 12 hours in advance. Final confirmation on VHF 2 hours in advance.

Pilotage. See 2.10, 2.350 and 2.396.

Outer anchorages

2.306

1 See 2.315.

Traffic separation scheme

2.307

1 See 2.6.

Navigation rules

2.308

See 2.7–2.8.

2.309

1 **Submarine cables.** The landing places of submarine cables are marked by inverted black anchor symbols on white boards, which are usually illuminated at night.

Vessels should not anchor within 1 cable of any submarine cable so marked.

General layout

Port areas

2.310

1 The Port of İstanbul, which consists of a number of separate harbours, is divided into Inner, Middle and Outer port areas.

Inner Port is the area that lies within Karaköy (Galata) Bridge (41°01′·3N, 28°58′·5E), This water area is also known as Haliç or the Golden Horn.

2 **Middle Port** is the area that lies N of a line joining Ahırkapı Burnu Light (41°00′N, 28°59′E) and Kadıköy Breakwater Light (1½ miles SE) and S of a line that joins Dolmabahçe clock tower (41°02′·3N, 28°59′·8E) and Kızkulesi Light (1 mile SSE).

3 **Outer port** is divided into two parts. The S part lies between the S limit of the port and the S limit of the Middle Port and the N part lies between the N limit of Middle Port and the N limit of the port.

Summary of harbours within the Port of İstanbul

2.311

1 The following harbours are situated within the Port of İstanbul:

S part of Outer Port		
Kalamış Koyu (2.347)	40°59′N, 29°02′E	Yacht marinas
Adalar (2.326)	40°53′N, 29°05′E	Several small harbours
Middle Port		
Haydarpaşa (2.356)	41°00′N, 29°01′E	
Galata (2.359)	41°01′·5N, 28°59·0E	
Inner Port		
Haliç Dockyard (2.363)	41°02′N, 28°58′E	

Port services

Repairs

2.312

1 Repairs of all kinds can be carried out.

The principal repair facilities in the Port of İstanbul are situated at Haliç Dockyard and İstinye Dockyard. For details see description of individual harbours.

Other facilities and supplies

2.313

1 For details see individual harbours.

SOUTH-WEST APPROACHES TO İSTANBUL BOĞAZI

General information

Charts 1005, 2286, 1159, 1198

Route

2.314

1 The traffic separation scheme across Marmara Denizi leads directly into a precautionary area and roundabout centred on a light-buoy (40°56′·1N, 28°57′·0E). Another traffic separation scheme joins the precautionary area from the S and a further scheme leads off to the NE towards the S entrance of İstanbul Boğazı. These schemes are shown on the charts.

Designated anchorage areas

2.315

1 A quarantine anchorage, an explosives anchorage, a long stay and departure anchorage and a harbour approach anchorage are situated between a position 2 miles SW of Yeşilköy (40°58′N, 28°50′E) (2.319) and Ahırkapı Burnu (9 miles ENE).

2 A Naval anchorage area is situated NW of Moda Burnu (40°59′N, 29°01′E). Other vessels, except for tankers, vessels loading or unloading explosives, inflammable, combustible or other dangerous cargoes and vessels requiring lighterage, may use this anchorage with the permission of the Port Authority.

The anchor berths and limits of these anchorages are shown on the chart.

Traffic regulations

2.316

1 **Entry** is prohibited into an area, the limits of which are shown on the chart, extending 4 cables W from Fenerbahçe Light.

2 **Anchoring, fishing and dredging** are prohibited in an area, the limits of which are shown on the chart, extending 5½ cables W from Fenerbahçe Light.

Currents

2.317

1 See 2.88.

Principal marks

2.318

1 **Landmarks:**

Aydos Dağı (40°56′N, 29°15′E).

Kayiş Dağı (40°58′N, 29°10′E).

Küçükçamlıca Tepesi (41°01′N, 29°04′E), rounded summit.

2 Büyükçamlıça Tepesi (41°02′N, 29°04′E), rounded summit. A television tower stands 500 m N of the peak.

Two chimneys (40°59′N, 28°54′E).

Sultanahmet Mosque (Blue Mosque) (41°00′·4N, 28°58′·5E). Six minarets.

3 **Major lights:**

Yeşilköy Burnu Light (white stone tower and dwelling, 15 m in height) (40°58′N, 28°50′E).

Ahırkapı Light (black tower and white dwelling, 29 m in height) (41°00′N, 28°59′E).

Fenerbahçe Light (white round stone tower and dwelling, 20 m in height) (40°58′N, 29°02′E)

Directions

(continued from 2.96)

2.319

1 From the vicinity of 40°51′N, 28°51′E, S of Yeşilköy Burnu Light, the route through the SW approaches to İstanbul Boğazi leads NE then N for 12 miles, passing:

SE of Yeşilköy Burnu Light which stands on Yeşilköy Burnu, a red cliff between 15 and 18 m high. Thence:

NW of Sivriada Light (white conical tower on concrete base, 3 m in height) (40°53′N, 28°58′E) which stands on the summit of Sivriada. This islet, which is 80 m high and consists of a steep mass of marble, is the W islet in Adalar (2.326). Thence:

2 SE of the light-buoy (40°56′·1N, 28°57′·0E) marking the centre of the precautionary area and roundabout. Thence:

W of Kınalıada (40°55′N, 29°03′E) (2.328), thence:

W of Fenerbahçe Light. The light stands on Fener Burnu, a prominent flat point, backed with red and white cliffs, 3 m high. A light-buoy (W cardinal) lies 9 cables W of the light and marks the edge of Fenerbahçe Bankı, a sand bank with depths of less than 9 m over it. Thence:

3 E of Ahırkapı Burnu (41°00′N, 28°59′E). This headland is fronted by Ahırkapı Bankı on which depths increase from 1 to 11 m about 4 cables SE. A light-buoy (E cardinal) marks the SE limit of the bank.

4 The white sector (000°-030°) of Kızkulesi Light (41°01′N, 29°00′E) leads between Ahırkapı Bankı and Fenerbahçe Bankı.

(Directions continue for the S entrance to İstanbul Boğazi at 2.355)

Anchorages and harbours

Chart 2286

Küçükçekmece

2.320

1 **Anchorage** may be obtained in the bight S of the village of Küçükçekmece (40°59′N, 28°46′E) as shown on the chart. The best berth is in depths of 12 m, with the railway station, which stands on the NE shore of the bight, bearing 042°, distant about 5 cables. Landing is not possible during S winds.

Yeşilköy

2.321

A line of buoys (special) extends 1 mile S from the coast at Yeşilköy; the S buoy is lit.

Between Yeşilköy and Moda Burnu

2.322

1 **Designated anchorage areas.** See 2.315.

Ataköy Marina

2.323

1 A large yacht marina is situated at Ataköy (40°58′N, 28°52′E). The marina has 700 berths handling yachts of 10 to 40 m in length with a maximum draught of 5 m.

A light is exhibited from the head of the breakwater.

Repair facilities are available.

Other facilities. Fuel, power, water and provisions are available.

Kumkapı

2.324

1 A fishing harbour, protected by a breakwater 620 m long, is situated at Kumkapı (41°00′N, 28°58′E). A light (concrete tower) stands at the head of the breakwater.

The harbour has a quay, 245 m in length, with depths of between 3 and 5 m alongside and is reserved for fishing vessels and harbour craft.

A further breakwater lies 4 cables W of the fishing harbour. A light (white metal framework tower, 6 m in height) stands at the head of the breakwater.

2 Further fishing harbours lie 1½ miles W of Kumkapı and at Yedikule (40°59′·5N, 28°55′·8E).

SOUTH-EAST APPROACHES TO İSTANBUL BOĞAZI

General information

Chart 2286

Route

2.325

1 The SE approaches to İstanbul Boğazı lead from the entrance to İzmit Körfezi (40°44′N, 29°22′E) through a traffic separation scheme to a precautionary area and roundabout centred on 40°56′·1N, 28°57′·0E. From there another traffic separation scheme leads off to the NE towards the S entrance of İstanbul Boğazı, as shown on the chart.

Topography

2.326

1 **Adalar** is a group of nine islands lying SW of Maltepe Burnu (40°54′N, 29°09′E) and the coast NW. They are generally high with cliffs of a bright red and yellow hue due to the large amount of iron and other minerals in their rock. The five largest islands are inhabited and are popular resorts for the inhabitants of İstanbul. The remainder of the group are little more than barren rocky islets.

2.327

1 **Büyükada**, which is the largest island in the group, is high and divided into two parts by a dip in the hills. The S and higher part is bare and rocky and attains an elevation of 200 m. A large monastery is situated on the summit of a hill about 6½ cables E of Dil Burnu, the W point of the island. The town and its harbour (2.344) are situated at the N end of the island.

2 **Heybeliada,** lying to the NW of Büyükada, is moderately steep-to except on its E side where there is a bank with depths of less than 5 m, that extends as much as 1 cable offshore. The island is generally bare and rocky. The town, the buildings of the Turkish Naval College and the main harbour (2.344), are situated on the E side of the island.

2.328

1 **Burgaz Adası,** lying to the WNW of Heybeliada, is 162 m high and moderately steep-to except on the E side where there is a bank with depths of less than 5 m, that extends as much as 1½ cables offshore. The island is bare and rocky except for a pine wood which crowns the summit. The S coast consists of a cliff, 150 m high. The town and harbour (2.344) lie on the E side of the island.

2 **Kınalıada**, lying 1 mile NNW of Burgaz Adası, is 114 m high. It is devoid of vegetation. The village is situated on its E side.

Traffic regulations

2.329

1 **Anchoring and fishing** are prohibited in the channels between the four larger islands of Adalar and between Büyükada and the mainland. The limits of these areas are shown on the chart.

Anchoring is prohibited within 1 cable of submarine cables, the positions of which are shown on the chart.

Currents

2.330

1 The main current spreads SE through the channels of Adalar. However, a strong eddy sets W through Tuzla Körfezi and thence a counter current sets towards İstanbul Boğazi between the main current and the shore. Within this counter current, a narrow SE current flows past Maltepe Burnu and Bostancı.

Principal marks

2.331

1 **Landmark:**

Tower (40°51′N, 29°07′E), which stands on the summit of a hill on the S part of Büyükada.

Major lights:

Yelkenkaya Burnu Light (40°45′N, 29°21′E) (2.260).

Fenerbahçe Light (40°58′N, 29°02′E) (2.318).

Ahıkapı Light (41°00′N, 28°59′E) (2.318).

Directions

2.332

1 From the vicinity of 40°45′N, 29°21′E the deep water route from İzmit Körfezi to the S entrance of İstanbul Boğazi leads WNW and NNW, passing:

2 SSW of Yelkenaya Burnu Light (40°45′N, 29°21′E), thence:

SSW of Hayırsızada Light (metal framework tower, 6 m in height) (40°48′N, 29°16′E). This light stands on the S extremity of Hayırsızada, a rocky islet 12 m in height. Thence:

3 SSW of Tuz Burnu (40°48′N, 29°15′E) (2.336), thence:

SSW of Balıkcı Adası Light (white metal framework tower, 6 m in height) (40°49′N, 29°07′E) standing on a rocky islet, 28 m in height, which is fringed by a rocky flat with depths of less than 18 m over it. Thence:

4 SW of Burgaz Adası (40°53′N, 29°04′E) (2.328), thence:

ENE of Yassıada (rocky islet, 64 m in height) (40°52′N, 29°00′E). Steep-to except at the E end where a flat with depths of less than 5 m over it extends ¾ cables offshore. There is good landing at a camber at the E end of the islet. Thence:

5 WSW of Kınalıada (40°55′N, 29°03′E) (2.328), thence:

W of Fenerbahçe Light (40°58′N, 29°02′E) (2.318), thence:

W of a light-buoy (W cardinal) (40°58′N, 29°01′E) that marks the SW edge of Fenerbahçe Bankı. Thence:

6 E of a light buoy (E cardinal) (41°00′N, 28°59′E) that marks Ahırkapı Bankı (2.319).

2.333

1 **Useful mark:**

Sivriada Light (40°53′N, 29°58′E) (2.319).

(Directions for the S entrance to İstanbul Boğazi continue at 2.355)

Side channels

Chart 2286

Passage between Adalar and mainland

2.334

1 **Directions.** From the vicinity of 40°51′N, 29°12′E the passage between Adalar and the mainland leads NW for about 9 miles, passing (with positions from Maltepe Burnu (40°54′N, 29°09′E)):

2 SW of Pendik Burnu (4 miles ESE), thence:

NE of Sedef Adası (3 miles S), thence:

SW of Çamaşır Burnu (1½ miles SE). A jetty about 100 m long extends SSW from the shore 2½ cables NW of this headland. Thence:

3 NE of a light-buoy (N cardinal) (1¼ miles SSW) that marks the N limit of Büyükada Bankı, a sand and coral bank with depths of less than 5 m over it, that extends 5 cables N from the N point of Büyükada. The ledge of the bank is mostly steep-to. Thence:

4 SW of Maltepe Burnu, a rocky and moderately high promontory. Orhan Tepesi, an isolated and bare hill stands 4 cables N and a bank, with depths of less than 10 m over it, extends about 2 cables SE from the headland. Thence:

5 SW of Dilek Kayalığı Light-beacon (S cardinal; 6 m in height) (3 miles WNW). The light stands on a rock 1 m high which is situated amongst a group of rocks at the SW extremity of Maltepe Bankı. A short distance W of this rock, the depths increase to over 18 m. Görünmeyen Kayalıklar, surrounded by a shoal with depths of less than 5·5 m, charted as dangerous rocks, lies 1 mile NNE. Thence:

6 SW of Yıldız Kayalığı Light-beacon (W cardinal) (3½ miles NW) which stands on a rock 1 m high situated on the NW part of Maltepe Bankı.

7 **Clearing bearing**. The line of bearing (268°) of Pide Adası Tepesi (40°53′N, 29°05′E) open N of Kuzey Burnu (the N point of Heybeliada) (2.327) passes N of the light-buoy that marks the N limit of Büyükada Bank.

Passages within Adalar

2.335

1 **Between Büyükada and Sedef Adası.** Sedef Adası is separated from Büyükada by a channel about 6 cables wide with a least depth of 12 m on the ridge that connects the two islands.

Heybeliada Kanali, the channel between Büyükada and Heybeliada is about 5 cables wide between the 5 m depth contours on either side.

2 **Pide Adası,** a bare rocky islet, 23 m high, situated between the N parts of Heybeliada and Burgaz Adası, has a navigable channel on either side of it. Both of these channels have a depth of 14·6 m in the fairway.

South of Pide Adası the channel between the 10 m depth contours extending from Heybeliada and Burgaz Adası is about 230 m wide with depths of 14 m.

Caution. Prohibited anchorage and fishing. See 2.329.

Anchorages and harbours

Chart 2286

Tuzla Körfezi

2.336

1 **Topography.** Tuzla Körfezi is entered between Üçburunlar Yarımadası (40°47′N, 29°20′E) and Tuz Burnu (3½ miles WNW). Üçburunlar Yarımadası is a flat peninsula with three low points and is not easily distinguished from the land behind it. Tuz Burnu is the S extremity of a peninsula 22 m high and both the point and the coast adjoining it are fronted by rocky flats. Two rocky islets, Hayırsızada (2.332) and İncir Ada, lie about 1 mile SSE and SE, respectively, of Tuz Burnu.

2 The village of Tuzla is situated at the head of the gulf on the shore of a small bight, close W of Mezar Burnu, about 2 miles NW of Üçburunlar Yarımadası.

2.337

1 **Current.** See 2.330.

2.338

1 **Anchorages.** Tuzla Körfezi provides anchorage and protection for a large number of vessels during N winds. Although open to the SW, the holding ground is very good and winds from that direction do not raise a heavy sea.

2 Anchorage may be obtained anywhere in Tuzla Körfezi according to the circumstances. Small vessels may obtain convenient anchorage, as shown on the chart, off the village of Tuzla, with some shelter from W gales, in depths of about 13 m, with Mezar Burnu bearing 087°. Larger vessels may obtain a better berth farther S in depths of about 26 m, with Mezar Burnu bearing 023°.

Moorings. Mooring buoys lie S and WSW of Tuzla village.

3 **Caution.** Attention is drawn to Ada Sığlığı, a shoal with a least depth of 7·5 m over it, that lies 9 cables ESE of Tuz Burnu and a shoal with a least depth of 9·1 m, that lies 1 mile farther E in the S approaches to Tuzla.

2.339

1 **Alongside berths.** A small mole, which gives shelter to small craft, extends about ¾ cable ENE from Liman Burnu at the W end of Tuzla village. A light (white round metal tower, black band, 9 m in height) stands at the head of the mole.

A pier about 200 m long extends S from the shore 1¼ miles E of Mezar Burnu. Near it is a factory and two red brick chimneys. Within the pier is a harbour, which in 1966 was dredged to a depth of 2 m.

2 A jetty 300 m long extends W from the shore, 9 cables NE of Üçburunlar Yarımadası. This jetty, which belongs to a glass factory, has depths of between 3 and 5 m at its outer end and a light (grey metal mast, 20 m in height) stands at its head.

Sarp Burun

2.340

1 A harbour (40°49′N, 29°16′E) protected by a breakwater extending 3 cables NE from the shore, is situated in the SW part of the bight lying 5 cables ENE of Sarp Burun. Depths in the harbour are between 2·7 and 7·2 m. Two mooring buoys lie 5 cables NW of the breakwater and a light-buoy (special) is moored at the seaward end of an outfall extending 1¼ miles WNW from the shore 8 cables NE of the head of the breakwater.

Aydınlı Limanı

2.341

1 **A shipbuilding and repair port** is situated in the S part of Aydınlı Limanı (40°51′N, 29°16′E). The harbour is

protected by a breakwater which extends 5½ cables NNE from the N end of Ekrembey Yarımadası. A light (concrete tower, 6 m in height) is exhibited from the head of the breakwater.

2 **Anchorage** may be obtained, as shown on the chart, 5½ cables E of the head of the breakwater.

Pilots board about 6 cables WSW of the head of the breakwater.

Layout. Shipbuilding and repair facilities are situated on the SE and SW side of the harbour. There is an unloading quay on the inshore side of the breakwater and a basin on the W side of the peninsula.

Longest slipway. 235 m.

İstanbul Dockyard

2.342

1 İstanbul Dockyard (40°52′N, 29°16′E), which is now under the control of the military authorities, lies within Aydınbey Yarımadası, a former island now connected to the mainland by a causeway. The harbour is also protected to the SW by a breakwater that extends 3 cables WNW from Aydınlı Burnu. Lights stand at the head of the breakwater (concrete tower, 10 m in height) and the S point of Aydınbey Yarımadası (metal framework tower, 7 m in height).

2 **Prohibited area.** An area into which entry is prohibited to vessels not using the port is situated around Istanbul Dockyard as shown on the chart.

Pilots board about 8 cables SSE of the head of the breakwater.

Pendik

2.343

1 **Quays,** protected by a breakwater extending 4 cables SE from Pendik Burnu, are situated at the E end of the town of Pendik (40°53′N, 29°14′E). A light is exhibited from the head of the breakwater.

Anchorage may be obtained, as shown on the chart, in depths of 6 to 7 m, about 4 cables NNW of the head of the breakwater.

Anchoring is prohibited within 500 m of the gas pipeline which comes ashore in the bay 6 cables SE of the town.

Moorings. Two mooring buoys, shown on the chart, lie 4 cables SE of the head of the breakwater.

Caution. See 1.29.

Adalar

2.344

1 **Büyükada.** A concrete pier, 98 m in length with a depth alongside of 2·4 m, is situated on the N coast of the island. This pier is used by ferries.

Anchorage may be obtained, as shown on the chart, between Büyükada and the mainland.

2 **Heybeliada.** A small harbour, protected by breakwaters, lies close SE of the Naval College on the E side of the island. Lights (white round concrete towers, 2 m in height) mark the head of each breakwater.

A boat harbour is situated 3 cables N of the Naval College. the entrance to this harbour is marked by a light (concrete tower, 3 m in height).

A concrete pier, 63 m in length with a depth alongside of 6 m, is situated on the E coast of the island. This pier is used by ferries.

3 **Anchorage** may be obtained in Çam Limanı, a cove on the S coast of the island, in depths of 14 m, as shown on the chart.

Burgaz Adası. A concrete pier, 15 m in length with a depth alongside of 5 m, is situated on the E side of the island. This pier, which is used by ferries, is protected from the S by a breakwater which extends from the shore 1½ cables S. A light (concrete tower, 3 m in height) stands at the head of the breakwater.

A light-buoy (special) is moored at the seaward end of an outfall extending 4½ cables W from the W side of the island.

Kınalıada. A concrete pier, 12·5 m in length with a depth alongside of 8·5 m is situated on the E shore of the island. This pier is used by ferries.

Buoys (special) mark an outfall extending 5 cables S from the S side of the island.

Maltepe Burnu

2.345

1 A concrete jetty, 267 m in length with depths of between 4 and 8 m alongside, extends from the shore 9 cables NW of Maltepe Burnu (40°54′N, 29°09′E).

This jetty is used by vehicle ferries.

Bostancı

2.346

1 The village of Bostancı (40°57′N, 29°06′E) has a harbour for small craft which is sheltered from the NW and S by a breakwater. A light (concrete tower, 3 m in height) stands at the head of the breakwater.

Chart 1159

Kalamış Koyu

2.347

1 Kalamış Koyu is entered between Moda Burnu (40°59′N, 29°01′E) and Fener Burnu (7½ cables SE). The S and E shores of the bay are low, but Moda Burnu and the N shore consist of cliffs about 15 m high.

The entrance to the bay is obstructed by Fenerbahçe Bankı (2.319).

2 **Small craft.** A yacht marina, protected by breakwaters at the head of which stand lights, is situated on the NE side of the bay. Its entrance is clearly visible on entering the bay.

Fuel, water, electricity, provisions and repairs are available.

Anchorage may be obtained off Moda Yacht Club close E of Moda Burnu. The jetty in this vicinity is used by ferries.

3 A small harbour belonging to Fenerbahçe Yacht Club is situated on the S side of the bay. This harbour is protected by breakwaters, at the head of which stands lights.

Restricted areas. See 2.316.

PORT OF İSTANBUL — MIDDLE AND INNER PORTS INCLUDING HAYDARPAŞA

General information

Charts 1159, 1198

Area covered

2.348

1 This section covers the transit route through the Middle Port in the S part of İstanbul Boğazi; and the harbours of Haydarpaşa (2.356), Galata (2.359) and Haliç Dockyard (2.363).

Ferry services

2.349

1 Numerous ferries and small passenger craft cross the harbour between the European and Asiatic shores of İstanbul Boğazi.

İstanbul – Topkapı Palace (2.354)

(Original dated 2003)

(Photograph – A. McDonald mv Doulos)

Pilotage

2.350

1 Pilot station at Harem (41°00′·7N, 29°00′·6E) provides pilots for İstanbul and İstanbul Boğazi whilst the pilot station at Tophane (Galata) (41°01′·5N, 28°58′·9E) provides berthing pilots for İstanbul. See 2.10.

For pilot embarkation positions, see 2.13.

Traffic separation scheme

2.351

1 See 2.6.

Prohibited anchorage

2.352

1 Anchoring and fishing are prohibited in the area that lies between İstanbul and Üsküdar, as shown on the chart.

Current

2.353

1 See direction and strength of current as shown on the chart.

Principal marks

2.354

1 **Landmarks:**

Sultanahmet Mosque (41°00′·4N, 28°58·6E) (2.318).

Ayasofya Mosque (41°00′·6N, 28°58′·8E). Formerly known as St. Sophia.

2 Topkapı Palace (41°00′·8N, 28°59′·0E).

Kızkulesi (tower on square base) (41°01′·3N, 29°00′·3E). Known as Leander's Tower.

Major light:

Ahırkapı Light (41°00′N, 28°59′E) (2.318).

Directions

(continued from 2.319 and 2.332)

2.355

1 From the vicinity of 41°00′N, 29°00′E, the N traffic lane leads N for 1½ miles to the S limit of the N part of the Outer Port (2.310), passing (with positions from Kızkulesi (2.354)):

E of Ahırkapı Light (1¼ miles SW). This light stands 3 cables NE of Ahırkapı Burnu (2.319), within

İstanbul – Kizkulesı Light, Kizkulesı Tower and Boğaziçi Bridge from S (2.355)

(Original dated 2003)

(Photograph – A. McDonald mv Doulos)

which stand Sultanahnet Mosque and Ayasofya Mosque (2.354). Thence:

2 W of Haydarpaşa Breakwater Light (white concrete tower, 8 m in height) (7 cables S). This light stands at the N end of the outer breakwater. Thence:

E of Sarayburnu (8 cables WSW). Topkapı Palace stands within this point. Thence:

3 W of Kızkulesi Light (tripod on white base, 9 m in height) which stands on a rocky ledge close to the tower. A disused navigation control station (2.304) also stands on this ledge.

Southbound traffic follows the S traffic lane of the transit route, which lies to the W of the N traffic lane.

(Directions continue for the Outer Port in the N part of İstanbul Boğazi at 2.376)

Haydarpaşa

Chart 1198

General information

2.356

1 **Position and function**. The harbour of Haydarpaşa (41°00′N, 29°01′E) is situated on the Asiatic shore of the S entrance to İstanbul Boğazi and is a modern port with facilities for handling container traffic, bulk and general cargoes.

It is the terminal for the İzmit railway.

2 **Entry.** The port is entered by the N entrance. Only small craft use the S entrance.

Tugs are available.

Port Authority. Türkiye Cumhuriyeti Devlet Demir Yolları (TCDD), Haydarpaşa.

General layout

2.357

1 The harbour is protected from the W by two overlapping detached breakwaters. The inner breakwater provides protection to the railway ferry jetty and berths Nos 1–3. The outer breakwater, which is of more recent construction, provides protection to two broad piers on which are berths Nos 4–16.

2 **Berths.** There are 12 main berths in the harbour. No 11 berth, which is the largest general cargo berth, is 350 m long and has a depth alongside of 10 m. The largest container berth (No 12) is 300 m long and has a depth alongside of 12 m. The depths of other berths range between 9 and 10 m.

Port services

2.358

1 **Repairs.** Minor repairs only.

Other facilities. Ro-Ro jetty between N and S piers.

Supplies: fuel by barge; fresh water at most of the berths; provisions.

Galata

General information

2.359

1 **Position.** The harbour of Galata (41°01′·5N, 28°59′·0E) is situated in Orta Liman at the entrance to Haliç on the European shore of İstanbul Boğazı.

Function. Principal harbour for passenger and tourist ships.

2 **Port Authority.** Türkiye Denizcilik Isletmeleri, Genek Mudurluk, Karaköy. İstanbul. The Harbour Master's office is situated at Karaköy quay (2.361).

General layout

2.360

1 **Quays** are situated on either side of Orta Liman. On the N side of the harbour Karaköy and Salıpazarı quays extend NE from Galata Bridge for over 1 km. On the S side of the harbour, the Eminönü ferry berths, and Sirkeci and Sarayburnu quays, extend E for about 1 km between the S end of Galata Bridge and Saray Burnu.

Berths

2.361

1 The main berths in the harbour are:

Karaköy quay, 601 m in length with a depth alongside of 6·7 m. A passenger terminal.

Salıpazarı quay, 645 m in length with a depth alongside of 8·1 m. A passenger and cruise terminal.

Sirkeci, 238 m in length with a depth alongside of 7 m, used by ferries and general cargo vessels.

Sarayburnu, 250 m in length with a depth alongside of 6·8 m.

There are mooring buoys in the harbour that may be used by vessels waiting to enter Haliç.

Port services

2.362

1 **Repairs:** not available.

Other facilities: deratting.

Supplies: fuel and fresh water are available at Salıpazarı quay.

Haliç

General information

2.363

1 **Position.** Haliç, the Inner Port, consists of the waters lying within Galata Bridge (41°01′·3N, 28°58′·5E) as far as Kağıthane, about 7 km up harbour.

Function. Repairs and drydocking services.

2 **Bridges.** Galata Bridge and Atatürk Bridge. Both are opening bridges with Galata Bridge having a vertical clearance of 60 m.

The exact time that the bridges are open varies with the time of year, but is in the early morning for a period of 1 hour. Passage through the bridges is controlled by light signals exhibited from the bridges.

Port Authority. See 2.302.

General layout and berths

2.364

1 **Quays** extend on either side of the harbour, with depths alongside of up to 8 m.

The main ship repair facilities and drydocks are situated at Kasımpaşa on the NE shore of the harbour within Atatürk Bridge.

Repair facilities

2.365

1 **Drydocks.** There are 3 drydocks at Kasımpaşa Dockyard. The dimensions of the docks are, (from S to N):

No 1.	118·8 m x 22 m x 8·8 m
No 2.	85·0 m x 18·8 m x 6·9 m
No 3.	182·8 m x 19·2 m x 6·3 m

All types of repairs can be undertaken at the dockyard.

İSTANBUL BOĞAZI

General information

Charts 1198, 1159, 1158,

Topography

2.366

1 İstanbul Boğazı, which leads generally NNE for about 15 miles and has an average width of about 7½ cables, resembles a river with abrupt and angular windings. Both sides are covered with houses and many fine buildings. The W side is built over throughout its length, but on the E side, the buildings are more scattered and are everywhere backed by hills covered with rich vegetation.

Hazards

2.367

1 A large number of small vessels fish in the fairway of İstanbul Boğazı and at night these and numerous other small craft move about unlit. An additional hazard is the random use of searchlights by ferries trying to avoid these craft.

Pilotage

2.368

1 See 2.10–2.13.

Traffic separation scheme

2.369

1 A traffic separation scheme has been established through İstanbul Boğazı See 2.6.

Traffic regulations

2.370

1 **Prohibited area.** Entry is prohibited into an area of Umuryeri Limanı (2.390) extending about 2 cables offshore between Acar Burnu and a point on the coast 2½ cables NNE of Selvi Burnu, as shown on the chart.

2 **Anchoring and diving** are prohibited N and E of a line joining positions 41°10′·5N, 29°04′·2E and 41°08′·9N, 29°04′·5E.

3 **Fishing** is prohibited N and E of a line joining 41°12′·5N, 29°06′·4E and a point on the opposite shore 7 cables SE.

Intercontinental bridges

2.371

1 **Boğaziçi Bridge** spans İstanbul Boğazı between Ortakö (41°03′N, 29°02′E) on the European shore and Beylerbeyi on the Asiatic shore. This suspension bridge has a vertical clearance of 58 m at each end and 64 m over a central width of 400 m (safe passage height, 58 m). Lights are exhibited to indicate the centre and limits of the central width.

2 **Fatih Sultan Mehmet Bridge** spans İstanbul Boğazı between Rumelihisarı (41°05′·5N, 29°03′·5E) on the European shore and a point close S of Kanlıca Koyu on the Asiatic shore. This suspension bridge has a vertical clearance of 67 m over a central width of 400 m.

Bridge lights indicate the centre and limits of the central width.

Safe Air Draught. See 2.8.

Overhead power cables

2.372

1 Overhead power cables span İstanbul Boğazı between Arnavutköy (41°04′N, 29°03′E) and Kandilli and Tellitabya Burnu (41°10′·6N, 29°04′·4E) and the Asiatic shore opposite. The safe overhead clearances of these cables are 66 and 70 m respectively.

2 **Caution.** The characteristics of radar echoes from overhead power cables are described in *The Mariner's Handbook* and mariners are advised to take care, especially during periods of reduced visibility.

Currents

2.373

1 **South entrance to Kandilli Burnu.** Between the S entrance of İstanbul Boğazı and Kandilli Burnu (2.376) the current runs mainly on the SE side. The NW side from Haliç to Akıntı Burnu (2.376) as well as Bebek Koyu (2.383) is occupied by eddies.

2 The strength of the counter current is on average about ½ kn. During SW winds, the eddy between Defterdar Burnu (2.377) and Akıntı Burnu may vanish completely. On the SE side the eddies are less extensive, although during SW winds, a narrow counter current NE of Üsküdar can widen to fill the SE half of the strait.

3 **Kandilli Burnu to Istinye Koyu.** Between Kandilli Burnu and İstinye Koyu (2.385) the current normally occupies the whole strait and occasionally reaches a strength of 7 kn between Rumelihisarı and Anadoluhisarı, 1 mile N of Kandilli Burnu. A small eddy can form off Anadoluhisarı and there is sometimes slack water abreast Kanlıca Koyu (2.376).

4 **Istinye Koyu to Selvi Burnu.** Between Tarabya Koyu (2.389) and Selvi Burnu on the opposite shore, the current fills the whole width of the strait. South of this line it leaves the E side and strikes the shore in the vicinity of Yeniköy Bankı (2.378) and a large eddy forms in Paşabache Koyu and Beykoz Limanı (2.387).

5 **Mezar Burnu to Kavak Burnu.** The main current sets SW from Dikilikaya (2.378). An eddy forms in the N and central part of the bay S of Kavak Burnu and, when the current is stronger than usual, in the bight NE of Mezar Burnu (41°10′N, 29°03′E).

6 **Kavak Burnu to north entrance of İstanbul Boğazı.** The main S-going current from the Black Sea strikes the W side of İstanbul Boğazı at Garipçe Burnu at a rate of ½ to 1 kn, occupying the full width of the strait. Between Fil Burnu (2.378) and Dikilaya, the axis of the current shifts towards the NW shore and the E edge impinges upon Kavak Burnu at between 1½ and 2 kn. Eddies may be found in the bays S of Poyraz Burun (2.393) and Fil Burnu.

Principal marks

2.374

1 **Major lights:**

Anadolu Light (white concrete tower and dwelling, 20 m in height) (41°13′N, 29°09′E). There is a signal station at the lighthouse.

Türkeli Light (white round stone tower, 30 m in height) (41°14′N, 29°07′E).

Other navigation aids

2.375

1 See 2.399.

Directions

(continued from 2.355)

Chart 1159

Kızkulesi to Çakal Burnu

2.376

1 From a position close NW of Kızkulesi (41°01′·3N, 29°00′·3E) the N traffic lane leads generally NNE for 6 miles to a position close NW of Çakal Burnu, passing (with positions from Kandilli Burnu Light (41°04′·4N, 29°03′·3E)):

İstanbul Boğazi– Ortaköy Mosque from S (2.376.1)

(Original dated 2003)

(Photograph – A. McDonal mv Doulos)

2 SE of Dolmabahçe Palace (3¼ miles SW) (2.381), thence:
SE of Ortakoy Mosque (2 miles SW), thence:
Beneath Boğaziçi Bridge (2 miles SSW) (2.371), thence:

İstanbul Boğazi– Boğaziçi Br. & Beylerbeyi Palace from N (2.376.2)

(Original dated 2003)

(Photograph – A. McDonald mv Doulos)

ESE of Kuruçeşme Light (black triangle on black metal tripod, with white bands, 7 m in height) (1½ miles SW) which stands on Kuruçeşme Bankı in the approaches to Kuruçeşme (2.382), and:

3 WNW of Çengelköy Light (white metal framework tower, 10 m in height) (1¼ miles S). Thence:
ESE of Akıntı Burnu Light (white metal mast, 9 m in height) (6 cables SW). An overhead cable (2.372) suspended between two metal framework towers, 113 m in height, spans İstanbul Boğazı 2 cables N of the light. Thence:

4 W of Kandilli Burnu Light (white metal column, 9 m in height). A traffic control station is situated close E of the light. And:
E of Bebek Light (black concrete cone, 5 m in height) (4½ cables WNW) (2.383). Thence:
SE of Rumelihisarı Light (metal tower, 5 m in height) (5½ cables N) standing on the head of a quay close N of Aşiyan Burnu, thence:

İstanbul Boğazi– Rumelihisarı Fort & Fatih Sultan Mehmet Br. from SSE (2.376.3)

(Original dated 2003)

(Photograph – A. McDonald mv Doulos)

5 NW of a light-buoy (W cardinal) (5½ cables NE) marking the outer edge of a bank, with a depth of 0·9 m over it, that extends for ½ cable off the mouth of Göksu Deresi. Thence:
Beneath Fatih Sultan Mehmet Bridge (1 mile N) (2.371), thence:

6 E of Baltalimanı Light (white round column, green band, 10 m in height) (1½ miles N), thence:
WNW of Kanlıca Light (white metal framework tower, 11 m in height) (1¾ miles NNE), thence:
SE of İstinye Light (white round metal tower, 2 green bands, 10 m in height) (2½ miles N), which stands on the N entrance point of İstinye Koyu. And:
NW of Çakal Burnu (2¼ miles NNE).

2.377

1 **Useful marks:**
Salıpazarı Rıhtımı Light (metal tower, green band, 10 m in height) (41°01′·8N, 28°59′·3E).

Defterdar Burnu Light (white metal framework tower, 12 m in height) (41°03′·1N, 29°02′·0E). Defterdar Burnu can also be identified by a white mosque which stands on it.

Beylerbeyi Light (white metal post on wall of palace, 1 m in height) (41°02′·7N, 29°02′·5E) which stands on a wall of the marble palace of Beylerbeyi.

Chart 1158

Çakal Burnu to the north entrance of İstanbul Boğazı

2.378

1 From a position close NW of Çakal Burnu, the N traffic lane leads between NE and NW for 10 miles to the N entrance of İstanbul Boğazı, passing (with positions from Kavak Burnu (41°10′·7N, 29°05′·2E)):

NW of Paşabahçe Light (white metal tripod, 12 m in height) (3¾ miles S). The light stands on the S entrance to Paşabahçe Koyu close W of the oil depot (2.387). Thence:

SW of İncirköy Light (metal framework tower) (3¼ miles S), thence:

2 NE of Yeniköy Light (E cardinal; 5 m in height) (3¼ miles SSW) which marks the E extremity of Yeniköy Bankı, thence:

SW of Selvi Burnu Light (framework tower, 10 m in height) (2¼ miles SSW) standing on the S entrance point to Umuryeri Limanı (2.390). Thence:

W of Umur Bankları (2 miles SW) (2.390). This bank, which is divided into two parts, is marked on its W side by three light-buoys (S, W and N cardinal, respectively), and on the SE corner by a spar-buoy (E cardinal). And:

3 E of Kireçburnu Light (white metal column, 8 m in height) (2½ miles SW) standing on the S entrance point to Büyükdere Limanı (2.391). Thence:

NW of a 1·1 m patch marked by a beacon (W cardinal) (7 cables SW), thence:

SE of Tellitabya Burnu (7 cables WSW). A pilot station is situated on this headland. An overhead cable (2.372) suspended between two framework towers, 124 m in height, spans İstanbul Boğazı at this point. Thence:

4 NW of Anadolukavak Light (metal framework tripod, 5 m in height) standing on Kavak Burnu. The ruins of a Genoese castle stand 3 cables within the headland. And:

SE of Dikilikaya Light (white concrete tower, 7 m in height) (4 cables NW) standing near the centre of a group of rocks. Some of these rocks are almost awash and others are marked by breakers in bad weather. Thence:

SE of a light-buoy (E cardinal) (1¾ miles NNE), marking a shallow patch off Çalı Burnu, thence:

5 NW of Fil Burnu Light (white metal framework tripod, 6 m in height) (2 miles NE). There is a battery on a hill within Fil Burnu. And:

SE of Büyük Liman Light (white metal framework tower, 6 m in height) (2 miles NNE) standing on Çalı Burnu. A mooring buoy lies 2½ cables SW of Çalı Burnu. Thence:

NW of Anadolu Light (3¾ miles NE) (2.374), and:

SE of Türkeli Light (3½ miles NNE). (2.374).

2.379

1 **Useful mark:**

Büyükdere Light (white column, 9 m in height) (41°10′N, 29°03′E).

Cautions

2.380

1 **Attention** is drawn to a wreck, with a least depth of 17·1 m over it, which lies in the S traffic lane, 9 cables NNE of Kızlulesı (2.354).

Kandilli Burnu (2.376). When proceeding N this headland should be given a berth of at least ½ cable and attention should be given to the course when the current strikes the starboard bow.

(Directions for the N approaches to İstanbul Boğazı continue at 2.400)

Anchorages and harbours

Dolmabahçe Palace

2.381

1 **Anchorage** and moorings may be obtained by passenger ships and visiting warships in the area that fronts Dolmabahçe Palace (41°02′·4N, 29°00′·0E) and Ortaköy Mosque (1·3 miles ENE). An anchorage within this area, allocated to passenger ships, is shown on the chart.

2 **Landmarks:**

Dolmabahçe Palace.

Clock tower (1½ cables SW of Dolmabahçe Palace). Clock face is illuminated at night.

Dolmabahçe Mosque (2 cables SW of Dolmabahçe Palace) which has a central dome with two minarets.

3 **Landing place.** Dolmabahçe steps, close SW of Dolmabahçe Palace.

Caution. The position of the dividing line between the main S-going current and the counter current is not constant and at times will pass through this anchorage area. If this situation should arise, there is a danger that ships at anchor will swing in opposite directions, with the consequent risk of collision if their berths are not sufficiently far apart.

Kuruçeşme

2.382

1 The harbour of Kuruçeşme (41°04′N, 29°02′E) is fronted by Kuruçeşme Bankı, upon which stands Kuruçeşme Light (2.376). Galatasaray Deniz Kulübü lies abreast of the village.

2 **A submarine cable area,** the limits of which are shown on the chart, surrounds Galatasaray Deniz Kulübü.

Anchorage berths and mooring areas are available for small craft 2 cables SW and 4 cables NNE of Galatasaray Deniz Kulübü.

Bebek Koyu

2.383

1 Bebek Koyu (41°05′N, 29°03′E) is entered between Akıntı Burnu and Aşiyan Burnu, about 1 miles NNE.

Bebek Light (2.376) stands in the centre of the bay on the NNE extremity of a spit that extends from the SW shore.

Current. The main current does not enter into Bebek Koyu.

2 **Anchorage** berths and mooring areas are available for small craft.

Alongside berth. there is a quay at the head of the bay which is approached by a boat channel marked by light-buoys.

Kandilli Burnu

2.384

1 Anchorage berths and mooring areas are available for small craft in the bay NE of Kandilli Burnu (41°04′N, 29°03′E).

İstinye Koyu
2.385

1 İstinye Koyu (41°06′·8N, 29°03′·6E) is entered between Tokmak Burnu and İstinye Light (2.376), 3 cables NNE. It is sheltered from all winds and currents.

Çubuklu Liman
2.386

1 Çubuklu Liman (41°06′·5N, 29°05′·0E) is entered between Çakal Burnu and Kozaltı Burnu, 5 cables ENE. An oil depot is situated in the harbour.

Fuel berths. Concrete quay 50 m in length; depth alongside 4·5 m. Three jetties between 10 and 15 m in length extend from the quay. Depth at head of central jetty, 8 m.

Pasabahçe Koyu and Beykoz Limani
2.387

1 Pasabahçe Koyu is the S part, and Beykoz Limanı the N part, of the bay that lies E of and opposite to Koybaşı Burnu (41°07′N, 29°04′E).

Pasabahçe Koyu is partly obstructed by İncirköy Bankı, a mud flat with an outer edge of mud and gravel, with depths of 2·8 to 4·3 m over it. There is a naval anchorage in Beykoz Limanı.

2 **Currents.** A large eddy exists, which extends up to 4 cables offshore in the more extensive parts of the bay. The resulting counter current sets along the shore from the S part of the bay and is strongest, with a rate of over ½ kn, in Beykoz Limanı. This current produces overfalls over İncirköy Bankı and is strongest when a N wind quickly replaces a strong S wind. In this situation it can widen to fill half the strait.

3 **Alongside berths.** An oil depot with a number of piers is situated close NE of Pasabahçe Light (2.378) on the S shore of the bay.

A jetty, 39·5 m in length with a depth alongside of 3 m, serves a factory 4 cables NE of Pasabahçe Light.

A ferry pier, with a depth of 4·6 m alongside, is situated near İncirköy.

4 **Beykoz.** The municipal jetty is 38 m in length and has depths of between 4·5 and 6 m at its head. The town has a number of other jetties, including a ferry berth.

Selvi Burnu
2.388

1 There is an oil fuel depot at Selvi Burnu (41°09′N, 29°04′E) (2.378) at which vessels can be supplied by pipeline or barge.

Alongside berth. A T-shaped jetty with a depth of 6 m at its head.

2 **Size of vessel handled.** 16 000 dwt. For larger vessels it is necessary to add a lighter to the jetty.

A small breakwater, exhibiting a light (white concrete column on pedestal) at its head, encloses four jetties, 3 cables N of Selvi Burnu.

Tarabya Koyu
2.389

1 **Anchorage** berths, mooring areas and a quay are available for small craft in Tarabya Koyu (41°08′N, 29°03′E).

A mooring buoy lies in the middle of the entrance to this bay.

Umuryeri Limanı
2.390

1 Umuryeri Limanı (41°09′N, 29°04′E) is entered between Selvi Burnu and Acar Burnu, 1 mile N. Umur Bankları (2.378), composed of sand, gravel and stones and with depths of less than 5 m over it, lies in the entrance to the harbour. This bank is often marked by discolouration.

Entry is prohibited in the inner part of the harbour. See 2.370.

İstanbul Boğazi – Umuryeri Traffic Watch Station from SW (2.390)
(Original dated 2003)
(Photograph – A. McDonald mv Doulos)

2 **Currents.** The current sets S over Umur Bankları and an eddy of considerable proportions is formed in the bay. The strength of this current has been observed to be about ¾ kn in a light SW wind and 1¼ kn in a light NW wind.

Caution. It is inadvisable to use the channel between the two parts of Umur Bankları because of the strength of the current that sets across it.

Büyükdere Limanı
2.391

1 Büyükdere Limanı is entered between Kireçburnu (41°09′N, 29°03′E) (2.378) and Mezar Burnu, 1¼ miles NNE. This bay provides shelter in all winds and is the best anchorage in the straits.

Mooring buoys, shown on the chart, are situated close inshore in Büyükdere Limani.

Currents. The main current setting directly S from Mezar Burnu creates a complex eddy in the bay. The associated counter current flows N, normally in excess of ½ kn in the S part, across the middle of the bay back towards Mezar Burnu. It does not normally reach this point unless it is stronger than usual.

Landing places. A pier is situated at the head of the bay, close S of a mosque.

Rumelikavağı
2.392

1 **A fishing harbour**, protected by a breakwater 130 m in length, is situated 2 cables SW of Dikilikaya Light (41°11′N, 29°05′E) (2.378).

Depth at the entrance is 2 m. In the inner part there are depths of between 1 and 1·5 m.

Poyraz
2.393

1 **A fishing harbour**, protected by a breakwater 370 m in length, is situated on the S side of Poyraz Burun (41°12′·5N, 29°08′·0E). An old stone fort stands on the headland.

Depths. At the entrance the harbour has depths of 9 m. In the inner part the average depth is between 5·5 and 6·1 m, decreasing to between 2 and 3 m near the shore.

Fuel and water available.

Rumeli
2.394

1 **A fishing harbour**, consisting of two small basins protected by two breakwaters, is situated close S of Türkeli Light (41°14′N, 29°07′E) (2.374).

Türkeli Light (2.398)

(Original dated 2003)

(Photograph A. McDonald mv Doulos)

Depths at the entrance are 3·6 m and in the inner part of the harbour between 1·1 and 2·8 m.

Lights (concrete towers, 5 and 7 m in height) stand at the head of each breakwater.

Fuel and water are available.

NORTH APPROACHES TO İSTANBUL BOĞAZI

General information

Charts 3930, 1158, 1198

Topography

2.395

1 The N entrance to İstanbul Boğazı is approached between Dalyan Burnu (41°15′N, 29°02′E) and Kelağra Burnu, 10 miles E. In clear weather the entrance is easy to recognise by the peculiar outlines of the mountains on the E side of the strait, namely Alem Dağı and Çatal Dağ (2.398) which tower far above the intervening ranges on the coast of Anadolu. On the W side of the entrance the outline of the hills extends for miles at an apparently uniform elevation.

2 **Shore west of entrance.** Between Rumeli (2.394) and Dalyan Burnu, 3½ m WNW, there are a number of rocky points, of which Güvem Burnu is the most prominent. This headland is the E entrance point of the largest of a number of coves, open N, in which there are depths of about 5·5 m about 1 cable offshore. There is good landing for boats in these coves.

For a description of the topography W of Dalyan Burnu, see 4.13.

3 **Shore east of entrance.** Between Yom Burnu (41°14′N, 29°10′E) and Elmas Burnu, 2 miles E, there is a bight at the head of which is a sandy beach fringed by a sandy bank. The beach is divided by Soğan Yarımadası, which is connected to the beach by a sandspit. Çayağı Çayı enters the sea at the E end of the bight.

4 Elmas Burnu, which is a bold headland, is the termination of a range of hills, which recedes inland and forms the E side of the valley through which flows the Çayağı Çayı.

For description of the topography E of Kelağra Burnu see 3.16.

Pilotage

2.396

1 See 2·6–2·9.

Traffic regulations

2.397

1 **Traffic separation schemes.** See 2.6–2.8.

Anchoring and fishing are prohibited in an area between Elmas Burnu (2.395) and Kara Burnu (5¾ miles W), as shown on the chart..

Anchorage for passenger and dry cargo vessels is centred on position 41°16′·0N, 29°01′·5E. To the W of this area there is an anchorage for vessels carrying dangerous cargoes. The limits of both these areas are shown on the chart.

Principal marks

2.398

1 **Landmarks:** (Chart 2230)

Alem Dağı (41°04′N, 29°12′E), which on a clear day is visible from seaward at a distance of 30 miles.

Çatal Dağ (41°02′N, 29°17′E). which on a clear day is visible from seaward at a distance of 30 miles.

2 **Major lights:**

Anadolu Light (41°13′N, 29°09′E) (2.374).

Türkeli Light (41°14′N, 29°07′E) (2.374).

Other navigational aids

2.399

1 **Fog signal:**

No 1 coastguard station (41°13′N, 29°10′E).

Racon:

Anadolu Light — as above.

For further details see *Admiralty List of Radio Signals Volume 2.*

Directions

(continued from 2.380)

İstanbul Boğazı to Black Sea

2.400

1 From the vicinity of 41°14′N, 29°08′E, in the N approaches to İstanbul Boğazı, all routes leading into the Black Sea pass through waters clear of charted dangers.

(Directions continue to ports in Kryms'kyy Pivostriv, the NE part of the Black Sea and Sea of Azov at 3.8; for ports in the E part of Black Sea at 3.9; for ports on the N coast of Turkey and SE part of Black Sea at 3.15 and 3.20; for ports in the NW Black Sea and the Danube Delta at 4.11, and for those in the SW part of Black Sea at 4.15).

Northern approach to İstanbul Boğazı

2.401

1 From the vicinity of 41°20′N, 29°05′E the passage leads SSE towards the entrance of the İstanbul Boğazı Traffic Separation Scheme, passing (with positions from Anadolu Light (41°13′N, 29°09′E)):

2 ENE of Dalyan Burnu (5½ miles WNW), a headland which terminates in a cliff and within which the land rises gradually to a hill. An islet, upon which stands Dalyan Burnu Light (4.15), lies close NNW of the headland. Thence:

3 NW of Yom Burnu (7½ cables NE). This headland is bold and steep-to. It is much higher than the adjacent land and obscures Anadolu Light when this light bears more than 236°. Thence:

ENE of Güvem Burnu (4 miles WNW), thence:.

ENE of Türkeli Light Traffic Control Station (2 miles WNW).

4 Thence the TSS leads SSW into İstanbul Boğazı.

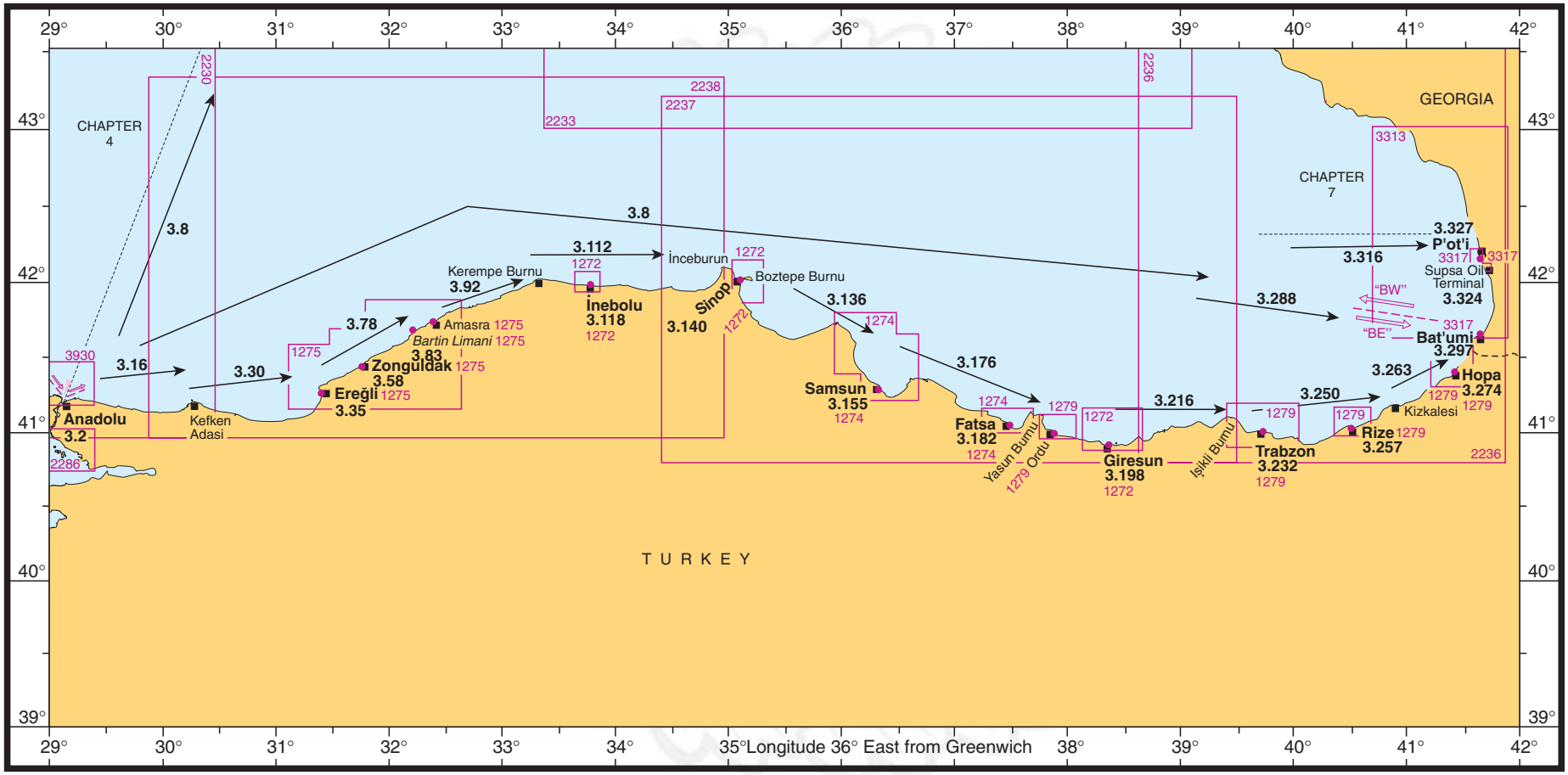
2.402

1 **Useful marks:**

Kelağra Burnu (a long and sloping headland) (41°14′N, 29°15′E).

Eşek Light (metal tripod, 4 m in height) (41°14′N, 29°14′E), which stands on Eşek Adası, an islet which is high and steep and consists of two parts connected in the middle by a low ridge.

Chapter 3 - South part of the Black Sea



December 2003

CHAPTER 3

SOUTH PART OF BLACK SEA

GENERAL INFORMATION

Charts 2214, 2230, 2238, 2237, 2236

Scope of the chapter

3.1

1 The area covered by this chapter includes the S part of the Black Sea between the N approaches to İstanbul Boğazı (Bosporus) and the Georgian ports of Bat'umi (41°39′N, 41°39′E) and P'ot'i (42°09′N, 41°39′E). The E part of the N limit of this area follows, in general, the median line between Turkey and Georgia.

Topography

3.2

1 **Coast of Anadolu.** The S shore of the Black Sea, which tends in an E direction for about 600 miles from the N entrance of İstanbul Boğazı to just beyond the Georgia-Turkey frontier, is divided into two distinct regions; a coastal and an inland belt.

2 The rainy coastal belt rises steeply from the sea and is thickly forested. The high land of the inland belt, which is traversed by deep valleys, consists mainly of worn plateau blocks standing up as mountains, many of which are extinct volcanoes.

3 The difference between the two regions is more marked in the E where high mountains lie between the wet coast and the more arid hinterland. In the W, where altitudes are lower, the change is more gradual.

Between Ereğli and İnebolu the coastal belt differs from the remainder and consists of wide parallel valleys and wooded hills.

Harbours

3.3

1 Amongst the harbours described in this chapter are the ports of:

Ereğli (41°17′N, 31°25′E) (3.35).
Zonguldak (41°28′N, 31°47′E) (3.58).
Bartin (41°41′N, 32°14′E) (3.83).
Amasra (41°45′N, 32°23′E) (3.97).
İnebolu (41°59′N, 33°46′E) (3.118).

2 Samsun (41°18′N, 36°20′E) (3.154).
Giresun (40°55′N, 38°23′E) (3.198).
Trabzon (41°01′N, 39°44′E) (3.232).
Rize (41°02′N, 40°31′E) (3.257).
Hopa (41°24′N, 41°26′E) (3.274).
Bat'umi (41°39′N, 41°39′E) (3.297).
P'ot'i (42°09′N, 41°39′E) (3.327).

Navigational aids

3.4

1 See caution at 1.18 concerning the reliability of navigational aids.

Natural conditions

3.5

1 **Winds.** Between İstanbul Boğazı and Kerempe Burnu (42°01′N, 33°20′E) the prevailing winds are between N and NE. Farther E, the prevailing winds are between NW and NE.

In both regions winds from S or SE, which veer to W or NW, blow strongly when a depression moves E across the Black Sea. See 1.165.

3.6

1 **Flow.** In general, the current flows E along the N coast of Anadolu at a rate of between ¼ and ¾ kn. See 1.145.

3.7

1 **Earthquakes.** The N coast of Anadolu is subject to severe earthquakes.

OFFSHORE PASSAGES

ROUTES

İstanbul Boğazı to NE Black Sea and Sea of Azov

Charts 2214, 2230, 2238, 2233, 2237

Directions

(continued from 2.400)

3.8

1 From a position N of the N entrance to İstanbul Boğazı (41°20′N, 29°10′E) the through route to ports in the NE Black Sea and Sea of Azov proceeds for about 240 miles, through waters clear of charted dangers, to a position about 70 miles NNE of Kerempe Burnu (42°01′N, 33°20′E) approximately midway between the N coast of Anadolu and the S point of the Kryms'kyy Pivostriv.

(Directions continue for S Kryms'kyy Pivostriv at 7.9, and for Sea of Azov and Novorossiysk at 7.10)

İstanbul Boğazı to ports in the E Black Sea

Directions

(continued from 2.400)

3.9

1 The route follows the coastal route from the N entrance to İstanbul Boğazı to Kerempe Burnu (42°01′N, 33°20′E) and İnce Burun (42°06′N, 34°57′E), thence to Bat'umi and P'ot'i through waters clear of charted dangers.

2 Vessels bound for Caucasian ports between P'ot'i and Novorossiysk may leave the route either off Kerempe Burnu or İnce Burun and proceed generally NE through waters clear of charted dangers.

(Directions continue for Bat'umi and P'ot'i at 3.295 and 3.320, and for other Caucasian ports at 7.11)

Flow

3.10

1 See 1.145.

KELAĞRA BURNU TO BARTIN LIMANI

GENERAL INFORMATION

Charts 2230, 2238, 1275

Topography

3.11

1 The N Anadolu coast from Kelağra Burnu (41°14′N, 29°15′E) (2.402) to Bartın Limanı, about 140 miles ENE, forms a shallow bight which is clear of charted dangers.

The ports of Ereğli (3.35) and Zonguldak (3.58) are situated on this stretch of the coast.

Submarine exercise areas

3.12

1 Submarines exercise frequently within the area between Akçakoca (41°05′N, 31°07′E) and Girece Burnu (41°50′N, 32°35′E).

KELAĞRA BURNU TO BARTIN LIMANI—OFFSHORE PASSAGE

General information

Charts 2230, 2238, 1275

Topography

3.13

1 From Kelağra Burnu to Bartın Limanı the coast is generally steep-to and backed by mountains rising to heights of over 300 m.

Principal marks

3.14

1 **Major lights:**

Şile Burnu Light (41°11′N, 29′37′E) (3.19).
Ölüce Light (41°19′N, 31°24′E) (3.31).
Zonguldak Burnu Light (41°28′N, 31°47′E) (3.80).

Directions

(continued from 2.400)

3.15

1 From a position N of Kelağra Burnu (41°14′N, 29°15′E), the direct passage to Bartın Limanı and thence to other destinations in the SE part of the Black Sea proceeds generally ENE for 140 miles in waters clear of charted dangers, passing:

2 NNW of Şile Burnu Light (41°11′N, 29′37′E) (3.19), thence:

NNW of Kefken Adası Light (41°13′N, 30°15′E) (3.20), thence:

NNW of Demirli Burnu Light (41°41′N, 32°13′E) (3.81).

(Directions for the coastal passage to Kerempe Burnu continue at 3.96)

KELAĞRA BURNU TO KEFKEN ADASı

General information

Charts 3930, 2238

Topography

3.16

1 **Kelağra Burnu to Şile Burnu.** Between Kelağra Burnu (41°14′N, 29°15′E) and Kara Burun (6 miles E) (3.20) the coast forms a slight bight and consists of yellow cliffs, intersected in places by small valleys with narrow strips of beach. The coast E of Kara Burun consists of cliffs interspersed by low sandy stretches of coast, behind which lie low coastal hills.

2 **Şile Burnu to Kefken Adası.** Between Şile Burnu and Kefken Adası the coast is indented by a number of small bays. Villages are situated at the head of a number of these bays. Hills, between 150 m and 300 m in height, rise steeply from the sea along this part of the coast.

Prohibited landing

3.17

1 Landing is prohibited between Kelağra Burnu and where the meridian 29°34′E crosses the coastline, 15 miles ESE.

Rescue

3.18

1 **Lifeboats** are stationed at Şile and Kefken Adası.

Life-saving stations are situated on the coast between Kelağra Burnu and Şile.

Principal marks

3.19

1 **Landmarks:**

Babadağı (41°07′N, 30°11′E). Two peaks covered in trees, which are visible from 10 miles N of Kefken Adası in clear weather.

Major light:

Şile Burnu Light (white stone tower, black bands, 19 m in height) (41°11′N, 29°37′E).

Directions

(continued from 2.400)

3.20

1 From a position N of Kelağra Burnu (41°14′N, 29°15′E) the coastal passage to Kefken Adası proceeds generally E for 46 miles, in waters clear of charted dangers, passing (with positons from Şile Burnu Light (41°11′N, 29°37′E)):

2 N of Karaburun Light (white tripod on round concrete tower, 8 m in height) (10½ miles W). This light stands on Kara Burun, a sloping headland which, near its extremity, suddenly rises to a rampart consisting of boulders resembling tombstones. Life-saving stations stand 1¼ miles W and 1 mile E of the headland. Thence:

3 N of Şile Burnu Light which stands 2 cables SSE of Şile Burnu. A number of rocky islets lie close NW of this extremity. Thence:

4 N of Kefken Adası Light (white metal column and dwelling, 10 m in height) (29 miles E). There are remains of an old fort on the island and several above-water rocks lie close off its N and W side,

Useful mark:

Kerpe Burnu (41°10′N, 30°11′E). A bold headland.

(Directions for Ereğli continue at 3.32)

Small craft channels

Inshore of Kadırga Adası

3.21

1 The channel between Kadırga Adası (41°09′N, 30°09′E), a small islet 1·8 m high, and the mainland is about 4½ cables wide and has depths of 11 to 16·5 m. Local knowledge is necessary for this passage.

Inshore of Kefken Adası

3.22

1 The channel between Kefken Adası and Pazarbası Burnu, 5 cables SE, is about 4½ cables wide but spits extend from

the shore on either side. Foul ground extends 2 cables W from Kefken Adası. The channel has depths of 6 m. Local knowledge is necessary for this passage.

Anchorages and harbours

Şile
3.23

1 **Harbour** at Şile, which is entered 6 cables WSW of Şile Burnu, is protected by two breakwaters. The N breakwater, which extends NW and then SW for 5 cables, has a light (concrete tower, 6 m in height) at its head.

2 **Depths.** In 1991 it was reported that the harbour was silted and in places there were rocks and shoal patches with depths of about 1 m extending up to 2 m from the quay.

Yeşilçay
3.24

1 The harbour at Yeşilçay (41°08′N, 29°51′E), at the mouth of the Koca Deresi and close S of Çanak Burnu is sheltered by two breakwaters. Lights (concrete towers, 5 m in height) stand at the head of each breakwater.

Seyrek Limanı
3.25

1 Seyrek Limanı (41°08′N, 30°06′E), which is entered close E of Palamar Burnu, is used by small boats which are hauled up on the beach to protect themselves from the surf. Local knowledge is required to enter the bay.

Kerpe Limanı
3.26

1 **Anchorage** in Kerpe Limanı (41°09′N, 30°11′E) provides shelter from all but W and NW winds, in depths of 7 m. This is the best natural anchorage in the vicinity. Anchorage, the limits of which are shown on the chart, may also be obtained 2 miles NW of Kerpe Burnu (3.20).

Directions. When entering the bay, care should be taken to avoid above-water rocks which lie off the S side of the entrance point. Local knowledge is required to enter the bay.

Kefken Limanı
3.27

1 A harbour in the NE part of Kumcağiz Koyu (41°10′N, 30°13′E) is sheltered by a mole, 250 m in length, which extends S from the N coast of the bay. Shelter can be obtained off the village, inshore of the mole, in a depth of about 3 m. Small craft can also shelter from W winds within the SW entrance point. Local knowledge is required to enter the bay.

Kovanağzi
3.28

1 Aşağı Kovanağźı (41°11′N, 30°14′E) is a small harbour on the W side of Aşağı Kovanağı Koyu that serves the town of Kovanağzı. It is protected by a breakwater that has a light (white concrete tower, 5 m in height) at its extremity and has about 200 m of quayage with depths alongside of about 3 m.

Kefken Adası Barinağı
3.29

1 A harbour on S side of Kefken Adası (41°13′N, 30°16′E) is protected by two breakwaters. A marine farm is situated off the W breakwater.

Lights (concrete towers, 3 and 5 m in height) are exhibited from the head of each breakwater. There are depths of 7 m in the outer part of the harbour, but the inner part is shoal.

Anchorage, sheltered from N and E by Kefken Adası can be obtained 5 cables W of Pazarbaşı Burnu, in depths of 11 to 13 m. The bottom is rocky in places.

KEFKEN ADASI TO EREĞLI

General information

Charts 2238, 1275

Topography
3.30

1 From Kefken Adası (41°13′N, 30°16′E) to Ereğli (52 miles E) the coast forms a large bight into which flow several rivers, one of which, the Sakarya Nehri (3.33), is navigable by small craft.

2 From Kefken Adası to Dikili Burun (3½ miles ESE) the coast is fringed with rocks and the hills approach the coast. Thence for the next 28 miles the hills recede inland and the coast is fronted by a beach. From the mouth of the Büyükmelen Çayı (41°04′N, 30°58′E) to Ereğli (24 miles ENE) the coast rises in wooded slopes to heights of between 100 and 360 m.

Principal mark
3.31

1 **Major light:**

Ölüce Burnu Light (white round stone tower and dwelling, 9 m in height) (41°19′N, 31°24′E).

Directions
(continued from 3.23)

3.32

1 From a position N of Kefken Adası Light (41°13′N, 30°15′E) the coastal passage to Ereğli proceeds generally E in waters clear of charted dangers, passing (with positions from Kefken Adası Light):

2 N of Dikili Burun (3½ miles ESE), thence:
N of Sakarya Ağzı (18½ miles ESE), thence:
N of Akçakoca Kale Light (38½ miles ESE), thence:
To a position about 2 miles SSW of Ölüce Burnu Light (41°19′N, 31°24′E) (3.31).

(Directions continue for Ereğli and approaches at 3.49, and for the coastal passage to Zonguldak at 3.56)

Anchorages and harbours

Sakarya Ağzı
3.33

1 **General information.** Sakarya Nehri flows into the sea at Sakarya Ağzı (41°08′N, 30°39′E) where there is a harbour for small craft. It can be identified by a mosque in the village of Karasu (2½ miles SE). The river has depths of

5·5 m for 8 miles above its mouth and has an average width of ½ cable. The current is rapid and discolours the water to seaward for some distance.

2 **Anchorage** can be obtained 9 cables offshore in a depth of 18 m and in an area, the limits of which are shown on the chart, 9 miles E of Sakarya Ağzı Light.

Useful mark:

Sakarya Ağzı Light (metal tripod on concrete base, 8 m in height) standing on the E side of the river mouth.

Akçakoca

3.34

1 **Harbour.** Akçakoca (41°05′N, 31°07′E) has a small fishing harbour. The entrance, which opens W, is unlit. Depth alongside, 3·5 m.

Caution. Wind and swell from the W can make the entrance dangerous.

2 **Anchorage** may be obtained 1 mile off the E end of the town in a depth of 18 m, sand. The anchorage is exposed to all offshore winds.

Useful marks:

Akçakoca Breakwater Light (41°05′·5N, 31°07′·2E).
Akçakoca Kale Light (41°05′·3N, 31°05′·8E).

EREĞLI AND APPROACHES

General information

Chart 1275, with plan of Ereğli

Position

3.35

1 Ereğli (41°17′N, 31°25′E) and the associated port of Erdemir are situated 2 miles S of Ölüce Burnu Light (3.31), between Baba Burnu and Çengel Burnu.

Function and traffic

3.36

1 Ereğli, which in 2000 had a population of 79 500, is the main port servicing the Ereğli—Zonguldak coalfields and the steel works at Demir Çelik. Principal imports are iron ore and coal, principal exports are finished steel products.

Traffic. In 2002 the port was used by 189 vessels with a total deadweight of 6 674 438 tonnes.

Port limits

3.37

1 **Outer harbour** limit extends S from Baba Burnu and E to Çengel Burnu as shown on the chart.

Inner harbour limit extends SSE from the head of Kuzey Mendirek to the head of the S mole.

Approach and entry

3.38

1 The port is approached through a channel dredged to 20 m (1998), and marked by a pair of light-buoys (lateral) at the seaward entrance. A wreck with a depth of 10·8 m over it lies 1 cable N of the N light-buoy.

Port Authority

3.39

1 Ereğli Demir ve Celik Fabrikaleri, Pk 8, Ereğli.

Limiting conditions

Controlling depths and deepest berths

3.40

1 **Approach channel.** Dredged to 20 m (1998).
Inner harbour. North part. See 3.51.
Erdemir. See 3.51.

Largest vessel

3.41

1 **Erdemir**, 150 000 dwt, draught 18 m.

Arrival information

Port radio

3.42

1 See *Admiralty List of Radio Signals Volume 6(3)* for details.

Outer anchorage

3.43

1 **Anchorage** may be obtained in or to seaward of the outer harbour as convenient in depths of 13 to 20 m. Safe anchorage, mud and sand.

Pilots and tugs

3.44

1 **Pilotage** is compulsory for foreign vessels over 150 grt and Turkish vessels over 1000 grt. Pilots are available 24 hours a day; they embark in the outer harbour about 1 mile W of the light at the head of Kuzey Mendirek. In rough weather they embark in the inner harbour.

2 **Tugs** are available and compulsory for vessels using the inner harbour or Erdemir.

Regulations

3.45

1 **Restricted areas.**

Entry is prohibited to an area, as shown on the chart extending either side of Kuzey Mendirek.

Anchoring is prohibited in an area of Ereğli Limanı as shown on the chart.

2 Vessels carrying explosives and inflammable materials anchor in the outer harbour or berth in Erdemir if cargo is for the steel works.

Permission of the harbour authority is required before vessel may enter inner harbour.

Harbour

General layout

3.46

1 **Inner harbour** which is protected by breakwaters, has two ports:

Ereğli Limanı is the N part of inner harbour, which is protected by Kuzey Mendirek and a Y-shaped breakwater extending SSW from the shore.

Erdemir is the S part of the inner harbour, and is divided into two separate basins by a central breakwater. The E basin (adjacent to the steelworks) is of an earlier construction than the deep water facilities in the W basin.

Traffic signals

3.47

1 Displayed from signal mast (41°17′N, 31°24′E) on Kuzey Mendirek. Signals are disposed vertically.

Signal		*Meaning*
Day	*Night*	
● ●	● ●	Harbour closed
▲ ▲	● ●	Harbour open
● ▲	● ●	Do not attempt to enter
▲ ●	● ●	No tug available
▲ ● ▲	● ● ●	Wait. You will be piloted into the harbour
● ● ●	● ● ●	Because of unfavourable weather, you cannot be piloted into harbour

Traffic Signals (3.47)

Principal marks

3.48

1 **Landmark:**
Baba Burnu is the S extremity of a broad headland faced by rocky cliffs, which extends 1 mile N to Deliktaş Burnu. This headland can be identified by the sudden change in aspect of the coast N of Baba Burnu.

2 **Major light:**
Ölüce Burnu Light (41°19′N, 31°24′E) (3.31).

Directions for entering harbour

(continued from 3.32)

3.49

1 From a position about 2 miles SSW of Ölüce Burnu Light (41°19′N, 31°24′E) (3.31), in the vicinity of the pilot boarding area, the track leads E passing between a pair of light-buoys (lateral) at the entrance to the dredged channel, thence between the head of Kuzey Mendirek and the head of the S mole at the entrance to Erdemir and into the inner harbour.

Berths

Anchorages and moorings

3.50

1 **Anchorage** is available, subject to permission and clear of restricted areas, for vessels of less than 500 tonnes in the NE part of the inner harbour.

Alongside berths

3.51

1 **Ereğli Limanı.** Passenger and cargo berths total 335 m in length with a depth alongside of 8·5 m. Works were in progress (2000) on the construction of a new jetty in the N part of the inner harbour.

Erdemir.

E basin: Maximum vessel size 60 000 dwt, depth alongside 11 m.

W basin: Maximum vessel size 150 000 dwt, depth alongside 20 m (2003).

Port services

Facilities

3.52

1 **Deratting** (exemption certificates only); hospitals.

Supplies

3.53

1 Diesel oil supplied by road tanker; fresh water; provisions and stores.

EREĞLI TO ZONGULDAK

General information

Chart 1275

Topography

3.54

1 From Ölüce Burnu (41°19′N, 31°24′E) to Zonguldak (20 miles ENE), the coast is generally mountainous, wooded and intersected by numerous ravines. The shore is steep-to except for a stretch between Kandilli Burnu and Asar Burnu, 5½ and 9¾ miles, respectively, ENE of Ölüce Burnu, where in places sunken rocks extend up to 3 cables offshore.

Principal marks

3.55

1 **Major lights:**
Ölüce Burnu Light (41°19′N, 31°24′E) (3.31).
Zonguldak Burnu Light (41°28′N, 31°47′E) (3.80).

Directions

(continued from 3.32)

3.56

1 From a position about 2 miles SSW of Ölüce Burnu the coastal passage to Zonguldak proceeds generally ENE for 22 miles, passing (with positions from Ölüce Burnu Light):
NNW of Kandilli Burnu (5½ miles ENE), thence:
NNW of Asar Burnu (9¾ miles ENE), thence:
To a position WNW of Zonguldak Burnu Light (20 miles ENE).

(Directions continue for Zonguldak and approaches at 3.72, and for the coastal passage to Bartı Limanı at 3.81.)

Anchorages

Kozlu Limanı

3.57

1 Kozlu Limanı is entered between Domuz Burnu (41°27′N, 31°45′E), and a point 1¾ miles SW. The town of Kozlu, which in 1985 had a population of 35 600, stands at the head of the bay.

Anchorage may be obtained at a convenient depth, the bottom being sand in depths of less than 20 m and mud and sand in greater depths.

ZONGULDAK AND APPROACHES

General information

Chart 1275, plan of Zonguldak

Position

3.58

1 Zonguldak (41°28′N, 31°47′E) is situated 5 cables S of Zonguldak Burnu.

Function

3.59

1 Zonguldak, which in 2000 had a population of 104 300, is the administrative centre for the region.

Traffic. In 2002 the port was used by 12 vessels with a total deadweight of 29 728 tonnes.

Exports. The main function of the port is the export of coal from the Ereğli coalfields.

Port limits

3.60

1 **Outer harbour** limit extends 300 m N from Zongulda Burnu Light (3.80) and thence to İncivez Burnu.

Inner harbour limit joins the heads of the two breakwaters.

Limiting conditions

3.61

1 **Deepest berth.** See 3.74.

Density of water reported to be 1·013 g/m^3.

Largest vessel. 25 000 grt. Draught 8·2 m. Length 170 m.

Local weather. The outer anchorage, where holding ground is reported to be poor, is unsafe during bad weather with winds from NE through N to W.

Arrival information

Port radio

3.62

1 See *Admiralty List of Radio Signals Volume 6(3)* for details.

Notice of ETA

3.63

1 Twenty-four hours notice required for all foreign vessels and Turkish vessels from foreign ports. See *Admiralty List of Radio Signals Volume 6(3)* for details.

Outer anchorage

3.64

1 Anchorage available NNW of inner harbour in depths of about 24 m, sand and mud.

Vessels carrying explosives and inflammable material are required to anchor at least 1 cable offshore in the outer harbour, E of a line drawn N from the head of Kuzey Mendirek.

3.65

1 **Prohibited anchorage** area is shown on the chart, extending 6½ cables W from the harbour entrance.

Pilotage and tugs

3.66

1 **Pilotage** is compulsory for vessels over 150 grt and for warships and support vessels of 500 tonnes displacement or more. Pilots are provided by the coaling company and board in the outer anchorage.

Tugs are available. their use is compulsory for vessels of 500 grt or more. Vessels of 5000 grt or more must use two tugs.

Harbour

Layout of inner harbour

3.67

1 The inner harbour, which occupies the SE part of Zonguldak Limanı, is protected by two breakwaters.

Coal quay and other berths connected with coal operations are situated in the S part of the harbour.

The passenger quay is situated in the N part of the harbour.

The E side of the harbour has depths of less than 5 m.

Silting

3.68

1 Silting caused by the waters of the Uzulmez Deresi, which flows into the SE corner of the inner harbour, makes constant dredging necessary.

Traffic signals

3.69

1 Displayed from signal station situated at elbow of Kuzey Mendirek.

Signals as at Ereğli. See 3.47.

Climatic table

3.70

1 See 1.195 and 1.216.

Principal marks

3.71

1 **Landmark:**

Zonguldak Burnu Lighthouse (41°28′N, 31°47′E) (3.80).

Major light:

Zonguldak Burnu Light—as above.

Directions for entering harbour

(continued from 3.56)

Outer harbour

3.72

1 From a position WNW of Zonguldak Burnu Light, the approach to the outer harbour leads SE through waters clear of charted dangers.

Inner harbour

3.73

1 **Leading lights:**

Front light (pedestal, 14 m in height) (41°27′·6N, 31°47′·3E), situated on the E shore of the inner harbour.

Rear light (flagstaff, 38 m in height) (25 m E of front light)

The alignment (080¼°) of these lights leads E through the breakwater entrance into the inner harbour.

Useful marks:
Lights (concrete columns, 10 m in height) stand at the head of each breakwater.

Berths

Alongside berths
3.74

1 There are three main quays. The Coal Quay, which is the largest, is 510 m long with a depth alongside of 8·5 m.

Port services

Repairs
3.75

1 Private dockyard and workshop owned by the coal company, Ereğli Kompani İşletmesi.

Other facilities
3.76

1 Ballast and slops reception; deratting (exemption certificates only); hospitals.

Supplies
3.77

1 Fresh water.

ZONGULDAK TO BARTIN LIMANI

General information

Chart 1275

Topography
3.78

1 From Zonguldak Burnu (41°28′N, 31°47′E) to Bartın Limanı (24 miles NE) the first 13 miles of the coast to Hisar Burnu is backed by a number of sharply pointed mountains, reaching heights of between 300 and 500 m. NE of Hisar Burnu the aspect is less mountainous. The shore between Zonguldak Burnu and Hisar Burnu is generally steep-to, with a number of beaches. A rocky bank lies 2 cables offshore close SW of Hisar Burnu.

2 Between Hisar Burnu and Demirli Burnu (11 miles NE) the shore consists of a series of long beaches, divided by a number of small headlands, of which Güzelcehisar Burnu (41°38′N, 32°10′E), is the most prominent.

Regulations
3.79

1 **Fishing** is prohibited in an area which extends 3 miles to seaward off Bartın Limanı (3.83).

Principal marks
3.80

1 **Major light:**
Zonguldak Burnu Light (white round stone tower and dwelling) (41°27′·9N, 31°47·3E).

Directions
(continued from 3.56)

3.81

1 From a position WNW of Zonguldak Burnu, the coastal passage to Bartın Limanı proceeds generally NE in waters clear of charted dangers, passing (with positions from Zonguldak Burnu Light):
NW of Hisar Burnu (13 miles NE). A low point with reddish-coloured slopes, thence:
NW of Demirli Burnu Light (white concrete tower on concrete base, 10 m in height) (24 miles NE).
(Directions for the coastal passage to Kurucaşile Burnu continue at 3.97)

Anchorages and harbours

Hisarönü
3.82

1 Two piers extend from the shore 8½ and 11 cables SW of Hisar Burnu. The W pier, which is 240 m in length, has a depth of about 9·5 m at its outer end. Both piers are connected to the general rail system.
Useful mark:
A light (white column, 6 m in height) is exhibited from the head of the W pier.

2 A small harbour 6 cables WSW of Küp Burnu, 6 miles WSW of Hisarönü, is formed by two breakwaters from which lights are exhibited.

Bartin Limanı

Chart 1275, plan of Bartın

General information
3.83

1 **Position and approach.** Bartın Limanı (41°41′N, 32°14′E) is situated on the N side of the mouth of the Bartın Çayı and is approached between Demirli Burnu (3.78) and Taşdibi Burnu, 6 cables NE.
Function. Naval base and commercial port.
Traffic. In 2002 the port was used by 63 vessels with a total deadweight of 312 744 tonnes.

Limiting conditions
3.84

1 **Controlling depths.** There are charted depths of 7 m or more in the approaches to and the centre of the outer harbour. Depths in the outer harbour are liable to change due to silting from the Bartın Çayı.
Longest berth. 480 m.

Arrival information
3.85

1 **Port radio.** See *Admiralty List of Radio Signals Volume 6(3)* for details.
Pilotage is compulsory for Turkish merchant vessels of 1000 grt or more and for all foreign flag vessels of greater

Bartin (3.86)

(Photograph – Port of Bartin) *(Original dated 2002)*

than 150 grt and yachts. Pilots embark in the outer harbour anchorage area.

Tugs are available. Their use is compulsory for all vessels over 2000 grt except warships.

Harbour

3.86

1 **General layout.** Bartın Limanı comprises the sea area within a boundary extending from the shore W from 41°41·65′N, 32°14·55′E and N from 41°39·55′N, 32°12·50′E and includes Bartın Çayı.

The harbour is divided into three parts, Outer harbour, Inner harbour and Bartın Çayı.

Outer harbour is the sea area between the outer limits and the boundary joining the seaward ends of the N and S breakwaters and the mouth of Bartın Çayı.

2 **Inner harbour** is the sea area within the N and S breakwaters, Kusey Mendirek and Güney Mendirek, which forms the N bank of the Bartın Çayı, thence extending to the E shore of Taşdibi Burnu.

Bartın Çayı is the area between the river mouth and the bridge crossing the river.

Prohibited area. A military harbour, into which entry is prohibited, is situated in the E part of the inner harbour.

Directions

3.87

1 From a position NW of Demirli Burnu Light the white sector (060°–065°) of Bartın Limanı directional light (white 4-sided metal tower, 5 m in height) (41°41′·4N, 32°13′·8E) leads into the harbour, passing between:

Head of Kuzey Mendirek, marked by a light (white concrete tower on concrete base, 7 m in height), and:

Heads of two arms of Güney Mendirek, both of which are marked by lights (white towers, 8 m in height).

3.88

1 **Useful mark:**

Light (white metal tower, 5 m in height) standing on the S shore of Taşdibi Burnu (about 4 cables E of N breakwater head light) marking the N side of the inner harbour entrance.

Anchorages and berths

3.89

1 **Anchorage** may be obtained, the limits of which are shown on the chart, 1 mile WSW of the harbour entrance.

2 **Berth** is 480 m in length and handles vessels with a maximum draught of 7·5 m. A turning circle, with a depth of 8 m and radius 300 m, is situated between the berth and the N breakwater.

Bartın Çayı

3.90

1 Bartın Çayı is navigable by small craft with local knowledge as far a the town of Bartın, 6 miles upstream. The mouth of this river is narrowed by rocks and obstructed by a sandbar over which there are depths of about 2 m. Within the entrance, depths increase to between 7 and 9 m.

Small craft

Yenice Irmağı

3.91

1 Yenice Irmağı (41°35′N, 32°03′E) enters the sea through two channels about 1 mile NE of Hisar Burnu (3.81). The E channel has depths of about 2 m and this depth extends about 3 cables upstream. The W channel has lesser depths. Local knowledge is required to enter this river.

BARTIN LIMANI TO KEREMPE BURNU

BARTIN LIMANI TO KURUCAŞILE BURNU

General information

Charts 2238, 1275

Topography

3.92

1 From Bartın Limanı (41°41′N, 32°14′E) to Kurucaşile Burnu (24 miles ENE) the coast is generally steep-to.

It is indented by a number of small inlets and the larger bay of Büyük Limanı which forms the approaches to the port of Amasra (3.97).

Regulations

3.93

1 Seining and trawling are prohibited in an area that extends 3½ miles N and 1¼ miles E and W of Amasra.

Submarine exercise areas

3.94

1 Submarines exercise frequently within the area between Akçakoca (41°05′N, 31°07′E) and Girece Burnu (41°50′N, 32°35′E).

Principal marks

3.95

1 **Major light:**

Amasra Light (white stone tower and dwelling, 3 m in height) (41°45′N, 32°23′E).

Directions

(continued from 3.15 and 3.81)

3.96

1 From a position NW of Demirli Burnu Light (3.81) the coastal passage to Kurucaşile Burnu proceeds generally ENE, passing (with positions from Demirli Burnu Light):

2 NNW of Kamişlar Burnu (7 miles ENE). A 3 m shoal extends 3 cables NW. Thence:

NNW of Amasra Light (3.95) (8 miles ENE), thence:

NNW of Çakraz Burnu (12 miles ENE). A dark precipitous cliff, 424 m in height. A detached group of above-water rocks lies 1 mile ENE. Thence:

3 NNW of Dikili Burun (14½ miles ENE). A detached rounded summit rises precipitously from its extremity. Thence:

NNW of Kurucaşile Burnu Light (white concrete tower, 8 m in height) (24 miles ENE), which stands on Kurucaşile Burnu, a narrow promontory extending 5 cables from the general line of the coast.

(Directions for the coastal passage to Kerempe Burnu continue at 3.108)

Amasra

Chart 1275, plan of Amasra

General information

3.97

1 **Position and approaches.** Amasra (41°45′N, 32°23′E), a walled town, is situated on the W side of Büyük Limanı and stands on a peninsula which is connected to the mainland by a low sandy isthmus 1¼ cables wide.

Büyük Limanı and the port of Amasra lie between the E extremity of the peninsula and Felangıt Burnu, 1¾ miles E.

Harbour limits are shown on the chart.

Arrival information

3.98

1 **Notice of ETA.** 24 hours for all foreign vessels and Turkish vessels from foreign ports.

Anchorage may be obtained 1 mile NE of Amasra Light in depths of 19 to 43 m, mud. The limits of the anchorage area are shown on the chart.

3.99

1 **Regulations.** On arrival, foreign vessels must anchor in outer harbour until granted permission to enter inner harbour.

Harbour

3.100

1 **General layout.** Asmara Town Harbour consists of an outer and inner harbour.

Outer harbour. Consists of the outer anchorage area N and E of the peninsula, and Küçük Liman, W of the peninsula.

Inner harbour. The sea area within the breakwaters.

Directions

3.101

1 From a position N of Amasra Light, Büyük Limanı is entered through waters clear of charted dangers, passing:

NE of Ayıbalığı Adası (1 cable E of peninsula), an island of moderate height with bold yellow sides. From a distance this island and the peninsula appear as a group of islands.

2 If entering the inner harbour, continue:

Between the N and S breakwaters, marked by lights (N, white column on pedestal, 10 m in height and S, white round tower, 6 m in height, respectively).

Berths

3.102

1 **Inner harbour.** Vessels berth stern-to the N breakwater.

A prohibited zone lies in the S and W parts of the Inner harbour and includes an area close E of the S breakwater.

A small jetty, from the head of which a light is exhibited, extends NE from the SW corner of the harbour.

Port services

3.103

1 Provisions in limited quantities.

Small craft

3.104

1 Küçük Liman (41°45′N, 32°23′E) the entrance of which is about 1 cable wide, narrowed by submerged rocks fringing its N and S side, is a favourite anchorage for small craft during the summer months, when it provides shelter from the prevailing E winds.

Fishing harbours, each protected by two breakwaters, lie 5 cables E of Kurucaşile Burnu (3.96) and at Tekkeönü, 2 miles WSW of Kurucaşile Burnu. Lights (concrete towers, 7 and 9 m in height) are exhibited from each breakwater.

Other names

3.105

1 Girece Burnu (41°50′N, 32°35′E).

Tarlaağzi Liman (41°44′N, 32°20′E).

KURUCAŞILE BURNU TO KEREMPE BURNU

General information

Chart 2238

Topography

3.106

1 From Kurucaşile Burnu (41°51′N, 32°43′E) (3.96) to Kerempe Burnu (30 miles ENE), the coast is generally steep-to and backed by mountains rising to heights of over 1000 m.

Kapısuyu Deresi valley, lying about 2 miles E of Kurucaşile Burnu Light can be distinguished from 25 miles N. On the W side is the village of Kapısuyu. The E side rises to Yanikpırner Tepesi (3.107).

2 **Kerempe Burnu** is one of the highest capes on this coast and forms the W termination of that part of Anadolu that projects N into the Black Sea. The coast W of the cape is elevated and intersected by valleys with sandy beaches (3.108).

Principal marks

3.107

1 **Landmark:**

Yanikpırner Tepesi (41°50′N, 32°46′E), a pointed summit.

Major light:

Kerempe Burnu Light (white round tower and dwelling, 8 m in height) (42°01′N, 33°20′E).

Directions

(continued from 3.96)

3.108

1 From a position NNW of Kurucaşile Burnu (41°51′N, 32°43′E) (3.96), the coastal passage to Kerempe Burnu proceeds generally ENE in waters clear of charted dangers, passing (with positions from Kurucaşile Burnu):

2 NNW of Kopekkaya Burnu Light (concrete tower, 7 m in height) (12½ miles ENE), standing on Kopekkaya Burnu which terminates in a bluff. Thence:

NNW of Kerempe Burnu Light (29 miles ENE). Kerempe Burnu is a high cape, bordered by reddish cliffs, with cultivated land within them. It may be approached with safety.

(Directions continue for the offshore passage to central Caucasian ports at 3.9, and for the coastal passage to Usta Burnu at 3.116)

Anchorages and harbours

Sütlüce Limanı

3.109

1 **General.** The small harbour of Sütlüce Limanı (41°52′N, 32°52′E), backed by a mountain in the form of a sugar loaf, is used by small craft.

2 **The entrance**, which in 1985 was reported to be marked by a short white stone pillar standing at the foot of the cliff, is ¾ cable wide and is divided into two channels by a sunken rock 30 m in extent. There is a depth of 2·7 m over this rock and 13 m in the fairway on either side.

The anchorage accommodates 5 or 6 small craft in depths of 5 to 7 m.

3.110

1 **Directions.** When entering the harbour, vessels should keep close to the E shore to avoid the sunken rock.

The harbour is exposed to N winds and should not be used during a strong breeze except in cases of necessity.

Local knowledge is required to enter this harbour.

Karaağaç Limanı

3.111

1 **General.** Karaağaç Limanı is situated in the bay that lies SSW of Köpekkaya Burnu (41°54′N, 32°59′E) (3.108). The village of Cide stands at the head of the bay.

Anchorage, sheltered from E, may be found in the bay in depths of 5 to 28 m.

A harbour protected by breakwaters, is situated on the NE side of the bay.

2 Lights (concrete towers, 9 m in height) are exhibited from the head of each breakwater.

Directions. The breakwater entrance is approached from S.

KEREMPE BURNU TO BOZTEPE BURNU

GENERAL INFORMATION

Charts 2238, 2237

Topography

3.112

1 Kerempe Burnu (42°01′N, 33°20′E) (3.108) and Boztepe Burnu (85 miles E) are the W and E terminations, respectively, of the part of Anadolu that projects farthest N into the Black Sea.

This promontory of Anadolu and Kryms'kyy Pivostriv (140 miles N) divides the Black Sea into W and E parts.

Weather

3.113

1 Due to different weather systems in the W and E Black Sea, winds often change direction completely when passing Kerempe Burnu and squalls are common in this vicinity.

KEREMPE BURNU TO USTA BURNU

General information

Chart 2238

Topography

3.114

1 From Kerempe Burnu (42°01′N, 33°20′E) to Usta Burnu (52 miles E), the coast is steep-to with few significant indentations. the shore is backed by mountains, which in places rise to heights of over 600 m. A number of villages, visible from seaward, are situated in the valleys.

Between Kerempe Burnu and İnebolu (19 miles E) (3.118), the coast is covered with vegetation right down to the sea. Farther E the coast is bluff with bare rocks.

Principal marks

3.115

1 **Major light:**

Kerempe Burnu Light (42°01′N, 33°20′E) (3.107).

Directions
(continued from 3.108)

3.116

1 From a position N of Kerempe Burnu Light (42°01′N, 33°20′E), the coastal passage to Usta Burnu proceeds generally E for 52 miles, in waters clear of charted dangers, passing (with positions from Kerempe Burnu Light):

N of İnebolu Burnu Light (white metal mast and dwelling, 9 m in height) (19 miles E), which stands on a low bluff point. Thence:

N of Usta Burnu Light (white metal tripod on concrete base, 7 m in height) (52 miles E).

(Directions for the coastal passage to Boztepe Burnu continue at 3.130)

Anchorages

3.117

1 Open anchorages exposed to onshore winds are situated (with positions from Kerempe Burnu Light):

Between Kecin Burnu and Asar Burnu (3½ miles E), A dangerous wreck, the charted position of which is approximate, lies close E of this anchorage.

A position 1¼ miles WNW of Zarbana (11½ miles E).

İnebolu

Chart 1272, plans of İnebolu and Approaches to İnebolu

General information

3.118

1 **Position.** The port of İnebolu lies on the E side of İnebolu Burnu (41°59′N, 33°46′E).

Port limits extend about 5 cables to seaward, 2 miles W and 1½ miles E of İnebolu Light.

2 **Function.** İnebolu is the port to the town of Kastamonu, 65 km S, which is the seat of local government.

Exports. Pyrites ore.

Traffic. In 2002 the port was used by 11 vessels with a total deadweight of 29 354 tonnes.

Limiting conditions

3.119

1 **Local weather.** Fog is frequent from March to May.

Deepest and longest berth. Depth 5 m. Length 95 m.

Arrival information

3.120

1 **Notice of ETA.** 24 hours for all foreign vessels and Turkish vessels from foreign ports. 72 hours for vessels carrying explosive materials.

Anchorage may be obtained, the limits of which are shown on the chart, 3 miles WNW of the harbour entrance.

Pilotage is compulsory for vessels over 300 grt.

Harbour

3.121

1 **General layout.** İnebolu harbour consists of an outer and inner harbour.

Outer harbour. The sea area, including the outer anchorage, within the port limits outside the breakwaters.

Inner harbour. Protected by N and S breakwaters.

Work was in progress (1998) to extend the N breakwater but it was reported (2002) that owing to this work less water than charted existed within the harbour.

Directions

3.122

1 From a position WNW of İnebolu Light (41°59′N, 33°46′E), the outer anchorage is approached through waters clear of charted dangers.

The inner harbour is entered between the N and S breakwaters, marked by lights (N, white concrete tower, 7 m in height and S, white metal framework tower, 7 m in height).

Berths

3.123

1 **Inner harbour.** An ore loading berth, 85 m in length, with a depth alongside of 5 m, is situated at the inner end of the N breakwater.

Port services

3.124

1 Hospital**;** limited quantities of fresh provisions.

Other names

3.125

1 Karaç Burnu (41°58′N, 34°26′E).
Liman Burnu (41°58′N, 34°10′E).
Yaka Burnu (41°59′N, 33°58′E).

USTA BURNU TO BOZTEPE BURNU

General information

Chart 2237

Topography

3.126

1 From Usta Burnu (41°59′N, 34°29′E) to İnce Burun (21 miles ENE), the coast forms a wide bight. Between Usta Burnu and Bahçeli (10 miles E), the coast is backed by mountains which, in places, rise precipitously from the sea. these mountains recede inland as the coast trends NE towards İnce Burun.

2 **Bahçeli Kayaları,** parts of which are above-water, lie close NE of Bahçeli. This reef is 3 miles in length and its outer edge lies about 1 mile offshore.

3.127

1 From İnce Burun (42°06′N, 34°57′E) to Boztepe Burnu (13 miles ESE) the coast is comparitively low lying. The E end of this stretch of the coast terminates in a peninsula, connected to the mainland by a narrow low lying isthmus.

Magnetic anomaly

3.128

1 A local magnetic anomaly, amounting to as much as 2½° from normal, has been reported off Boztepe Burnu.

Principal marks

3.129

1 **Major light:**

İnce Burun Light (white stone tower and dwelling, 12 m in height) (42°06′N, 34°57′E).

Directions
(continued from 3.116)

3.130

1 From a position N of Usta Burnu (41°59′N, 34°29′E), the coastal passage to Boztepe Burnu proceeds generally ENE and then ESE for 35 miles, passing (with positions from İnce Burun Light (42°06′N, 34°57′E)):

NNW of Bahçeli Kayaları (14 miles SW) (3.126), thence:

N of İnce Burun Light, which stands on a point which is sharp, rocky and reddish in colour. Thence:

2 NNE of Boztepe Burnu Light (white stone tower and dwelling, 4 m in height) (13 miles ESE), which stands on the E extremity of Boztepe Yarımadası. This peninsula can be identified by its flat summit

and, except towards the isthmus, its steep sides. From the N, the isthmus, on which stands the town of Sinop (3.140), is scarcely visible and the peninsula appears as an island.

3 **Useful marks:**

Basakaya Burnu (42°06′N, 35°01′E), a rocky bluff with reddish tint.

Gazibey Kayası, a steep-to prominent islet 3 cables NE of Boztepe Burnu.

(Directions continue for the offshore passage to Bat'umi at 3.9, and for the coastal passage to Samsun at 3.139)

Anchorages and harbours

Usta Burnu

3.131

1 **Anchorage,** sheltered from NW winds, can be obtained in depths of 5·5 to 9 m, sand and mud, in the bight SE of Usta Burnu (41°59′N, 34°29′E).

Useful mark:

Lights (white concrete columns, 5 m in height) (41°58′N, 34°30′E) standing on breakwaters at the entrance to Çaylioğlu, a fishing harbour on the E side of Usta Burnu.

Ayancık

3.132

1 Ayancık (41°57′N, 34°35′E), a village which lies 5 miles E of Usta Burnu, is situated near the mouth of the Ayancık Çayı. There are two piers, suitable for small craft, off which coasting craft anchor.

Chart 1272, plan of Approaches to Sinop

Akliman

3.133

1 The village of Akliman (42°03′N, 35°03′E) lies on the SE side of a cove. This cove, the entrance of which is 2 cables wide, is entered between Kara Ada and Sarı Ada. Reefs extend between these islets and the mainland.

Anchorage, open E, can be obtained in depths of 9 to 13 m, a short distance within the entrance. Shelter from all winds can be obtained by vessels of shallow draught in the N part of the harbour, 1½ cables offshore, in depths of 3·4 m.

2 **Useful mark:**

Akliman Light (white concrete tower, 5 m in height) standing on Kara Ada on the N side of the entrance.

Other names

3.134

1 Cebelit Burnu (41°57′N, 34°48′E).
Hamsi Burnu (42°04′N, 35°03′E).
Pekkaya Burnu (42°06′N, 35°01′E).

BOZTEPE BURNU TO YASUN BURNU

GENERAL INFORMATION

Chart 2237

Topography

3.135

1 From Boztepe Burnu (42°01′N, 35°13′E) to Yasun Burnu (123 miles ESE) the coast forms 3 wide bights. The promontories forming these bights are low lying, backed by mountains, which lie 10 to 15 miles inland.

The port of Samsun (3.154) is situated on this stretch of the coast.

BOZTEPE BURNU TO APPROACHES TO SAMSUN

General information

Charts 2237, 1272, plan of Approaches to Sinop

Topography

3.136

1 From Boztepe Burnu (42°01′N, 35°13′E) to Bafra Burnu (37 miles ESE) the coast forms a bight, the W part of which is backed by mountains. The coast between Yakakent (41°38′N, 35°31′E) (3.150) and Bafra Burnu (21 miles ENE) is low and wooded. Between Bafra Burnu and İncir Burnu (10 miles SE) the coast continues low and is covered by trees.

2 Kızılırmak, the largest river in Anadolu, enters the sea at Bafra Burnu. For its last 11 miles this river flows through a tree covered plain. There are sandy beaches on either side of Bafra Burnu.

Stranded wrecks lie 1 mile E and 1½ miles SE of Bafra Burnu.

Magnetic anomaly

3.137

1 See 3.128.

Principal mark

3.138

1 **Major light:**

Bafra Burnu Light (white metal framework tower) (41°44′N, 35°57′E).

Directions

(continued from 3.130)

3.139

1 From a position NNE of Boztepe Burnu Light (42°01′N, 35°13′E) the coastal passage to the approaches to Samsun Körfezi proceeds generally SE for 70 miles in waters clear of charted dangers, passing (with positions from Bafra Burnu Light (41°44′N, 35°57′E)):

2 NE of Bafra Burnu Light situated 1 mile SW of Bafra Burnu which is formed by the delta of the Kızılırmak. Thence:

NE of İncir Burnu Light (white metal framework tower, 12 m in height) (10 miles SE). The coast in the vicinity of İncir Burnu is low and covered in trees.

3 **Caution.** The coastline around the deltas of the Kızılırmak and Yeşilirmak Nehir (3.152) may differ from that charted due to shoaling. It is recommended that these headlands be given a wide berth.

(Directions continue for the approaches to Samsun Körfezi at 3.152, and for the coastal passage to Yasun Burnu at 3.177)

Sinop

Chart 1272, plan of Sinop

General information

3.140

1 The town of Sinop (42°01′N, 35°09′E) is divided into two parts. One part consists of the fortress, which is built on the isthmus. The other part is situated on the W slope of Boztepe Yarımadası (3.130).

Function. Sinop, which in 2000 had a population of 30 500, is a minor port, the harbour of which provides the safest natural anchorage between the Bosporus and Bat'umi.

The governor of the district resides in the town.

2 **Approach.** The harbour of Sinop is approached from SE between Boztepe Burnu and the coast 5 miles SW.

Harbour Authority. Harbour Master, Liman Başkanlığı, Sinop.

Arrival information

3.141

1 Pilotage and port radio not available.

Harbour

3.142

1 The harbour of Sinop lies in the bay S of the town.

Layout. the harbour consists of an anchorage, a fishing harbour protected by a breakwater, a jetty and an oil terminal.

3.143

1 **Landmarks** (positions from Boztepe Burnu Light):

Gazibey Kayası (3 cables ENE) (3.130).

Boztepe Burnu Lighthouse (3.130) which stands halfway up a cliff.

Water tower (2 miles WNW) standing on Hıdırlık Tepesi, a hill 207 m in height.

Directions

3.144

1 From a position S of Boztepe Burnu Light (42°01′N, 35°13′E) the harbour of Sinop is approached direct.

Caution. A wreck with a depth of 5·5 m over it lies 2¾ miles W of Boztepe Burnu Light and 2 cables S of the W end of the breakwater.

Berths

3.145

1 **Anchorage** can be obtained S of Sinop in an area shown on the chart. Marine farms lie close W of the anchorage.

3.146

1 **Alongside berth.** A jetty used by ferries, 260 m long and 20 m wide, extends SE from the old stone jetty below the fort. Length of berth 180 m. Maximum draught 7·5 m. A light stands at the head of the jetty.

A breakwater extends 500 m W and SW from the head of the old stone jetty. Berths on the inner side of this breakwater have depths of between 3 and 4·5 m. A light (concrete tower, 5 m in height) is exhibited from the seaward end of the breakwater.

Caution. Remains of ancient jetties extend about ½ cable from the shore N of the breakwater.

2 **Oil Terminal.** Tankers secure to 3 mooring buoys, which lie at the head of a pipeline extending 1½ cables from the shore, 1½ miles SW of the quay.

Port services

3.147

1 **Facilities:** medical.

Supplies: fresh water; provisions; no fuel.

Anchorages and small harbours

Chart 2237

Gerze

3.148

1 Gerze which has a small jetty protected to its W by a breakwater stands on Köşk Burnu (41°48′N, 35°12′E), a low but prominent point at the foot of a high mountain.

A reef extends about 1 cable E and ½ cable S from the point.

2 **Anchorage** can be obtained E of Gerze in the area shown on the chart.

Useful mark:

Light (white concrete tower, 6 m in height) standing on Köşk Burnu.

Çalboğaz Burnu

3.149

1 **Anchorage** can be obtained in depths of 14 to 16 m in a bight S of Çalboğaz Burnu, 4½ miles SE of Köşk Burnu.

Yakakent

3.150

1 Yakakent (41°38′N, 35°31′E) has a small harbour enclosed by two breakwaters.

Lights stand at the head of each breakwater.

APPROACHES TO SAMSUN KÖRFEZI

General information

Chart 1274, plan of Approaches to Samsun

Topography

3.151

1 Samsun Körfezi is contained within a wide bight which is entered between İncir Burnu (41°38′N, 36°07′E) and Cıva Burnu (28 miles SE).

The W coast of this bight, from İncir Burnu to Kumcaz İskelesi (8 miles S), is low and covered with trees. Within this stretch of coast lies Balık Gölü and several smaller lakes. Between Kumcaz İskelesi and Samsun (15 miles SE) the coast is backed by mountains rising to heights of over 1200 m.

The E coast of the bight SSW of Cıva Burnu is low lying.

Directions

(continued from 3.139)

3.152

1 From a position E of İncir Burnu Light (41°37′N, 36°07′E) the approach to Samsun Körfezi proceeds generally S for 20 miles through waters clear of charted dangers, passing:

W of Cıva Burnu (41°23′N, 36°39′E). This point, which is low lying, is formed by the delta of the Yeşilırmak.

Caution. It has been reported that the delta is extending to seaward.

(Directions for the port of Samsun continue at 3.166)

Anchorages

Yali

3.153

1 **Anchorage** may be obtained about 2 miles off Yali (41°30′N, 36°07′E) in a depth of 11 m, mud. The roadstead is exposed between N and ESE.

SAMSUN KÖRFEZI

General information

Chart 1274, plan of Samsun

Position

3.154

1 Samsun Körfezi lies between Kalyon Burnu (41°19′N, 36°20′E) and Cıva Burnu (15 miles ENE).

The port of Samsun and its outer anchorage lie in the W part of the bay.

Azot Sanayi terminal (3.172) is situated on the S shore of the bay, 6 miles SE of the port of Samsun.

Function and traffic

3.155

1 **Samsun**, with a population of 363 200 in 2000, is the largest and one of the most important ports on the Black Sea coast of Anadolu and is the administrative centre for the region. It is a port of entry.

Traffic. In 2002 the port was used by 340 vessels with a total deadweight of 5 148 312 tonnes.

Port limits

3.156

1 The harbour area comprises all waters lying S of parallel of 41°21′N to the longitude of 36°23·16′E, thence a line drawn S to the coast. The inner harbour conststs of all waters within the breakwaters.

Port Authority

3.157

1 Samsun Port Authority, TCDD Liman Isletmesi Mudurlugu, 55 100 Samsun, Turkey.

Limiting conditions

3.158

1 **Depth** in entrance to inner harbour 12·6 m.
Deepest berth. See 3.168.
Density of water 1·025 g/m^3.
Largest vessel. Draught 10·9 m. Length 206 m.

Arrival information

Port radio

3.159

1 See *Admiralty List of Radio Signals Volume 6(3).*

Notice of ETA

3.160

1 Warships and tourist ships, 48 hours.

Vessels carrying explosives and dangerous materials, 24 hours.

Outer anchorage

3.161

1 General anchorage lies E and N of the inner harbour entrance. It is exposed to winds between NW and ESE and is subject to heavy swells.

Explosives anchorage, the limits of which are shown on the chart, lies 1¼ miles SSE of the breakwater entrance.

2 **Prohibited anchorage area,** the limits of which are shown on the chart, lies ESE of the breakwater entrance.

Azot Sanayi terminal (3.172). Anchorage may be obtained in depths of 24 m, 1 mile NNE of the terminal.

Pilots and tugs

3.162

1 **Pilotage** is compulsory for all foreign vessels and Turkish merchant vessels, over 300 grt, entering and berthing in the inner harbour and proceeding alongside jetties in the outer harbour. Pilots embark in the outer harbour.

2 **Tugs** are available. Their use is compulsory for foreign vessels over 500 grt and Turkish vessels over 1000 grt. Vessels of over 4000 grt must use at least 2 tugs.

Pilotage and tugs are not compulsory for warships and auxiliaries.

Harbour

Layout of inner harbour

3.163

1 **Tali Menderik** extends SE in the NW part of the inner harbour.

Quays are situated on the W side of the the N part of the harbour, and in the S part of the harbour.

Climatic table

3.164

1 See 1.195 and 1.209.

Principal mark

3.165

1 **Landmark:**
Chimney (black and white) (41°14′·6N, 36°27′·7E) surrounded by a framework structure, situated at Azot Sanayi terminal.

Directions for entering harbour

(continued from 3.152)

Anchorages in outer harbour

3.166

1 Anchorages in the outer harbour may be approached from seaward through waters clear of charted dangers.

Inner harbour

3.167

1 The inner harbour is entered between the heads of Kuzey Mendirek and Doğu Mendirek. Lights (concrete towers, 11 and 12 m in height) stand at the head of each breakwater.

Caution. Depths in the harbour are continuously changing and mariners are advised to consult the port authorities for the latest information.

Useful mark:
Kalyon Burnu (41°19′N, 36°20′E), a remarkable brown colour with a battery situated on it.

Berths

Inner harbour

3.168

1 **Alongside berths** are available for between 12 and 15 vessels within the harbour. The main quays are 770 m long with depths of up to 10·5 m, and 400 m long with depths of up to 12 m. See Caution (3.167).

Berths Nos 6 to 9, have been constructed between the yacht club and the ferry terminal together with a rail ferry berth at the N end of the industrial Quay.

Facilities

3.169

1 Deratting (exemption certificates only); hospitals.

Supplies

3.170

1 Fuel oil supplied by trucks; fresh water piped to quays; provisions and stores.

Communications

3.171

1 Samsun Airport 5 km from the port.

Azot Sanayi terminal

Chart 1274, plan of Approaches to Samsun

Layout

3.172

1 The Azot Sanayi terminal consists of an unprotected jetty extending 546 m from the S shore of Samsun Körfezi.

Two mooring buoys lie close W of the jetty. Oil pipelines and mooring buoys lie 1½, 2¼ and 3 miles WNW respectively of the terminal jetty.

Directions

3.173

1 Azot Sanayi terminal jetty (alignment 356°–176°), the head of which is marked by a light (mast, 6 m in height), may be approached from seaward as convenient.

Berthing in any but light winds should be avoided and vessels should be prepared to depart at the onset of deteriorating weather conditions. Night berthing is not permitted.

Useful mark:

Chimney (41°14′·7N, 36°27′·4E) close W of the root of the jetty.

Berths

3.174

1 E berth, 200 m in length with reported depths alongside of 9 to 19 m, handling bulk liquid cargoes.

W berth, 100 m in length with reported depths alongside of 10 to 19 m, handling phosphate cargoes.

Supplies

3.175

1 Fuel and fresh water available.

SAMSUN KÖRFEZI TO YASUN BURNU

General information

Charts 2237, 1274, plan of Approaches to Fatsa

Topography

3.176

1 From Cıva Burnu (41°23′N, 36°39′E) to Yasun Burnu (50 miles ESE) the coast is low and wooded.

From Çaltı Burnu (41°16′N, 37°01′E) to Yasun Burnu the coast forms a wide bight indented by a number of smaller bays.

Directions

(continued from 3.139)

3.177

1 From a position N of Cıva Burnu Light (white concrete tower, 18 m in height) (41°22′N, 36°41′E), which stands 2 miles SE of Cıva Burnu, the coastal passage to Yasun Burnu proceeds generally ESE for 50 miles through waters clear of charted dangers, passing (with positions from Çaltı Burnu Light (41°16′N, 37°01′E)):

2 NNE of Çaltı Burnu Light (metal framework tower and dwelling, 10 m in height), thence:

NNE of Ünye Light (framework tower on concrete base, 4 m in height) (14 miles ESE). The light stands on Taşkana Burnu which is fringed by a reef. Thence:

N of Yasun Burnu Light (white metal framework tower on concrete base, 7 m in height) (31 miles ESE), and a 3·6 m shoal lying 5 cables N of Yasun Burnu. Yasun Burnu, which is low, has a ruined church standing on it.

3 **Caution.** From Cıva Burnu light to Çaltı Burnu Light depths within 1 mile of the coast are variable and in places not more than 5·5 to 7·5 m.

(Directions for the coastal passage to Giresun continue at 3.190)

Harbours and anchorages

Terme Çayı

3.178

1 **Anchorage,** sheltered from NW winds may be obtained in depths of 7 to 9 m, mud, off the mouth of the Terme Çayı, about 3 miles SSE of Çaltı Burnu.

Chart 1274, plan of Approaches to Fatsa

Ünye Körfezi

3.179

1 **General information.** The town of Ünye (41°08′N, 37°17′E), which in 2000 had a population of 61 600, is built on the slopes of a hill within Taşkana Burnu and is backed by wooded mountains. A large mosque stands 1 mile SSW of Ünye Light.

Traffic. In 2002 the port was used by 6 vessels with a total deadweight of 34 688 tonnes.

3.180

1 **Directions.** Ünye Körfezi is entered SE of Taşkana Burnu. this point is fringed by a reef with depths of less than 10 m extending for 2½ cables offshore.

Useful mark:

Ünye Light (3.177).

3.181

1 **Designated anchorage,** as shown on the chart, is situated 4 miles WNW of Taşkana Burnu.

Jetty, with a charted depth of less than 3 m at its head, extends 150 m from the shore, 8 cables SSW of Ünye Light.

Fishing harbour lies 3 miles SE of Ünye Light. A jetty 200 m in length, with two small finger piers on its W side, extends from the shore in a N direction, a light (white concrete tower, 7 m in height) is exhibited from the jetty head. Approximately 500 m W of the jetty, a curved breakwater extends from the shore and ends off the head of the jetty, encompassing a small harbour. A light (black concrete tower, 7 m in height) is exhibited from the head of the breakwater.

Chart 1274, plan of Fatsa

Fatsa Körfezi

3.182

1 **General information.** The town of Fatsa (41°02′N, 37°30′E), which in 2000 had a population of 63 700, stands on the SW side of Fatsa Körfezi, 2 miles SSE of Kireçci Burnu.

Traffic. In 2002 the port was used by 14 vessels with a total deadweight of 43 550 tonnes.

3.183

1 **Directions.** From a position NE of Kireçci Burnu, the approach route to Fatsa Körfezi leads S through waters clear of charted dangers, until within about 2 miles of the port, passing:

2 E (about 5 cables recommended) of Fatsa Bankı Light (white metal framework tower on concrete base, 5 m in height) (1½ miles E of Kireçci Burnu). This light stands on a reef, 1 cable in width, parts of which dry. A number of submerged rocks, with depths of

5·2 m over them, lie 5 cables W of Fatsa Bankı and make it inadvisable to pass between this reef and the shore.

3.184

1 **Designated anchorage,** as shown on the chart, is situated 1 mile NNW of Kireçci Burnu. This anchorage is close inshore of a Turkish firing practice area.

3.185

1 A small harbour, sheltered by two breakwaters, is situated 1 mile NW of the town. In its outer half there are charted depths of 5 to 6 m.

Useful marks:

Lights (white concrete towers, 5 m in height) stand at the head of each breakwater.

A jetty, with charted depth of 5 m at its head, extends 150 m from the shore 7½ cables SE of the breakwater entrance.

Chart 1274, plan of Approaches to Fatsa

Bolaman and Yalıköy

3.186

1 Two small harbours, sheltered by breakwaters, are situated at Bolaman and Yalıköy on the E side of Fatsa Körfezi, 7½ and 6 miles, respectively, SW of Yasun Burnu.

Lights (metal framework towers, 8 m in height) stand at the head of each breakwater.

YASUN BURNU TO THE TURKEY-GEORGIA BORDER

GENERAL INFORMATION

Charts 2237, 2236

Topography

3.187

1 From Yasun Burnu (41°08′N, 37°41′E) to the international boundary between Turkey and Georgia, the coast forms a series of shallow bights, some of which are indented by smaller bays.

The ports of Giresun (3.198), Trabzon (3.232) and Hopa (3.274) are situated on this stretch of coast.

YASUN BURNU TO GIRESUN

General information

Charts 2237, 1272, plan of Approaches to Giresun

Topography

3.188

1 From Yasun Burnu (41°08′N, 37°41′E) to Ordu (13 miles SE) the coast forms two bights separated by Çam Burnu. This part of the coast is backed by hills rising to heights of between 200 and 300 m.

2 E of Ordu the coast is at first low, thence becoming hilly and wooded. A number of rivers enter the sea between Ordu and Giresun (24 miles E).

Between Çam Burnu and the mouth of the Turna Suyu (40°59′N, 38°00′E), a coastal bank, with depths of less than 10 m, extends between 3 and 5 cables from the shore.

Principal marks

3.189

1 **Landmark:**

Dikmendağı Tepesi (40°55′N, 38°16′E). This peak has a dark coloured summit which appears conical from NE.

Major lights:

Çam Burnu Light (41°07′N, 37°47′E) (3.190).

Giresun Light (40°55′N, 38°23′E) (3.210).

Directions

(continued from 3.177)

3.190

1 From a position N of Yasun Burnu Light (41°08′N, 37°41′E) (3.177), the coastal passage to Giresun proceeds generally ESE for 35 miles through waters clear of charted dangers, passing (with positions from Yasun Burnu Light):

2 NNE of Çam Burnu Light (white stone tower on hut, 6 m in height) (5 miles E), thence:

NNE of Bozukkale Light (concrete tower, 6 m in height) (11 miles SE). This light stands on Bozukkale, the NE termination of a steep rocky promontory which rises to a height of 533 m at Boztepe. Thence:

3 NNE of Ayvalı Burnu (30 miles ESE). A bank with a depth of less than 10 m over it, extends 5 cables offshore in places, either side of this point.

(Directions continue for Giresun and approaches at 3.211, and for the coastal passage to Kale Burnu at 3.218)

Anchorages and harbours

Akkus Adası

3.191

1 An anchorage, sheltered from E through S to W, lies 2 miles SE of Yasun Burnu. Akkus Adası, an islet on which stands a tower, lies about 7½ cables E of the anchorage.

Chart 1279, plan of Approaches to Ordu

Mersin

3.192

1 A small fishing harbour, protected by two breakwaters, is situated at Mersin 1 mile W of Çam Burnu (41°07′N, 37°47′E). A light stands at the head of each breakwater.

Kışla

3.193

1 A small fishing harbour, protected by two breakwaters, extends S from the shore at Kışla, 2 miles S of Çam Burnu. A light (concrete tower, 8 m in height) stands at the head of each breakwater.

Perşembe Limanı

3.194

1 Perşembe Limanı is entered between Çam Burnu and Bozukkale, 7 miles SSE. This bay provides the best anchorage on this part of the coast, with good holding ground. Although exposed from between N and ESE, it is reported that winds from between these directions seldom reach full force. However, violent squalls during offshore winds should be guarded against.

3.195

1 **Anchorage** in the N part of the bay may be obtained off Kışla and Perşembe, about 2 and 3½ miles, respectively, S of Çam Burnu. Of these anchorages Kışla is considered the

best, there being depths of 18 m, sand and mud, with good holding ground 2½ cables offshore.

Chart 1279, plan of Ordu

Ordu

3.196

1 **General information.** The town of Ordu (40°59′N, 37°53′E), which in 2000 had a population of 112 500, is situated 2 miles S of Bozukkale. A prominent white minaret stands in the centre of the town.

Traffic. In 2002 the port was used by 26 vessels with a total deadweight of 112 478 tonnes.

2 **Anchorages.** An explosives anchorage, the limits of which are shown on the chart, is situated 2½ miles ESE of Bozukkale in depths of 8 to 36 m. An anchorage for all other vessels, the limits of which are shown on the chart, is centred 1¾ miles SE of Bozukkale in depths of 8 to 23 m.

3 **Pilotage** is compulsory for vessels over 150 grt.

Tugs are not available locally but can be ordered from Giresun.

Berths. Yeni İskelele extends about 300 m from the shore at the N end of the town and provides 2 berths on its E and S sides with depths of 5 to 9 m alongside.

4 **Other facilities:** hospital.

Supplies: fuel by road tanker; fresh water; provisions.

Chart 1272, plan of Approaches to Giresun

Bulancak

3.197

1 A jetty extends from the shore at Bulancak (40°56′N, 38°14′E), a large village situated close E of the mouth of the İncüvez Deresi. A small fishing harbour, protected by two breakwaters has been constructed on the W edge of the village.

2 **Useful mark:**

Piraziz Light (white metal framework tower, 10 m in height) stands on Büyükeyrice Burnu, 4 miles W of Bulancak.

GIRESUN AND APPROACHES

General information

Chart 1272, plan of Giresun

Position

3.198

1 The town of Giresun (40°55′N, 38°23′E), which in 2000 had a population of 83 600, stands on both sides of a promontory. Several towers stand on the summit of this promontory and the walls of an old fortress extend down its slopes.

Traffic

3.199

1 In 2002 the port was used by 23 vessels with a total deadweight of 84 379 tonnes.

Port limits

3.200

1 The harbour area comprises all waters that are within about 1 mile to seaward and 3 miles E and W of Giresun Light (40°55′·4N, 38°23′·4E).

Port Authority

3.201

1 Cakiroglu Giresun Liman Isletmeciligi AS, Ataturk Bulvari, Sultanselim Mahallesi No 9, Giresun.

Limiting conditions

3.202

1 **Deepest berth.** See 3.213.

Density of water. 1·025 g/m^3.

Maximum size of vessel. 8920 dwt. Length 250 m. Draught 7·9 m.

Depths in harbour. N part, 9 to 12·8 m. SE part, 4·6 to 7·1 m.

Arrival information

Notice of ETA

3.203

1 Warships and tourist ships. 48 hours.

Other vessels. 24 hours.

Outer anchorages

3.204

1 Anchorage, with good holding ground, may be obtained in the outer harbour.

Vessels sometimes anchor in the roadstead off the mouth of the Batlama Çayı, 1 mile W of the entrance to the inner harbour, in depths of 37 m.

Coasters anchor E of Giresun promontory.

3.205

1 **Explosives anchorage,** 400 m in radius and centred as shown on the chart, lies 4 cables NW of Giresun Light.

Prohibited anchorage area, the limits of which are shown on the chart, lies W of the inner entrance.

Pilots and tugs

3.206

1 **Pilotage** is compulsory for all vessels entering the inner harbour except for Turkish vessels of less than 1000 tonnes displacement.

Pilots embark in the outer harbour and are available 24 hours a day.

3.207

1 **Tugs** are available. Their use is compulsory for merchant ships of 500 grt or over and warships and support ships of more than 2000 tonnes displacement. Vessels of more than 4000 grt may be required to take 2 tugs.

Harbour

General layout

3.208

1 The port of Giresun consists of an outer and inner harbour.

The inner harbour consists of all waters within a line joining the head of each breakwater.

Development

3.209

1 Works were in progress (2003) on extending the N breakwater and reclaiming land in the S part of the inner harbour. A light-buoy (port hand) marks the SE limit of the extension to the breakwater.

Principal marks

3.210

1 **Major light:**

Giresun Light (white metal framework tower, 12 m in height) (40°55′N, 38°23′E).

Directions for entering harbour

(continued from 3.190)

3.211

1 From a position NW of Giresun Light, the main anchorages in the outer harbour may be approached, passing (with positions from Giresun Light):

W (more than 1 cable) of Palamut Kayası (5 cables NNE), a rock 1 m in height.

W of Körtaş Bankı (4 cables NNE), a shoal with a least depth of 1 m.

2 The inner harbour is entered between the heads of the N and W breakwaters, which are marked by lights (concrete towers, 6 m in height).

3.212

1 **Useful mark:**

Giresun Adası (2¼ miles ENE of Giresun Light). The ruins of a fort stand on the islet.

Berths

Inner harbour

3.213

1 **Alongside berths** are available for cargo and passenger vessels. The main cargo and passenger jetties have a combined length of about 480 m with a depth alongside of about 11·6 m.

3.214

1 **Mooring.** Vessels awaiting an alongside berth may moor stern-to the inside of the N breakwater.

Port services

Faclilities and supplies

3.215

1 **Facilities:** hospital.

Supplies: fuel available by road tanker; fresh water; provisions.

GIRESUN TO KALE BURNU

General information

Charts 2237, 1272, plan of Approaches to Giresun

Topography

3.216

1 From Giresun (40°55′N, 38°23′E) to Kale Burnu (36 miles E), the coast is indented by a number of bays. There are a number of beaches and several rivers enter the sea along this stretch of coast.

Coastal hills rise to heights of over 300 m and in some places have a rugged appearance.

Principal marks

3.217

1 **Landmark:**

Sis Dağı (Kayasis Tepesi) (40°53′N, 39°06′E).

2 **Major light:**

Tirebolu Light (white framework tower, 8 m in height) (41°01′N, 38°49′E).

Directions

(continued from 3.190)

3.218

1 From a position N of Giresun (40°55′N, 38°23′E) the coastal passage to Kale Burnu proceeds generally ENE for 36 miles in waters clear of charted dangers, passing (with positions from Tirebolu Light (41°01′N, 38°49′E)):

NNW of Çam Burnu Light (metal framework tower, 6 m in height) (8½ miles WSW). This light is situated on a high point which forms the NE extremity of a broad headland rising to a height of 546 m. Thence:

2 NNW of Tirebolu Light, thence:

NNW of Karaburun (5½ miles ENE), a low point that rises to a dark conical hill. Thence:

N of Kale Burnu (16½ miles ENE), the NW extremity of a low wide projection. Eynesil Light (metal framework tower, 7 m in height) and the ruins of a castle stand on this point.

(Directions for the coastal passage to Trabzon continue at 3.227)

Anchorages and harbours

Espiye

3.219

1 The village of Espiye (40°57′N, 38°43′E) is situated at the head of Espiye Koyu close W of the mouth of the Özlüe Deresi.

Espiye Koyu is entered between Çam Burnu and Kılıç Burnu (7 miles ENE). The W side of the bay is steep and rocky with greyish coloured cliffs. The E side of the bay is sand.

Fırıntası, a group of islets lies 1 mile WSW of Kılıç Burnu in the NE part of the bay.

2 **Anchorage** for small craft may be obtained in depths of 9 to 18 m, sand and mud, ½ cable off the W shore of the bay.

Görele

3.220

1 Görele (41°02′N, 39°00′E) stands on the E side of the mouth of the Görele Deresi. Hills rise steeply behind the town and the coast in the vicinity is fringed by a shelving shingled beach.

Anchorage is situated 1 mile NE of Görele Light.

Harbour. A small breakwater extending NE, with a light (white metal pylon, 6 m in height) at its head, shelters a jetty used by small craft.

Tirebolu

3.221

1 **General information.** The town of Tirebolu (41°00′N, 38°49′E), which in 1985 had a population of 12 300, is situated between Kılıç Burnu (3.219) and the mouth of the Harşit Çayı, 2½ miles E.

The town stands on three hills which form small promontories extending N from the coast.

3.222

1 **Landmark:**

Sis Dağı (Kayasis Tepesi) (40°53′N, 39°06′E).

2 **Major light:**

Tirebolu Light (41°01′N, 38°49′E) (3.217). which stands on the E promontory.

3.223

1 **Anchorage.** The best anchorage can be obtained 7½ cables NE of Tirebolu Light in depths of 11 to 14 m, hard sand, off the sandy beach near the mouth of the Harşit Çayı.

A designated anchorage is centred 1½ miles NE of Tirebolu Light.

Harbour. A small harbour, protected by a breakwater, lies in the W part of the cove close W of Tirebolu Light. Depths 5 m.

3.224

1 **Directions for entering harbour.** From a position N of Tirebolu Light, the roadstead is approached passing N and then E of Hangise Kayası and a number of other rocks and islets which lie off the coast within 5 cables NW of Tirebolu Light.

KALE BURNU TO TRABZON

General information

Charts 2236, 1279, plan of Approaches to Trabzon

Topography

3.225

1 From Kale Burnu (41°05′N, 39°10′E) to Trabzon (27 miles ESE) the coast forms two wide bights that are separated by Işıklı Burnu (3.226).

A number of small towns and villages are situated along this stretch of the coast and several rivers enter the sea.

Coastal hills rise to heights of over 300 m within 1 mile of the shore.

Principal marks

3.226

1 **Landmarks:**

Sis Dağı (Kayasis Tepesi) (40°53′N, 39°06′E).

Işıklı Burnu (41°06′N, 39°25′E). Reddish in colour with white patches in the vicinity. It rises to a conical hill and is visible in clear weather from a distance of 60 miles.

2 Haghia Sophia Cathedral (41°00′N, 39°42′E) (3.244) on the outskirts of Trabzon.

Major lights:

Işıklı Burnu Light (white round stone tower and dwelling, 8 m in height) (41°06′N, 39°25′E).

Güzelhisar Burnu Light (white metal tripod on hut, 6 m in height) (41°01′N, 39°44′E) (3.227).

Directions

(continued from 3.218)

3.227

1 From a position N of Kale Burnu (41°05′N, 39°10′E) the coastal passage to Trabzon proceeds generally ENE for 13 miles, thence SE for 16 miles through waters clear of charted dangers, passing (with positions from Işıklı Burnu Light (41°06′N, 39°25′E)):

N of Işıklı Burnu Light, thence:

N of Güzelhisar Burnu Light (15½ miles ESE).

(Directions continue for Trabzon and approaches at 3.245, and for the coastal passage to Kızkalesi at 3.253)

Anchorages and harbours

Büyük Liman

3.228

1 Büyük Liman is entered between Bostan Burnu (41°04′N, 39°13′E), a wooded point 7½ cables SE of Zeytin Burnu, and Işıklı Burnu (10 miles ENE).

Designated anchorage, sheltered from E through S to W, may be obtained 2 miles ESE of Bostan Burnu off the mouth of the Çamlik Deresi.

2 A jetty extends from the shore at Vakfıkebir, a village situated on the W side of the mouth of the Fol Deresi, 3 miles ESE of Bostan Burnu.

Lighters available and there is regular sea communications with other Turkish ports.

Chart 1279, plan of Approaches to Trabzon

Incir Limanı

3.229

1 İncir Limanı (41°06′N, 39°26′E), a small bight on the E side of Işıklı Burnu, is protected by a short mole and provides shelter for small craft from NW winds.

Local knowledge is required to enter this harbour.

Useful mark:

Light (metal tower) which stands at the head of the mole.

Akçaabat

3.230

1 The town of Akçaabat (41°01′N, 39°34′E), which in 2000 had a population of 39 100, is situated on the slope of a hill about 1 mile SE of Tabya Burnu.

The town is fronted by a beach of loose sand, 5 cables long. Kireçhane Deresi enters the sea close ESE.

A minaret stands in the centre of the town 1¼ miles SSE of Tabya Burnu.

3.231

1 **Anchorage** may be obtained in the roadstead 5 cables NE of the minaret in depths of 18 to 27 m. This roadstead, although exposed from NNW to E, provides good anchorage in winter and is considered a better anchorage than the roadstead off Trabzon (3.232).

2 **A small jetty** extends from the shore close N of the town, 7½ cables SSE of Tabya Burnu. The jetty is protected by a curved breakwater approximately 300 m W of the jetty, extending from the shore and ending off the head of the jetty.

TRABZON AND APPROACHES

General information

Chart 1279, plans of Trabzon and Approaches to Trabzon

Position

3.232

1 Trabzon (41°01′N, 39°44′E), formerly known as Trebizond, is spread over three hills within Güzelhisar Burnu; parts of the town date back to 700 BC.

The hills on which the town stands are divided by ravines, over which there are a number of bridges.

2 The port of Trabzon is situated in a bight on the E side of the town.

A small fishing harbour, with two breakwaters, lies approximately 2 miles W of the main harbour.

Function and traffic

3.233

1 Trabzon, which in 2000 had a population of 214 900, is an important and modern port which handles transit trade to Iran and Iraq. It is the administrative centre of the region and a port of entry.

Traffic. In 2002 the port was used by 104 vessels with a total deadweight of 1 227 288 tonnes.

Exports: Cereals, vegetables, fruits, tea and hazlenuts.

Port limits

3.234

1 Details of the Outer Port limits should be obtained from the Harbour Authorities.

Port Authority

3.235

1 Ports Management, Trabzon Liman Isletmesi Mudurlugu, Trabzon, Turkey.

Limiting conditions

3.236

1 **Deepest and longest berth.** See 3.247.

Largest vessel. Length 200 m, Draught 10·5 m.

Density of water. 1·025 g/m^3.

Local weather. It is reported that strong N winds make entry into the harbour difficult because of the limited manoeuvring space available.

Depths in the harbour. N part of inner harbour 8 to 9·4 m.

Arrival information

Port radio

3.237

1 See *Admiralty List of Radio Signals Volume 6(3)* for details.

Notice of ETA

3.238

1 Foreign vessels and Turkish vessels from foreign ports 24 hours.

Vessels carrying explosives 72 hours.

Outer anchorages

3.239

1 **Anchorage.** A designated anchorage, the limits of which are shown on the chart, lies 1½ miles WNW of Güzelhisar Burnu Light (3.226).

Explosives anchorage, the limits of which are shown on the chart, lies 3¼ miles W of Güzelhisar Burnu Light.

2 **Caution.** Rocks and the remains of an old port extend up to 2 cables from the shore between Güzelhisar Burnu Light and the W end of the town, 1¼ miles W.

In heavy weather, breakers extend some distance offshore and vessels may obtain shelter off Akçaabat (3.230) or in Sürmene Koyu (3.255).

3.240

1 **Prohibited anchorage** area, the limits of which are shown on the chart, lies N of the inner harbour entrance.

Pilots and tugs

3.241

1 **Pilotage** is compulsory for warships and support vessels of over 500 tonnes displacement and all other vessels over 300 grt when entering the inner harbour.

Pilots embark in the outer harbour.

Tugs are available. Their use is compulsory for merchant vessels over 500 grt. Vessels over 4000 grt may be required to take 2 tugs.

Harbour

General layout

3.242

1 Trabzon City Harbour consists of an outer and an inner harbour.

Inner harbour is protected by two breakwaters. Lights stand at the head of each breakwater. The inner harbour is divided into two parts by Küçük Mendirek, which forms Küçük Liman in the SE part of the inner harbour. The main commercial harbour lies to the W of this breakwater.

Climatic table

3.243

1 See 1.195 and 1.212.

Principal marks

3.244

1 **Landmarks** (positions from Güzelhisar Burnu Light):

Boz Tepe (hill 258 m in height) (8½ cables S) large walled mosque on slope.

Haghia Sophia Cathedral (dome) (1¾ miles W) with a belltower standing close by.

2 **Major light:**

Güzelhisar Burnu Light (41°01′N, 39°44′E).

Directions for entering harbour

(continued from 3.227)

Anchorages in outer harbour

3.245

1 From a position N of Güzelhisar Burnu Light (41°01′N, 39°44′E) anchorages in the outer harbour may be approached through waters clear of charted dangers.

Inner harbour

3.246

1 The inner harbour is entered between the heads of Ana Mendirek and Tali Mendirek.

Useful marks:

Lights (white concrete tower, 5 m in height and metal framework tower, 6 m in height) mark the heads of Ana Mendirek and Tali Mendirek, respectively.

Berths

Alongside berths in inner harbour

3.247

1 **General cargo and container quay.** Combined length 590 m, depth 10 m.

General cargo quay. Length 400 m, depth 9 m.

Ore quay. Length 290 m, depth 11 to 11·5 m.

Ro-Ro quay. Length 25 m, depth 9·5 m.

Small craft. In Küçük Limanı

Customs quay. N end of main quay, landing place for passengers.

Moorings and anchorages in inner harbour

3.248

1 **Ana Mendirek.** S side. Up to 6 vessels can moor stern-to the breakwater. Cargo can be discharged from these berths.

Anchorage. Vessels of under 300 grt may anchor in the inner harbour.

Port services

Facilities and supplies

3.249

1 **Facilities:** deratting (exemption certificates only); hospitals; oily waste disposal.

Supplies: limited supplies of fuel; fresh water at quays; fresh provisions.

TRABZON TO KIZKALESI

General information

Charts 2236, 1279, plan of Approaches to Trabzon

Topography

3.250

1 From Trabzon (41°01′N, 39°44′E) to Kızkalesi (52 miles ENE) the coast forms three wide bights which are backed by hills rising to heights of over 300 m.

Farther inland there are mountains rising to heights of over 3000 m.

A number of small towns and villages are situated along this stretch of the coast and many rivers enter the sea between Trabzon and Kızkalesi.

Magnetic anomaly

3.251

1 An abnormal magnetic variation has been reported (1963) about 10 miles N of the port of Rize (41°02′N, 40°31′E).

Principal marks

3.252

1 **Major light:**

Güzelhisar Burnu Light (41°01′N, 39°44′E) (3.226).

Directions

(continued from 3.227)

3.253

1 From a position N of Güzelhisar Burnu Light, the coastal passage to Kızkalesi proceeds generally ENE for 52 miles through waters clear of charted dangers, passing (with positions from Rize Light (41°02′N, 40°30′E)):

2 NNW of Narlık Burnu Light (white metal framework tower, 12 m in height) (21½ miles WSW), which stands on a rocky headland on which there is a ruin. Thence:

NNW of Rize Light (metal framework tower on white hut, 4 m in height), thence:

3 NNW of Çayeli (10 miles ENE); lights (white concrete towers, 6 m in height) are exhibited from breakwaters at the entrance. Thence:

NNW of Kızkalesi Light (white metal framework tripod, 3 m in height) (20 miles NE), which is situated on the ruins of a fort standing on a bold rock, close inshore. A number of islets lie offshore, within 1 cable of this point.

(Directions for the coastal passage to Çamlı Burnu continue at 3.265)

Anchorages and harbours

Chart 1279, plan of Approaches to Trabzon

Kovata Limanı

3.254

1 Kovata Limanı (40°58′N, 39°52′E) situated 4 miles SE of Hopsi Burnu, is entered between Kovata Burnu and the mouth of the Durana Deresi, 2½ miles SE.

2 **Tanker Berths:** Four mooring buoys are situated, 800 m off the coast, in the SW part of the bay.

Berth No 1, Fuel oil, consists of two buoys situated off Kovata Burnu.

Berth No 2, Kerosene, gasoline and gas oil, is situated 285 m SE of berth 1. It is also reported that approximately 900 m E of berth 2 there are several marine farms, 200 m off shore.

3 Vessels moor using two anchors, with 6/7 shackles on each and mooring lines from each quarter to the mooring buoys, which are 100 m off when the vessel is in posiiton.

Depth of water is reported to be 31 m and maximum size of vessel is 20 000 dwt, LOA 161 m.

4 **Pilots and Tugs** are not available. A small fishing vessel indicates the position for dropping the anchors.

Supplies: provisions; no fresh water.

Submarine pipeline. A buoy (conical) marks the seaward end of a water pipeline extending ½ mile NE from the shore about 1 mile SE of Kovata Burnu.

Anchorage may be obtained off the village of Yomra, which stands close W of the mouth of the Durana Deresi.

Chart 2236

Sürmene Koyu

3.255

1 Sürmene Koyu is entered between Narlık Burnu (40°58′N, 40°03′E) and the town of Of, which stands at the mouth of the Solaklı Çayı, 10 miles E.

The town of Sürmene, which in 1985 had a population of 11 400, is situated at the head of Sürmene Koyu, 4 miles SE of Narlık Burnu.

3.256

1 **Berths:**

A small jetty, protected by breakwaters, stands at the head of Araklı Limanı, a small bight 1 mile SE of Narlık Burnu. A light (concrete tower, 8 m in height) is exhibited from the head of each breakwater.

2 A jetty extends about 120 m from the shore at the W end of Sürmene.

A shelter, suitable for small craft and protected by two breakwaters, lies 3 miles E of Sürmene. A light (white metal pylon, 6 m in height) stands at the head of the W breakwater.

Rize

Chart 1279, plans of Rize and Approaches to Rize

General and arrival information

3.257

1 **Position.** Rize (41°02′N, 40°31′E), which in 2000 had a population of 78 100, stands on the SW shore of a bay which is situated between Piryos Burnu and Taşlıdere Burnu (3½ miles E).

2 **The port** of Rize lies 1 mile NW of the town close E of Piryos Burnu. Works are in progress (2003) extending Kuzey Mendirek. A light-buoy (E cardinal) marks extremity of the works.

3 **Traffic.** In 2002 the port was used by 37 vessels with a total deadweight of 232 226 tonnes.

Port limits. The harbour area of Rize comprises all waters S of a line joining Taşlıdere Burnu with a position 2½ cables N of Piryos Burnu.

3.258

1 **Notice of ETA:**

All vessels (except tourist vessels) 24 hours.

Tourist vessels 48 hours.

3.259

1 **Outer anchorage.** Anchorage is obtainable in the outer harbour in charted depths of 12 m, 6 cables SE of the inner harbour entrance.

Pilotage is compulsory.

Current from the Taşlı Deresi, which enters the sea at Taşlıdere Burnu, sets W.

Directions for entering harbour

3.260

1 From a position NE of Piryos Burnu the inner harbour is entered between the heads of the breakwaters.

Useful marks:

Ayana Dağı (40°58′N, 40°29′E).

Berths

3.261

1 **Quays.** W side of inner harbour. charted depth less than 5 m, with further quayage on the NW side of the SE breakwater having charted depths of more than 5 m.

Mooring. Stern to inside Kuzey Mendirek.

Pier. A short pier extends from the shore in the centre of the town, 7½ cables SSE of inner harbour entrance. A wreck

lies off and parallel to the inner end of Kuzey Menderek breakwater in position 41°02·48′N, 40°30·46′E. A further wreck, dangerous to navigation, lies in the inner harbour 1½ cables E of Pírgos Burnu Light.

Port services

3.262

1 **Facilities:** hospital.
Supplies: fresh water; provisions.

KIZKALESI TO ÇAMLI BURNU

General information

Charts 2236, 1279

Topography

3.263

1 From Kızkalesi (41°11′N, 40°52′E) to Çamlı Burnu (24 miles NE) the coast is backed by wooded hills rising to heights of over 300 m. Farther inland there are mountains rising to heights of over 3000 m.

Principal marks

3.264

1 **Major light:**
Çamlı Burnu Light (white round tower and dwelling, 12 m in height) (41°22′N, 41°21′E).

Directions

(continued from 3.253)

3.265

1 From a position NNW of Kızkalesi (3.253) the coastal passage to Çamlı Burnu proceeds generally NE for 24 miles, in waters clear of charted dangers, passing (with positions from Kızkalesi):

2 NW of the mouth of the Fırtına Çayı (4 miles E). The winding valley, through which the river flows, can be seen from offshore. On the W side of the river mouth is a tree covered hill, with 3 perpendicular sides, which appear as a tableland. Thence:
NW of Vize Burnu (14 miles NE), thence:
NW of Çamlı Burnu Light (24 miles NE).
(Directions for the approaches to Hopa continue at 3.273)

Anchorages and harbours

Pazar

3.266

1 The town of Pazar is situated in a gap in the hills 5 cables E of Kızkalesi.

Berth. A jetty extends NNW 100 m from the shore in the centre of the town and has a charted depth of about 5 m at its N extremity. The jetty is protected to the W by a breakwater. Foul ground extends up to ½ cable offshore between the jetty and Kızkalesi Light, and up to ¼ cable offshore to the E of the town.

2 **Anchorage** may be obtained in the roadstead off the mouth of the Modaçar Deresi, 2 miles E of Pazar. This anchorage is used by coasters.

Ardeşen

3.267

1 The town of Ardeşen (41°12′N, 40°59′E) is situated 5 miles E of Kızkalesi. A small harbour sheltered by two breakwaters is situated in the town.

Anchorage. It is reported that, in fine weather, anchorage can be obtained in depths of about 13 m, good holding ground, about 3½ cables offshore abreast the town.

Useful mark:
Lights (concrete towers, 6 m in height) standing at the head of each breakwater.

Other name

3.268

1 Arhavi, a town (41°21′N, 41°19′E).

APPROACHES TO HOPA

General information

Chart 1279, plan of Approaches to Hopa

Topography

3.269

1 The approaches to Hopa (41°24′N, 41°26′E) lie between Çamlı Burnu (3.263) and the international boundary of Turkey and Georgia (3.270) (13 miles NE).

This stretch of coast is backed by hills rising to heights of 300 m. Farther inland, mountains rise to heights of more than 1000 m.

International boundary

3.270

1 The international boundary between Turkey and Georgia reaches the sea at the village of Sarp (41°31′N, 41°33′E). This village is divided into two by the frontier.

2 The alignment (110°) of two lights (orange rectangle, white stripe on black metal pylon, 27 m in height and white rectangle, red stripe on framework tower, 31 m in height), situated in the village, marks the seaward extension of the international boundary.

Regulated area

3.271

1 **Area into which entry is prohibited:**
Area SARPI, shown on the chart, extends WNW for 12 miles to seaward from a position 1½ miles N of the Turkish-Georgian frontier.
See Appendix IV for further details.

Principal marks

3.272

1 **Landmark:**
Oil tanks (41°25′N, 41°26′E).

Directions

(continued from 3.265)

3.273

1 From a position NW of Çamlı Burnu (41°22′N, 41°20′E) the approaches to Hopa are entered between Çamlı Burnu and the seaward extension of the international boundary (11 miles NE), through waters clear of charted dangers.

The red sector (095°–105°) of the lights at Sarp covers the S approaches to the seaward extension of the international boundary.

(Directions for Hopa continue at 3.283)

HOPA

General information

Chart 1279, plan of Hopa

Position and port limits

3.274

1 The town of Hopa (41°24′N, 41°26′E) is situated 9 miles SW of the frontier between Turkey and Georgia.

The port of Hopa lies 1 mile to the NE of the town. To the W of the town there is a small fish harbour

Port limits. The harbour limits comprises of all waters within an area extending 9 cables to seaward from positions on the shore 1 mile NE and 1 mile SW of Ana Mendirek.

Function and traffic

3.275

1 Hopa, which in 2000 had a population of 14 350, is a transit port for traffic to Iran and Iraq.

Traffic. In 2002 the port was used by 73 vessels with a total deadweight of 305 203 tonnes.

Exports: Minerals and timber.

Port Authority

3.276

1 Park Denizcilik Hopa Liman Isletmeleri AS, Liman Isletmesi Mudurlugu, TR–08600 Hopa-Artvin, Turkey

Maximum size of vessel handled

3.277

1 43 480 dwt. Draught 10 m.

Arrival information

Notice of ETA

3.278

1 All vessels. 24 hours.

Pilots and tugs

3.279

1 Pilotage is compulsory for all foreign vessels, and for Turkish merchant vessels of 300 grt or more. Pilots embark in the outer harbour.

3.280

1 **Tugs** are available. Their use is compulsory for foreign merchant vessels of 500 grt or more. Turkish merchant vessels of 1000 grt or more and foreign warships and support craft over 2000 tonnes displacement.

Vessels of 4000 grt or more must use 2 tugs.

Harbour

General layout

3.281

1 The port of Hopa consists of an outer and inner harbour.

The inner harbour consists of all waters within a line joining the heads of the two breakwaters.

Layout of the inner harbour

3.282

1 The inner harbour is protected by Ana Mendirek which extends about 4 cables NNW then 6 cables NNE, and Tali Mendirek which extends 2¼ cables WNW, from the shore.

Principal quays extend from the E shore of the harbour.

Directions for entering harbour

(continued from3.273)

Outer harbour

3.283

1 Two miles off the harbour a light-buoy (special) is moored in position 41°25′·4N, 41°23′·0E. The outer harbour may be entered as convenient through waters clear of charted dangers.

Inner harbour

3.284

1 The inner harbour is entered between the heads of the two breakwaters.

Useful marks:

Termik power station (41°25′·2N, 41°26′·4E).

Lights (concrete towers, 8 m in height) at the head of each breakwater.

Berths

Inner harbour

3.285

1 The port has 890 m of berthing space. The three main berths are at the Ore quay, with depths alongside of 10 m and the Cargo and Passenger quays, each with depths alongside of 8 to 9 m.

Ro-Ro berth. length 38 m. Depths 7 to 8 m.

Port services

Facilities

3.286

1 Deratting (exemption certificates only); hospital; oily waste disposal.

Supplies

3.287

1 Fuel by road tanker; fresh water; provisions.

OUTER APPROACHES TO BATUMSKAYA BUKHTA

General imformation

Charts 2236, 3313

Routes

3.288

1 From a position about 13 miles W of Mys Batumskiy, Recommended routes BE and BW lead E and W respectively to and from Bat'umi.

2 Recommended routes GN–1 and GS–8 lead N and S, respectively, for about 24 miles between the N approaches to Bat'umi and a position about 5 miles SW of P'ot'i (42°09′N, 41°39′E) (3.327).

Topography

3.289

1 The outer approaches to Batumskaya Bukhta (41°39′N, 41°39′E) are backed by the coast that lies between the Turkish-Georgian frontier at Sarp (41°31′N, 41°33′E) (3.270) and the mouth of the Reka Natanebi (25 miles NNE).

3.290

1 From Sarp to the village of Guniye (about 3 miles N) there are coastal cliffs, in which there is a conspicuous cleft.

Between Guniye and Mys Batumskiy (41°39′N, 41°39′E) the coast is low lying, being backed by Dolina Chorokh, a wide and cultivated valley through which the Reka Chorojh enters the sea about 4 miles SW of Mys Batumskiy.

3.291

1 From Mys Batumskiy to the mouth of the Reka Natanebi (17 miles NNE), the coast is generally low lying except near Mys Tsikhisdziri, where the NW spur of the mountains of Anadolu terminates.

A bank, with depths of less than 10 m, fronts this stretch of the coast. The S end of this bank extends 1½ miles W into Batumskaya Bukhta.

A number of rivers enter the sea between Mys Batumskiy and the mouth of the Reka Natanebi.

Regulated areas

3.292

1 **Area into which entry is prohibited:**
Area SARPI, shown on the chart, extends WNW for 12 miles from the coast, close N of the Turkish-Georgian frontier at Sarp.

2 **Area which is temporarily prohibited to navigation:**
Area BURUN-TABIA lies 2 miles SW of Mys Batumskiy.

3 **Explosives dumping ground:**
Area No 60, shown on the chart, lies 11 miles NNW of Mys Batumskiy.

4 **Spoil ground:**
Area No 10 lies 7 cables NE of Mys Batumskiy, as shown on Chart 3317. This area may contain unexploded ordnance and should be regarded as an explosives dumping ground.

See Appendix IV for further details of all these areas.

Local magnetic anomaly

3.293

1 Within an area from Bat'umi up to 20 miles N, the magnetic variation is affected by local influences and varies from 1°W to 19°E (1987).

Principal marks

3.294

1 **Landmark:**
Television mast (red lights) (41°42′N, 41°43′E).

2 **Major light:**
Kobuletskiy Light (lantern on building, 30 m in height) (41°51′N, 41°47′E).

Directions

(continued from 3.9)

3.295

1 **Entry route:** From position 41°41′·9N, 41°20′·4E, approximately 14 miles WNW of Mys Batumskiy (41°39′N, 41°39′E), the approaches to Batumskaya Bukhta follows Recommended route BE leading 094½° for 12½ miles, proceeding through waters that are clear of charted dangers, passing (with positions from Mys Batumskiy):

2 N of the prohibited Area SARPI, the N limit of which extends WNW from the mouth of the Reka Chorokh. Thence:

NW of Chorokhskiy Light (white square with black stripe on red metal framework tower, 10 m in height) (3½ miles SW). A bank, with depths of less than 10 m extends 7½ cables offshore between this light and Mys Batumskiy. Thence:

The route then follows Recommended route BN, leading 149° for 1 mile to position 41°40′N, 41°38′E in the approaches to the inner roadstead.

3 **Exit routes:**

West route. From the approaches to the inner roadstead, the route follows Recommended route BN, leading 329° for 3½ miles to a position 4 miles NNW of Mys Batumskiy. This route then joins Recommended route BW which leads 274½° for 11 miles to a position 13½ miles NW of Batumskiy Light.

North route. From the approaches to the inner roadstead in a position about 1½ miles N of Mys Batumskiy, Recommended route GN–1 leads N for 25 miles to the SW approaches to P'ot'i.

Useful mark:

3.296

1 Batumskiy Light (white 8-sided stone tower and dwelling, 20 m in height) (41°39′N, 41°39′E).

(Directions continue at 3.310)

BAT'UMI

General information

Charts 3313, 3317, plan of Bat'umi

Position

3.297

1 Bat'umi (41°39′N, 41°39′E) lies on the W side of Batumskaya Bukhta.

Function and traffic

3.298

1 Bat'umi, which in 2003 had an estimated population of 145 000, is the centre of local administration and one of the most important of the Georgian Black Sea oil ports.

There is a large oil refinery at Bat'umi and it is a shipping port for the output of the Baku and other Caucasian oilfields.

A container terminal is under construction (2000) on the E side of the Neftyanaya Gavan' (3.306).

Traffic. In 2002 the port was used by 227 vessels with a total deadweight of 11 599 490 tonnes.

Port Authority

3.299

1 Port of Bat'umi Authority, 20 Gogebashvili Street, 384500, Bat'umi, Adjarian, Georgia.

Limiting conditions

3.300

1 **Deepest berth.** See 3.313.

Density of water. Reported 1·014 to 1·018 g/cm^3.

Largest vessel handled: 69 992 dwt, 243 m LOA.

Local weather. Storms are not frequent, but where they do occur it is usually with SW winds. During such winds there is much swell in the bay. The Tyagun may occur with W, SW and NW winds. See 1.152.

Arrival information

Port radio

3.301

1 See *Admiralty List of Radio Signals Volume 6(3)* for details.

Notice of ETA

3.302

1 See *Admiralty List of Radio Signals Volume 6(3)* for details.

Outer anchorage

3.303

1 Outer anchorage area No 100 (Bulk Carriers and Tankers), as shown on the chart, is situated about 1½ miles NE of the harbour entrance. It contains anchor berths Nos 1 to 5, in depths of 9 to 15 m, mud and sand. Its S and E limits are marked by two buoys (N and W cardinal respectively).

It was reported (1989) that with a strong W wind and a heavy swell, anchors are likely to drag in this area.

Pilot and tugs

3.304

1 **Pilotage** is compulsory for all vessels entering or leaving harbour. In good weather pilots board about 8 cables NNE of

Batumskiy Light (3.296). In bad weather pilots board in the Inner roads. They are available 24 hours a day and should be ordered 24 hours before arrival.

Tugs are available. Their use is compulsory when berthing.

Regulations concerning entry

3.305

1 **Time of entry.** No restrictions.

Keel clearance. Not less than 0·3 m.

Draught in ballast. Bow draught should not be less than 1·5 m.

Entry is prohibited to an area in the inner roadstead (No 822), shown on the chart, extending ¼ cable to seaward from the N face of Neftyanaya Mol and Zashchitnyy Mol.

Harbour

General layout

3.306

1 Bat'umi consists of an outer and inner roadstead and 2 basins.

The main alongside berths are situated on the W side of the inner roadstead and in the Neftyanaya Gavan', which lies at the S end of the inner roadstead.

Signal station

3.307

1 Signal station is situated 1·7 cables S of Mys Batumskiy.

Climatic table

3.308

1 See 1.195 and 1.198.

Principal marks

3.309

1 **Landmarks:** (positions from Batumskiy Light)

Building (2 cables SW). 66 m in height.

Batumskiy Light-structure (41°39′·3N, 41°38′·5E) (3.296).

Gora Tamara (2 miles ENE). A ruined fort on a hill close S of mouth of Korolis-Tskali.

Oil tanks (8 cables SE), which stand on Zashchitnyy Mol.

Directions for entering harbour

(continued from 3.295)

Inner roadstead and Neftyanaya Gavan'

3.310

1 **Initial position:** 329° distant 8 cables from Batumskiy Light at the end of Recommended route BN.

Route. The route leads E to the pilot boarding position then S, passing (with positions from Batumskiy Light):

W of a spar-buoy (N cardinal) (6½ cables NE) that marks the NW limit of the coastal bank that occupies the E part of Batumskaya Bukhta. Thence:

2 E of Mys Burun-Tabiya (1¼ cables NW), the termination of a marshy tree covered plain that is being extended by gravel deposits from the Reka Chorokh (3.290); and:

W of a spar-buoy (W cardinal) (5 cables ENE).

3.311

1 **Petroleum Harbour Leading Lights:**

Front light (white round metal tower, 2 black bands with gallery, 11 m in height) (41°39′N, 41°39′E).

Rear light (black, truncated pyramid with white wings) (7 cables S of front beacon, 5 m in height).

Mole Head

Front Leading Light (3.311)

The alignment (172½°) of these lights leads into the inner roadstead and to the entrance of Neftyanaya Gavan'.

2 **Lights in line.** The alignments (166¼° and 261½°) of 2 pairs of lights (black shapes, white stripes on white metal framework structures), shown on the chart, assist tanker mooring operations in the inner roadstead.

3 **Caution.** Vessels must not pass within 80 m of other vessels loading at the outer side of the oil jetty.

Berths

Mooring and anchorage

3.312

1 **Inner roadstead:**

Mooring:

Tankers moor at No 13 berth stern to the N side of Neftyanaya Mol using 2 anchors forward and lines connected to a buoy on each quarter. The berth is connected by pipelines to the shore and is capable of handling vessels of up to 60 000 dwt, maximum length 210 m, maximum draught 12 m. Vessels must maintain an under-keel clearance of 0·8 m whilst at this berth.

Alongside berths

3.313

1 There are 11 berths in Neftyanaya Gavan' and the inner roadstead. The longest berth (No 7) is 260 m long with depths of 11 m alongside.

Kabotazhnaya Gavan'. A shallow small craft basin, which lies E of Neftyanaya Gavan'.

Port services

Repairs and other facilities

3.314

1 Minor repairs; compass adjustment; deratting; hospital; lifeboat; oily waste disposal.

Supplies

3.315

1 Fuel oil; fresh water at quays; fresh provisions and stores.

APPROACHES TO P'OT'I

General information

Charts 3313, 3317, plan of Approaches to P'ot'i

Topography

3.316

1 The approaches to P'ot'i (42°09′N, 41°39′E) are backed by the coast that lies between the mouth of the Reka

Natanebi (41°55′N, 41°46′E) and the mouth of the Reka Khobi (23 miles N).

From the mouth of the Reka Natanebi to P'ot'i (15 miles NNW) the coast is low and covered with trees. There are numerous buildings and considerable cultivation on this stretch of the coast.

Ozero Paleostomi, a large lake fed by the Reka Pichora, is connected to the sea 5 miles SSE of P'ot'i.

2 From the mouth of the Reka Khobi (42°17′N, 41°38′E), which enters the sea 2 miles S of the S limit of Area ANAKLIYA (7.246) to P'ot'i (7 miles S) the coast is low lying with few features. The N mouth of the Reka Rioni enters the sea 4 miles S of Reka Khobi. Reka Rioni, which is navigable for 48 miles above its mouth, is the largest of the rivers flowing into the E Black Sea.

Regulated areas

3.317

1 **Area which is temporarily prohibited to navigation:**
Area MALTAKVA lies in the S approaches to P'ot'i.
Explosives dumping grounds:
Area No 40, shown on the chart, lies 17 miles WNW of P'ot'i.
Area No 50, shown on the chart, lies 9 miles WNW of P'ot'i.
See Appendix IV for further details of all these areas.

Principal marks

3.318

1 **Landmark:**
Gora Olen' (42°24′N, 41°51′E). A jagged peak, 466 m high, which is visible in clear weather from 40 miles.
Grain Silo (42°09′·1N, 41°39′·4E) situated at the root of the S breakwater is radar conspicuous up to 27 miles.

2 **Major lights:**
Kobuletskiy Light (41°51′N, 41°47′E) (3.294).
Potiyskiy Light (white round metal tower with red bands, floodlit, 37 m in height) (42°08′N, 41°40′E).

Other navigational aids

3.319

1 **Racon:**
SBM (42°01′N, 41°43′E) (3.324) at Supsa OIl Terminal.
See *Admiralty List of Radio Signals Volume 2* for details.

Directions

(continued from 3.9)

Approach from south

3.320

1 From a position about 1½ miles N of Mys Batumskiy (41°39′N, 41°38′E), Recommended route GN–1 leads N for about 25 miles to the SW approaches to P'ot'i, passing (with positions from Kobuletskiy Light (41°51′N, 41°47′E)):
W of Mys Tsikhisdziri (6 miles SSW) (3.291), thence:
E of Area No 60 (11 miles W) (3.292), thence:
W of Kobuletskiy Light (3.294), thence:

2 W of Natanebi Light (white rectangle, red stripe, on framework tower, 12 m in height) (7 miles N), thence:
W of Supsa Terminal (10½ miles NNW) (3.324), thence:
W of Grigoleti Light (orange rectangle, white stripe on red framework tower, 9 m in height) (11¾ miles N).

3 Thence the track joins the SW approach route to P'ot'i (3.341).

Approach from south-west

3.321

1 From the vicinity of 42°00′N, 41°27′E Recommended route PS leads NE to P'ot'i through waters clear of charted dangers, passing:
NW of Kobuletskiy Light (41°51′N, 41°47′E) (3.294), thence:
NW of Grigoleti Light (42°02′N, 41°44′E) (3.320).
(Directions for the SW approach route to P'ot'i continues at 3.341)

Approach from west

3.322

1 From position 42°10′·2N, 41°22′·6E Recommended route PW leads for about 12 miles E to the inner harbour.

Approach from north-west

(continued from 7.249)

3.323

1 From the vicinity of 42°16′N, 41°22′E, WSW of Area ANAKLIYA (7.246), Recommended route PN leads ESE to P'ot'i through waters clear of charted dangers, passing:
SSW of Kulevi Light (42°16′N, 41°38′E) (7.249).
(Directions for the NW approach route to P'ot'i continue at 3.342)

Supsa Terminal

Chart 3313

3.324

1 **Position and function.** Supsa Terminal (42°01′N, 41°43′E) located 8 miles S of P'ot'i (42°09′N, 41°39′E) consists of one SBM for the exportation of crude oil.

Traffic. In 2002 the terminal was used by 26 vessels with a total deadweight of 6 681 506 tonnes.

Terminal operator. Georgia Pipeline Company, 26 St Georges Street, P'ot'i, Georgia.

Arrival information.

3.325

1 **Port Radio.** See *Admiralty List of Radio Signals Volume 6(3)* for details.

Notice of ETA. Vessels should forward their arrival time 48 and 12 hours in advance, thereafter at any other time should the ETA change by more than 2 hours. See *Admiralty List of Radio Signals Volume 6(3)* for details.

2 **Anchorages.** Designated anchorages, radius 500 m, for tankers lie 1¼ and 2¼ miles NW of the SBM respectively.

Pilotage. Pilotage is compulsory. Two berthing masters who act as pilots, will board vessels on the port side, 3 miles W of the SBM from a service launch. The launch is fitted with VHF R/T.

3 **Restricted area.** The terminal is enclosed within a restricted area as shown on the chart. Entry is prohibited to vessels not using the terminal.

Berth and services

3.326

1 **Berth.** The SBM is moored in a depth of 50 m, with attached floating hoses 270 m in length. A submarine pipeline extends 1½ miles ENE from the buoy to the shore 3 cables SSE of Grigoleti Lighthouse (3.320). The buoy is fitted with a light (3.320), fog signal and racon and is designed to handle crude oil tankers of 60 000 to 150 000 dwt and between 240 and 290 m in length.

Entry is prohibited into an area of radius 500 m centred on the SBM.

2 Berthing is conducted during daylight hours only. Unberthing and loading by day and by night. Hose connection personnel and equipment will be transferred to the vessel at the same time as the pilots. The port derrick should be rigged ready to load the hose equipment. A maintenance support vessel and the service launch act as tugs.

3 **Services.** There are no facilities for the reception of dirty ballast. Vessels must arrive with clean ballast.

Supplies. No fuel available. No fresh water or provisions.

P'OT'I

General information

Charts 3313, 3317, plans of P'ot'i and Approaches to P'ot'i

Position

3.327

1 P'ot'i (42°09′N, 41°39′E) is situated on Ostrov Bolshoy, an island formed by the N and S branches of Reka Rioni.

Function and Traffic

3.328

1 P'ot'i, which in 2003 had an estimated population of about 50 000, is the principal port for the transhipment of cargo to and from Central Asia and the Trans-Caspian district. It is also the shipping port for the export of manganese ore from the Caucasian and Chiaturi regions.

In 2002 the port was used by 282 vessels with a total deadweight of 4 022 832 tonnes.

Port limits and Port Authority

3.329

1 **Limits.** The port area is contained between the parallels of 42°12′E and 42°05′N, extended seaward for a distance of 10 miles.

Port Authority. Port of P'ot'i Authority, 52 D Agmashenebeli Street, P'ot'i, Georgia.

Limiting conditions

3.330

1 **Entrance channel.** Least depth 10·5 m (2000). See 3.343.

Deepest berth. See 3.344.

Maximum size of vessel permitted. Draught 12·5 m, 250 m LOA and beam 32 m.

Density of Water. 1·015 g/m^3, but varies with the season.

Arrrival information

Port radio

3.331

1 See *Admiralty List of Radio Signals Volume 6(3)* for details.

Notice of ETA

3.332

1 See *Admiralty List of Radio Signals Volume 6(3)* for details.

Outer anchorages

3.333

1 The outer roadstead, bounded by the parallels of 42°12′N and 42°08′N, and the meridian of 41°35′E contains Anchorage areas Nos 200 (Tankers) and 300 (Bulk Carriers), as shown on the chart. Anchoring outside the limits of these areas is prohibited.

A mooring buoy is moored in the S end of anchorage area 300, 1½ miles WSW of the head of Zapadnyy Mol.

Pilots and tugs

3.334

1 **Pilotage** is compulsory for all vessels entering or leaving harbour. Pilots board 1 mile W of the head of Zapadnyy Mol.

Tugs are available. Their use is compulsory when berthing.

Traffic regulations

3.335

1 **Area into which entry is prohibited:**

Area P'OT'I, shown on the chart, lies 2 cables W of the inner harbour.

Spoil ground:

2 Area No 20 lies close SW of Yuzhnaya Gavan', as shown on Chart 3317. This area may contain unexploded ordnance and should be regarded as an explosives dumping ground.

See Appendix IV for further details of all these areas.

Regulations concerning entry

3.336

1 **Time of entry.** No restrictions.

Speed limit. 4 knots.

Entry prohibited when entrance and leading lights obscured by fog.

Harbour

General layout

3.337

1 P'ot'i consists of an outer roadstead and an inner harbour. The inner harbour, which is protected by breakwaters, consists of 4 basins approached by a channel.

Development

3.338

1 In 2003 work had started on the construction of a new container terminal and it is planned to dredge the entrance channel and some berths to a depth of 13 m.

Traffic signals

3.339

1 Signals for vessels entering and leaving the port are exhibited from the port signal station situated at the head of Severnyy Mol on the N side of Severnaya Gavan' (42°09′·3N, 41°39′·1E).

When necessary, signals are repeated from the roadstead signal post, situated on the roof of the cold store at the head of Sredniy Mol (1½ cables S).

A signal station is situated at the end of No 11 berth on the S side of the entrance to Vnutrenniy Basseyn.

Principal marks

3.340

1 **Landmarks:**

Potiyskiy Lighthouse (42°08′N, 41°40′E) (3.318).
Building (cupola) (42°08′·5N, 41°40′·6E).
Chimney (42°09′·6N, 41°39′·7E).
Television mast (42°10′·7N, 41°40′·1E).

Major light:

Potiyskiy Light—as above.

Directions for entering harbour

South-west approach route

(continued from 3.321)

3.341

1 **Initial position:** 42°07′N, 41°35′E.

Recommended route PS leads NE to a position 5½ cables WNW of the head of Zpadnyy Mol, passing:

Through anchorage area No 300 (3.317), and:
NW of Potiyskiy Light (3.318) and a bank with depths of less than 10 m over it, which extends up to 1¼ miles W of the mouth of the Reka Staryy Rioni.

North-west approach route

(continued from 3.323)

3.342

1 **Initial position:** 42°11′·3N, 41°34′·8E, SSW of Kulevi Light

Recommended route PN, shown on the chart, continues ESE to a position 7 cables NW of the head of Zapadnyy Mol, passing (with positions from Potiyskiy Light):

2 SSW of the mouths of Reka Rioni (4 miles NNW). The mouths of the river are obstructed by a shallow bar and several islets. A coastal bank, with depths of less than 20 m, extends 1½ miles to seaward. Thence:

SSW of anchorage area No 200 (4 miles NW), and:

3 NNE of anchorage area No 300 (3 miles WNW), thence:

To the vicinity of the light-buoy (safe water) (42°10′·1N, 41°38′·1E) at the seaward end of the approach channel.

4 **Caution.** Vessels are advised to adhere closely to the recommended route when approaching the harbour as the current sets N and depths diminish towards the land. The shoals near the N mouth of Reka Rioni are reported (2001) to be extending westwards.

Directions for entering inner harbour

3.343

1 **Initial position.** Vicinity of the light-buoy (safe water) (42°10′·1N, 41°38′·1E) located 6½ cables NW of the head of Zapadnyy Mol.

Leading lights:

Front light-beacon (white square metal framework tower, white rectangular daymark with red stripe) (42°09′·6N, 41°39′·0E) located at the head of Novvy Severnyy Mol.

2 Rear light-beacon (square framework tower with gallery, white rectangular daymark with red stripe) (1½ cables SE of front light-beacon).

The alignment (129°) of these lights leads along the first leg of the channel, dredged to 10·5 m (2000) and 100 m wide, passing between a pair of light-buoys (lateral) and close NE of a spar buoy (starboard hand) situated ½ cable E of the head of Zapadnyy Mol.

3 **Second leg.** The alignment (159°) of a light-beacon (orange rectangle, black stripe, 15 m in height) (42°09′·0N, 41°39′·2E) and Potiyskiy Light (3.318) leads into the inner harbour along the second leg of the channel which is 100 m wide (2000). See chart for further details.

4 **Caution.** NW gales cause silting in the entrance channel and basins, decreasing depths by up to 0·6 m. Dredgers are constantly at work removing this silt.

Berths

Alongside berths

3.344

1 There are 15 alongside berths, with depths of up to 12·5 m, situated in Vnutrenniy Basseyn, Severnaya Gavan' and Yuzhnaya Gavan'.

Port services

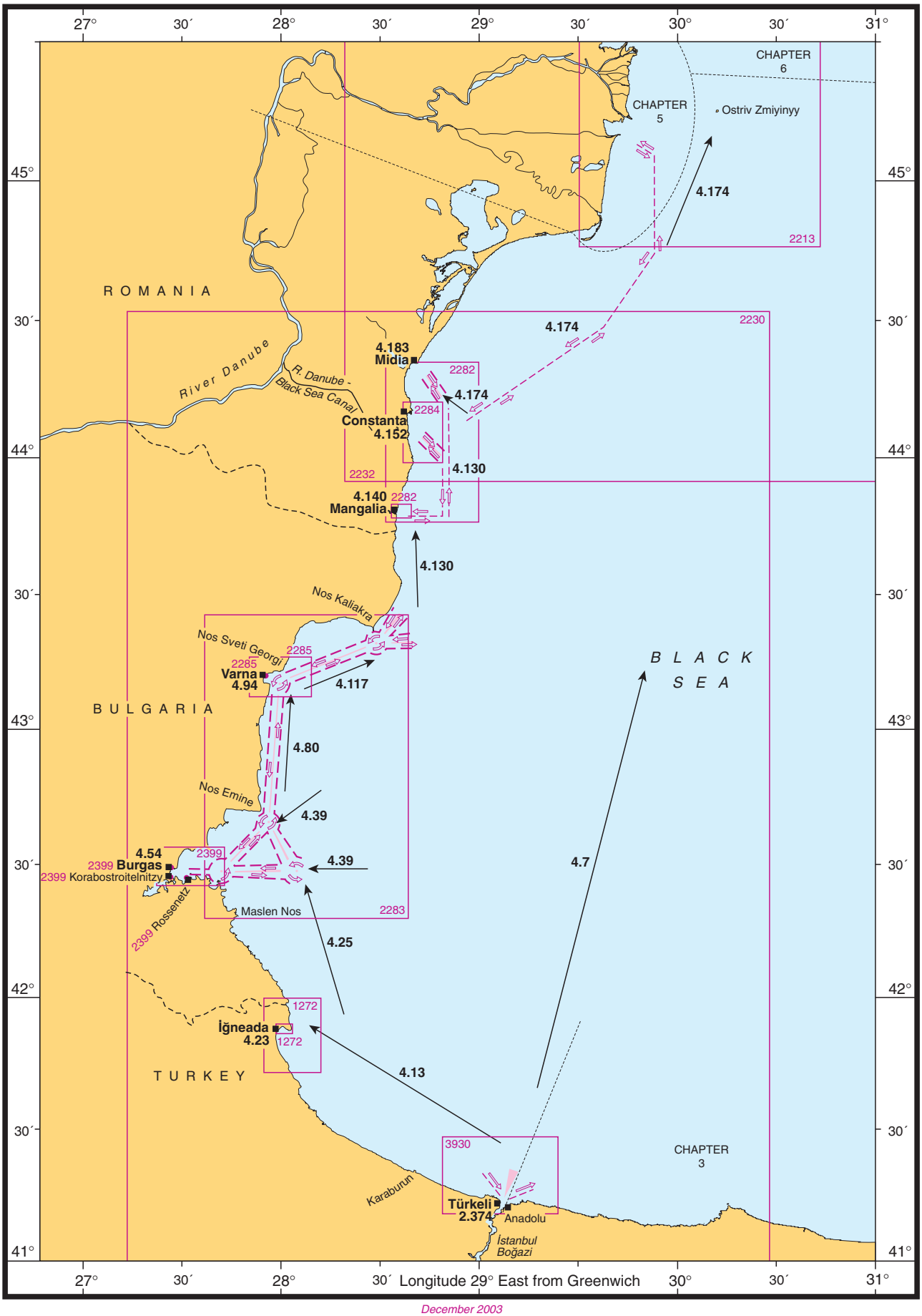
Facilities and supplies

3.345

1 **Facilities:** ballast and slops reception available; compass and radio adjustment; deratting; hospital.

2 **Supplies:** fuel oil; coal; fresh water at berths and by barge; provisions.

Chapter 4 - South-west part of the Black Sea



December 2003

CHAPTER 4

SOUTH-WEST PART OF THE BLACK SEA

GENERAL INFORMATION

Charts 2214, 2230, 2232

Scope of the chapter

4.1

1 This chapter covers the SW part of the Black Sea between the N approaches to İstanbul Boğazı (Bosporus) (41°20′N, 29°10′E) and the Danube delta (240 miles N) and includes descriptions of the Bulgarian coast and its ports and that part of Romanian coastal waters S of the Danube delta.

Harbours

4.2

1 Amongst the harbours described in this chapter are the ports of:

Burgas (42°29′N, 27°29′E) (4.54).
Varna (43°12′N, 27°55′E) (4.94).
Mangalia (43°48′N, 28°36′E) (4.140).
Constanţa (44°09′N, 28°40′E) (4.152).
Midia (44°20′N, 28°41′E) (4.183).

Holiday resort areas

4.3

1 A number of extensive holiday resort areas are situated on the Bulgarian and Romanian coasts. While no detailed information is available of their facilities, it is known that some of these resorts are capable of accommodating small craft.

Traffic regulations

4.4

1 **Traffic separation schemes.** A series of traffic separation schemes and traffic roundabouts, which are shown on the chart, extend from the approaches to Burgas to the approaches to Varna and thence NE to Nos Kaliakra (43°22′N, 28°28′E) (4.120).

Areas temporarily dangerous to navigation lie off the Bulgarian coast and between the Danube delta and SW Kryms'kyy Pivostriv. See Appendix III.

Natural conditions

4.5

1 **Currents.** See 1.145.

Ice. The area covered by this chapter is free of ice. See 1.158.

Hydrographic information

4.6

1 Bulgaria is not (2003) a member of the International Hydrographic Organisation (see *The Mariners Handbook)* and therefore up-to-date hydrographic information of Bulgarian waters is not always available.

OFFSHORE PASSAGE TO PORTS IN NORTH-WEST BLACK SEA

General information

Charts 2214, 2230, 2232

4.7

1 From the vicinity of 41°20′N, 29°10′E, the direct route to ports in the NW Black Sea passes out of sight of land and through waters clear of charted dangers until it approaches Ostriv Zmiyinyy (240 miles N) (4.9).

Traffic regulations

4.8

1 **Areas temporarily dangerous for navigation:**

Areas Nos 211 and 212, the limits of which are shown on the chart, extend up to 65 miles offshore from Nos Emine (42°42′N, 27°54′E) and 40 miles offshore from Nos Kaliakra (43°22′N, 28°28′E). See Appendix III.

Area Nos 708 and 709, the limits of which are shown on the chart, lie about 15 miles E of the direct route between İstanbul Boğazı and Ostrov Zmiyinyy. See Appendix II.

Principal marks

4.9

1 **Landmarks:**

Alem Dağı (41°04′N, 29°12′E) (2.398).
Çatal Dağ (41°02′N, 29°17′E) (2.398).
Ostriv Zmiyinyy (40 m high) (45°15′N, 30°12′E). The coast of this island is formed by continuous cliffs from 15 to 21 m in height. A lighthouse stands on the highest point of the island. See 4.189 for details of anchorage off the island.

2 **Major lights:**

Türkeli Light (41°14′N, 29°07′E) (2.374).
Anadolu Light (41°13′N, 29′09′E) (2.374).
Sfintu Gheorghe Light (44°54′N, 29°36′E) (4.179).
Ostriv Zmiyinyy Light (white 6-sided tower, 18 m in height) (45°15′N, 30°12′E).

Other navigational aids

4.10

1 **Racons:**

Anadolu Light — as above.
Türkeli Light — as above.

For further details see *Admiralty List of Radio Signals Volume 2.*

DGPS:

DGPS corrections are transmitted from Kavarna (43°25′·2N, 28°21′·9E).

For further details see *Admiralty List of Radio Signals Volume 8.*

Directions

(continued from 2.400)

4.11

1 From the vicinity of 41°20′N, 29°10′E, the offshore route to ports in the NW Black Sea proceeds in a N direction for about 240 miles, to the vicinity of Ostriv Zmiyinyy (4.9).

Caution. Attention is drawn to the oil and gas field in position 44°32′N, 29°34′E; see 4.176.

(Directions continue for the offshore route to the approaches to Odes'ka Zakota at 6.14, and for the coastal route to the approaches to Ust'Dunaysk at 5.119)

DALYAN BURNU TO NOS KALIAKRA

General information

Marine farms

4.12

1 **Caution.** Numerous marine farms are situated throughout the inshore waters of Bulgaria between Rezovo (41°59′N, 28°02′E) and Nos Kaliakra (43°22′N, 28°28′E) and represent a danger to navigation. They are not marked, neither are they shown on the charts, but are usually situated within 5 cables of the coast.

DALYAN BURNU TO KORU BURNU

General information

Chart 2230

Topography

4.13

1 **Dalyan Burnu to Karaburun.** Between Dalyan Burnu (41°15′N, 29°02′E) (2.401) and Karaburun (17 miles WNW), the coast is formed by a long sandy beach, parts of which are a remarkable reddish colour. The beach is backed by reddish hills, the summits of which are covered with vegetation.

A number of coastguard stations, the positions of which are shown on the chart, are situated along this stretch of coast.

2 **Karaburun to Koru Burnu.** Between Karaburun (41°21′N, 28°41′E) (4.15) and Koru Burnu (42 miles NW), the coast is backed by hills rising to heights of over 250 m. These hills are generally covered with brushwood and trees and in places have a yellowish appearance.

Durusu Gölü, a lake connected to the sea by Darboğaz Deresi, lies about 4 miles W of Karaburun. This lake is bounded to the S by an irregular range of hills which bear some resemblance to the winding shores of İstanbul Boğazı.

Principal marks

4.14

1 **Major lights:**

Karaburun Light (white metal framework tower and dwelling, 12 m in height) (41°21′N, 28°41′E).

Koru Light (white stone tower and dwelling, 8 m in height) (41°53′N, 28°03′E).

Directions

(continued from 2.400)

4.15

1 From the vicinity of 41°20′N, 29°14′E, the coastal passage to Koru Burnu proceeds generally NW for 62 miles through waters clear of charted dangers, passing (with positions from Karaburun Light (4.14)):

NE of Dalyan Burnu Light (white metal framework tower, 11 m in height) (17 miles ESE). This light stands on an island that lies off Dalyan Burnu (2.401) and is situated about 5 cables N of Kumköy Limanı (4.17). Thence:

2 NE of Karaburun Light. This light stands on Karaburun, a broad headland with a small harbour (4.19) on its E side. The headland is precipitous and steep with depths of 36 m about 1 cable offshore. Thence:

NE of Asarıtevfik Kayası (11 miles NW). The charted position of this 3·6 m patch, which lies about 5 cables offshore, is approximate. Thence:

NE of Esen Burnu (26 miles WNW), a steep and rocky headland which is not easy to recognise from seaward. Thence:

NE of Kıyıköy Light (white metal framework tower, 10 m in height) (31 miles NW) (4.22). Thence:

3 NE of Servi Burnu (32 miles NW). A promontory with some streaks of reddish coloured rocks on the slope within it. A tower and a pyramidal rock stand near the extremity of the headland and a reef extends 1½ cables SE of it. Thence:

NE of Sandal Burnu (37 miles NW), a point which may be identified by white cliffs and Büyükbezirgan Tepesi. Thence:

4 NE of Koru Light (43 miles NW) (4.14). This light stands on Koru Burnu, a sloping promontory of moderate elevation with a yellowish appearance, which lies NE of Iğneada Limanı (4.23). Depths off the headland are uneven and it should be given a berth of at least 2½ cables.

4.16

1 **Useful mark:**

Büyükbezirgan Tepesi (41°46′N, 27°56′E) is situated between the coast and a range of hills inland. This peak helps to identify the coast in the vicinity of Sandal Burnu (4.15).

(Directions for the coastal passage to Burgaski Zaliv continue at 4.31)

Anchorages and small harbours

Dalyan Burnu

4.17

1 **Anchorage** may be obtained off Dalyan Burnu by passenger and dry cargo vessels in a designated area shown on the chart.

Karataş Burnu

4.18

1 **Anchorage** may be obtained by vessels carrying dangerous cargo off Karataş Burnu as shown on the chart.

Karaburun

4.19

1 The village of Karaburun (41°21′N, 28°41′E), has a small harbour situated on the E side of the headland. This harbour is protected from the N and E by an angled breakwater.

Depths. The harbour is shallow and cannot be entered by craft with a draught of more than 1 m.

Çilingoz Koyu

4.20

1 **Anchorage** may be obtained by light draught vessels off the mouth of Çilingoz Deresi (41°32′N, 28°13′E), during offshore winds; bottom, sand and shell.

Local knowledge is required.

Kasatura Koyu

4.21

1 **Anchorage** may be obtained by light draught vessels in Kasatura Koyu (41°35′N, 28°09′E). There is a rock close S of the N entrance point which provides some shelter from N and NE and this anchorage is reported to be a better anchorage than Çilingoz Koyu.

The anchorage is in a depth of 5 m, sand, with the S extremity of the rock bearing 065°. Local knowledge is required.

Kıyıköy

4.22

1 The town of Kıyköy (41°38′N, 28°06′E) stands above a steep cliff between the mouths of two streams.

The harbour, which is protected by breakwaters lies to the S of the town in a creek about 1½ cables wide. Lights (concrete towers, 4 and 5 m in height) stand at the heads of the breakwaters.

2 **Anchorage** within the harbour may be obtained by small craft in depths of 3 to 4 m. Local knowledge is required. Anchorage outside the harbour is over a rocky bottom and is indifferent.

Chart 1272, plan of Approaches to Iğneada

Iğneada Limanı

4.23

1 İğneada Limanı is entered between İğneada Burnu (41°52′·9N, 28°02′·6E) and the village of İğneada, 2½ miles WSW. The village of Limanköy stands between İğneada Burnu and Koru Burnu (4.15).

2 **Harbour.** A small harbour, protected by two breakwaters, lies on the NE shore of İğneada Limanı, 7½ cables NW of İğneada Burnu. A dangerous wreck, the mast of which is visible, lies 1 mile SSE of the harbour entrance.

Alongside berths are available for small craft.

Depths within the harbour range from 2·7 to 6·8 m.

Lights (white concrete towers, 12 and 13 m in height) stand at the head of each breakwater.

Traffic. In 2002 the port was used by 1 vessel with a deadweight of 1061 tonnes.

4.24

1 **Anchorage,** with good holding ground, may be obtained in depths of 10 to 12 m about 5 cables offshore, with the breakwater entrance bearing 060° distant 5 cables. A heavy swell comes into the anchorage at times and on such occasions, an eddy sets strongly towards Koru Burnu.

KORU BURNU TO BURGASKI ZALIV

General information

Chart 2230

Topography

4.25

1 Between Koru Burnu (41°53′N, 28°03′E) and Maslen Nos (28 miles NNW), the coast is backed by mountains rising to heights of over 500 m. This stretch of the coast is indented by a number of coves.

International boundary

4.26

1 The seaward end of the international boundary between Turkey and Bulgaria is formed by a river, known as Mutlu Deresi to the Turks and Rezovska Rika to the Bulgarians. This river enters the sea at the head of a cove that lies 5½ miles N of Koru Burnu. The Bulgarian village of Rezovo stands on the N shore of the cove and the Turkish village of Beğendik lies 1 mile S.

Traffic regulations

4.27

1 **Area periodically dangerous for navigation:**

Area No 112 lies between 1 and 12 miles offshore between Nos Kyupriya and Nos Kolokita. See Appendix III.

2 **Area temporarily dangerous for navigation:**

Area No 212 lies between 36 and 76 miles offshore from the entrance to Burgaski Zaliv. See Appendix III.

4.28

1 **A recommended route** for small vessels of up to 300 grt is situated inshore between Tzarevo (Michurin) (42°10′N, 27°51′E) and Primorsko (42°16′N, 27°45′E) (4.37). This route then proceeds N past Maslen Nos to Sozopol.

4.29

1 **A traffic roundabout** centred on position 42°29′N, 28°05′E, which is shown on the chart, is situated in the outer approaches of Burgaski Zaliv. This traffic roundabout is part of the traffic separation scheme leading to the port of Burgas (4.40).

Principal marks

4.30

1 **Landmarks:**

Mount Papiya (42°07′N, 27°51′E), a steep and rather pointed peak.

Major lights:

Koru Light (41°53′N, 28°03′E) (4.14).

Maslen Nos Light (white stone tower, 7 m in height) (42°19′N, 27°48′E).

Sveti Ivan Light (42°26′N, 27°41′E) (4.43).

Directions

(continued from 4.15)

4.31

1 From a position NE of Koru Burnu (41°53′N, 28°03′E), the coastal passage to the approaches to Burgaski Zaliv proceeds generally NW for about 30 miles through waters clear of charted dangers to a traffic roundabout (centred at 42°29′N, 28°05′E) (4.29), passing (with positions from Koru Light):

NE of Nos Rezovo (6 miles N), thence:

NE of Nos Sinemorets (11 miles N). A beacon stands on this point. Thence:

NE of Nos Akhtopol (14 miles NNW) (4.33), thence:

NE of Tzarevo (20 miles NNW) (4.35), thence:

2 NE of Nos Urdoviza (24 miles NNW), a steep white promontory from which a sunken reef extends 1 mile SE. Thence:

NE of Maslen Nos (28 miles NNW). This headland, a high steep promontory, projects 5 cables E of the general line of the coast and is fringed by sunken rocks. Thence:

NE of Nos Korakya (29½ miles NNW), which is steep-to.

(Directions continue for Burgaski Zaliv at 4.44, and for the coastal passage to Varnenski Zaliv at 4.89)

Anchorages and small harbours

Chart 1272, plan of Approaches to Iğneada

Rezovo

4.32

1 **Anchorage,** sheltered from the N by Nos Rezovo (41°59′N, 28°02′E), may be obtained by small craft in depths of about 5 m in the cove that lies at the seaward end of the international boundary between Turkey and Bulgaria (4.26).

Chart 2230

Akhtopol

4.33

1 The village of Akhtopol (42°06′N, 27°57′E) is situated in a small bay of which Nos Akhtopol is the S entrance point. The entrance of this bay, which is about ½ cable wide, has depths of 10·7 m. The N side of the entrance is fringed with rocks, most of which are visible. The S side is steep-to.

Akhtopol Light (black concrete tower, framework superstructure with yellow top, 11 m in height) stands on Nos Akhtopol.

4.34

1 **Anchorage** for small craft may be obtained in depths of 7 m, sand, with shelter from all but E winds. Depths in most of the bay are only 4 m.

Alongside berths are available for small craft.

Local knowledge is required to enter the bay.

Tzarevo

4.35

1 The town of Tzarevo (Michurin) (42°10′N, 27°51′E) stands on the shores of a cove of which Nos Kastro is the S entrance point. East of this point and about 3½ cables offshore, there are some above-water rocks. A reef extends off the N entrance point.

A light (yellow round concrete and metal tower, black top, 10 m in height) stands on a rock off Nos Kastro.

A small harbour, protected by a breakwater, is situated in the cove. A light (white round stone tower, 9 m in height) stands at the head of the breakwater and another light (on dwelling, 20 m in height) stands 1 mile NW.

2 **Alongside berths.** The harbour has two quays suitable for small craft.

Anchorage can be obtained in depths of 20 to 27 m, sand, off the entrance to the cove.

Hospital. The town has a hospital.

Ayavolsk Zaliv

4.36

1 Ayavolsk Zaliv is entered S of Nos Kyupriya (42°16′N, 27°46′E). The bay is open E and has depths of 4 m over a sandy bottom.

A sunken reef, on which there some above-water rocks, extends about 1½ cables N from the S shore of the bay and a similar reef, which partly shelters the anchorage, extends about the same distance SE of Nos Kyupriya.

4.37

1 The town of Primorsko, which has a small artificial harbour, lies in the N part of the bay.

Alongside berths for small craft are available within the harbour.

Primorsko Light (white round tower, 5 m in height) stands at the head of a pier about 5 cables W of Nos Kyupriya.

Local knowledge is required to enter this harbour.

4.38

1 **Anchorage** for small craft, with their sterns secured to the shore, is available in depths of 7 to 9 m in the S part of the harbour and in depths of 7 m in the N part of the harbour.

BURGASKI ZALIV

General information

Charts 2283, 2399

Topography

4.39

1 Burgaski Zaliv is entered between Nos Korakya (42°20′N, 27°47′E) (4.31) and Nos Emine (22½ miles NNE) (4.43) and is the only part of the W side of the Black Sea where there are several good anchorages.

The S shore of the gulf is backed by a chain of mountains that rise to a height of over 300 m (4.43) and is indented by a number of bays.

2 The outer part of the N shore of the gulf is backed by a wooded range which rises to heights of over 300 m. This range has four distinctive peaks at its E extremity, 4 miles W of Nos Emine, and three distinctive peaks at its W extremity.

Traffic regulations

4.40

1 **Traffic separation schemes** joined by traffic roundabouts, which are shown on the charts, form the E and NE approaches to the port of Burgas and that part of the coastal route that leads across the entrance of Burgaski Zaliv.

All vessels with a displacement of more than 300 tonnes must use the traffic separation schemes when entering or leaving port or when following the coastal route between ports.

2 These traffic separation schemes are not IMO-adopted, but the Bulgarian Authorities advise that the principles for the use of a routeing system, defined in Rule 10 of the *International Regulations for Preventing Collisions at Sea (1972)* apply.

3 **Areas in which anchoring, fishing, submarine and seabed operations are prohibited:**

Area No 319, the limits of which are shown on the chart, lies between Ostrov Sveti Ivan (4.43) and Sozopol (4.48).

Pilotage

4.41

1 Pilotage for the E approach to Burgas is available from the E outer traffic roundabout (4.40). Pilotage from this roundabout is not compulsory. but if required should be ordered 8 hours in advance.

Measured distance

4.42

1 Between Nos Kolokita (4.47) and Ostrov Sveti Ivan Light (4.43) there is a measured distance:

South Limit marks: Beacon and mast close SW of Nos Kolokita.

North Limit marks: Beacon and Ostrov Sveti Ivan Lighthouse.

Distance: 4480 m.

Running track: 151¼°/331¼°.

Principal marks

4.43

1 **Landmarks:**

Bakŭrlŭka (42°24′N, 27°37′E), the most conspicuous peak of the chain of mountains that rises within the S shore of the gulf. From the SE, its summit appears rounded, whilst from the NE it appears as a double peak.

Biberna (42°40′N, 27°35′E).

Shilito (42°48′N, 27°23′E). The highest of three peaks that rise from a valley at the head of the gulf. the other two peaks are oval with nipple shaped summits and appear N and S of Shilito.

Sveti Iliya (42°43′N, 27°52′E), a rounded tree covered mountain.

Nos Emine (42°42′N, 27°54′E), a bold headland with cliffs from 36 to 45 m high.

2 **Major lights:**

Maslen Nos Light (42°19′N, 27°48′E) (4.30).

Sveti Ivan Light (white round concrete tower, 13 m in height) (42°26′N, 27°41′E) which stands on Ostrov Sveti Ivan.

Nos Emine Light (tower on white dwelling, 9 m in height) (42°42′N, 27°54′E).

Directions

(continued from 4.31)

Eastern approach to Burgas

4.44

1 **Initial position.** Traffic roundabout centred on 42°29′N, 28°05′E.

Route. The E approach route to Burgas leads W for about 16 miles by way of a traffic separation scheme (4.40), through waters clear of charted dangers, to the traffic roundabout (centred 42°29′N, 27°42′E) at the entrance of the inner part of Burgaski Zaliv.

(Directions for the port of Burgas continue at 4.71)

North-eastern approach to Burgas

4.45

1 **Initial position.** Traffic roundabout centred 3 miles SE of Nos Emine (42°42′N, 27°54′E).

Route. The NE approach route to Burgas leads SW for 15 miles, by way of a traffic separation scheme, to the traffic roundabout (centred 42°29′N, 27°42′E) at the entrance to the inner part of Burgaski Zaliv, passing (with positions from Nos Emine Light):

SE of Nos Emine (42°42′N, 27°54′E), thence:

Close SE of Banka Koketrays (3 miles SSW). A shoal with a least depth of 9·1 m over it. Thence:

2 SE of Nesebarski Light (metal framework tower, 6 m in height) (8 miles WSW), thence:

SE of Pomoriyski Rif Light (black round stone tower, yellow band, 8 m in height) (14 miles SW).

(Directions for the port of Burgas continue at 4.71)

Coastal route across entrance to Burgaski Zaliv

4.46

1 **Initial position.** Traffic roundabout centred at 42°29′N, 28°05′E.

The coastal route across the entrance to Burgaski Zaliv leads NW for 12 miles, by way of a traffic separation scheme, to the traffic roundabout (centred 42°40′N, 27°57′E), 3 miles SE of Nos Emine.

(Directions for the coastal route to Varnenski Zaliv continue at 4.89)

Anchorages and small harbours on the south shore of Burgaski Zaliv

Zaliv Kavatsite

4.47

1 Zaliv Kavatsite is centred between Nos Sveta Agalina (42°23′N, 27°43′E) and Nos Kolokita 2 miles NNE. Some above-water rocks lie 1¼ miles N of Nos Sveta Agalina.

Good anchorage during the summer may be obtained 1½ miles offshore in depths of 33 to 36 m, mud. Large vessels should anchor with the entrance point bearing W of N. Smaller vessels may obtain anchorage closer inshore, in depths of about 13 m, 1 mile NNW of Nos Sveta Agalina.

Sozopol

4.48

1 The town of Sozopol (42°26′N, 27°42′E) is situated on Poluostrov Kiril. It is a popular tourist resort.

Sozopolski Zaliv, which lies to the W of the town, is entered between Ostrov Sveti Kiril (42°25′·5N, 27°41′·5E), an islet 2 cables NW of Poluostrov Kiril, and Nos Krisosotira (42°25′·9N, 27°39′·4E). Ostrov Sveti Ivan (4.43) lies in the approaches to this bay.

2 The passage between Ostrov Sveti Ivan and the mainland is restricted to vessels of 300 grt or less.

3 **Harbour.** A harbour is formed by Ostrov Sveti Kiril and a breakwater 150 m in length that joins the NE point of the islet to the peninsula E.

Berths. The longest is 170 m in length with a depth alongside of 4·5 m.

Lights (blue metal masts, 5 m in height) mark the entrance to the harbour.

Anchorages and small harbours on the north shore of Burgaski Zaliv

Nesebŭrski Zaliv

4.49

1 Nesebŭrski Zaliv is entered between Nos Emine (42°42′N, 27°54′E) (4.45) and the town of Nesebŭr 7½ miles WSW. The bay is open between E and S.

Anchorage may be obtained, as shown on the chart, throughout the bay. Vessels usually anchor in the W part but in the E part, the best anchorage is obtained in depths of 13 m, mud, about 2½ miles W of Nos Emine and 4 cables offshore.

2 **A holiday resort area**, in which there are numerous high buildings, is situated at the head of Nesebŭrski Zaliv, N of Nesebŭr.

Several piers, suitable for small craft, extend from the shore in this area.

Caution. Attention is drawn to Banka Koketrays (Cockatrice Bank) (42°39′N, 27°53′E) (4.45) and the charted obstruction about 2½ miles SW of Nos Emine.

Nesebŭr

4.50

1 The town of Nesebŭr (42°40′N, 27°44′E) stands on a rocky peninsula connected to the mainland by a narrow causeway. The town is a popular tourist resort and has sea communications with other Black Sea ports. The port lies to the S of the causeway.

Approaches. The port is approached from the S by a recommended route which is shown on the chart.

Alongside berths are available at the passenger quay, which is situated on the S side of the peninsula, for vessels with a maximum length of 160 m and draught of 7 m.

2 **Light.** Nesebarski Light (4.45) stands at the head of the breakwater which extends SW from the passenger quay.

Anchorage may be obtained, in depths of 9 to 14 m, sand and shell, between Nesebŭr and Nos Akrotiriya, a steep rocky point lying 1 mile SW of Nesebŭr. Small craft may obtain anchorage in the harbour.

Traffic. In 2002 the port was used by 3 vessels with a total deadweight of 4576 tonnes.

Akheloy Rika

4.51

1 **Anchorage** may be obtained off the mouth of Akheloy Reka (5 miles WSW of Nesebŭr) in depths of 11 m, with the river mouth bearing 321°.

The approach to the anchorage passes S of Nos Ravdenski (42°38′N, 27°41′E), a white rocky point, and Ravdenski Rif, which has a depth of 5·2 m over it.

Pomorie

4.52

1 Pomorie (42°33′N, 27°39′E) stands on the cliffs of a peninsula and on the low sandy isthmus that joins this peninsula to the mainland. The town is a popular health resort specialising in mud baths and is also a centre for salt and wine production.

2 **Anchorage** may be obtained about 1½ miles W of SE Pomoriyski Rif Light (42°33′N, 27°40′E).

Dangers. The rocky peninsula is fringed by a bank which extends between NE and S from the peninsula. A number of detched reefs, with depths of less than 6 m over them, are situated on the bank.

Other names

4.53

1 Chimos, Banka (42°36′N, 27°39′E).
Eminska Planina (42°44′N, 27°51′E).
Khadzhiyska, Reka (42°40′N, 27°42′E).
Vlas (42°43′N, 27°46′E).

BURGAS

General information

Chart 2399

Position

4.54

1 Burgas (42°29′N, 27°29′E) lies at the head of Burgaski Zaliv on the N side of the bay, and is entered between Nos Foros (42°28′N, 27°29′E) and Nos Burgas, about 1½ miles N.

The port consists of two harbours which are open to international trade, Burgas commercial harbour and Rossenetz oil terminal, 3 miles E.

Function

4.55

1 Burgas, which in 2001, had a population of 192 390, is a major port.

Industry and trade. Oil refineries, shipbuilding and ship repair.

Port limits

4.56

1 Burgas port area consists of all waters W of a line joining Nos Lakhna (42°33′N, 27°34′E) and Nos Talasakra (42°27′N, 27°39′E), 7 miles SE. The port area is divided into an outer and inner harbour. The boundary between the two harbours is the line joining Nos Foros and Nos Burgas.

Entry

4.57

1 The outer harbour is entered by way of a traffic separation scheme which leads W from the traffic roundabout (centred 42°29′N, 27°42′E). This TSS is not IMO-adopted but the Bulgarian authorities advise that the principles for the use of the routeing system, defined in Rule 10 of the *International Regulations for Preventing Collisions at Sea (1972),* apply.

Traffic

4.58

1 **Traffic.** In 2002 the port was used by 717 vessels with a total deadweight of 18 144 467 tonnes.

Port Authority

4.59

1 Port Authority of Burgas, 1 Prince Al Battenberg Street, BG–8000, Burgas, Bulgaria.

Limiting conditions

4.60

1 **Deepest berths:**
Burgas harbour. See 4.74.
Rossenetz oil terminal. See 4.76.
Maximum size of vessel:
Burgas harbour. 60 000 dwt, 11·0 m draught and 244 m LOA.
Rossenetz oil terminal. 100 000 dwt, 12·65 m draught and 260 m LOA.
Density of water. 1·012 – 1014 g/m^3.

Arrival information

Port radio

4.61

1 See *Admiralty List of Radio Signals Volume 6(3)* for details.

Regulations concerning entry

4.62

1 Vessels may not enter the territorial waters of the Republic of Bulgaria until permission to do so has been obtained.

Depths may not be measured with mechanical or other sounding lines except when authorised by the pilot.

Vessels may not anchor outside defined areas.

Photographs may not be taken.

Anchorages in the outer harbour

4.63

1 Anchorage areas, the limits of which are shown on the chart, lie between 3 cables and 4½ miles ENE of Nos Foros, as follows (numbered from W to E):

Area number	*Available for:*
1A	Vessels up to 5 000 grt
1B	Damaged vessels
2	Vessels over 5 000 grt
3	Tankers

Area number	*Available for:*
4	Vessels in quarantine. Carrying dangerous cargo
5A	Vessels over 200 m long in reduced visibility
5B	Gas carriers

Pilotage
4.64

1 Outer approaches. See 4.41.

Outer and inner harbour. Pilotage is compulsory for all vessels over 100 grt. Pilots are embarked in position 42°30′N, 27°43′E. They are available 24 hours a day and should be ordered at least 4 hours before arrival at the anchorage area.

Tugs
4.65

1 Tugs are available. Their use is compulsory by vessels over 1000 grt.

Harbour

General layout
4.66

1 **Outer harbour.** Within the outer harbour lie anchorage areas (4.63), Rossenetz oil terminal and a small port complex in the SE part of Zaliv Atiya (42°27′N, 27°34′E).

Rossenetz oil terminal (42°27′N, 27°32′E) (4.76) which is protected by a breakwater with a light at its head, consists of two T-shaped tanker berths and a products berth.

2 **Inner harbour.** Within the inner harbour lies the main commercial port of Burgas, which stands on the N side of the bay, and which comprises an E basin and a W basin. The buoyed approach channels to both basins are dredged to 11·0 m (1990). A shipbuilding and repair complex lies 1 mile W of Burgas port. The port of Korabostroitelnitzy lies on the SW shore of the bay and is approached by a buoyed channel dredged to 7·0 m (1990).

3 The shipbuilding and repair complex, capable of accepting vessels up to 15 000 tonnes, stands on the low lying land that separates Burgas Bay from Burgasko Ezero. This complex is still under development.

Traffic regulations
4.67

1 **Area into which entry is prohibited:**

Area No 18, shown on the chart, is located 5 cables SW of Nos Atiya (42°28′N, 27°35′E).

2 **Areas in which anchoring, fishing, submarine and seabed operations are prohibited:**

Area No 317, shown on the chart, extends between Ostrov Sveta Anastasiya (42°28′N, 27°33′E) and the shore 1 mile SW.

Area No 318, shown on the chart, is located 5 cables E of Nos Atiya (42°28′N, 27°35′E).

Measured distance
4.68

1 Between Rossenetz oil terminal (4.76) and Korabostroitelnitzy harbour (4.75) there is a measured distance:

Limit marks. Pairs of beacons (black and white).
Distance: 1851 m.
Running track: 141°/321°.

Natural conditions
4.69

1 **Local magnetic anomalies.** A local magnetic anomaly with a magnitude of up to 18° has been reported in the vicinity of Ostrov Sveta Anastasiya.

2 **Climatic table.** See 1.195 and 1.199.

Principal marks
4.70

1 **Landmarks:**

Flare (42°27′·0N, 27°32′·6E).
Hotel (42°29′·7N, 27°28′·4E).
Conveyor (42°28′·2N, 27°26′·7E).

2 **Major lights:**

Sveti Ivan Light (42°26′N, 27°42′E) (4.43).

Directions
(continued from 4.44 and 4.45)

Inner part of Burgaski Zaliv
4.71

1 **Initial position.** Traffic roundabout centred at position 42°29′N, 27°42′E.

Route. The route through the outer harbour leads W for about 7 miles by way of a traffic separation scheme, passing (with positions from Sveta Anastasiya Light (42°28′N, 27°33′E)):

2 N of Nos Talasakra (4½ miles ESE), a steep-to point. Thence:

S of Stavro Banka (5 miles NE). A shoal with a least depth of 4·5 m which is marked by a light-buoy (E cardinal). Thence:

N of Nos Akin (3½ miles ESE). Skala Malatsite, a shoal on which there are several above-water rocks, lies 2 cables NE of this point. Thence:

3 N of Nos Atiya (1½ miles ESE), which may be identified by an isolated, rounded, hill 5 cables S on which stands an Hellenic fortress and a beacon, 8 m in height. A signal station stands on the point. Thence:

S of Banka Spitfaier (Spitfire Rock) (3 miles NNE), with a least depth of 5·4 m over it. Thence:

N of Sveta Anastasiya Light (white round concrete tower, 12 m in height), which stands on Ostrov Sveta Anastasiya, an islet about 24 m high.

Final approach to Rossenetz oil terminal
4.72

1 **Rossenetz Leading Lights:**

Front light (white square tower, black stripe) (42°26′·6N, 27°31′·8E).
Rear light (similar structure, about 130 m from front light).

From the anchorage areas, the alignment (180¾°) of these lights leads S for about 1 mile through a channel dredged to 15·0 m (1990) and marked by light-buoys (port and starboard hand) passing W of a breakwater, the head of which is marked by a light (white concrete platform, 5 m in height).

Final approach to Burgas harbour
4.73

1 From the anchorage areas the final approach to Burgas commercial harbours leads:

S of a light-buoy (S cardinal) (42°29′N, 27°31′E) which marks the SE edge of Burgaski Rif, thence:

Between Nos 1 and 2 Light-buoys (port and starboard hand) which mark the start of the two dredged channels.

2 Thence the two buoyed channels lead N to the main harbour and NW to the fish and timber basin.

The entrance to the main harbour lies between the heads of the S and E moles, which are marked by lights (white round concrete tower with red bands, 14 m in height on the E breakwater and white round metal tower, 6 m in height on the S breakwater.).

Berths

Burgas commercial harbour

4.74

1 **Alongside berths.** There are 21 berths for seagoing vessels, the largest of which are the bulk cargo quays Nos 17 to 20 in the E basin, on the N side of the S mole. These berths can accommodate ore and bulk carriers of up to 20 000 dwt and have a depth alongside of 11 m. Berths Nos 1 and 2 accommodate general cargo vessels up to 15 000 dwt and have a least depth of 9·7 m alongside.

2 The container terminal, comprising 3 berths, occupies the SE quay of the W basin with a least depth of 9·5 m alongside. Fish and timber are also handled in the W basin.

Korabostroitelnitzy harbour

4.75

1 Korabostroitelnitzy harbour is approached from Burgaski Reyd through a dredged channel marked by light-buoys. The harbour is protected by two breakwaters with light-beacons (white round metal towers, red or green bands, 4 m in height) at their heads.

Rossenetz oil terminal

4.76

1 There are 3 berths. The longest and deepest is 300 m in length with a depth alongside of 12·0 m.

Port services

Repairs

4.77

1 Limited repairs available at the commercial harbour; Floating dock with 3000 dwt capacity.

Other facilities

4.78

1 Deratting; firefighting tugs available; hospital; measured distances (4.42 and 4.68).

Supplies

4.79

1 Fuel available at 72 hours notice; fresh water supplied at quays and by barge, 24 hours notice required; provisions.

BURGASKI ZALIV TO VARNENSKI ZALIV

General information

Charts 2230, 2283

Topography

4.80

1 Between Nos Emine (42°42′N, 27°54′E) and Nos Galata (28 miles N) the coast is backed by wooded hills which slope steeply to the sea and in places are intersected by river valleys. These hills rise to heights of over 300 m.

Traffic regulations

4.81

1 A traffic separation scheme, which is shown on the chart, forms the coastal route between Burgaski Zaliv and Varnenski Zaliv for vessels of over 300 grt.

The TSS is not IMO-adopted but the Bulgarian Authorities advise that the principles for the use of the routeing system, defined in Rule 10 of the *International Regulations for Preventing Collisions at Sea (1972)* apply.

4.82

1 **A recommended route** for small vessels of up to 300 grt is situated, inshore of the traffic separation scheme, between Nos Emine and Nos Galata.

4.83

1 **Areas into which entry is prohibited:**

Area No 16, the limits of which are shown on the chart, is located 5 miles S of Nos Galata (4.88).

Area No 17, the limits of which are shown on the chart, is located 7½ miles ENE of Nos Sveti Atanas (4.89).

An area bounded by a circle, radius 500 m, centred on 43°02′·4N, 28°11′·5E.

4.84

1 **Areas in which anchoring, fishing, submarine and seabed operations are prohibited:**

Area No 316, the limits of which are shown on the chart, is situated 10 miles ENE of Nos Sveti Atanas (4.89).

Area No 320, radius 2½ cables, is situated 8½ miles ESE of Nos Galata (4.88).

An area, 1 mile in width, around gas pipelines, extending 13 miles ESE from the shore 4 miles S of Nos Galata (4.88).

Measured distance

4.85

1 Close S of Nos Galata (4.88) there are 2 measured distances:

Limit marks: Pairs of beacons (black and white).
Distances (N to S): 1852 m and 3703 m.
Running track: 000°–180°.

Spoil ground

4.86

1 Area No 412, the limits of which are shown on the chart, extends into Anchorage area No 2 (4.92).

Local magnetic anomaly

4.87

1 A local magnetic anomaly has been reported in the vicinity of Cherni Nos (42°56′N, 27°54′E).

Principal marks

4.88

1 **Landmarks:**

Radio Tower (42°51′N, 27°53′E).
Panayot Koru (42°53′N, 27°52′E).
Building (42°58′N, 27°54′E).

2 Nos Galata (43°10′N, 27°57′E). A steep and high headland covered with cultivated fields, which gives it a bright colour in comparison with a tree covered coast to the S. A lighthouse and signal station stand on the headland.

A television tower, lit by red lights, height 305 m, stands E of the city of Varna in position 43°14′N, 27°57′E.

3 **Major lights:**
Nos Emine Light (42°42′N, 27°54′E) (4.43).
Nos Galata Light (white 8-sided tower, beige stripes and dwelling, 22 m in height) (43°10′·3N, 27°56′·8E).

Directions
(continued from 4.46)

4.89

1 **Initial position.** Traffic roundabout centred at 42°40′N, 27°57′E).

Route. The route between Burgaski Zaliv and Varnenski Zaliv leads N for about 31 miles by way of a traffic separation scheme (4.81), passing (with positions from Cherni Nos (42°56′N, 27°54′E)):
E of Nos Emine (14 miles S) (4.43), thence:
E of a dangerous wreck (10 miles S) lying 5 cables E of Nos Kochan, a steep headland wooded on its S side. Thence:
E of Nos Sveti Atanas (4½ miles S), a headland with a large clump of trees near its extremity. A light (white metal framework on stone tower, 10 m in height) stands on the headland. Thence:
E of a beacon (2½ miles S), standing at an elevation of 137 m, on Beli Nos. Thence:
2 E of a beacon (metal framework tower with black and white bands, 15 m in height), standing at an elevation of 114 m on Cherni Nos. Thence:
E of a building (2 miles N) (4.88), thence:
E of Rika Kamchiya entrance beacon (metal framework tower, 18 m in height) (6 miles N). This beacon stands on the N side of the river mouth, which forms a break in the coastal hills and white cliffs. Thence:
E of Nos Ilandzhik (7½ miles N), thence:
E of Nos Galata (4.88).
(Directions continue for the port of Varna at 4.109, and for coastal passage to Nos Kaliakra at 4.122)

Anchorages

Nos Sveti Atanas

4.90

1 **Anchorage** in fine weather, can be obtained close S of Nos Sveti Atanas (42°51′·3N, 27°54′·0E).

Obzor

4.91

1 **Anchorage,** with some shelter from NW winds, can be obtained in depths of 16 to 20 m abreast the village of Obzor (42°49′N, 27°53′E), where there is a jetty.

Designated anchorage areas

4.92

1 Area No 2, shown on the chart, in which vessels may anchor between 1st May and 1st October, lies 2½ miles S of Nos Galata.

Area No 1, shown on the chart, in which vessels may anchor between 1st October and 30th April, lies S of Yevksinograd Zaliv (43°13′N, 27°59′E). An area (No 13) into which entry is prohibited, marked by buoys (N and S cardinal) lies close W of Anchorage area No 1.

2 Area No 4, shown on the chart, for quarantine and dangerous goods, lies 5½ miles S of Nos Galata.

Other names

4.93

1 Byala (42°53′N, 27°53′E).
Dvoynitsa, Reka (42°50′N, 27°53′E).
Shkorpilovska, Reka (42°57′N, 27°54′E).

VARNA

General information

Charts 2230, 2283, 2285

Position

4.94

1 The city of Varna (43°12′N, 27°55′E) stands at the head of Varnenski Zaliv on the N side of a bridge of land that separates this bay from Varnensko Ezero.

The port of Varna is situated on the S side of the city and within Varnensko Ezero and Beloslavsko Ezero, two lakes which lie W of Varna and are connected to the sea by channels.

Function

4.95

1 Varna, which in 2001 had a population of 312 889, is an important industrial city and port.

Port limits

4.96

1 The port area of Varna consists of the waters of Varnenski Zaliv, Varnensko Ezero and Beloslavsko Ezero. The small harbours of Balchik (43°24′N, 28°10′E) (4.123) and Kavarna (43°25′N, 28°21′E) (4.128) are administered by the port of Varna.

Approach

4.97

1 The port is approached from S and ENE by way of traffic separation schemes.

Traffic

4.98

1 **Traffic.** In 2002 the port was used by 680 vessels with a total deadweight of 15 709 683 tonnes.

Port Authority

4.99

1 Port Complex Administration, Varna.

Limiting conditions

4.100

1 **Least Depth** in No 1 buoyed fairway 9·0 m.
Deepest berth. See 4.111.
Density of water. Reported 1·013 g/m^3.
Maximum size of vessel handled:
Varna. 20 000 dwt.
Varna-Zapad 25 000 dwt.

Arrival information

Port radio

4.101

1 See *Admiralty List of Radio Signals Volume 6(3)* for details.

Anchorage

4.102

1 See 4.92 for details of designated anchorage areas.

Pilotage and tugs

4.103

1 **Sea pilotage** from Nos Kaliakra (4.120) and Nos Emine (4.43) is recommended. Vessels requiring sea pilotage must

give 24 hours notice, and confirm the requirement 12 hours before reaching the embarkation point.

2 **Pilotage** in the inner roads is compulsory. Pilots embark in the vicinity of the traffic roundabout (centred 43°11′N, 28°00′E), as shown on the chart.

Tugs are compulsory for vessels over 1000 grt.

Traffic regulations

4.104

1 **Areas into which entry is prohibited:**

Area No 13, as shown on the chart, 2 miles NNE of Nos Galata (43°10′N, 27°57′E).

Area No 14, as shown on the chart, which extends 1 cable S from the S mole in Varna harbour (43°11′·5N, 27°55′·0E).

2 **Area in which anchoring and fishing is prohibited:**

Area No 311 as shown on the chart, which extends up to 1 mile E of the entrance to Varna harbour.

Harbour

General layout

4.105

1 The port complex of Varna is divided into two main parts, Varna and Varna-Zapad.

Varna, which lies at the head of Varnenski Zaliv on the S side of the city and is approached by a buoyed fairway, is the main general cargo port. It is formed by an E and a S mole and its general layout is best seen on the chart.

2 **Varna-Zapad,** (Chart 2283), lies 10 miles W of Varna on the S shore of Beloslavsko Ezero (4.94) and is approached by Channels Nos 1 and 2 and Varnensko Ezero. Channel No 2 connects the two lakes.

Terminals specialising in the handling of wood products, coal for a power station and ferry boats stand on the shores of Varnensko Ezero.

Regulations for navigation in fairways and channels

4.106

1 Vessels with a draught of 8·5 m or more must show signals in accordance with Rule 28 of the *International Regulations for Preventing Collisions at Sea (1972).*

Navigation in Channels Nos 1 and 2 is one way. The maximum speed permitted in these channels is 6 kn.

Climatic table

4.107

1 See 1.195 and 1.214.

Principal marks

4.108

1 **Landmarks:**

Tower (43°13′·0N, 27°59′·7E). Former Royal summer palace standing close within Nos Sveti Dimitur.

Cathedral (43°12′·3N, 27°54′·7E), which has 6 cupolas.

Major light:

Nos Galata Light (43°10′N, 27°57′E) (4.88).

Directions

(continued from 4.89)

4.109

1 From the vicinity of the TSS (centred 43°11′N, 28°00′E) or Anchorage area No 1, close NW, the final approach to the port of Varna leads generally W to the fairway channel which is marked by light-buoys (port and starboard hand).

2 The fairway passes S of the breakwater, marked at its S extremity by Varna Lighthouse (white round metal tower, 9 m in height), and leads to the entrance of Varna harbour, which is marked by lights (white round metal towers, 6 m in height), and to the entrance of Channel No 1, which is marked by light-buoys (lateral).

3 **Caution.** An obstruction, with a depth of 7 m over it, lies close S of the seaward entrance to the fairway channel.

4.110

1 **Useful marks:**

Light (43°11′N, 27°55′E) (white round tower, 7 m in height), standing on the end of a jetty S of the entrance to Channel No 1.

Yevksinograd Pier Light (white round metal tower, 16 m in height) (43°13′N, 27°59′E).

Berths

Varna

4.111

1 Fourteen berths in total which can accommodate vessels of up to 10·8 m draught and up to 53 000 grt.

Container terminal is 338 m in length with a depth alongside of 7·5 m.

Grain terminal. Five berths with a total length of 817 m with depths alongside of up to 10·8 m.

Passenger terminal. Two berths with a total length of 354 m with depths alongside of 8·5 m.

Chart 2283

Varna-Zapad

4.112

1 Eighteen berths in total with depths of up to 11 m.

Container terminal is 500 m in length with a depth alongside of 9 m.

Coal terminal. Three berths with a total length of 430 m with depths alongside of up to 10·5 m.

2 **Cement terminal.** Two berths with a total length of 375 m with depths alongside of up to 10·5 m.

Soda terminal. Two berths with a total length of 363 m with depths alongside of up to 9·5 m.

Liquid chemicals. One berth 200 m in length with depths alongside of up to 10·5 m.

Other terminals

4.113

1 **Lesport.** Port for wood products on the N side of Varnensko Ezero, which has three berths for vessels with a draught of up to 7·5 m.

Coal terminal situated 6 miles W of Varna. Three berths, longest and deepest is 211 m in length with a depth alongside of 11·5 m.

Petroleum terminal. Three berths which can accommodate vessels of up to 220 m LOA and draught of up to 9·5 m.

Port services

Repairs

4.114

1 Repair yard, situated in the W part of Varna harbour, can carry out major repairs on vessels of up to 50 000 dwt.

Docking capacity for vessels of up to 30 000 dwt.

Two floating docks for vessels of up to 4500 and 12 000 tonnes respectively.

Other facilities

4.115

1 **Varna**:

Deratting; hospitals; measured distance (4.85).

Varna-Zapad:

Oily waste disposal.

Supplies

4.116

1 Fuel; fresh water available alongside and from barges; provisions.

NOS SVETI GEORGI TO NOS KALIAKRA

General information

Charts 2230, 2283

Topography

4.117

1 Between Nos Sveti Georgi (43°13′N, 28°01′E) and Nos Kaliakra (22 miles ENE) the coast is backed by a narrow mountain range, which at first is moderately flat, but later becomes undulating.

2 This range is broken by the valley of Balchik (4.123) and a ravine near Kavarna, 7½ miles E. Balchik valley lies at the W extremity of some chalk cliffs, by which it can be identified, and there is an isolated triangular hillock in the middle of the range near Kavarna that is easily identified from seaward.

4.118

1 **Holiday resort areas** in which there are many high buildings, are situated on the coast between Nos Sveti Georgi and Balchik. A number of piers, suitable for small craft, extend from the shore in this area.

Traffic regulations

4.119

1 **Traffic separation scheme,** shown on the chart, is situated between the traffic roundabouts (centred on 43°11′N, 28°00′E) in the entrance of Varnenski Zaliv and the traffic roundabout (centred on 43°20′N, 28°29′E) SSE of Nos Kaliakra.

2 This TSS is not IMO-adopted but the Bulgarian authorities advise that the principles for the use of the routeing system, defined in Rule 10 of the *International Regulations for Preventing Collisions at Sea (1972),* apply.

3 **Area periodically dangerous for navigation:**

Area No 111, shown on the chart, lies between the traffic separation scheme and Balchik (4.123).

Area temporarily dangerous for navigation:

Area No 211 lies 10 miles SSE of the traffic separation scheme.

4 **Areas in which anchoring, fishing, submarine and seabed operations are prohibited:**

Area No 313, the limits of which are shown on the chart, lies 1¾ miles NW of Nos Kaliakra.

Area No 314, the limits of which are shown on the chart, lies 3 miles S of Balchik (4.123).

Within 1½ miles of a cable extending 12 miles ESE from a position 1 mile NNE of Nos Sveti Georgi.

See Appendix III.

Principal marks

4.120

1 **Landmarks:**

Building (43°17′N, 28°03′E) in Zlatni Pjasaci.

Kaleto (hill) (43°20′N, 28°03′E).

Building (43°22′N, 28°05′E) in Kurort Albena (4.129).

Radio Mast (43°23′N, 28°06′E).

2 Mosque (43°24′N, 28°09′E).

Silo (43°26′N, 28°09′E).

Water Tower (43°25′N, 28°17′E).

Pile (43°25′N, 28°21′E).

Water Tower (43°25′N, 28°24′E).

3 Nos Kaliakra (43°22′N, 28°28′E). The S extremity of a peninsula about 4 cables in length, which from a distance E appears to be separate from the mainland to the N. This headland marks the boundary between the high land S and the lower land N. A lighthouse stands on the headland.

4 **Major lights:**

Nos Galata Light (43°10′N, 27°57′E) (4.88).

Ekrene Light (white square tower on yellow dwelling, 15 m in height) (43°20′N, 28°04′E).

Nos Kaliakra Light (white stone tower on dwelling, 10 m in height) – as above.

Other navigational aids

4.121

1 **DGPS:**

Kavarna (43°25′·2N, 28°21′·9E).

Directions

(continued from 4.89)

4.122

1 **Initial position.** Traffic roundabout centred 43°11′N, 28°00′E.

Route. Traffic separation scheme (4.119) which leads ENE for 23 miles to the traffic roundabout centred 2 miles SSE of Nos Kaliakra, passing SSE of Area No 111 (4.119).

(Directions for Mangalia continue at 4.138)

Balchik

General information

4.123

1 **Position and function.** The port of Balchik (43°24′N, 28°10′E) is situated about 16 miles NE of Varna and is used for the handling of bulk grain, vegetable oil and livestock.

Port Authority. The port of Balchik is administered by the Port Complex Administration, Varna (4.94).

2 **Traffic.** In 2002 the port was used by 38 vessels with a total deadweight of 255 439 tonnes.

Limiting conditions

4.124

1 Maximum size of vessel handled, 5000 dwt with a draught of 7·3 m.

Arrival information

4.125

1 **Pilotage** is compulsory. Pilots embark at the outer roadstead of the port of Varna (4.103).

No 5 Anchorage, the limits of which are shown on the chart, lies 1 mile S of the head of the breakwater.

Regulations for foreign vessels. Only one foreign vessel may be alongside at Balchik at any one time.

Directions

4.126

1 From the outer roads of the port of Varna the recommended track, shown on the chart, leads NE then NNE, passing (with positions from Ekrene Light (4.120)):

ESE of a light-buoy (E cardinal) (3 miles S) which marks the outer edge of a bank which extends up to 1 mile offshore in places and has depths of between 1·8 and 7·2 m over it.

2 WNW of a light-buoy (special) (5 miles ENE) which marks the centre of Area No 314 (4.119).

Useful mark. A beacon stands on the hillside ½ mile NE of the harbour pier.

Berths

4.127

1 The harbour has one pier, the head of which is marked by a light (framework tower, 8 m in height), providing 2 berths with a total length of 164 m with a depth alongside of 7·5 m.

Anchorage and small harbours

Kavarna

4.128

1 **A pier,** marked by a light (white metal column on concrete base, 9 m in height) extends from the shore close SSE of Kavarna (43°25′N, 28°21′E).

Useful mark. A beacon (metal framework with black and white bands, 15 m in height) stands at an elevation of 158 m close inshore about 2 miles WNW of Kavarna Pier Light.

The port is not open to foreign vessels.

Anchorages

4.129

1 **Kurort Albena.** Anchorage may be obtained in depths of 14 m, sand and mud, about 1 mile E of Kurort Albena (43°22′N, 28°05′E).

2 **Nos Kaliakra.** Anchorage may be obtained in depths of 13 m, mud, about 1 mile WNW of Nos Kaliakra S of Area No 313 (4.119).

NOS KALIAKRA TO OSTROV ZMIYINYY

NOS KALIAKRA TO CONSTANŢA

General information

Charts 2230, 2282

Topography

4.130

1 Between Nos Kaliakra (43°22′N, 28°28′E) (4.120) and Nos Shabla (12 miles NNE) the coast is flat and rocky with steep cliffs, which are reddish in colour.

North of Nos Shabla the height of the cliffs decreases and the coast is backed by a number of shallow lakes which are separated from the sea by narrow necks of land.

2 **Holiday resort areas,** in which there are many high buildings, are situated between Mangalia (43°49′N, 28°35′E) (4.140) and Constanţa (21 miles N).

International boundary

4.131

1 The international boundary between Bulgaria and Romania, which is not marked by any natural feature, reaches the coast about 4 miles S of Mangalia at Nos Sivriburun (43°44′N, 28°35′E).

Traffic regulations

4.132

1 **Traffic separation schemes and traffic roundabouts.** Two traffic separation schemes, both of which are shown on the chart, lead E and NE for 8 miles from the traffic roundabout centred 2 miles SSE of Nos Kaliakra.

2 These TSSs are not IMO-adopted but the Bulgarian Authorities advise that the principles for the use of the routeing system, defined in Rule 10 of the *International Regulations for Preventing Collisions at Sea (1972)* apply.

3 In the approaches to Constanţa, another traffic separation scheme leads NW for 6½ miles from 44°00′N, 28°50′E. In the approaches to Midia, a further scheme leads NW for 2½ miles from 44°16′N, 28°46′E.

4.133

1 **Areas into which entry is prohibited:**

Areas No 11 and 12, shown on the chart, lie 5 miles ENE and 3½ miles E from Nos Shabla.

2 **Areas in which anchoring, fishing, submarine and seabed operations are prohibited:**

Area No 312, shown on the chart, extends up to 21 miles NE of Nos Kaliakra.

For details see Appendix III.

4.134

1 **Recommended route** between Mangalia and Constanţa, shown on the chart, leads E then N from position 43°48′N, 28°38′E to the S end of the traffic separation scheme that leads to Constanţa.

Measured distances

4.135

1 In the vicinity of Capul Tuzla (43°59′N, 28°40′E) four pairs of beacons mark three measured distances. The N and central measured distances are 1 mile in length, the S measured distance is 2 miles in length. The track on all three distances is 000°—180°.

2 **Beacons** in the three N pairs are four sided metal structures, black and white chequers, with the exception of the rear beacon of the N pair which has black and white bands.

The position of the front beacon of each pair is, from N to S, 9 cables NNW, 2 cables SSW, 1¼ miles SSW and 3½ miles SSW of Capul Tuzla Light.

Local magnetic anomaly

4.136

1 In 1926 a magnetic anomaly was reported to exist between Nos Kaliakra and Capul Tuzla.

Principal marks

4.137

1 **Landmarks:**

Nos Kaliakra (43°22′N, 28°28′E) (4.120).

Mangalia Light (white pyramidal stone tower, 42 m in height) (43°49′N, 28°34′E).

Capul Tuzla Light (black metal framework tower, white bands, 44 m in height) (43°59′N, 28°40′E).

Television mast (44°02′N, 28°37′E).

2 **Major Lights:**

Nos Kaliakra Light—as above.

Nos Shabla Light (white 8-sided stone tower, red bands, 32 m in height) (43°32′N, 28°36′E).

Mangalia Light—as above.

Capul Tuzla Light—as above.

Constanţa Main Light (44°09′N, 28°38′E) (4.166).

Directions

(continued from 4.122)

Nos Kaliakra to Mangalia

4.138

1 **Initial position.** Traffic roundabout SE of Nos Kaliakra centred 43°20′N, 28°29′E.

The coastal passage from Nos Kaliakra to the approaches of the port of Mangalia (43°48′N, 28°36′E) leads NE for about 8 miles by way of a traffic separation scheme (4.132)

and then NNE for about 22 miles, passing (with positions from Nos Shabla Light (43°32′N, 28°36′E) (4.137)):

2 ESE of Kamen Bryag Beacon (white framework tower, black bands, 16 m in height) (5 miles SSW), thence:
Clear of Areas No 11 and 12 (4.133) into which entry is prohibited, thence:
ESE of Nos Shabla. A steep headland that is not prominent from seaward, but may be identified by a high hillock 8 cables W of the point. Thence:
ESE of a light-buoy (S cardinal) (12½ miles NNE).

(Directions for the final approach to Mangalia continue at 4.149)

Mangalia to Constanţa

4.139

1 **Route.** The recommended route between Mangalia and Constanţa leads E then N to a traffic separation scheme (4.132), passing:
E of the holiday resort complexes that lie N of Mangalia. Thence:
E of Capul Tuzla (43°59′N, 28°40′E), a sloping headland of moderate elevation. See 4.135 for details of measured distances.

2 **Useful marks:**
Measured distance beacons near Capul Tuzla (4.135).

(Directions continue for the port of Constanţa at 4.167, and for the coastal passage to Ostriv Zmiyinyy at 4.181)

Mangalia

Chart 2282, plan of Portul Mangalia; plan of Mangalia to Midia

General information

4.140

1 **Position and function.** Mangalia (43°49′N, 28°35′E) is a popular holiday and health resort situated on the N side of the E end of Lacul Mangalia. In 2002 it had a population of 40 037.

4.141

1 **Port and approaches.** Portul Mangalia lies S of the town at the E end of Lacul Mangalia. It is approached from E by a recommended route that is shown on the chart.

4.142

1 **Limiting conditions:**
Longest berth. 1150 m.
Deepest berth. See 4.150.

4.143

1 **Traffic.** In 2002 the port was used by 69 vessels with a total deadweight of 1 874 174 tonnes.

Arrival information

4.144

1 **Anchorage** is available in the roads 3½ miles NE of the harbour entrance in depths of 23 to 29 m. The anchorage area, which has depths of between 23 and 29 m, is shown on the plan.

Pilotage and tugs are compulsory for all vessels. Requests for a pilot should be made 2 hours before arrival in the anchorage area. The pilot boards 2 cables S of the NE breakwater head.

Harbour

4.145

1 **General layout.** The harbour is enclosed by the NE and SE breakwaters and is divided into a N and S basin by a mole extending E from the shore.

The S basin (Bazinul de Sud) is the commercial port and contains the main alongside berths. The N basin (Bazinul de Nord) is prohibited to foreign shipping.

2 Mai Shipyard is situated in the SW part of the harbour.

2 The port is enclosed by two breakwaters, Digul de Sud-est and Digul de Nord-est of 1½ and 2 km in length, respectively, which have light-beacons at their heads. The main quay 1150 m in length can accommodate deep draughted vessels.

4.146

1 **Development.** It was reported (2003) that two breakwaters have been built enclosing a basin with berths of 400 m in length.

4.147

1 **Current.** In normal weather the current sets S off the harbour entrance at a rate of ½ kn. The current extends for about 3 miles offshore where its outer limit can be distinguished, as the water forming the current is darker in colour.

4.148

1 **Regulations:**
Vessels carrying toxic materials, explosives and inflammable materials are prohibited from entering the roadstead and port.
Foreign vessels are prohibited from entering Lacul Mangalia and the channel connecting the basin to the lake.

Directions

(continued from 4.138)

4.149

1 From the vicinity of position 43°48′N, 28°50′E, the recommended approach route leads due W for 10 miles to the harbour entrance, passing:

2 S of the harbour entrance light-buoy (S cardinal) (2¾ cables SE of NE breakwater head).
S of NE breakwater, the SE extremity of which is marked by a lighthouse (cupola on grey metal framework tower, 21 m in height) and into Mangalia harbour, the entrance of which is marked by lights (cupola on grey stone and concrete dwelling, 13 m in height).

Caution. Attention is drawn to a rock, with a depth of 0·5 m over it, that lies 2 cables S of the SE breakwater head.

Berths

4.150

1 Two berths, with a combined length of 419 m and depths of 9 m alongside, lie on the W face of the SE breakwater.

Port services

4.151

1 **Repairs.** Two dry docks; largest is length 322 m, breadth 48 m, depth 18·2 m.
Repair berths; length 1600 m.
Facilities: deratting.
Supplies: fuel oil by barge; fresh water alongside; provisions.

CONSTANŢA AND APPROACHES

General information

Charts 2282 plan of Mangalia to Midia, 2284

Position

4.152

1 The city of Constanţa backs Capul Constanţa (44°10′N, 28°40′E), a headland which is the termination of a low

promontory that extends for about 5 cables from the general line of the coast.

The port of Constanţa lies to the S of this promontory.

Function

4.153

1 Constanţa, which in 2002 had a population of 310 526, is Romania's principal port and second largest city. The port handles general cargo, chemicals, foodstuffs, timber, metals, containers, dry bulk and oil.

Approaches

4.154

1 Portul Constanţa is approached by a traffic separation scheme that leads NW from 44°00′N, 28°50′E.

This TSS is not IMO-adopted but the Romanian Authorities advise that the principles for the use of the routeing system, defined in Rule 10 of the *International Regulations for Preventing Collisions at Sea (1972)* apply.

Traffic and Port Authority

4.155

1 **Traffic.** In 2002 the port was used by 1476 vessels with a total deadweight of 45 976 844 tonnes.

Port Authority, Constantza Port Authority, Incinta Port, 8 700 Constantza, Romania.

Limiting conditions

4.156

1 **Maximum size of vessel:**

Tankers. Draught 17·6 m. 165 000 dwt.

Other vessels. Draught 11 m.

Deepest berth. See 4.168.

Entrance channel to Portul Constanţa. Dredged to 19·0 m (1988).

2 Vessels with a draught in excess of 12·5 m are only handled in daylight.

Arrival information

Vessel Traffic Service

4.157

1 A Vessel Traffic Service (VTS) with radar surveillance is maintained for the control of shipping in the approaches to Constanţa within a radius of 12 miles from the VTS Centre (44°10′·2N, 28°39′·6E) to the coast and a line joining the seaward ends of Constanţa breakwaters.

2 Participation in the scheme is mandatory for the following:

All power driven vessels of 300 grt and over.

All towing vessels, navigating within the area.

For details see *Admiralty List of Radio Signals Volume 6(3).*

Port radio

4.158

1 See *Admiralty List of Radio Signals Volume 6(3)* for details.

Notice of ETA

4.159

1 72 hours, 48 hours and 24 hours in advance.

Outer anchorages

4.160

1 Anchorage areas Nos 1, 2 and 3 are shown on the chart and lie between 3 and 8 miles ESE of Capul Constanţa.

Vessels are designated to each area as follows:

No 1	Less than 40 000 grt, excluding tankers
No 2	Over 40 000 grt, excluding tankers
No 3	Tankers and vessels carrying liquified gas.

2 It was reported (2002) that the holding ground was good and that there was a strong S current in the anchorages.

During bad weather, small vessels may enter the port with the approval of the Harbour Master.

3 **Caution.** With strong onshore winds or during gales, a heavy swell is experienced in the roadstead causing vessels to roll and sheer heavily. The swell continues after the storm has passed. In 1988 and 1995, three vessels dragged their anchors during gales and were driven on to the breakwater, where the vessels sank with resultant heavy loss of life.

Pilots and tugs

4.161

1 **Pilotage** is compulsory for all vessels entering or leaving harbour, or manoeuvring within the port except for vessels of Romanian or foreign navies.

Pilots are available 24 hours a day and in fair weather board within a circle of radius 5 cables centered on 44°05′·1N, 28°43′·1E. In bad weather the pilot boards near 44°06′·2N, 28°42′·3E as shown on the chart.

The pilot launch is white with "Pilot" painted on its side.

4.162

1 **Tugs** are available. Their use is compulsory for vessels over 1000 tonnes. For vessels under this tonnage, the need for the use of tugs will be left to the discretion of the pilot and the ship's master.

Harbour

General layout

4.163

1 The commercial port area is divided into two parts. The N part, Portul Constanţa, which lies immediately S of Capul Constanţa and the new port of Portul Constanţa-Sud, which lies 3 miles S of this headland.

2 **Portul Constanţa** is formed by a breakwater which extends S and SE from Capul Constanţa and reclaimed land which extends E from the shore. The Old Harbour lies in the N part of this port and there are seven docks, with alongside berths, in the S part,

3 **Portul Constanţa-Sud** is formed by a SE extension of the breakwater protecting Capul Constanţa, reclaimed land extending E from the shore and a S breakwater extending E from the shore about 5 miles S of Capul Constanţa. Works are in progress throughout this section of the port (1992).

Caution. Mariners are advised to exercise extreme caution when navigating in the port or its approaches.

Danube-Black Sea Canal

4.164

1 The Danube-Black Sea Canal joins the Black Sea and the River Danube near Constanţa. It is located at the end of the Danube Main Rhine Waterway which crosses the whole of Europe connecting Constanţa with Rotterdam.

2 The canal is entered from the Black Sea at Constanţa South Port through the locks at Agigea (km 1·9). The canal then trends NW to join the Danube at Cernavodă. The length of the canal is 64·4 km and places along the canal are referenced by their km distance from the Constanţa entrance. The breadth of the canal is 90 m, water depth 7·0 m which allows a maximum draught of 5·5 m and 5000 tonnes dwt. Bridge clearances are 16·5 m and minimum curve radius is 3000 m.

3 The canal shortens the distance from the Black Sea to the Danube ports by nearly 400 km.

There are two ports on the canal, Basarabi and Medgidia.

The canal has a spur link, from approximately mid length, to Midia (4.183) on the Black Sea coast. This canal, Poarta Alba-Midia-Navodari Canal trends NE and has two sets of locks at Ovidiu and Navodari. The canal is 27·5 km in length, 35–50 m wide, depth of water 5·5 m which allows a maximum draught of 3·8, bridge clearance is 12·5 m.

Climatic table

4.165

1 See 1.195 and 1.202.

Principal marks

4.166

1 **Landmarks:**

Television mast (44°02′·2N, 28°37′·5E).

Major lights:

Capul Tuzla (43°59′N, 28°40′E).

Constanţa Main Light (white pyramidal concrete tower, blue cupola, 58 m in height) (44°09′·5N, 28°37′·9E).

Directions

(continued from 4.139)

Approach to Constanţa harbour entrance

4.167

1 From the vicinity of 44°00′N, 28°50′E, the approach to Constanţa harbour entrance proceeds NW by way of a traffic separation scheme (4.132), marked at each end by buoys (special).

Basins and berths

Portul Constanţa

4.168

1 There are more than 82 berths (numbered from 0–78, plus two berths unnumbered) of which 65 are operative. The chart gives full details of depths alongside within this complex port.

Portul Constanţa-Sud

4.169

1 It was reported (2003) that there were 145 berths of which 119 were in operation.

Port services

Repairs

4.170

1 Repairs of all kinds can be carried out. One dry dock 350 m long, 48 m width, 10 m depth. Six floating docks capable of handling vessels of up to 15 000 tonnes.

There are also shipyards at Mangalia and Midia.

Facilities

4.171

1 Deratting; hospitals; oily waste disposal; Ro-Ro berth; salvage craft.

Supplies

4.172

1 Fuel supplied by self propelled bunkering vessels within the port or at the roadstead; fresh water alongside; provisions.

Small craft

Portul Tomis

4.173

1 Portul Tomis, which lies close N of Capul, provides shelter for small pleasure craft. Anchoring is prohibited between the breakwater lights owing to submerged power cables in that area.

Depths alongside the inner part of the E breakwater are 4 to 5 m, reducing to 3 m in the centre of the harbour.

2 **Fresh water** is available at alongside berths.

Directions. Craft approaching Portul Tomis should give Capul Constanţa a wide berth.

Useful mark: Constanţa Casino (white building) (44°10′·3N, 28°39′·9E).

Constanţa – Silos at Berth 68 from N & Dock 8, Berth 58 & Dock 9 from E (4.168)

(Original dated 2003)

(Photograph – A. McDonald mv Doulos)

CAPUL CONSTANŢA TO OSTRIV ZMIYINYY

General information

Charts 2282, 2213, 2232

Topography

4.174

1 Between Capul Constanţa (44°10′N, 28°40′E) and Capul Singol (3 miles N), the coast consists of a steep cliff backed by the N suburbs of Constanţa. N of Capul Singol the coast consists of a sandbank that separates Lacul Mamaia from the sea. The holiday resort of Mamaia, in which there are many high buildings, stands on this sandbank.

2 Between Capul Midia (44°21′N, 28°41′E) (4.183) and Gura Sfîntu Gheorghe (50 miles N), the coast, which except in the vicinity of Capul Midia is low and sandy, is generally only visible from between 3 and 4 miles offshore. Within the S part of this stretch of the coast there are a number of lakes, of which Lacul Sinoie and Lacul Razim are the largest. These lakes are separated from the sea by narrow sandy beaches. There are a number of fishery stations along the coast, the buildings of which, are visible from seaward.

4.175

1 The coast N of Gura Sfîntu Gheorghe continues low and sandy with few features visible from seaward except for the five peaks of Dealul Beştepe (45°05′N, 29°03′E) which are visible in good visibility.

The approaches to the Danube Delta are described at 5.15.

Hazards

4.176

1 **Oil and gas field.** An oil and gas field, shown on the chart, lies about 22 miles S of Gura Sfîntu Gheorghe. Two platforms and a well are connected by submarine pipelines to the main platform (44°31′·5N, 29°33′·9E). Submarine oil and gas pipelines (see 1.29) connect the main platform to the shore 34 miles WSW.

Tanker mooring buoy. A mooring buoy at which tankers may load oil is located about 1 mile SW of the main platform.

2 **Restricted area.** The platforms, tanker mooring buoy and pipelines are contained within an area, shown on the chart, within which anchoring, fishing and dredging are prohibited.

An isolated platform lies 16½ miles SSE of Gura Sfîntu Gheorghe.

Traffic regulations

4.177

1 A traffic separation scheme, shown on the chart, leads NW for 2½ miles from 44°16′N, 28°46′E towards Midia (4.183).

This TSS is not IMO-adopted but the Romanian Authorities advise that the principles for the use of the routeing system, defined in Rule 10 of the *International Regulations for Preventing Collisions at Sea (1972)* apply.

4.178

1 **A recommended route,** shown on the chart, leads between the approaches to Constanţa and the entrance to the river Danube at Gura Sulina (45°09′N, 29°46′E).

Anchoring, fishing and dredging are prohibited within 1 mile of the pipeline connecting the oil platforms (4.176) to the shore.

Principal marks

4.179

1 **Major lights:**

Constanţa Main Light (44°09′N, 28°38′E) (4.166).

Capul Midia Light (red metal framework tower, white bands and white cupola, 22 m in height) (44°21′N, 28°41′E).

Sfîntu Gheorghe Light (blue tower, 50 m in height) (44°54′N, 29°36′E).

Sulina Light (45°09′N, 29°46′E).

Ostriv Zmiyinyy Light (45°15′N, 30°12′E) (4.9).

Other navigational aids

4.180

1 **DGPS:**

Ostriv Zmiyinyy Light — as above.

See *Admiralty List of Radio Signals Volume 2* for details.

Directions

(continued from 4.139)

4.181

1 **Route.** From a position E of Capul Tuzla (4.139) the recommended route leads NE and N for about 90 miles to the vicinity of Ostriv Zmiyinyy (45°15′N, 30°12′E) (4.9), passing (with positions from Sfîntu Gheorghe Light (44°54′N, 29°36′E)):

2 NW of a dangerous wreck (43 miles SSW), thence:

SE of an oil and gas field (22 miles S) (4.176), thence:.

SE of Gura Sfîntu Gheorghe. The entrance may be identified at a distance of up to 6 to 7 miles from seaward by the buildings of the village (5.59) which includes a church with twin spires. Thence:

E of a dangerous wreck (8 miles ENE), thence:

E of Gura Sulina (16 miles NNE). The entrance may be identified at a distance of up to 10 miles by the buildings of the town of Sulina (5.21). Thence:

E or W of Ostriv Zmiyinyy (32 miles NE).

3 **Caution.** Care must be taken not to confuse Sfîntu Gheorghe with the Ciotica fishery station which lies 4 miles SW of the village. Vessels are advised to keep clear of the fishing area.

Attention is drawn to a wreck, dangerous to navigation, and an obstruction which lie respectively, approximately 5 miles SW and 6 miles W of Ostriv Zmiyinyy (4.9).

4.182

1 **Useful marks:**

Church in Vadu (44°27′N, 28°44′E), a village standing on high ground.

Chituc beacon (17 m high) (44°30′N, 28°50′E). A four sided metal structure with black and white bands.

2 Portita Light (black metal framework tower, white bands and cupola, 22 m in height) (44°41′N, 28°59′E). This light originally marked a passage into the lakes which has now silted up.

Zaton beacon (21 m high) (44°48′N, 29°16′E). A four sided metal structure, with black and white bands, standing near a fishery station.

(Directions continue for Gura Sulina at 5.20, for the approaches to Kiliyskoye Girlo and Ust'-Dunaysk at 5.119, and for the offshore route to ports in NW Black Sea at 6.14)

Midia

Chart 2282

General information

4.183

1 **Position and function.** Midia (44°20′N, 28°41′E), is a large harbour located 10 miles N of Capul Constanţa (44°10′N, 28°40′E). The port handles mainly crude oil, oil products, natural gas and livestock. In 2002 it had a population of 32 400.

2 **Approach and entry.** Midia is approached by a traffic separation scheme that leads NW for 2½ miles from 44°16′N, 28°46′E, and entered between two breakwaters.

Traffic. In 2002 the port was used by 117 vessels with a total deadweight of 4 123 895 tonnes.

3 **Port Authority.** Midia Port, National Company Maritime Ports Administration Constanţa SA, Incinta Port, Gara Maritima, 8700 Constanţa, Romania.

Limiting conditions

4.184

1 **Entrance channel.** Depth 5·6 m, width 80 m.

Deepest berth.

No 9, length 204 m, depth alongside 9 m.

Maximum size of vessel.

Draught 7·0 m. Tonnage 7000 dwt.

Arrival information

4.185

1 **Vessel Traffic Service.** See 4.183.

Port radio. See *Admiralty List of Radio Signals Volume 6(3)* for details.

Notice of ETA. Vessels should forward their ETA to agents through Radio Constanţa. See *Admiralty List of Radio Signals Volume 6(3)* for details.

Anchorage. Anchorage may be obtained in an area, the limits of which are shown on the chart, 4 miles E of Capul Midia Light, in depths of 16 to 22 m.

2 **Pilots.** Pilotage is compulsory for berthing, unberthing and maneouvring of vessels within the port throughout 24 hours. Masters should notify the pilots of their ETA at least 12 hours prior to arrival, then again when 12 miles from the N breakwater through Constanţa Port Control on VHF Channel 14. The pilot boards at Constanţa boarding points (4.161). The pilot boat is painted white with pilot painted on the sides.

Tugs. A tug is available.

Regulations concerning entry. Tankers may berth in daylight only.

Harbour

4.186

1 The harbour is protected on the E by a breakwater which extends S and SSE for about 1¼ miles from Capul Midia. A light (metal structure on white concrete tower, 18 m in height) stands on the head of the breakwater. Protection on the S is afforded by a breakwater extending about 2 miles E from the shore. A light (metal structure on white concrete tower, 9 m in height) stands on the S breakwater head.

Berths. The port consists of: a petrochemical products quay, 203 m in length; a petroleum and ammonia products quay, 204 m in length; a livestock export quay, 336 m in length and fishing quays with a length of 544 m.

2 The port is connected to the Poarta Alba-Midia Navodari Canal which is a branch of the Danube-Black Sea Canal.

Development. It is planned to dredge the port to a depth of 9·0 m to accommodate vessels up to 15 000 dwt.

Port services.

4.187

1 **Repairs.** Shipyard with specialised facilities.

Floating docks. Three that accommodate vessels of 35 000 and 65 000 dwt. There are also three berths with a total length of 720 m available for fitting out purposes.

Other facilities. Deratting; hospitals at Constanţa; oily waste disposal up to 600 tonnes; salvage tugs.

Supplies. Fuel by bunkering vessel; fresh water provided at quays or by barge.

Anchorage and mooring

Portita roadstead

4.188

1 **Anchorage,** sheltered from N and W, may be obtained between 2½ and 4 miles offshore between Portita Light (44°41′N, 28°59′E) and Zaton beacon, 14 miles ENE. Depths are between 15 and 20 m, ooze and sand.

The coast in the vicinity is low lying and hardly discernable from the anchorage.

Small vessels can anchor closer inshore in depths of 5 to 7 m.

Ostriv Zmiyinyy

4.189

1 **Anchorage** may be obtained anywhere under the lee of Ostriv Zmiyinyy (4.9) and, with good shelter from winds between NW and NE, in 20 m, sand and shells, about 3 cables S of the lighthouse.

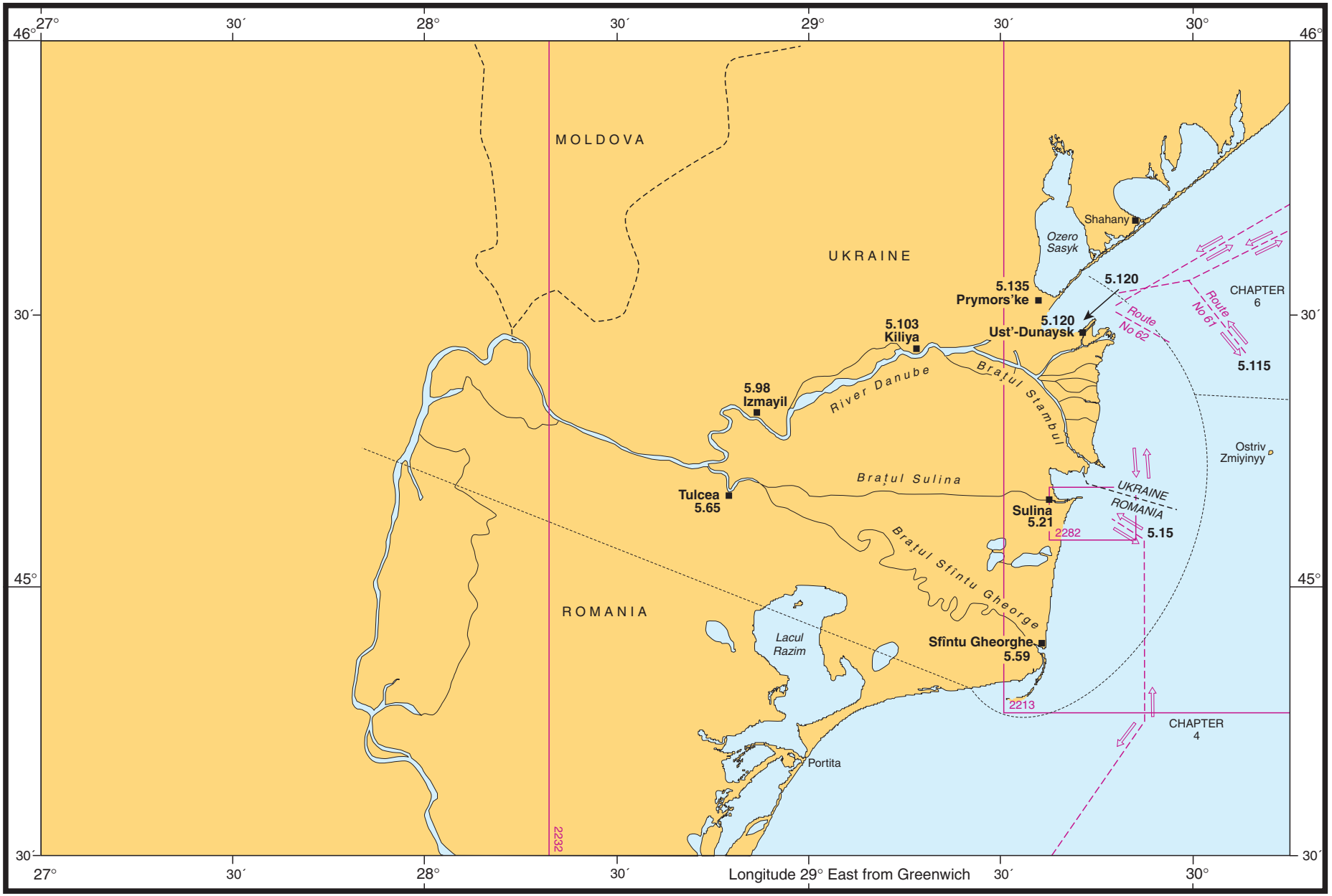
Landing places. There are several landing places, but the best two are those at the NE and S side of the island depending on the prevailing wind.

Bratul Sfîntu Ghoerghe

4.190

1 The entrance to Bratul Sfîntu Ghoerghe (44°52′N, 29°38′E) is obstructed by Insula Sacalin and a bar which has been formed by alluvial deposits. Depths in the area are subject to frequent change.

The approach channel to the village of Sfîntu Ghoerghe (5.59), which can only be used by craft with a draught of less than 2 m, leads NE of Insula Sacalin and close to the W side of the entrance.



December 2003

CHAPTER 5

RIVER DANUBE

GENERAL INFORMATION

Chart 2214

5.1

1 The River Danube, which is the second longest river in Europe, rises in the Black Forest in Germany and flows for about 2800 km through Central and E Europe until it enters the Black Sea.

On its passage to the sea, the River Danube passes through or forms part of the boundaries of eight countries where it is known as: Germany and Austria, Donau; Slovakia, Dunaj; Hungary, Duna; Yugoslavia and Bulgaria, Dunav; Romania, Dunărea.

2 The cities of Regensburg, Linz, Wien (Vienna), Bratislava, Budapest and Beograd (Belgrade) stand on its banks.

The Rhine—Main—Danube Link Canal was completed in 1992 and provides a direct route for river traffic between the Black Sea and North Sea.

Distances

5.2

1 Distances from the river entrance are given by distance posts set on the river bank. Between Sulina and Galaţi distances are given in nautical miles. In other parts of the river, distances are given in kilometres.

Danube Commission

5.3

1 Navigation on the Danube is administered by the Danube Commission, which was established in 1948. The headquarters of this organisation are in Budapest and the following countries are members: Austria, Bulgaria, Croatia, Germany, Hungary, Moldova, Romania, Russia, Slovakia, Ukraine and Yugoslavia.

River charts and other navigational publications are available from the offices of the Danube Commission, Benczur utca 25, H–1028 Budapest, Hungary.

River navigation

Topography

5.4

1 Commercial river navigation ends at Regensburg in Germany, some 350 km upstream from Wien (Vienna). Except for a hydro-electric dam at the Iron Gates 160 km E of Beograd (Belgrade), which is by-passed by locks, navigation is uninterrupted from the Black Sea.

2 The nature of the river varies. Above Wien and as it passes through the Carpathian mountains at the Kagan gorges and Iron Gates, it consists of a number of narrow channels and turbulent rapids. South of Budapest, as it crosses the Hungarian plains, and in its lower reaches as it approaches its delta, the river is slow flowing and often several miles wide with numerous channels and sandbanks.

Depths

5.5

1 Depths in the river vary considerably and range from between over 20 m and less than 2 m depending on the place and time of year. The draught of river traffic, which consists mainly of tugs and barges, is normally less than 2 m so that it can navigate the restricted parts of the river.

Current

5.6

1 The strength of the current in the river varies and is normally about 2 to 3 kn in the wider parts of the river but in the narrow defiles, rates of up to 8 kn may be experienced.

Danube—Black Sea Canal

5.7

1 The Danube—Black Sea Canal connects the Danube River port of Cernavodă (44°21′N, 28°02′E) to Portul Constanţa—Sud thereby shortening the river route to the Black Sea by over 100 miles. See 4.164.

Maritime navigation

Charts 2214, 2232, 2213

Maritime Danube

5.8

1 Navigation by seagoing vessels on that part of the river known as the Maritime Danube, is possible to the following Romanian and Ukrainian river ports.

Sulina (5.21)	45°09′N, 29°39′E	Mile 0	Romania
Tulcea (5.65)	45°11′N, 28°48′E	Mile 39	Romania
Reni (5.74)	45°26′N, 28°17′E	Mile 69	Ukraine
Galaţi (5.81)	45°25′N, 28°05′E	Mile 81	Romania
Brăila (5.87)	45°16′N, 27°59′E	Km 170	Romania
Izmayil (5.98)	45°20′N, 28°50′E	Km 93	Ukraine
Kiliya (5.103)	45°26′N, 29°16′E	Km 47	Ukraine
Ust'-Dunaysk (5.120)	45°28′N, 29°42′E		Ukraine

5.9

1 Deep draught vessels visiting these ports enter the Danube Delta by way of Gura Sulina (45°10′N, 29°43′E) (5.15). Vessels with a draught of less than 4·5 m visiting the Ukrainian ports may enter the delta by way of Girlo Prorva (45°29′N, 29°44′E) (5.140) which leads to Kiliys'ke Hyrlo.

Navigation marks

5.10

1 **Buoyage.** The Maritime Danube is marked by light-buoys and buoys as follows:

Dangers along the S bank and S side of the fairway	Red cylindrical buoys or spar buoys with red cylinder topmark
Dangers along the N bank and the N side of the fairway	Black cylindrical buoys or spar buoys with black conical topmark.
Axis of fairway where no danger exists.	White buoys with shape of two superimposed conical sections on small base with black and white horizontal bands or, spar buoys with topmark of similar shape.
Junction or division of fairway or danger in fairway.	Spherical buoys with black and red horizontal bands or spar buoys with spherical topmark

5.11

1 **Light-beacons** and beacons (yellow panels with black vertical lines) standing on the river bank indicate the axis of the fairway.

2 **Special beacons,** as laid down in Rules and Regulations of the Danube, mark:

Distances.
River crossing points.
Anchorage areas.
Turning places.

Sections where two way traffic, overtaking and anchoring are prohibited.

Danube delta

Charts 2230, 2232, 2213

Topography

5.12

1 The delta of the River Danube, covering an area of over 4500 km^2, stretches from the lakes backing the coast near Portita (44°41′N, 28°59′E) (4.182) to Bukhta Zhebryyans'ka (60 miles NE) (5.120), a bay which forms the approaches to the Ukrainian port of Ust'-Dunaysk (45°28′N, 29°42′E).

5.13

1 There are three main entrance channels to the Danube which join some 40 miles from the sea. They are from S, Braţul Sfîntu Gheorghe (4.190), Braţul Sulina (5.15) and Kiliys'ke Hyrlo (5.108). It is estimated that these branches take 24 per cent, 9 per cent and 67 per cent of the waters of the river, respectively.

Braţul Sulina, which was largely canalised in the late nineteenth century, is the main commercial channel used by seagoing vessels visiting the maritime river ports, including Izmayil (5.98) and Kiliya (5.103).

International boundary

5.14

1 The international boundary between Romania and the Ukraine, follows the Danube between its junction with the River Prut, 2 miles W of the port of Reni (45°26′N, 28°17′E) and the sea. In the delta the boundary follows Kiliys'ke Hyrlo and reaches the coast 4 miles N of Sulina (45°09′N, 289°39′E). The seaward extension of the international boundary is marked by buoys (special).

PORTUL SULINA AND APPROACHES

APPROACHES TO GURA SULINA

General information

Charts 2213, 2282 plan of Portul Sulina

Topography

5.15

1 Between the mouth of Braţul Sfîntu Gheorghe (44°53′N, 29°37′E) and the mouth of Ochakivs'ke Hyrlo (35 miles N) the coast on the delta on either side of Gura Sulina (45°10′N, 29°43′E) is low, sandy and lacking in vegetation. It is not easily visible from seaward.

Depths

5.16

1 Because of the alluvial soil brought down by the river, depths in the approaches to the delta are subject to frequent change and may not always correspond with those shown on the chart.

Recommended routes

5.17

1 **South approach.** A recommended route, shown on the chart, approaches Gura Sulina from the S. This route lies to seaward of a fishing area, the limits of which are shown on the chart.

North approach. A recommended route, with a maximum authorised draught of 7 m, shown on the chart, approaches Gura Sulina from N. Its centre line is marked by No 1 Light-buoy (safe water) about 7½ miles N of the entrance to Gura Sulina.

2 **Caution.** The N approach route passes through a former mined danger area (1.5) that extends up to 9 miles to seaward off the entrance of Starostambul'skoye Hyrlo and to the W of explosives dumping ground No 95. Vessels are advised to keep strictly to the recommended fairway.

Principal marks

5.18

1 **Landmarks:**

Ostriv Zmiyinyy (45°15′N, 30°12′E) (4.9).
Sulina church, conspicuous, (45°09′·4N, 29°39′·8E) with former lighthouse, white tower, green cupola, 1 cable ESE.
Water tower (41 m in height) (45°09′·6N, 29°37′·8E).

2 **Major lights:**

Sfîntu Gheorghe Light (44°54′N, 29°36′E) (4.179).
Ostriv Zmiyinyy Light—as above.
Sulina Light (white round stone tower, red cupola, 48 m in height, racon) (45°09′N, 29°46′E).

Other navigational aids

5.19

1 **Racon:**

Sulina Light — as above.

See *Admiralty List of Radio Signals Volume 2* for details.

Directions

(continued from 4.182)

North and south approaches

5.20

1 Vessels are advised to follow the recommended routes (5.17) and if approaching from S to remain in depths of more than 20 m until certain of their position. In the N approach, soundings give little guidance as the shallow bank fronting Starostambul'skoye Hyrlo (45°13′N, 29°44′E) is extending S and SE towards Gura Sulina.

2 **Useful marks:**

Bystroye Girlo entrance beacon, 13 m in height with radar reflector (45°20′·5N, 29°45′·6E).

Rybatskiy Light (white metal column, 4 m in height) (45°13′·7N, 29°44′·4E).

3 **Caution.** Because of the low lying coast, lack of navigational marks and uncertain depths, mariners without local knowledge are advised to ascertain their position from Ostriv Zmiyinyy (4.9) before closing Gura Sulina from the E.

(Directions continue at 5.34)

PORTUL SULINA

General information

Charts 2213, 2282 plan of Portul Sulina

Position

5.21

1 The town of Sulina (45°09′N, 29°39′E) stands on both banks of Braţul Sulina near its entrance to the sea. The main buildings of the town are situated on the S bank of the river.

Function

5.22

1 Portul Sulina, which is one of Romania's principal riverine ports is a free port and specialises in the handling, storing and transhipment of goods. In 2002 it had a population of 4624.

Traffic. In 2002 the port was used by 368 vessels with a total deadweight of 4 680 786 tonnes.

Port limits

5.23

1 The seaward limits of Rada Sulina, which are shown on the chart, extend 2 miles between N and ESE from the seaward end (45°08′N, 29°48′E) of the protected channel. Upstream the port area extends to mile 3.

Approach channel

5.24

1 The port area is approached by a channel, 4 miles long, which has a bar at its seaward end. The channel is protected by N and S breakwaters.

Port Authority

5.25

1 Administratia Zonei Libere Sulina Regie Autonoma, Str Intai Nr 202, R–8829 Sulina, Tulcea County, Romania.

Limiting conditions

5.26

1 **Sulina bar** was dredged to 7 m (2000), but it is sometimes impassable due to massive deposits of sand. This condition is most likely to occur in spring and summer (5.30). It was reported (2003) that the least depth at the bar was 7·62 m.

Deepest and longest berth. See 5.36.

2 **Maximum size of vessel.** 25 000 dwt, length 200 m, draught 7·3 m.

Density of water. 1020 g/m^3.

Ice occurs in winter, but ice breakers ensure all year navigation.

Current in approach channel is between 0·7 and 3·8 kn.

Arrival information

Port operations

5.27

1 The pilot station and harbour control are situated at Sulina Lighthouse on the S breakwater (5.18).

Outer anchorage

5.28

1 Anchorage for vessels waiting to enter the river is available in Rada Sulina, depths of 7 to 22 m, ooze. The anchorage, the limits of which are shown on the chart, does not provide much shelter from the E or NE from which direction winds frequently increase to gale force.

Pilotage and tugs

5.29

1 **Pilotage** is compulsory except for vessels under 120 grt, or 180 grt when crossing the bar in ballast. Pilots board about 1 mile E of Sulina Light (5.18). For river pilotage see 5.40.

Tugs are available and their use is compulsory in certain weather conditions.

Entry

5.30

1 Entry is usually permitted in daylight hours only.

Sulina bar. When the bar is impassable, a signal (A1) (red panel with white vertical central stripe) is shown at Sulina Lighthouse (5.18) signal station.

2 **Speed** of vessels in Braţul Sulina and Braţul Tulcea (5.60) is by agreement between the Pilot and the Master, but should not exceed the following limits:

Size of seagoing vessel	*Upstream*	*Downstream*
Up to 2000 tonnes	8 kn	10 kn
2001 to 5000 tonnes	7 kn	8 kn
5001 to 15 000 tonnes	6 kn	8 kn
Over 15 000 tonnes	5 kn	8 kn

Harbour

General layout

5.31

1 The port consists of two areas. The river and seaport which stands on both banks of the river abreast the town and the Free Port consisting of the Maritime Transit Basin, situated on the S bank, 7½ cables downstream from Sulina Church.

Climatic table

5.32

1 See 1.195 and 1.211.

Principal marks

5.33

1 **Landmarks:**

Sulina Church (45°09′·4N, 29°39′·8E) (5.18).

Water tower (45°09′·6N, 29°37′·8E) (5.18).

Major light:

Sulina Light (45°09′N, 29°46′E) (5.18).

Directions

(continued from 5.20)

5.34

1 **Initial position.** From the vicinity of the fairway light-buoy (safe water) (45°08′·1N, 29°47′·7E), the fairway leads NW between a pair of light-buoys (port and starboard hand) marking the entrance to the channel and passage across the bar, and thence between the breakwater heads which are marked by lights (square concrete towers, 4 m in height).

2 **Caution.** Positions of lights and buoys are being altered as this breakwater is extended seaward.

(Directions for Braţul Sulina continue at 5.55)

Basins and berths

Maritime Transit Basin

5.35

1 The Maritime Transit Basin has 5 berths, with a total length of 1500 m, with depths alongside of 6 to 9 m.

River and seaport

5.36

1 **South bank.** No 2 maritime berth. Length 250 m. Depth 7·5 m. Ten river berths numbered from seaward.

North bank. One oiling berth and 3 river berths.

Port services

Repairs

5.37

1 Synchrolift with capacity of up to 1200 tonnes.

Supplies

5.38

1 **Fuel** is available and supplied by road tanker; fresh water is available; provisions are available, but must be ordered in advance.

Communications

5.39

1 The only communications with other parts of Romania are by sea or river.

MARITIME DANUBE—PORTUL SULINA TO PORTUL BRĂILA AND PORT KILIYA

GENERAL INFORMATION

Charts 2214, 2232, 2213

Routes and areas covered

5.40

1 The routes and area covered by this section comprises the stretch of the River Danube between:

Sulina (45°09′N, 29°39′E) (5.21) and Brăila (45°17′N, 27°59′E) (5.87).

2 Ismail Chatal (known to the Russians as Mys Izmayil'skiy Chatal) (45°14′N, 28°45′E) and Port Kiliya (45°26′N, 29°16′E) (5.103).

Gura Sfîntu Gheorghe (44°52′N, 29°28′E) (5.56) and Sfîntu Gheorghe Chatal (45°11′N, 28°54′E).

Major seagoing vessels approach the Ukrainian ports of Izmayil (5.98) and Kiliya downstream from Ismail Chatal.

Distances

5.41

1 Distances between Sulina and Galaţi (45°25′N, 28°05′E) (5.81) are marked by distance posts 1 nautical mile apart. Distances between Galaţi, Brăila, Ismail Chatal and Kiliya are marked by posts 1 kilometre apart. The mile distance posts are shown on the charts.

Pilotage

5.42

1 Pilotage is compulsory except for vessels under 120 grt and vessels of up to 180 grt which pass over the Sulina bar in ballast.

2 Vessels visiting the Ukrainian ports of Reni, Izmayil and Kiliya will be guided by Romanian pilots of the River Administration to Ismail Chatal (Mile 43) (5.40) where Ukrainian pilots will embark.

Port pilotage is available at Sulina, Tulcea, Galaţi and Brăila.

Pilots for the Ukrainian part of the river are based at Izmayil.

Signal stations

5.43

1 Signal stations are situated at:

Crişan (Mile 11·2).
Gorgova (Mile 21·3).
Sfîntu Gheorghe Chatal (Mile 33·5).
Ismail Chatal (Mile 43).

Navigational marks

5.44

1 See 5.10.

Limiting conditions

5.45

1 **Least depth** between Sulina and Braĭla is normally 7·32 m, but this is subject to change and the charts and local authorities must be consulted for the latest information.

Traffic regulations

Traffic signals

5.46

1 **Signal A1** (5.30) shown at signal station indicates that Braţul Sulina is temporarily closed.

Flag U of International Code shown at signal stations indicates that navigation is prohibited due to low visibility. Ships must remain stationary in the vicinity of the station where the signal is observed.

General regulations

5.47

1 The following regulations have been extracted from Rules and Regulations of Navigation in the Danube:

Speed. As agreed with the pilot, but must never exceed 10 kn. (See also 5.30).

2 **Overtaking** is prohibited on bends and where the fairway is not sufficiently wide. Elsewhere all vessels proceeding upstream may overtake, but only vessels of less than 4000 tonnes may overtake proceeding downstream.

3 **Vessels meeting.** The vessel proceeding downstream has priority and may choose its own course. Vessels proceeding upstream should wait at a position that is suitable for two way traffic.

Distance apart. Vessels should keep 1 mile apart when navigating through sharp bends or other difficult parts of the river.

River craft give way to seagoing vessels

4 **Vessels carrying inflammable** or explosive materials entering Braţul Sulina will anchor as instructed by the pilot. Vessels proceeding downstream must wait at Mile 35 until given permission to proceed to Sulina.

Natural conditions

Water level

5.48

1 **Variations** in water level are seasonal. Compared to mean level, the variation is between 30 and 90 cm. In general the seasonal changes are as follows:

March	Level begins to rise
May	Reaches highest level
August	Level begins to fall
October	Reaches lowest level

2 **Information.** All ports have water level indicators. Data is displayed in white on black panels. General information, including depths over shallow places, is provided at Crişan and Gorgova signal stations (5.43). Water level information is also broadcast by Radio Bucharest in Romanian, Russian and French.

Current

5.49

1 Depends on water level. For further details see 5.54, 5.63 and 5.72.

Information. A red flag at Ismail Chatal signal station indicates the existence of currents running towards the banks in Tulcea (5.63). A black flag signals strong currents in Braţul Sulina (5.54).

Ice

5.50

1 Maritime Danube only freezes over in very cold winters, which occur about once in two years. On average the lower Danube is navigable for 320 days in the year.

BRAŢUL SULINA

General information

Charts 2232, 2213

Route

5.51

1 Braţul Sulina leads from Sulina (45°09′N, 29°39′E) to Sfîntu Gheorghe Chatal (Mile 34).

Topography

5.52

1 Braţul Sulina consists mainly of a canal that was constructed in the late nineteenth century and except between miles 19–23 and miles 28–34 is almost completely straight. The old river, which is now only navigable by small craft, takes a series of loops N of Braţul Sulina.

This stretch of the river is between 120 and 200 m wide and the fairway is between 90 and 120 m wide. The banks are low and unchanging with patches of willow. In places they have been strengthened by retaining walls of stone.

Traffic regulations

5.53

1 **Navigation** at night is prohibited for seagoing vessels.

Speed. See 5.30.

Two way traffic is prohibited between Mile 12·5 and 21·5 and also Mile 23 to 33. See also 5.46.

Current

5.54

1 The strength of the current in this branch varies between 0·7 and 3·8 kn (5.49).

Directions

(continued from 5.34)

5.55

1 From Portul Sulina, the fairway along Braţul Sulina follows the buoyed channel to Sfîntu Gheorghe Chatal for 33½ miles, passing (with positions relative to mileposts):

The entrance to the old Danube leading N to Letea (Mile 9), thence:

2 The obelisk on the N bank (Mile 13) commemorating the completion of Sulina ship canal, thence:

The entrance to old Danube (Mile 13·5) leading N to village of Mila 23, thence:

A stranded wreck (mile 30·9) at Partizani.

(Directions for Braţul Tulcea continue at 5.64)

Braţul Sfîntu Gheorghe

Route and topography

5.56

1 Braţul Sfîntu Gheorghe winds for about 110 km between Gura Sfîntu Gheorghe (44°52′N, 29°38′E) and Sfîntu Gheorghe Chatal (Mile 34) (45°11′N, 28°54′E).

Its banks are low and marshy except in the vicinity of the village of Mahmudia (45°05′N, 29°06′E) where the Beştepe hills back the S bank.

Limiting conditions

5.57

1 Depths in the channel are between 7 and 8 m, but its seaward end is obstructed by a bar. See 4.190.

Distances

5.58

1 Distances are marked by posts 1 km apart standing on the S bank.

Sfîntu Gheorghe

5.59

1 The town of Sfîntu Gheorghe (44°54′N, 29°36′E) which had a population of 66 896 (2000), stands on the N bank of the channel about 3 km upstream from the entrance. The port has moorings for river boats and a harbour in which small craft can shelter.

BRAŢUL TULCEA

General information

Charts 2232, 2213

Route

5.60

1 Braţul Tulcea leads from Sfîntu Gheorghe Chatal (45°11′N, 28°54′E) (Mile 34) to İsmail Chatal (Mile 43).

Topography

5.61

1 Braţul Tulcea consists of a number of bends, the one at the town of Tulcea being particularly sharp. The banks of

this branch are low, except in the vicinity of Tulcea, and are inclined to become inundated.

This stretch of the river is between 200 and 550 m wide and the width of the fairway is at least 100 m wide. The depth of the fairway varies between 7·3 and 35 m.

Traffic regulations

5.62

1 **Two way** traffic is prohibited between Mile 40 and 41.

Vessels proceeding downstream must warn vessels proceeding upstream by sounding a signal.

Navigation at night is prohibited when the water level in Portul Tulcea is raised more than 3 m.

Overtaking is prohibited in Tulcea bend between Mile 38 and 40.

Speed. See 5.47.

Current

5.63

1 The strength of the current in this branch varies between 0·8 and 4·7 kn.

Directions

(continued from 5.53)

5.64

1 From Sfîntu Gheorghe Chatal the fairway follows the buoyed channel to Ismail Chatal for 9 miles, passing (with positions relative to the mile posts):

W of Tulcea rock Light structure (45°11′N, 28°49′E) (Mile 38), thence:

N of Portul Tulcea (Mile 36 to 40) (5.65), standing on the S bank of the river.

2 **Caution.** There are powerful eddies in the vicinity of Tulcea rock. Vessels proceeding upriver which are keeping to the N bank, pass from slack water into the full force of the stream, which swings the bow off to port.

(Directions continue for Braila at 5.73, and for Izmayil and Kiliya at 5.97)

Portul Tulcea

General information

5.65

1 **Position.** 45°11′N, 28°48′E. On the S bank of the Danube between Mile 37 and 40.

Function. Romanian river port, industrial and tourist centre. Administrative centre for the Tulcea county, which includes the delta area. In 2000 the population was 95 957.

2 **Port limits** cover the area between Mile 35 and Mile 40.

Largest vessel accommodated. 25 000 dwt, length 185 m, draught 7 m.

Port Authority. Port Authority of Tulcea, Delta Navy SA, Str Portului No 8, Tulcea, Romania.

Traffic. In 2002 the port was used by 40 vessels with a total deadweight of 142 566 tonnes.

Harbours and berths

5.66

1 **General layout.** The port area extends along the S bank of the river from Mile 38·5 to 40.

Pilots and tugs. Pilotage is compulsory. Town Pilots embark in the roads. Tugs are compulsory for seagoing vessels with a length of more than 100 m.

5.67

1 **Anchorages:**

River craft and seagoing vessels. Off S bank between Mile 38·5 and 36.

Vessels awaiting daylight sailing in Braţul Tulcea and Braţul Sulina, when the water level is +3 m. Between Mile 35 and 36.

Barges. Off N bank between Mile 40 and 41.

5.68

1 **Alongside berths** are available for:

Seagoing vessels: Two berths. The longest and deepest is 220 m long, depth alongside 7·5 m.

River craft: Quayage of 920 m. Depth 3·5 m.

Fishing craft: Quayage of 285 m. Depth up to 6 m.

Port services

5.69

1 **Repairs:** synchrolift with capacity of 6500 dwt.

Other facilities: deratting; hospitals.

Supplies: fuel by road tanker; fresh water; provisions.

Communications: airport 10 km from town.

ISMAIL CHATAL TO PORTUL BRAILA

General information

Charts 2214, 2232

Topography

5.70

1 The Danube between Ismail Chatal (45°14′N, 28°44′E) (Mile 43) and Braïla (45°16′N, 27°59′E) (Km 145), a distance of 49 miles, is wide and deep. In general, the banks are low except at the ports of Galaţi and Braïla, and on the N bank between Mile 44·5 and 47, where there are cliffs.

2 The width of the river varies between 1200 m at Isaccea (Mile 56) and 350 m at Reni (Mile 69). Depths vary between 7·4 and 25 m.

There are several large lakes close behind the banks of the river which are connected to the river by unnavigable channels.

International boundary

5.71

1 See 5.14.

Current

5.72

1 The strength of the current in this stretch of the river varies between 1·5 and 3 kn.

Directions

(continued from 5.64)

5.73

1 From Ismail Chatal (Mile 43) the fairway to Braïla follows the buoyed channel for 49 miles, passing (with positions relative to mile posts to Galaţi and kilometre posts thereafter):

2 S of a monument (Mile 52·7), a black cast iron pyramid that commemorates the crossing of the Danube by Russian armies in 1828. Thence:

N of Isaccea (Mile 56), a Romanian port which is fronted by an islet. The port has facilities for river craft. Thence:

S of a wreck (20 m from N bank, Mile 65·2), which is partly above water. Thence:

S of a wreck (Mile 67·7), thence:

S of Reni (Mile 68 to 71) (5.74), thence:

3 S of the junction of the River Prut with the Danube (Mile 72·5). An uncharted islet lies in the Danube at this confluence where it is reported that the main channel passes N of the islet. Thence:

Portul Galaţi (Mile 78·2 to 84·7) (5.81), a Romanian port on the N bank.

Port Reni

General information

5.74

1 **Position.** 45°26′N, 28°17′E. On the NE bank of Danube between Mile 68 and 71.

Function. Important Ukrainian sea and river port.

Port area lies along the N bank of the river between Mile 62·5 and 71, extending to international boundary in midstream.

Traffic. In 2002 the port was used by 81 vessels with a total deadweight of 870 533 tonnes.

Port Authority. Port of Reni Authority, Dunaiskaya ul.188 Reni, 68802, Ukraine.

Limiting conditions

5.75

1 **Depths.** Vessels drawing up to 7 m can be accommodated.

Ice. Icebreaker assistance required for about 2 months in winter.

Arrival information

5.76

1 **Anchorage** while awaiting pilot. Between Mile 63 and 64·5 off the N bank. Depth 10 to 20 m, clay and mud.

Pilotage is compulsory and available 24 hours a day. Foreign vessels embark the port pilot in vicinity of Mile 64, having reported ETA while in vicinity of Ismail Chatal.

Harbour Master's office and pilot station are situated at Mile 68·6.

Regulations

5.77

1 Vessels in ballast are required to use a tug to turn. Vessels at anchor must use two anchors.

Anchorages

5.78

1 Anchorage areas, with depths of between 10 and 20 m are allocated as follows:

Seagoing tankers unloading to barges	Mile 66 to 66·2. 500 to 600 m off the bank.
Foreign seagoing tankers.	Mile 66·1 to 66·3. 50 to 300 m off the bank.
Seagoing ships, Dry cargo.	Mile 68·3 to 68·9. 100 to 200 m off the bank.

Alongside berths

5.79

1 Eleven alongside berths at river quays, between Mile 67·3 and 68·7, with depths up to 7·4 m.

Passenger terminal at Mile 69·5.

Port services

5.80

1 **Facilities:** deratting; oily waste disposal.

Supplies: fuel in limited quantities; fresh water at quays and by barge; provisions.

Portul Galaţi

General information

5.81

1 **Position.** 45°25′N, 28°05′E. On the bank of the Danube between Mile 78·5 and Km 157.

Function. Largest riverine port in Romania. Important industrial and commercial centre, which in 2000 had a population of 338 596. The city is the administrative centre for Galaţi county.

Traffic. In 2002 the port was used by 259 vessels with a total deadweight of 1 738 854 tonnes.

Port Authority. Galatz Port Authority – CN APDM SA, 34 Portului Street, R–6200 Galatz, Romania.

Limiting conditions

5.82

1 **Maximum size** of vessels handled:

Bulk carrier. 25 000 dwt, length 200 m, draught 7·3 m.
Dry cargo. 8700 dwt. length 130 m, draught 7·3 m.

Ice. Danger of ice in severe winters, but icebreakers keep port open.

Arrival information

5.83

1 **Port radio.** See *Admiralty List of Radio Signals Volume 6(3)* for details.

Anchorages for vessels awaiting a berth are situated between Mile 76 and 78·5 downstream and Km 155 and 157 upstream.

Pilotage is compulsory and may be carried out either by the port or river pilot.

Harbour

5.84

1 **General layout.** The port consists of two basins and extensive quayage along the N bank of the river. There is a naval dockyard and a harbour servicing the steel works.

Basins and berths

5.85

1 **Basins:**

New basin for timber products between Mile 78·5 and 79·1. Length 600 m, width 180 m. Entrance 60 m wide. Depth at low water 4·5 to 7 m.

Basin for general cargo situated upstream of Mile 80. Length 500 m, average width 22 m. Entrance 50 m wide. Depths 4·5 to 7 m.

2 **Alongside berths** for seagoing vessels at four berths upstream of general cargo basin and also in both basins.

Naval shipyard is situated between the two basins.

Steel Works port is situated at Km 156. There is 840 m of quayage with depths of 7·3 m alongside.

Port services

5.86

1 **Repairs:** dry dock divided into two sections, each about 230 m long and 35 m wide, one dry section and one wet section, capable of handling vessels up to 60 000 dwt.

Facilities: deratting (exemption certificates only); firefighting and salvage tugs; hospital.

Supplies: bunkers and diesel oil supplied by lorry; fresh water; provisions.

Portul Braĭla

General information

5.87

1 **Position.** 45°16′N, 27°59′E. On the NW bank of the Danube between Km 168·7 and 173.

Function. Romanian riverine port, which in 2000 had a population of 233 447, and administrative centre for Braĭla county. This port is the limit of navigation for seagoing vessels.

Traffic. In 2002 the port was used by 52 vessels with a total deadweight of 251 262 tonnes.

Port Authority. Navrom – CN APDM SA, 34 Portului Street, R–6200 Galatz, Romania.

Limiting conditions

5.88

1 **Maximum draught** of vessels handled, 7 m.

Ice. Danger of ice in hard winters, but port remains open all year round.

Fog. Dense fog in December and January.

Arrival information

5.89

1 **Approaches.** Depths in approach channel range between 11 and 25 m.

Caution. A sand and stone bank on the E bank between Km 171 and 172 is a danger to navigation.

Pilotage, which is compulsory, is available 24 hours a day.

Harbour, basin and berths

5.90

1 **General layout.** The port consists of a basin, quayage along the NW bank, and a transhipment anchorage.

Basin, the entrance of which is at Km 169, is 500 m long, 120 m wide, with an entrance 40 m in width. Depth 6·5 to 7 m.

2 **Alongside berths** on the river lie between Km 168·7 and 170·7. Depths alongside are over 7 m.

Transhipment anchorage for seagoing vessels lies between Km 171·3 and 172.

Port services

5.91

1 **Repairs:** three berths capable of handling vessels of up to 9000 dwt and 7 m draught.

Facilities: deratting (exemption certificates only); medical.

Supplies: fuel available at some berths; fresh water; provisions.

ISMAIL CHATAL TO PORT KILIYA

General information

Chart 2232

Topography

5.92

1 Between Ismail Chatal (45°14′N, 28°44′E) (Mile 43 and Km 116) and Port Izmayil (45°20′N, 28°50′E) (Km 94) (5.98), the river follows four large bends. Both banks, which are covered with bushes and trees, are generally low with the exception of a few short stretches where they are elevated with cliffs. The width of the river in this section is between 300 and 500 m.

5.93

1 Between Port Izmayil and Port Kiliya (5.103), the river divides into several channels which come together further downstream, thereby forming a number of low lying islands.

2 The largest of these channels are Rukav Kislitskiy (Bratul Caslita), which leads N from the mainstream at Km 76·3 (45°20′N, 28°58′E) and rejoins it at Km 48 (45°26′N, 28°15′E); and Rukav Ivanesht' which leads S at Km 75·5 rejoining Kiliys'ke Hyrlo at Km 60·6 (45°23′N, 29°07′E). Rukav Ivanesht' forms the international boundary in this stretch of the river.

The width of the river in this section varies between 200 and 1000 m and its depth between 5 and 33·5 m.

Limiting conditions

5.94

1 **Ismail Chatal to Izmayil.** See 5.26.

Izmayil to Kiliya. Navigable by vessels with a draught of less than 5 m.

Pilotage

5.95

1 See 5.42 and 5.112.

Traffic regulations

5.96

1 The following regulations apply to this stretch of the river:

Two way traffic and overtaking is prohibited between Km 113 and 109, 101 to 100, 99 to 97, 76 to 67 and 61 to 60.

2 Between Km 76 and 60, vessels proceeding downstream with a draught of up to 4 m must navigate by way of Rukav Ivanesht'.

Directions

(continued from 5.64)

5.97

1 From abreast of Ismail Chatal (45°14′N, 28°44′E) (Km 116) the fairway downstream to Port Kiliya (19 miles ENE) (Km 47), a distance of 38 miles, follows the buoyed channel, passing (with positions relative to kilometre posts):

Pălăgeanca (Km 115), a Romanian village standing on the S bank in which there is a conspicuous white church with a grey cupola. Thence:

2 Through the traffic regulation zone of Port Izmayil (Km 100 to 80). See 5.100 for the special regulations. Thence:

Port Izmayil (Km 94) (5.98) and the Romanian village of Plauru which stands on the opposite bank. Thence:

3 Pardina (Km 80), a Romanian village standing on the S bank, in which there is a conspicuous church and tower. Thence:

Between the islands (5.93), the main channel through which follows Kiliys'ke Hyrlo, S of Ostrov Kislitskiy.

Caution. In strong N winds, vessels may lie across the river in the vicinity of Port Izmayil.

Port Izmayil

General information

5.98

1 **Position.** 45°20′N, 28°50′E. on the N bank of Kiliys'ke Hyrlo between Km 94 and 91.

Function. River and seaport with facilities for handling container and Ro-Ro traffic.

Port limits. The port area and roadstead consists of the waters between Km 96 to 82 from the shore to the international boundary in midstream.

2 **Approach.** The port is approached either downstream from Ismail Chatal or upstream from Port Kiliya.

Traffic. In 2002 the port was used by 61 vessels with a total deadweight of 268 889 tonnes.

Port Authority. Port of Izmayil Authority, 7 Port Street, 272630 Izmayil, Ukraine.

Limiting conditions

5.99

1 **Maximum size** of vessel handled: as for Braţul Sulina (5.45).

Ice. Icebreaker assistance may be required for about 50 days a year during winter months.

Arrival information

5.100

1 **Port operations.** Traffic movement between Km 100 and 80 is controlled by the Ship's Traffic Regulation Post. All ships approaching this area must obtain permission from the harbour authorities before proceeding. Traffic signals also control the passage of vessels between Km 91 and 88.

2 **Maximum speeds** in harbour area. 4½ kn upstream, 6½ kn downstream.

Port radio station. See *Admiralty List of Radio Signals Volume 6(3)* for details.

Pilotage. See 5.42 and 5.112. Pilot should be ordered 24 hours before arrival at Mys Izmayil'skiy Chatal (45°14′N, 28°44′E).

Harbour and berths

5.101

1 **Alongside berths** lie along the river bank. Deepest berth 8·25 m.

Anchorage areas are situated as follows:

No 3. Km 87·7 to 86·7 between 100 and 200 m from N bank, for vessels waiting cargo handling operations.

No 5. Km 85·6 to 85·1, width 200 m. For vessels handling cargo in the roadstead. Two anchors must be used.

Port services

5.102

1 **Repairs:** three floating docks with max lifting capacity of 5000 tonnes.

Facilities: deratting; oily waste disposal; Ro-Ro facilities.

Supplies: fuel; fresh water at quays and by barge; provisions.

Port Kiliya

General information

5.103

1 **Position.** 45°26′N, 29°16′E. The town stands on the N bank of Kiliys'ke Hyrlo at Km 47.

Function. River and seaport.

2 **Approaches.** the port is approached either downstream from Port Izmayil or upstream from Girlo Prorva (5.140). The buildings of the town are clearly visible from Km 58 when navigating downstream and Km 34 when navigating upstream.

Traffic. In 2002 the port was used by 1 vessel with a deadweight 5985 tonnes.

Port Authority. Port of Kiliya Authority, Zheleznyakov ul.4, 272610 Kiliya, Danube, Ukraine.

Limiting conditions

5.104

1 **Maximum draught** of vessels:

from Port Izmayil (5.98), 5·0 m..

From Girlo Prora, 4·5 m.

Ice. Restricts navigation in the winter months.

Arrival information

5.105

1 **Pilotage.** See 5.42 and 5.112.

Regulations. Overtaking is not permitted in the port area.

Harbour and berths

5.106

1 **Alongside berths,** 150 m in length, lie along the river bank. Vessels with a draught of up to 7 m can be accommodated.

Anchorage is available:

At Km 48, 50 m from the shore.

At Km 46, for vessels in quarantine or with dangerous or inflammable cargo.

Port services

5.107

Supplies: fresh water; provisions; no fuel.

KILIYS'KE HYRLO AND ITS SEAWARD APPROACHES

GENERAL INFORMATION

Charts 2232, 2213

Routes

5.108

1 Kiliys'ke Hyrlo, known to the Romanians as Braţul Chilia, is the N branch of the Danube and its navigable part runs for 63 miles (116 km) from Girlo Prorva (45°29′N, 29°44′E) by way of Ochakivs'ke Hyrlo to Ismail Chatal (45°14′N, 28°44′E). Ochakivs'ke Hyrlo and Girlo Prorva are two of the many channels that form the delta of Kiliys'ke Hyrlo.

5.109

1 The Ukrainian ports of Izmayil (45°20′N, 28°50′E) and Kiliya (45°26′N, 29°16′E) which stand on the N bank of Kiliys'ke Hyrlo, may be approached either from the seaward entrance of Kiliys'ke Hyrlo or downstream from Ismail Chatal, the vessel having entered the Danube Delta at Sulina (45°09′N, 29°39′E).

2 Major seagoing vessels approach Izmayil and Kiliya from Ismail Chatal because of depth restrictions at the seaward end of Kiliys'ke Hyrlo. This route has been described at 5.40.

Distances

5.110

1 See 5.41.

International boundary

5.111

1 See 5.14.

Pilotage

5.112

1 **Pilotage** in Kiliys'ke Hyrlo is compulsory. Pilots, who are based at Izmayil, are available, subject to weather conditions, 24 hours a day. They embark, as shown on the chart, off Girlo Prorva Light-buoy (45°31′N, 29°47′E) or Ismail Chatal (45°14′N, 28°44′E) (5.42).

2 Request for a pilot should be made 24 hours in advance and ETA confirmed 4 hours before arrival.

Pilotage for Ust'-Dunaysk. See 5.130.

Natural conditions

5.113

1 **Current.** The strength of the current in Kiliys'ke Hyrlo is between 1·5 and 3 kn. Its strength depends on the level of the river.

Ice forms in Kiliys'ke Hyrlo between December and early March.

Navigation marks

5.114

1 See 5.10.

SEAWARD APPROACHES TO KILIYS'KE HYRLO AND UST'-DUNAYSK

General information

Chart 2213

Topography

5.115

1 Kiliys'ke Hyrlo and Ust'-Dunaysk (45°28′N, 29°42′E) are approached between Ostriv Prirvy (45°27′N, 29°44′E), one of the islands formed by the delta of Kiliys'ke Hyrlo, and the shore 10 miles NNE.

2 The coastline backing these approaches is low lying with few natural features. To the NW the coast is backed by a chain of salt water lakes which are separated from the sea by narrow necks of sand. These lakes are connected to the sea by shallow channels that are subject to silting.

Caution. The coastline, bars and depths in the estuaries of the rivers are subject to constant change.

Recommended routes

5.116

1 Recommended route No 61, shown on the chart, is for large tonnage ships coming from the S. Other recommended routes for smaller vessels, which are shown on the charts, lead WNW towards Girlo Prorva and NE from Ust'-Dunaysk to Odesa and other ports in the NW Black Sea.

Caution. See 5.20.

Principal marks

5.117

1 **Major light:**

Ostriv Zmiyinyy Light (45°15′N, 30°12′E) (4.9).

Other navigational aids

5.118

1 **Racons:**

Prorvinskiy Light (45°28′N, 29°43′E).

Shahany Light (45°40′N, 29°53′E) (5.119).

See *Admiralty List of Radio Signals Volume 2* for details.

2 **Radar reflectors,** which are charted, stand on the sandspit 5 miles NE of Prymors'ke church.

Directions

(continued from 4.11 and 4.182)

5.119

1 From a position NW of Ostriv Zmiyinyy (45°15′N, 30°12′E) Recommended route No 61 leads NW and then W to the entrances of the buoyed channels leading to Ust'-Dunaysk and Girlo Prorva, passing (with positions from Prorvinskiy Light (45°28′N, 29°43′E) (5.134):

2 S of Shahany Light (black daymarks on red concrete column, 16 m in height) (14 miles NNE). Thence:

S of a light-buoy (E cardinal) (9½ miles NE) which marks a 3 m rocky patch. Thence:

N of a light-buoy (N cardinal) (6 miles NE) marking a rock with a depth of 10 m over it. Thence:

N of a buoy (isolated danger) (6¼ miles NNE) marking a wreck with a depth of 10 m over it.

3 **Useful marks:**

Katranskiy Light (beacon, 15 m in height) (45°38′N, 29°44′E).

Prymors'ke Light (45°32′N, 29°39′E) (5.135).

(Directions continue for Ust'-Dunaysk at 5.135, for Kiliys'ke Hyrlo at 5.143, and for the inshore route to Illichivs'k at 6.20)

UST'-DUNAYSK

General information

Chart 2213

Position

5.120

1 Ust'-Dunaysk (45°28′N, 29°42′E) lies on the S shore of Bukhta Zhebryyans'ka, in an artificial inlet.

Function

5.121

1 Ust'-Dunaysk is the transhipment base for the inter-governmental commission *Interlikhter*, where cargo is transferred between river lighters and seagoing vessels.

Port limits

5.122

1 The seaward limits of the port area of Ust'-Dunaysk are bounded by the arc of a circle, 2½ miles in radius, centred on Prorvinskiy Rezervnyy Light (45°29′N, 29°45′E) (5.143).

The port area also includes the waters of Prorvinskiy Kanal (5.140), the link canal (5.132), Potapovskiy Kanal (5.148), Ochakivs'ke Hyrlo (5.108), Kiliys'ke Hyrlo from Km 18 to 22, to the international boundary at midstream, and Stepovoye Hyrlo (5.145) between Km 0 and 1.

Approach

5.123

1 Ust'-Dunaysk is approached by a dredged channel 3½ miles long. The area at the S end of the channel has been dredged to a depth of 9·6 m (1991).

Traffic

5.124

1 **Traffic.** In 2002 the port was used by 97 vessels with a total deadweight of 2 094 955 tonnes.

Port Authority

5.125

1 Port Izmayil Authority, Portovaya ul 7, Izmayil 272630.

Limiting conditions

5.126

1 Least depth in the approach channel is 6·9 m (1991) and depths along the axis of the channel are 8·1 m. Dredging in the channel is continuous.

Arrival information

Port operations and port radio

5.127

1 The movement of all vessels within the port area of Ust'-Dunaysk is regulated by the traffic regulation post situated at Prorvinskiy Lighthouse (45°28′N, 29°43′E) (5.134).

The office of the port captain is situated onboard *M.V. Uritskiy* in the E part of the inlet.

Port radio. Radio communications with the port are carried out through Port Izmayil radio station. See *Admiralty List of Radio Signals Volume 6(3)* for details.

Notice of ETA

5.128

1 See *Admiralty List of Radio Signals Volume 6(3)* for details.

Anchorage areas

5.129

1 Anchorage areas, which are shown on the chart, lie between N and E of Prorvinskiy Light (45°28′N, 29°43′E) and are designated as follows:

Area number	*Depth and bottom*	*Available for:*
367	22 to 29 m. Mud and shells	Large tonnage vessels.
368	19 to 22 m. Sand	All vessels.
369	14 to 15 m. Mud and sand.	LASH Vessels
370	11 to 13 m. Mud and sand.	Vessels drawing up to 5 m during bad weather
397	12 to 13 m. Mud and sand.	Large tonnage vessels; partial unloading

Permission must be obtained from the harbour master before using Anchorages 368, 369 and 370.

Pilots and tugs

5.130

1 Pilotage is compulsory for seagoing vessels and is carried out in daylight hours only. The pilotage service is situated at the traffic regulation post in Girlo Prorva and pilots embark in position 45°33′N, 29°47′E, as shown on the chart.

Tugs are available and are used by LASH and large tonnage vessels in the approach channel.

Regulations concerning entry

5.131

1 Vessels with a length of more than 150 m and a draught of more than 7 m are:

Prohibited from entering or leaving harbour while LASH vessels are at anchor.

Only permitted to enter or leave harbour with the assistance of two tugs, in daylight, in good weather and when the wind speed is not more than 23 kn.

Harbour

General layout

5.132

1 The harbour area consists of an artificial creek on the N side of the delta of Kiliys'ke Hyrlo. The harbour is approached by a dredged buoyed channel which leads from the outer anchorages.

2 Soyedinitel'nyy Kanal leading E and NE, connects the harbour area to Girlo Prorva (5.140) and thence to Kiliys'ke Hyrlo. This canal has a width of 40 m and handles vessels with a maximum draught of 2·4 m (2001).

Depths

5.133

1 Harbour area. 11 to 15 m.

Soyedinitel'nyy Kanal. See 5.132.

Principal marks

5.134

1 **Landmarks:**

Prorvinskiy Light (green truncated pyramidal metal framework tower, grey base, 28 m in height) (45°28′N, 29°43′E).

Prymors'ke church (45°31′N, 29°36′E).

Directions

(continued from 5.119)

5.135

1 **Leading lights:**

Front light (red rectangle on framework tower, 18 m in height) (45°28′N, 29°42′E).

Rear light (as for front light, 30 m in height) (7 cables SSW of front light).

2 From a position in the vicinity of the pilot boarding ground (45°33′N, 29°47′E), the alignment (210°) of Ust'-Dunaysk Leading Lights leads SSW for 6 miles, 3½ miles of which are in the buoyed channel, passing (with positions from front light):

SE of a buoy (starboard hand) (5¾ miles NNE), thence:

3 Between Nos 1 and 2 light-buoys (starboard and port hand) (4½ miles NNE) which mark the entrance to the buoyed channel, thence:

Between 7 further pairs of light-buoys (starboard and port hand) approximately 5 cables apart.

Useful mark:

Prymors'ke Light (white metal framework tower, radar reflector, 12 m in height) (45°32′N, 29°39′E).

Berths

5.136

1 **Mooring** buoys in centre of harbour for LASH vessels.

Quays. None available (2003). All cargo operations are carried out at three anchorage/mooring berths.

Port services

Repairs

5.137

1 Repair facilities are not available.

Facilities

5.138

1 Deratting; floating cranes of 50 tonne capacity.

Supplies

5.139

1 Fuel and fresh water supplied by barge.

KILIYS'KE HYRLO

Seaward entrance

Charts 2232, 2213

Route

5.140

1 The seaward entrance (45°31′N, 29°47′E) to Kiliys'ke Hyrlo consists of Prorvinskiy Kanal which has been cut through the bar and Girlo Prorva which runs for about 3 miles between Ostriv Prirvy and Ostrov Shabash.

Limiting depths

5.141

1 Prorvinskiy Kanal. Guaranteed depth of 4 to 4·8 m.

Girlo Prorva. Depths in river between 4·7 and 7·4 m.

Traffic regulations

5.142

1 A one way traffic system has been established in Girlo Prorva and Prorvinskiy Kanal. Ship movements are controlled by the following signals, which are shown from the traffic signal post situated at Prorvinskiy Light (45°28′N, 29°43′E):

Signal		*Meaning*
Day	*Night*	
▲	●	Entry from seaward permitted. Entry from Ochakovskoye Girlo prohibited
●	●	Entry from Ochakovskoye Girlo permitted. Entry from seaward prohibited.
●▲	●●	Entry from seaward and Ochakovskoye Girlo permitted.

Traffic regulations (5.142)

Directions

(continued from 5.119)

5.143

1 **Leading lights:**

Front light (black circle on black rectangle, 12 m in height) (45°28′N, 29°43′E).

Rear light (as for front, 18 m in height) (850 m SW of front light).

2 From a position in the vicinity of the pilot boarding area (45°31′N, 29°47′E) the alignment (219¼°) of these lights leads SW for 4 miles through Prorvinskiy Kanal and Girlo Prorva, passing (with positions from Prorvinskiy Light (5.134)):

Close to a buoy (safe water) (3½ miles NE). The pilot boarding ground is close to this buoy. Thence:

Between light-beacons which stand 20 m either side of the leading line and mark the limits of the canal. Thence:

NW of Prorvinskiy Rezervnyy Light (red framework tower, 17 m in height) (1·2 miles NE), which stands on the S bank of the canal. Thence:

3 SE of the entrance to a basin from which Seyedinitel'nyy Kanal leads to Ust'-Dunaysk (5.132). The S side of the entrance to the basin is marked by a light-beacon.

(Directions continue at 5.148)

Prorva to Port Kiliya

Topography

5.144

1 Between the village of Prorva (Km 3) (45°28′N, 29°43′E) and Gorod Vylkove (Km 18) (45°24′N, 29°36′E) the banks of Ochakivs'ke Hyrlo are generally low lying and thickly covered with reeds and trees. The average width of the ship canal in this stretch of the river is between 300 and 350 m, but it narrows to 150 m in the vicinity of Km 6, where the shallow Potapovskiy Kanal leads off in an E direction.

5.145

1 Between Gorod Vylkove and Port Kiliya (Km 47) (5.103), two channels branch off Kiliys'ke Hyrlo at Km 22. The N most of these channels, Stepovoye Hyrlo, which rejoins the main branch at Km 32, is navigable to river traffic.

Between Gorod Vylkove and Port Liliya, the width of the river varies from 200 m to a maximum of 950 m at Gorod Vylkove. The banks are generally low lying except for the N bank of Stepovoye Hyrlo, which is steep-to, and the S bank between Km 43·7 and 45·2, which is elevated with cliffs.

Limiting conditions

5.146

1 Vessels with a draught of up to 4·5 m can navigate between the village of Prorva and Port Kiliya.

Traffic regulations

5.147

1 The following traffic regulations apply to this stretch of the river:

One way traffic only is permitted at night in Ochakivs'ke Hyrlo, between Km 6 and 18.

Vessels with a draught of more than 4 m should use Stepovoye Hyrlo between Km 22 and 32.

Directions

(continued from 5.143)

5.148

1 From abreast the village of Prorva (Km 3) (45°27′N, 29°43′E) the fairway upstream to Port Kilya (Km 47) a distance of 24 miles, follows a buoyed channel, passing:

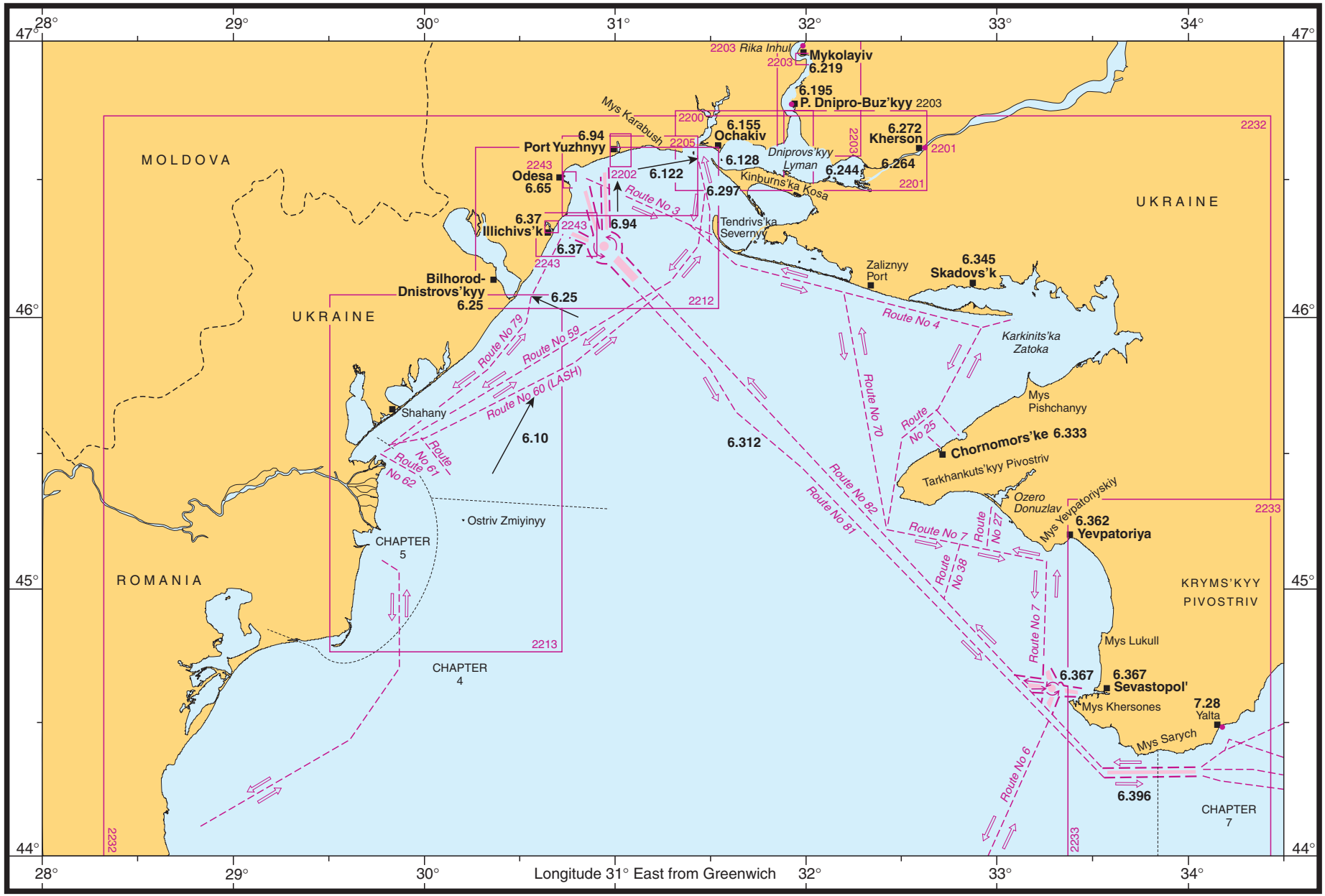
NW of entrance to Potapovskiy Kanal (Km 6), a shallow canal that leads E to the sea. Thence:

Gorod Vylkove (Km 16 to 20). This Ukrainian town, which stands on the N bank, has three churches and a tower, all of which are conspicuous. A T-shaped jetty for passenger ships extends from the shore at Km 19. Thence:

2 Periprava (Km 22) (45°24′N, 29°33′E), a Romanian village standing on the S bank. A jetty extends from the N bank opposite the village. Thence:

Chilia Veche (Km 45), a Romanian town standing on the S bank opposite Kiliya (5.103). A conspicuous church stands in the town.

(Directions for approaching Kiliya from Ismail are given at 5.97)



December 2003

CHAPTER 6

NORTH-WEST PART OF THE BLACK SEA

GENERAL INFORMATION

Charts 2232, 2212, 2213

Scope of the chapter

6.1

1 This chapter covers the NW part of the Black Sea which lies between the coast of the Ukraine N of the Danube delta, and the W coast of Kryms'kyy Pivostriv as far E as Mys Kikineyz (44°24′N, 33°59′N).

Ukraine – navigational information

6.2

1 **Caution.** Owing to insufficient information it is not always possible to ensure that charts covering Ukrainian waters are completely up to date for new dangers or changes to aids to navigation. Mariners are therefore advised to exercise particular caution when navigating in Ukrainian waters.

Ports

6.3

1 The following ports, which are open to international trade are described in this chapter:

Bilhorod-Dnistrovs'kyy (46°11′N, 30°22′E) (6.25).
Illichivs'k (46°19′N, 30°40′E) (6.37).
Odesa (46°30′N, 30°45′E) (6.65).

2 Port Yuzhnyy (46°36′N, 31°01′E) (6.94).
Port Dnipro-Buz'kyy (46°46′N, 31°57′E) (6.195).
Mykolayiv (46°57′N, 31°58′E) (6.219).
Kherson (46°38′N, 32°37′E) (6.272).
Sevastopol' (44°36′N, 33°32′E) (6.367).

Traffic regulations

6.4

1 **Traffic separation schemes,** linked by a traffic roundabout centred on 46°16′N, 30°56′E, are situated in the approaches to Illichivs'k, Odesa and Port Yuzhnyy. The position of these traffic separation schemes and the traffic roundabout are shown on the chart.

A further traffic roundabout and traffic separation scheme is situated in the approaches to Sevastopol'skya Bukhta (centred on 44°38′·8N, 33°17′·0E) and is shown on the chart. This scheme has not yet been accepted by the IMO but the Ukranian Authorities advise, however, that the principles for the use of the routeing system as defined in Rule 10 of the *International Regulations for Preventing Collisions at Sea (1972),* apply.

2 The traffic separation schemes in the approaches to Illichivs'k and Odesa are IMO adopted and Rule 10 of the *International Regulations for Preventing Collisions at Sea (1972),* applies to them. The traffic separation scheme has been extended by the Ukraine to cover the approaches to Port Yuzhnyy but has not yet been adopted by the IMO but the Ukranian Authorities advise, however, that the principles for the use of the routeing system as defined in Rule 10 of the *International Regulations for Preventing Collisions at Sea (1972),* apply.

North-west Black Sea Traffic Control System

6.5

1 The North-west Black Sea Traffic control system is a mandatory radar control system administered by the Ukraine from a radar station at Burlacha Balka (46°21′N, 30°39′E) and is mandatory for all foreign vessels.

This control system covers the approaches to the ports of Illichivs'k, Odesa, Port Yuzhnyy, Mykolayiv and Kherson.

See *Admiralty List of Radio Signals Volume 6(3)* for details.

Pilotage

6.6

1 Pilotage for vessels navigating in the waters of the NW Black Sea Traffic Control System and visiting the ports of Illichivs'k, Odesa, Port Yuzhnyy, Port Dnipro-Buz'kyy, Portpunkt Oktyabr'sk, Mykolayiv and Kherson is compulsory.

2 Port Yuzhnyy port control and Delta pilot will specify the pilot boarding position for vessels bound for Port Dnipro-Buz'kyy, Portpunkt Oktyabr'sk, Mykolayiv and Kherson when they have passed position 46°22′·6N, 30°57′·0E.

See *Admiralty List of Radio Signals Volume 6(3)* for details.

Natural conditions

Ice

6.7

1 In average winters, ice is found in a coastal belt and in bays and estuaries from Mys Tarkhankut (45°21′N, 32°30′E), N across the head of the Black Sea and down its W side to S of the Danube delta. In extremely hard winters, pack ice may be found in the open sea N of the parallel of Mys Tarkhankut. See 1.158.

Currents

6.8

1 See 1.145.

Magnetic anomaly

6.9

1 Between Sukhyy Lyman (46°19′N, 30°40′E) and the entrance to Dniprovs'kyy Lyman (46°36′N, 31°27′E), the magnetic variation is largely affected by local influences and varies from 5°W to 9°E (1982).

OSTRIV ZMIYINYY TO APPROACHES TO ODESA

OFFSHORE ROUTE BETWEEN OSTRIV ZMIYINYY AND APPROACHES TO ODES'KA ZAKOTA

General information

Charts 2232, 2213, 2212

Topography and dangers

6.10

1 Between Ostriv Zmiyinyy (45°15′N, 30°12′E) and the traffic roundabout (centred 46°16′N, 30°56′E) in the approaches to Odes'ka Zakota, depths of less than 20 m extend up to 20 miles from the shore.

The coast SW of Dnestrovsko—Tsaregradskoye Girlo (46°05′N, 30°28′E) (6.15) is low lying and inconspicuous from seaward. NE of this entrance the coast is more elevated with cliffs.

2 **Caution.** There are banks, underwater obstructions and wrecks, which constitute a danger to navigation up to 16 miles from the shore. For details see the chart.

Traffic regulations

6.11

1 A traffic roundabout centred on 46°16′N, 30°56′E, as shown on the chart, is situated in the approaches to Odes'ka Zakota. The centre of the roundabout is marked by a light-buoy (special).

A traffic separation scheme, shown on the chart, is situated between the NW end of Recommended routes Nos 81 and 82 (6.312) and the traffic roundabout. This traffic separation scheme is IMO adopted and Rule 10 of the *International Regulations for Preventing Collisions at Sea (1972),* applies.

Principal marks

6.12

1 **Landmark:**

Ostriv Zmiyinyy (45°15′N, 30°12′E) (4.9).

Major lights:

Ostriv Zmiyinyy Light (as above) (4.9).
Budaki Light (45°55′N, 30°17′E) (6.18).
Sanzhiys'kyy Light (46°14′N, 30°37′E) (6.18).
Illichivs'k Light (46°19′N, 30°41′E) (6.18).
Odes'kyy Light (46°23′N, 30°45′E) (6.56).
Vorontsovskiy Light (46°30′N, 30°46′E) (6.81).

Other navigational aids

6.13

1 **Racons:**

Sanzhiys'kyy Light — as above.
Odesa Approach No 1 Buoy (46°08′N, 31°06′E).

DGPS:

Ostriv Zmiyinyy — as above.

See *Admiralty List of Radio Signals Volume 2* for details.

Directions

(continued from 4.11 and 4.182)

6.14

1 From the vicinity of Ostriv Zmiyinyy (45°15′N, 30°12′E) the offshore passage to the traffic roundabout in the approaches to Odes'ka Zakota (6.11) leads NNE for about 65 miles, passing:

Clear of a wreck (45°53′N, 30°44′E) which has a depth of 11·2 m over it. Thence:

ESE of a buoy (S cardinal) (46°00′N, 30°43′E) which marks the S extremity of Dnistrovskaya Banka. The approach to Dnestrovsko—Tsaregradskoye Girlo (6.15) leads S of this bank. Thence:

2 ESE of a buoy (E cardinal) (46°06′N, 30°57′E) which marks a rock with a depth of 10 m over it. Thence:

ESE of No 1 Light-buoy (E cardinal) (46°08′N, 31°06′N) which marks the SE end of the traffic separation scheme which leads between Recommended routes Nos 81 and 82 and the traffic roundabout.

(Directions continue for Illichivs'k and approaches at 6.57, *for Odesa and approaches at 6.82, for Port Yuzhnyy and approaches at 6.115 and for offshore passage to Mys Kikineyz at 6.316)*

INSHORE ROUTE BETWEEN APPROACHES TO UST'-DUNAYSK AND ILLICHIVS'K

General information

Charts 2213, 2212, 2243

Topography

6.15

1 Between Shahany Light (45°40′N, 29°53′E) (5.119) and Mys Burnas (15 miles NE) the coast is low lying and backed by a chain of shallow salt lakes that are separated from the sea by narrow necks of land. Between Mys Burnas and Kurortnoye (9 miles NE), the coast is noticeably higher than the coast on either side and has cliffs in places.

2 The coast 20 miles NE of Mys Burnas is backed by Dnistrovs'kyy Lyman, a large shallow lagoon with depths of 1·5 to 2·4 m that extends NW for about 23 miles.

Dnistrovs'kyy Lyman is separated from the sea by Kosa Bugaz. In the S part of this spit is a passage, Dnestrovsko—Tsaregradskoye Girlo, which forms the entrance to the lagoon. A bridge, the centre part of which can be raised, crosses this passage.

3 Rika Dnestr, which rises in the Carpathian mountains and is 1400 km in length, flows into the head of Dnistrovs'kyy Lyman. This river is navigable to small craft with a draught of 2 m as far as Benderi, a distance of 70 miles.

Between Dnestrovsko-Tsaregradskoye Girlo and the entrance to Illichivs'k (17 miles NNE) the coast is generally high with cliffs which in places are intersected by gullies. A number of villages stand on this section of the coast.

Fishing nets

6.16

1 Numerous fishing nets may be encountered along the coast between Mys Burnas and Dnestrovsko-Tsaregradskoye Girlo.

Recommended routes

6.17

1 Recommended route No 79, for hydrofoils and tugs with draughts not exceeding 4 m, leads from Bukhta Zhebriyanskaya (45°30′N, 29°40′E) to the approaches to Dnestrovsko-Tsaregradskoye Girlo.

Recommended route No 28 leads NNE from the approaches to Dnestrovsko-Tsaregradskoye Girlo to the approaches to Illichivs'k (6.37).

Principal marks

6.18

1 **Landmarks:**

Mys Burnas (45°50′N, 30°09′E). A prominent rise on the sand ridge at the SE corner of Ozero Burnas.

Chimney (45°56′N, 30°18′E).
Building (46°01′N, 30°22′E).
Chimney (46°01′N, 30°22′E).
2 Water Tower (46°02′N, 30°22′E).
Chimney (46°02′N, 30°22′E).
Chimney (46°03′N, 30°26′E).
Tower of lift bridge crossing Dnestrovsko-Tsaregradskoye Girlo (46°05′N, 30°28′E).
Building (46°08′N, 30°32′E).
3 Television mast (46°09′N, 30°32′E).
Tower (46°13′N, 30°34′E).
Tower (46°15′N, 30°37′E).

Major lights:

Budaki Light (black square, white stripe on red square, metal tower, wind generator, 15 m in height) (45°55′N, 30°17′E).
4 Dnestrovsko-Tsaregradskoye Girlo Rear Leading Light (46°04′N, 30°28′E) (6.22).
Sanzhiys'kyy Light (white 8-sided stone tower, floodlit, 19 m in height) (46°14′N, 30°37′E).
Illichivs'k Light (white round concrete tower, red bands, 18 m in height) (46°19′N, 30°41′E).

Other navigational aid

6.19

1 **Racon:**

Sanzhiys'kyy Lt — as above.

See *Admiralty List of Radio Signals Volume 2* for details.

Directions

(continued from 5.117)

Mys Shahany to Dnestrovsko-Tsaregradskoye Girlo

6.20

1 From a position about 5 miles SE of Shahany Light (45°40′N, 29°53′E) Recommended route No 79 leads generally NE and NNE for 37 miles to Dnestrovsko-Tsaregradskoye Girlo, passing SE of a dangerous wreck (45°47′N, 30°12′E) and a number of wrecks with depths of between 4·8 and 10 m over them, which lie up to 5 miles offshore between Mys Burnas (45°50′N, 30°09′E) and Budaki Light (6.18) (8 miles NE).

2 A wreck (45°54′N, 30°20′E) with a depth of 4·8 m over it, is marked by a buoy (isolated danger).

6.21

1 **Useful mark:**

Burnas Light (white stone structure on yellow building, 13 m in height) (45°50′N, 30°09′E).

(Directions for Bilhorod-Dnistrovs'kyy and approaches continue at 6.22, and for Dnestrovsko-Tsaregradskoye Girlo to approaches to Illichivs'k at 6.36)

Directions for entering Dnistrovs'kyy Lyman

(continued from 6.20)

6.22

1 **Initial position.** In the vicinity of the pilot boarding point (46°05′N, 30°32′E).

Dnestrovsko-Tsaregradskoye Girlo Leading lights:

Front light (red rectangle, white stripe on red metal framework tower, 21 m in height) (46°04′·5N, 30°28′·4E).
2 Rear light (red rectangle, two white bands, white stripe, on red metal framework tower, 32 m in height) (220 m W of front light).

The alignment (265°) of these lights leads W for 2 miles to Dnestrovsko-Tsaregradskoye Girlo, passing along a buoyed channel, the outer end of which is marked by No 1 Light-buoy (starboard hand) and No 2 Buoy (port hand).

3 **Cautions.** A dangerous wreck lies close to the starboard side of the channel halfway between Nos 3 and 5 Buoys, 2½ cables to the W of No 1 Buoy.

Due to changes in the approach channel it was reported (2000) that a new channel, with a least depth of 4·7 m, marked by buoys and light-buoys is situated 80 m to the N of the existing leading line.

Directions for Dnestrovsko-Limansky Kanal

6.23

1 **Route.** The canal, which is 7½ miles long, consists of two legs.

First leg. Leading lights:

Front light (white diamond and white rectangle, black stripes, 18 m in height) (46°04′·5N, 30°28′·1E).
Rear light (white building, black stripe) (380 m S of front light).

2 The alignment (169°), astern, of these lights, visible on the leading line only, leads N for 2½ miles along the first leg of the canal, which is marked, at intervals of about 5 cables, by pairs of buoys and light-buoys (port and starboard hand). The start of the second leg of the canal is marked by Nos 17 and 18 Light-buoys.

3 **Caution.** A wreck lies close to the port side of the canal between No 10 Light-buoy and No 12 Buoy, 6½ cables N of the front leading light.

6.24

1 **Second leg. Leading lights:**

Front light (white diamond and rectangle, black stripe, 19 m in height) (46°11′·0N, 30°22′·5E).
Rear light (black diamond and rectangle, white stripe, 18 m in height) (6 cables NW of front light).

2 The alignment (319¼°) of these lights, visible on the leading line only, leads NW for 5 miles along the second leg of the canal to the entrance to Yuzhnyy Kovsh which is entered after passing Nos 37 and 38 Buoys. This leg of the canal is marked by pairs of buoys and light-buoys (port and starboard hand), which are situated about 5 cables apart.

Bilhorod-Dnistrovs'kyy and approaches

Chart 2212 (see 1.16)

General information

6.25

1 **Position.** The port (46°11′N, 30°22′E) is situated at the SE end of the town of Bilhorod-Dnistrovs'kyy on the W shore of Dnistrovs'kyy Lyman.

Function. A commercial port that handles general cargo and timber. 1n 2002 the town had a population of 52 000.

2 **Approach.** The port is approached by way of a channel which leads from No 1 Light-buoy (46°05′N, 30°30′E) to Dnestrovsko—Tsaregradskoye Girlo and thence by way of Dnestrovsko-Limanskiy Kanal through the S part of Dnistrovs'kyy Lyman.

Port area consists of:

The approach channel (6.22).
3 The outer roadstead (6.28).
Dnestrovsko-Limanskiy Kanal (6.23).
Yuzhnyy Kovsh (6.32).

Port Authority. Bilhorod-Dnistrovs'kyy Port Authority, Shabskaya ul 81, 272300 Bilhorod-Dnistrovs'kyy, Ukraine.

Traffic. In 2002 the port was used by 61 vessels with a total deadweight of 583 882 tonnes.

Limiting conditions

6.26

1 **Least depths:**

Approaches to Dnestrovsko—Tsaregradskoye Girlo. 2·0 m (1992).

Dnestrovsko-Limanskiy Kanal. Owing to considerable silting of the channel, the depth of water within the canal should be obtained from the port captain at Bilhorod-Dnistrovs'kyy before attempting transit.

2 **Maximum size** of vessel that can be accommodated in Port Bilhorod-Dnistrovs'kyy:

Draught in fresh water 4·5 m, length 125 m, width 20 m and height of mast 25 m.

Vertical clearance (when raised) of bridge crossing Dnestrovsko—Tsaregradskoye Girlo. 26 m.

6.27

1 **Water level** in Dnistrovs'kyy Lyman is determined by the level of Rika Dnestr and is highest in the spring and lowest in the autumn. NW winds reduce water levels in the S part of the inlet to 0·5 m below mean level.

Currents. When winds are from NW, strong currents out of Dnistrovs'kyy Lyman have been observed which make entry to the inlet and anchorage near the channel dangerous. Navigation is prohibited when the rate of the current is in excess of 4 kn.

2 **Ice.** In winter Dnistrovs'kyy Lyman is covered in thick ice. The average number of days with ice is about 80, but it varies between 35 and 125 days. Navigation all year round is maintained with the assistance of icebreakers.

Arrival information

6.28

1 **Port radio.** See *Admiralty List of Radio Signals Volume 6(3)* for details.

Notice of ETA. See *Admiralty List of Radio Signals Volume 6(3)* for details.

2 **Outer roadstead** extends up to 1½ miles offshore between the parallels of 46°07′N and 46°03′N.

Anchorage area No 350, the limits of which are shown on the chart, is situated within the outer roadstead and is used for cargo handling operations and by vessels awaiting entry to the port.

3 **Pilotage** is compulsory. Pilots normally embark 2 miles E of Dnestrovsko—Tsaregradskoye Girlo at the position shown on the chart. If, due to adverse weather conditions, the pilot is unable to embark the pilot boat will lead the vessel into the harbour. Requests for a pilot should be made 4 hours in advance.

4 **Tugs** are available. The use of at least one tug is compulsory when mooring. Tugs should be ordered 2 hours before they are required.

6.29

1 **Regulations concerning entry:**

Entry to and departure from the port can only be made during daylight hours.

One way traffic only is permitted in pilotage waters.

Overtaking by seagoing vessels is prohibited in the channel.

2 Vessels with a draught similar to the maximum depth of the channel must not exceed a speed of 5 kn.

Navigation in the channel is prohibited during fog or limited visibility.

6.30

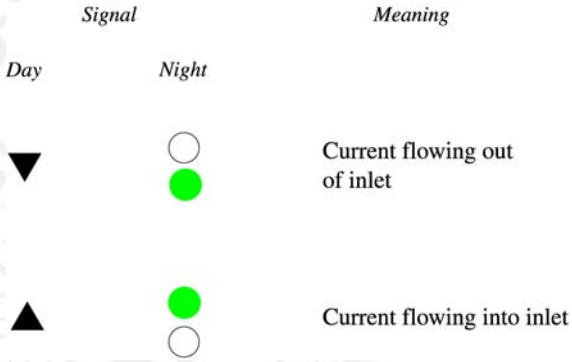
1 **Navigation during ice conditions:**

Ice breakers normally meet vessels in the vicinity of No 1 Buoy off the approaches to Dnestrovsko-Tsaregradskoye Girlo.

Request for pilotage in ice conditions should be made 48 hours before arrival.

6.31

1 Signals indicating the direction of the current in Dnestrovsko—Tsaregradskoye Girlo are exhibited from a mast on a building near the Dnestrovsko-Tsaregradskoye front leading light-beacon (6.22) as follows:



Directions of the current (6.31)

Harbour

6.32

1 **General layout.** Quays have been constructed in Yuzhnyy Kovsh, a basin on the SE side of the town of Bilhorod-Dnistrovs'kyy. The basin is protected by a short mole projecting SE from the N part of the basin. The principal berths are on the N side of the basin.

Depth in basin 3 m.

Principal marks

6.33

1 **Landmarks:**

Two towers of bridge (46°04′N, 30°28′E). (6.18).

Chimney (46°03′N, 30°26′E).

Building (46°08′N, 30°32′E).

Chimney (46°01′N, 30°22′E) (6.18).

Chimney (46°02′N, 30°22′E) (6.18).

Television mast (46°09′N, 30°32′E) (6.18).

Church (46°08′N, 30°23′E).

2 **Major light:**

Dnestrovsko-Tsaregradskoye Girlo Rear Leading Light (46°04′N, 30°28′E) (6.22).

Berths

6.34

1 Nine berths, with depths of between 3·1 and 4·8 m, are situated on the NW side of Yuzhnny Kovsh.

Port services

6.35

1 **Repairs:** minor repairs carried out.

Facilities: deratting.

Supplies: diesel fuel available; fresh water supplied at berth; provisions.

Dnestrovsko-Tsaregradskoye Girlo to approaches to Illichivs'k

Directions

(continued from 6.20)

6.36

1 From the vicinity of Dnestrovsko-Tsaregradskoye Girlo (46°05′N, 30°28′E), Recommended route No 28, which is shown on the chart, leads NNE for 16 miles to the approaches to Illichivs'k, passing:

WNW of the N end of Dnistrovskaya Banka which is marked by a buoy (N cardinal) (46°08′N, 30°40′E). Thence:

2 ESE of a number of charted obstructions with depths of 3·4 to 6 m over them, which lie within 1 mile of the coast. Almost all the dangers lie within the 20 m contour line. Thence:

ESE of a dangerous wreck (46°15′N, 30°40′E).

(Directions continue for the approaches to Illichivs'k at 6.57, and for the S approaches to Odesa at 6.83)

ILLICHIVS'K, ODESA AND PORT YUZHNYY

ILLICHIVS'K AND APPROACHES

General information

Charts 2212, 2243

Position

6.37

1 Illichivs'k (46°19′N, 30°40′E) is situated on the shores of Sukhyy Lyman, an inlet 11 miles SSW of Odesa.

Function

6.38

1 It is a major port which handles general and bulk cargoes and provides facilities for container and Ro-Ro traffic and is reported to be the largest container port in the Black Sea.

It is also a terminal for the international rail ferry between the Ukraine and Varna in Bulgaria.

In 2002 the population was 54 000.

Port limits

6.39

1 The port area consists of:

The three basins of Sukhyy Lyman.

The outer roadstead of the port which is bounded on the W by the coastline between Mys Velykyy Fontan (46°22′N, 30°45′E) (6.81) to Sela Sanzheyka (10 miles SSW); and on the N, E and S by the arc of a circle of 4½ miles radius centred on the harbour entrance (46°19′N, 30°41′E).

Approach and entry

6.40

1 Illichivs'k is approached by way of a traffic separation scheme (6.4) and Vkhodnoy Kanal (6.57) an entrance channel which leads through the coastal bank to the harbour entrance.

Traffic

6.41

1 In 2002, the port was used by 990 vessels with a total deadweight of 24 938 491 tonnes.

Port Authority

6.42

1 Illichivs'k Authority, pl Truda 6, 270901 Illichivs'k, Ukraine.

The Harbour Master's office and the port office are situated in the area of the fishing port.

Limiting conditions

Depths

6.43

1 Vkhodnoy Kanal dredged to 13·0 m (1991).

Pershyy Baseyn, dredged to 11·2 m (1991).

Deepest berths. Up to 12·2 m in Pershyy Baseyn.

Maximum size of vessel handled

6.44

1 Draught 11 m, length 260 m and width 35 m.

Times of entry

6.45

1 Port may be entered 24 hours a day but night time movement of vessels over 200 m in length requires special permission.

Natural conditions

6.46

1 **Density of water.** 1·010 g/m^3.

Water level. range of water level caused by strong winds may reach 1 m. N winds cause a rise and S winds a fall in level.

Ice. Icebreaker assistance required for about 30 days during severe winters.

Arrival information

Control of ship movements

6.47

1 The movement of all vessels within the port area of Illichivs'k is controlled by the Traffic Control post accommodated in a building, painted with red and white stripes, that is situated on the N spit of the harbour entrance. The zone of operation of this control post is the port and Anchorage area No 351 (6.49).

2 Traffic signals regulating entry and exit from the port are exhibited from a mast close to this building.

Port radio station is situated in the same building as the traffic regulating post. See *Admiralty List of Radio Signals Volume 6(3)* for details.

Notice of ETA

6.48

1 See *Admiralty List of Radio Signals Volume 6(3)* for details.

Outer anchorages

6.49

1 Anchorage areas Nos 352 and 351, the limits of which are shown on the chart, are situated, respectively, ½ and 4½ miles SE of the port entrance; depths 14 to 22 m, grey mud and shell.

Foreign vessels are permitted to anchor in area No 352 between 1 October and 1 May.

Pilots and tugs

6.50

1 **Pilotage** is compulsory for all vessels of 500 grt and over entering and leaving harbour and is available 24 hours. Pilots normally embark in the vicinity of the Illichivs'k approach light-buoy (46°19′N, 30°44′E) as shown on the chart. In the event of bad weather the place of embarkation or disembarkation can be changed with the approval of the master.

2 **Tugs** are available and their use is compulsory for vessels over 1500 grt.

Traffic regulations

6.51

1 **Area in which anchoring, fishing, submarine and seabed operations are prohibited:**

Explosives Dumping Ground Area No 665 into which entry is prohibited is situated 2¼ miles NNE of the harbour entrance.

Regulations concerning entry

6.52

1 When approaching the port the Master of a vessel must communicate in good time with the traffic regulation post, which will determine the sequence of the ship's movements.

All vessels within the port area must keep a watch on VHF channel 16.

Permission to enter or leave harbour, which is granted by the Port Captain, will be confirmed by a green light shown at the signal mast near the traffic regulating post. A red light indicates that entry or exit is prohibited.

6.53

1 Anchoring is prohibited on or to the N of the leading line between Illichivs'k approach light-buoy and the entrance channel, and between the moles at the entrance.

Vessels proceeding from N to S are not to cross the leading line between Illichivs'k approach light-buoy and the entrance channel.

Navigation in the entrance channel is normally one way.

2 Speed of vessels in the entrance channel should not exceed 6 kn unless a higher speed is necessary to retain control of the vessels, in which case the traffic regulation post should be informed.

Speed of vessels of more than 20 grt in the inner port area must not exceed 5 kn.

Harbour

General layout

6.54

1 Sukhyy Lyman is divided into three parts, which from seaward are known, respectively, as Pershyy Baseyn, Vtoroy Baseyn and Tretiy Baseyn.

Pershyy Baseyn lies between the harbour entrance and Ostrov Dambovyy, an artificial islet that lies 1 mile NNW. Vtoroy Baseyn extends 1 mile NW from Ostrov Dambovyy and Tretiy Baseyn, which is not shown on the chart, lies N of Vtoroy Baseyn and is entered by a channel which is crossed by a pontoon bridge.

2 Oleksandrivka and the new town of Illichivs'k are situated on the W side of Pershyy Baseyn.

The main berths for ocean going vessels are situated on the S and W side of Pershyy Baseyn and there is a fishing port on the E side of this basin.

Measured distance

6.55

1 Between the harbour entrance and Odes'kyy Light (6.56) there are 2 measured distances:

Limit marks: Pairs of beacons (black and white).
Distances (N to S): 3704 m and 1852 m.
Running track: 032½°/212½°.

Principal marks

6.56

1 **Landmarks:**

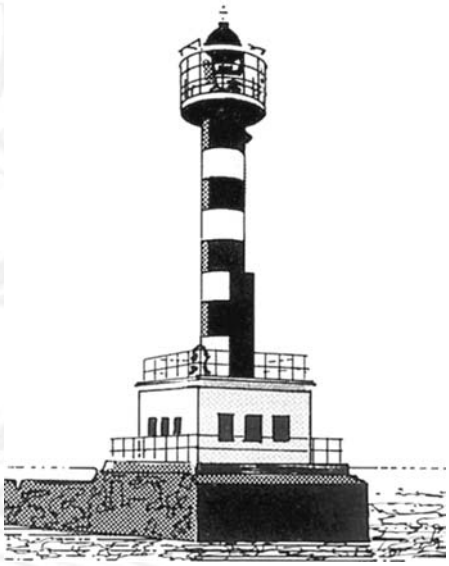
Tower (46°15′N, 30°37′E).
Chimney (46°17′N, 30°37′E).
Radar Station No 3 (46°17′·9N, 30°39′·7E).
Two chimneys (46°18′·4N, 30°39′·1E).

2 Chimney (46°18′·9N, 30°38′·3E).
Chimney (46°19′·7N, 30°40′·3E)
Tower (46°19′·9N, 30°41′·2E).
Chimney (46°20′·4N, 30°41′·4E).

3 Chimney (46°20′·9N, 30°40′·3E).

Major lights:

Sanzhiys'kyy Light (46°14′N, 30°37′E) (6.18).
Illichivs'k Light (46°19′N, 30°41′E) (6.18), which stands at the head of S mole.



Illichivs'k Light (6.56)

Odes'kyy Light (white metal framework tower with central column, 27 m in height) (46°23′N, 30°45′E).

Directions for entering harbour

(continued from 6.14 and 6.36)

Approach and entrance channel

6.57

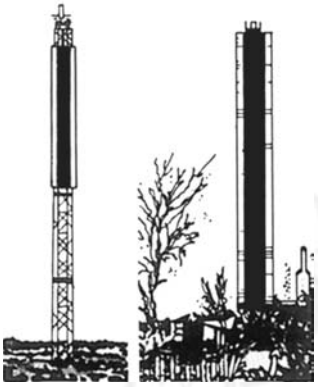
1 **Initial position.** In the vicinity of No 1 Light-buoy (E cardinal) (46°08′N, 31°06′E) lying on the SE edge of the traffic separation scheme. The track leads NW then WNW

within the traffic separation scheme for 19 miles to the pilot boarding position.

2 **Leading Lights:**

Front light (white rectangle, black stripe on black metal framework tower, 27 m in height) (46°19′N, 30°39′E).

Rear light (similar structure, 29 m in height) (720 m from front light).



Front *Rear*

Leading Lights (6.57)

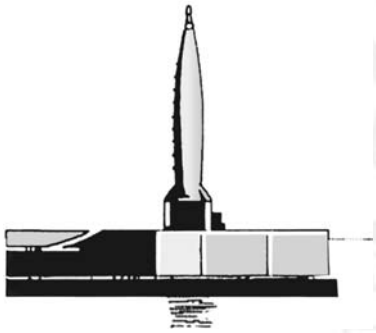
3 The alignment (288½°) of these lights, visible on the leading only, leads WNW to the harbour entrance, passing:

Illichivs'k approach light-buoy (safe water) (46°19′N, 30°44′E), thence:

Between Nos 1 and 2 Light-buoys (starboard and port hand) which mark the seaward entrance of Vkhodnoy Kanal. This entrance channel, the edge of which is marked by light-buoys, is 120 m wide. Thence:

4 Between the N and S moles which protect the inshore end of the entrance channel.

Caution. When there are strong winds between NE and S, the sea in the channel makes steering difficult.



North mole head Light (6.57)

Vtoroy Baseyn

6.58

1 **Leading lights:**

Front light (white rectangle, black stripe on metal framework tower, 16 m in height) (46°21′N, 30°39′E).

Rear light (similar structure, 28 m in height) (247 m NNW of front light).

2 The alignment (345¾°) of these lights leads into Vtoroy Baseyn passing E of Ostrov Dambovyy. This passage has a least depth of 8 m.

In-going traffic entering Vtoroy Baseyn uses the passage E of Ostrov Dambovyy.

3 **Out-going traffic** uses the W passage.

Large vessels which may find the W passage difficult to navigate may, with the permission of the Harbour Master, use the E passage when proceeding from Vtoroy Baseyn to Pershyy Baseyn.

Basins and berths

Pershyy Baseyn

6.59

1 **Alongside berths.** Positions of berths and their depths are shown on the chart. It has been reported that Berths Nos 1 and 2 are for coal and ore cargoes, Nos 3 and 4 are used by Ro-Ro vessels and the remaining berths are for general cargo.

2 **Mooring buoys**, the positions of which are shown on the chart, are situated in the centre of Pershyy Baseyn.

Anchoring is not normally permitted within the harbour entrance, but may be permitted in exceptional circumstances and for short periods, with tugs in attendance.

Vtoroy Baseyn

6.60

1 **Pier** used by the international rail ferry is situated on the NE side of Vtoroy Baseyn.

Port services

Repairs

6.61

1 **Repairs** of all kinds can be carried out on vessels up to 60 000 dwt.

Floating docks. Four docks are available with capacity of up to 60 000 tonnes, length 250 m.

Other facilities

6.62

1 Deratting; hospital; measured distance (6.55); oily waste disposal; salvage services.

Supplies

6.63

1 Fuel; fresh water supplied at quays and by barge; provisions.

Communications

6.64

1 **Sea.** International rail ferry to Varna.

ODESA AND APPROACHES

General information

Charts 2212, 2205, 2243 plan of Odesa

Position

6.65

1 Odesa (46°30′N, 30°45′E) is situated in the SW part of Odes'ka Zakota. a bay in the NW part of the Black Sea.

Topography

6.66

1 Odes'ka Zakota is entered between Mys Lanzheron (46°29′N, 30°46′E) and Mys Pivnichnyy Odes'kyy, about 5 miles NNE. The city of Odesa stands on a hill which rises steeply from the sea and has many fine buildings. A broad flight of steps, supported by arches, leads from the harbour up the hillside to a boulevard which runs along the top of the slope between the harbour and the city. The buildings of the city extend S to Mys Lanzheron.

2 The inner roadstead of the port consists of a number of basins separated by moles extending for 2 miles along the

shore and is protected from the E by Karantinnyy Mol and its extension Reydovyy Mol and from the NE and N by two detached breakwaters, Staryy and Novyy Volnolom. Vorontsvskiy Light (46°30′N, 30°46′E) (6.81) stands at the head of Reydovyy Mol.

For further details of the port layout, the chart is the best guide.

Function

6.67

1 Odesa, which in 2002 had a population of 1 029 000, is the largest Black Sea port in the Ukraine and a major industrial and cultural centre.

Port limits

6.68

1 The port is bounded by the parallels of 46°32′N and 46°25′N and the meridian of 30°54′E and the coastline.

The port area is divided into three roadsteads:

The outer roadstead which comprises waters within the port area to seaward of a line joining the entrance points of Odes'ka Zakota.

2 Odes'kyy roadstead which comprises waters in Odes'ka Zakota between the outer and inner roadstead.

The inner roadstead which comprises the water area of the port bounded by a line running from the N end of Reydovyy Mol, through Staryy Volnolom and Novyy Volnolom to Mol Neftyanoy Gavani.

Approach and entry

6.69

1 Odesa is approached by way of two traffic separation schemes, one of which leads from the traffic roundabout (centred 46°16′N, 30°56′E) and the other which follows the coast from the entrance to Illichivs'k, 11 miles S. Recommended route No 1, which is shown on the chart, leads ENE to Kherson.

2 The inner roadstead may be entered as follows:

South entrance. Between Reydovyy Mol and E end of Staryy Volnolom.

Middle entrance. Between the W end of Staryy Volnolom and the S end of Novyy Volnolom.

Traffic

6.70

1 In 2002, the port was used by 1122 vessels with a total deadweight of 52 459 767 tonnes.

Port Authority

6.71

1 Port Odesa Authority, Vakulenchuka Pl.1, Odesa 270004.

Limiting conditions

6.72

1 **Maximum size of vessel handled.** Draught 12·5 m, length 250 m, width 40 m.

Entry to port. 24 hours a day.

Density of water. Average 1·012 g/m^3, but varies with the season.

2 **Water level.** Range of water level caused by winds is 1–2 m.

Ice. Icebreaker assistance is required for about 30 days during severe winters.

Arrival information

Control of ship movements

6.73

1 Port control (6.81), which operates 24 hours a day, regulates and controls the movements of ships within its zone of operation.

This zone of operation consists of the waters that are bounded to the S and SE by the arc of a circle, 8 miles in radius, centred on the control post and to the E by the meridian of 30°55′E.

2 Port control is sited on the top of a tower which stands on No 1 quay, at the head of Karantinnyy Mol.

Radar-assisted pilotage is available on request but is mandatory if visibility falls below 3 miles. Radar pilotage is mandatory for; passenger ships, gas carriers, ferries, tankers, LASH vessels and Ro-Ro vessels.

Port radio

6.74

Port radio station is located in the same building as Port control. See *Admiralty List of Radio Signals Volume 6(3)* for details.

Notice of ETA

6.75

1 See *Admiralty List of Radio Signals Volume 6(3)* for details.

Outer anchorages

6.76

1 **Anchorage areas,** the limits of which are shown on the chart, are situated as follows:

Area No 354 in the outer roadstead. This anchorage is for large tonnage vessels, tankers, vessels with dangerous cargoes and other vessels waiting to enter Odesa.

Area No 355 in Odes'kyy roadstead. Vessels are brought to this anchorage by shore based radar pilotage irrespective of visibility. See 6.86.

Pilots and tugs

6.77

1 **Pilotage** is compulsory for all vessels entering and leaving Odesa. Pilots board 2 miles E of Vorontsovskiy Light (6.81).

2 **Tug** requirements should be made known to the harbour authorities 2 hours before entering the inner roadstead, and 2 hours and again 45 minutes before sailing. All vessels over 100 m in length are required to take tugs.

Traffic regulations

6.78

1 **Area into which entry is prohibited:**

Area No 184 extends about 2 cables NNE from Staryy Volnolom.

2 **Area in which anchoring, fishing, submarine and seabed operations are prohibited:**

Area No 605 is situated SE of Staryy Volnolom.

See Appendix II.

All vessels underway in the port area must keep watch on VHF.

3 Vessels must inform the Port control 20 minutes before entering the waters of the port area and on completion of anchoring or securing alongside.

Vessels anchoring in area No 354 should report their position from Vorontsovskiy Light.

Permission must be obtained before moving a vessel within the port area. The permission remains in force for 30 minutes and then automatically lapses.

4 **Speed** of vessels must not exceed:
In the outer roadstead, anchorages and approaches to port: Minimum speed required to control the ship.
In the inner roadstead and channel to Neftyanaya Gavan': 4 kn.

5 **Visibility.** When visibility is less than 2 miles in the outer roadstead and 5 cables in the inner roadstead, the movement of ships can only be carried out under radar pilotage from the coast radar station.

Tankers may not approach or leave their berths in the oil harbour, even under radar pilotage, if visibility is less than 1 mile.

Ice. Vessels requiring icebreaker assistance must give 24 hours notice of their arrival or departure.

Harbour

General layout

6.79

1 The harbour is divided into two main areas. The N part contains the oil berths and the S part the cargo, container and passenger berths. The harbour is protected by two detached breakwaters, Novyy Volnolom and Staryy Volnolom.

Climatic table

6.80

1 See 1.195 and 1.207.

Principal marks

6.81

1 **Landmarks:**
Mys Velykyy Fontan (46°23′N, 30°45′E), which rises vertically to a height of 38 m and is radar conspicuous. Odes'kyy Light stands on this headland.
Tower (46°22′·7N, 30°44′·9).
Water Tower (46°22′·7N, 30°45′·0).
2 Chimney (46°23·8′N, 30°43·6′E).
Building (46°26′·4N, 30°46′·2E) on Mys Maly Fontan.
Chimney (46°27′·4N, 30°43′·6E).
Monument (46°28′·8N, 30°45′·8E).
Port Control Tower (46°29′·5N, 30°45′·6E).
Factory chimney (46°30′·8N, 30°43′·6E).
Flare (46°31′N, 30°41′E).
3 Chimney (46°33′·6N, 30°49′·5E).
Mys Pivnichnyy Odes'kyy (46°33′N, 30°49′E), a conspicuous headland.
Chimney (46°35′N, 30°47′E).

Major lights:
Odes'kyy Light (46°23′N, 30°45′E).
4 Vorontsovskiy Light (white round tower, red lantern, 26 m in height) (46°30′N, 30°46′E).
Odessskiy Stvornyy Light (white hut on building, 20 m in height) (46°29′·4N, 30°44′·1E).
Luzanovskiy Light (orange column on white round concrete tower, 10 m in height) (46°33′N, 30°50′E).

Directions for entering harbour

Approach from east

(continued from 6.14)

6.82

1 **Initial position.** NW sector of traffic roundabout centred 46°16′N, 30°56′E.

A traffic separation scheme (6.4) leads NNW for 10 miles to a light-buoy (N cardinal) in the entrance of Odes'ka Zakota.

Odesa – Vorontsovskiy Lt (6.81)

(Original dated 2003)

(Photograph – A. McDonald mv Doulos)

Coastal approach from south.

(continued from 6.36)

6.83

1 From a position 2½ miles ESE of the entrance to Illichivs'k, a traffic separation scheme leads NE and then NNE for 9½ miles to the entrance to Odesa, passing:
SE of Mys Velykyy Fontan (46°23′N, 30°45′E) (6.81). Thence:
ESE of Mys Lanzeron (46°29′N, 30°46′E), a steep headland surrounded by a shelf with depths of less than 5 m over it.

2 **Inshore route.** Recommended route No 18 for passenger vessels of up to 120 tonnes, shown on the chart, leads NE and N from Illichivs'k to Odesa.

Caution. There are many sunken obstructions on the coastal bank which extends up to 5 cables offshore between Mys Velykyy Fontan and Lanzheronskiy (46°27′N, 30°46′E).

Entering Odesa

6.84

1 **South entrance.** The channel leads S between Reydovyy Mol, the head of which is marked by Vorontsovskiy Light (46°30′N, 30°46′E) (6.81) and the E end of Staryy Volnolom which is marked by a light (white metal framework tower, 9 m in height) (2 cables SW).

6.85

1 **Middle entrance Leading lights:**
Front (white diamond and white rectangle, black stripe on metal framework tower, 10 m in height) (46°30′N, 30°44′E).
Rear (white triangle, point up, and white rectangle, black stripe, 22 m in height) (695 m W of front light).

2 The alignment (274½°) of these lights, visible on the leading line only, leads along a channel (dredged to 13·5 m in 2003), N of Area No No 184 (6.78), into which entry is prohibited, to the harbour entrance between the W end of Staryy Volnolom and the S end of Novyy Volnolom. The W end of Staryy Volnolom is marked by a light (white metal framework tower, 9 m in height).

3 **Leading lights:**
Front (black daymark on metal framework tower, 22 m in height) (46°31′N, 30°44′E).

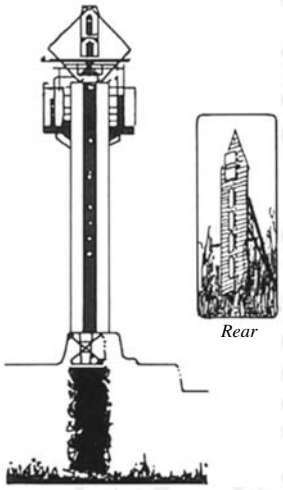
Port Control Tower

Vorontsovskiy Light *Staryy Volnolom Light*

Odesa – S Entrance & Vorontsovskiy Lt (6.84)

(Original dated 2003)

(Photograph – A. McDonald mv Doulos)



Rear

Front

Middle entrance Leading Lights (6.85)

Rear (as for front, 26 m in height) (200 m NNW of front light).

The alignment (327½°) of these lights, visible on the leading line only, and the alignment (147½°), astern, of the following lights, visible on the leading line only, leads for 7 cables along a channel, dredged to 13·4 m (1992), to Neftyanaya Gavan'.

4 **Leading lights:**

Front (white daymark, black stripe, on mast, 10 m in height) (46°30′N, 30°45′E).

Rear (white daymark, black stripe, on column, 15 m in height) (1·29 miles SSE of front light).

(Directions continue for the coastal route to Port Yuzhnyy at 6.93)

Basins and berths

Anchor berths

6.86

1 Positions of anchor berths in Anchorage area No 355 are shown on the chart. The seaward end of a submarine outfall pipeline lies 2 cables N of Anchorage area No 355 and is unmarked.

Odesa – Lt SE end Staryy Volnolom (6.85)

(Original dated 2003)

(Photograph – A. McDonald mv Doulos)

Odesa – Novyy Mol from NNW (6.87)

(Original dated 2003)

(Photograph – A. McDonald mv Doulos)

Basins and alongside berths

6.87

1 There are 7 basins and 38 sheltered berths with depths alongside that range from 8 to 13 m. The positions of the basins and berths are best seen on the chart.

Tanker terminals are situated in Neftyanaya Gavan' in the N part of the port.

Passenger terminal is situated on Novyy Mol.

Port services

Repairs

6.88

1 Repairs of all kinds can be carried out on vessels of up to 20 000 dwt.

Dry docks are available.

Other facilities

6.89

1 Deratting; hospitals; oily waste disposal; salvage services.

Supplies

6.90

1 Fuel supplied at quays and by barge; fresh water supplied at quays and by barge; provisions.

ODESA TO APPROACHES TO PORT YUZHNYY

General information

Charts 2243, 2205, 2202

Route

6.91

1 Recommended route No 1 leads 10 miles ENE from Odesa to the approaches to Port Yuzhnyy.

Traffic regulations

6.92

1 **Areas which should be avoided:**

Areas No 803 and 804, 5 cables SW and 2½ miles E, respectively, from Mys Pivnichnyy Odes'kyy.

Directions

(continued from 6.85)

6.93

1 **Initial position.** In vicinity of the light-buoy (S cardinal) (46°30′N, 30°48′E) in the entrance to Odes'ka Zakota. See caution below.

Leading lights:

Front light. Vorontsovskiy Light (46°30′N, 30°46′E) (6.81).

Rear light. Odesskiy Stvornyy Light (1¼ miles from front light) (6.81).

2 The alignment (250½°), astern, of these lights leads ENE along Recommended route No 1 for 9 miles to Port Yuzhnyy passing (with positions from Mys Pivnichnyy Odes'kyy (46°33′N, 30°49′E)):

SSE of an obstruction with a depth of 9·8 m over it (2 miles S). Anchoring and fishing are prohibited in an area, radius 1½ cables, surrounding it. Thence:

3 SSE of Area No 803 (5 cables SW), thence:

SSE of Mys Pivnichnyy Odes'kyy (6.81), thence:

SSE of two buoys (S cardinal and isolated danger) (1¾ miles SSE and 2½ miles ESE respectively) that mark the coastal bank and dangers that lie off it. Thence:

4 NNW of a light-buoy (isolated danger), moored close NE of a wreck with a depth of 8·3 m over it (3¼ miles SE). Thence:

SSE of Area No 804, marked by 2 buoys (S cardinal), (2½ miles E). Thence:

Through the Precautionary Area (5 miles ESE) (6.107), thence:

N of Anchorage area No 356 (6.105).

5 Thence to the seaward end of the final approach to Port Yuzhnyy and Anchorage areas Nos 357 and 358 (6.105).

Caution. To avoid the bank with a least depth of 8·8 m over it (46°30′·3N, 30°47′·7E), large vessels must leave the recommended route and pass S of the light-buoy (S cardinal) which lies 1½ cables S of the bank.

(Directions for the recommended route to Mys Adzhyyask continue at 6.127)

PORT YUZHNYY AND APPROACHES

General information

Charts 2212, 2205, 2202

Position

6.94

1 Port Yuzhnyy (46°36′N, 31°01′E) is situated on the shores of Adzhalykskiy Lyman, 13 miles ENE of Odesa.

Topography

6.95

1 Between Mys Pivnichnyy Odes'kyy (46°33′N, 30°49′E) and the entrance to Port Yuzhnyy, 8½ miles ENE, the coast is moderately high, steep and reddish in colour. In places it is intersected by ravines.

2 Adzhalykskiy Lyman, the harbour of Port Yuzhnyy, which was originally a salt lake cut off from the sea by a narrow ridge of sand, is entered by way of a dredged channel through an entrance about 2 cables wide.

Function

6.96

1 Port Yuzhnyy is a major port for the handling of oils and chemicals. It has been reported that when completed it will be the largest port in the S part of the Ukraine.

Port limits

6.97

1 The port area consists of the waters of Adzhalykskiy Lyman, the sea area within 2 miles of the port control radar tower (46°36′·1N, 31°01′·4E) (6.103) and Anchorage areas Nos 356, 357 and 358 (6.105).

Approach and entry

6.98

1 Port Yuzhnyy is approached from the S by way of a traffic separation scheme (6.4) which leads N from the traffic roundabout (centred 46°16′N, 30°56′E) and from the W by Recommended route No 1 which leads along the coast from Odesa. The final approaches to Port Yuzhnyy are by way of a dredged approach channel that leads through the coastal bank to the harbour entrance. Channel buoyage may be temporarily shifted during dredging operations, and mariners should navigate with caution.

Traffic

6.99

1 In 2002, the port was used by 530 vessels with a total deadweight of 22 298 055 tonnes.

Port Authority

6.100

1 Port of Yuzhnyy Kominternovskiy Rajon, Odesa Region, Ukraine.

The harbour offices are on the S end of No 1 berth (6.117).

Limiting conditions

6.101

1 **Least depth** in approach channel. 15·0 m (1999).

Maximum size of vessel handled. Length, 280 m. Draught, 14·2 m.

Natural conditions

6.102

1 **Wind.** Entry and departure of loaded gas and chemical carriers and all dry cargo vessels is only permitted when the wind strength is force 5 or less. Gas and chemical carriers in ballast may only enter or depart when the wind strength is force 4 or less. With wind strengths in excess of force 5 vessels may enter or depart utilising remote pilotage in the approach channel.

Current. Entry and departure of vessels will only be permitted when the cross current in the approach channel is not more than 1 kn.

Visibility. See 6.111.

Ice. 40 to 60 cm thick between January and March.

Arrival information

Control of ship movements

6.103

1 Traffic control station, which operates 24 hours a day, is situated in a building, 45 m high, at the E entrance point to Adzhalykskiy Lyman. This station regulates and controls the movements of all ships within its zone of operations, an area which is bounded by the arc of a circle, radius 8 miles, centred on the control building.

A coast radar station and the port radio station are co-located with the control station.

Notice of ETA

6.104

1 Gas and chemical carriers. 72 and 24 hours.

Other vessels. 48 and 12 hours.

Outer anchorages

6.105

1 Anchorage areas, the limits of which are shown on the chart, are situated as follows (with positions from the Port Control Radar Tower (46°36′·1N, 31°01′·3E)):

Area No 356. 5 miles SSW. Depths 13 to 21 m, mud, sand and shell. Nine berths for gas and chemical carriers. Nos 1, 2, 5, 6 and 8 are for vessels with draughts in excess of 7 m. Nos 3, 4, 7 and 9 are for vessels with draughts of 7 m or less.

2 Area No 357. 2 miles SE. Depths 12 to 21 m, mud, sand and shell. Seven berths for dry cargo ships up to 170 m in length.

Area No 358. 4½ miles ESE. Depths 15 to 18 m, mud and shell. Eight berths for dry cargo vessels.

Nos 18, 19, 20, 21 and 25 are for vessels with draughts in excess of 7 m. Nos 22, 23, and 24 are for vessels with draughts of 7 m or less. Nos 21 and 25 are also quarantine anchorages.

6.106

1 In the event of it not being possible for a vessel to proceed beyond the traffic roundabout (centred on 46°26′N, 30°56′E) to one of the above anchorages, vessels may, with permission of traffic control, anchor in area No 351 (6.49), 4½ miles SE of the entrance to Illichivs'k.

Regulated areas

6.107

1 **Precautionary area,** the limits of which are shown on the chart, is situated 5 miles SW of the entrance to the Port Yuzhnyy.

Pilots and tugs

6.108

1 **Pilotage** is compulsory for all foreign vessels entering or leaving Port Yuzhnyy. Port pilots embark, as shown on the chart, 5½ miles SSW of the entrance to Adzhalykskiy Lyman.

2 **Remote pilotage** is compulsory within the Yuzhny VTCS zone of operations (6.103) for all gas carriers, chemical carriers and tankers. It is also compulsory for all vessels to and from the boundaries of the zone and the anchorages, and to and from the anchorages to the port.

It is also available on request for all vessels in transit and becomes compulsory when visibility is less than 2 miles, irrespective of whether there is a pilot on board or not.

Tugs are compulsory for all vessels in excess of 500 grt. Requests for tugs should be made 4 hours in advance.

Regulations concerning entry

6.109

1 All vessels approaching Port Yuzhnyy must communicate with the traffic control station 2 miles before entering its zone of operation (6.103) giving details of the ship and its cargo.

All vessels navigating or at anchor in the zone of operations of the traffic control station, must keep watch on VHF Channel 11.

2 Gas and chemical carriers must be accompanied by a tug after reaching the pilot embarkation position, with those in excess of 20 000 dwt being accompanied by a firefighting tug.

Gas and chemical carriers have right of way over other vessels, which should not approach them within 2 miles.

6.110

1 When gas and container ships are using the traffic separation scheme in the approaches to Port Yuzhnyy, the movement of vessels in the opposite direction is prohibited.

Traffic in the approach channel is one way except for vessels of under 500 grt, not carrying chemical cargoes.

Overtaking is prohibited.

6.111

1 **Visibility.** Gas and chemical carriers over 10 000 dwt and cargo vessels over 20 000 dwt are not allowed to enter or leave port when the visibility is less than 1 mile. All other vessels are not allowed to enter or leave port when the visibility is less than 5 cables.

6.112

1 **Speed limits.** In the approach channel, 6 kn except where necessary to maintain steerage way or counter excessive drift. In port, 4 kn.

Harbour

General layout

6.113

1 The harbour is divided into two parts. The S part, which is dredged (1999) to a depth of 15·0 m, has berths situated on its E and W shores. The N part of the harbour is connected to the S part by a channel dredged to a depth of 13·4 m (1998).

Principal marks

6.114

1 **Landmarks:**

Mys Pivnichnyy Odes'kyy (46°33′N, 30°49′E).

Obelisk (46°35′N, 30°55′E), standing 2 cables NNW of Mys Dofinivs'kyy, a headland which forms a slight protrusion to seaward.

Chimney (46°35′N, 30°57′E).

2 Chimney (46°35′N, 30°59′E).

Chimney (46°36′N, 31°00′E).

Two chimneys (46°37′·5N, 31°00′·1E). 140 m apart.

Two towers (46°36′·9N, 31°00′·2E).

Tower (46°37′·1N, 31°00′·7E).

Port Control radar tower (46°36′N, 31°01′E).

3 Tower (46°38′N, 31°02′E).

Chimney (46°37′N, 31°02′E).

Major lights:

Luzanovskiy Light (6.81).

Grigor'yevskiy Light (black square and triangle on white round concrete tower, 15 m in height) (46°36′N, 31°00′E).

Directions for entering harbour

Approach

(continued from 6.14)

6.115

1 **Initial position.** N sector of traffic roundabout centred 46°16′N, 30°56′E.

A traffic separation scheme (6.4) leads N for 13 miles, passing:

E of Anchorage area No 354 (6.76), thence:

W of a buoy (W cardinal) (46°29′N, 30°59′E) that marks the W limit of Odeskaya Banka. Thence:

2 W of Anchorage area No 356 (6.105).

Thence to its junction with Recommended route No 1 (6.93) between Odesa and Kherson (46°38′N, 32°37′E).

Cautions. See 6.110 for regulations governing priority of traffic in the traffic separation scheme.

3 While in the Precautionary Area (46°32′N, 30°57′E), the limits of which are shown on the chart, vessels should keep a special lookout, especially for vessels proceeding on the recommended route between Odesa, Port Yuzhnyy and Kherson.

Final approach

6.116

1 **Initial position.** 46°33′·3N, 31°00′·1E.

Leading lights:

Front light (white framework tower, orange stripes, 17 m in height) (46°39′N, 31°02′E).

Rear light (white framework tower, orange stripes, 29 m in height) (6 cables NNE of front light).

The alignment (013°) of these lights leads for about 3¾ miles into the S part of Adzhalykskiy Lyman, passing:

2 Through a dredged channel which is marked by pairs of light-buoys (port and starboard hand). Thence:

Between the W and E moles that protect the harbour entrance. Lights (red and green metal columns,

respectively) are exhibited from the head and root of each mole.

Initial position. 46°37′·0N, 31°01′4E.

3 **Leading lights:**

Front light (orange rectangle on square metal framework tower, 18 m in height) (46°39′·8N, 31°00′·3E).

Rear light (similar structure, 18 m in height) (240 m from front).

4 The alignment (345¼°) of these lights leads NNW from the S of Adzhalykskiy Lyman through a dredged channel marked by light-buoys.

Berths

Alongside berths

6.117

1 Alongside berths, the positions of which are shown on the chart, are situated on the W and E shore of Adzhalykskiy Lyman.

There are four berths on the W shore with depths alongside of between 12·9 and 13·6 m. There are two berths on the E shore which handle coal and ore, with depths alongside of about 13·4 m. New tanker berths are under construction (2002) on the E shore 5 cables N of the port control radar tower (46°36′·1N, 31°01′·4E).

2 There are two berths on the E side of the N part of Adzhalykskiy Lyman. This part of the harbour is approached by a dredged channel (6.95).

3 **Development.** Large scale reconstruction of the port is taking place including new quays which will have specialised berths for metal and oil cargoes, and expansion of the container and ship repair facilities.

Port services

Repairs

6.118

1 All types of repairs are undertaken.

Other facilities

6.119

Deratting; firefighting and rescue launches; oily waste disposal; port surgery open 24 hours a day.

Supplies

6.120

1 Fuel available by barge; fresh water available at berths and from barge; provisions.

PORT YUZHNYY TO MYKOLAYIV, KHERSON AND ADJACENT WATERS SOUTH

GENERAL INFORMATION

Area covered

6.121

1 This section covers the waters between Port Yuzhnyy (46°36′N, 31°01′E), Mykolayiv 65 miles ENE, and Kherson, 75 miles E. Mykolayiv and Kherson, which are major commercial and river ports, are situated 40 and 50 miles from the open sea through Dniprovs'kyy Lyman. Mykolayiv is approached by way of the Bugso-Dneprovsko-Limanskiy Kanal and Port Mykolayiv Kanal, and Kherson is approached by way of the Bugso-Dneprovsko-Limanskiy Kanal and the Khersonskiy Morskoy Kanal.

2 This section also covers the coastal and inshore waters between Kinburns'ka Kosa and Tendrivs'ka Kosa that lie to the S of the entrance to Dniprovs'kyy Lyman (46°36′N, 31°30′E).

PORT YUZHNYY TO MYS ADZHYYASK

General information

Charts 2205, 2200

Topography

6.122

1 The coast between Port Yuzhnyy and Mys Adzhyyask (14 miles E) is predominantly high and cliffy, reddish in colour and, in places, indented by gullies and ravines. A low part of the coast, lying between Mys Sychavskiy (46°37′N, 31°08′E) and Mys Karabush (5½ miles E) forms a bay on the shore of which are situated the many buildings of a health resort.

2 **Odeskaya Banka,** which has depths of less than 10 m over it, runs parallel to this stretch of the coast. The N edge of the bank, where depths change sharply, lies between 2½ to 4½ miles offshore. the S side of the bank is shelving. The seabed of the bank consists of hard sand and shells.

Regulated areas

6.123

1 **Anchorage area** No 359 is situated 3¼ miles S of Mys Karabush Light (6.126). The limits are marked by buoys as shown on the chart.

Traffic regulations and pilotage

6.124

1 See 6.5 and 6.6.

Magnetic anomaly

6.125

1 See 6.9.

Principal marks

6.126

1 **Landmarks:**

Chimney (46°37′N, 31°02′E).

Chimney (46°38′N, 31°06′E).

Mys Sychavskiy (46°37′N, 31°08′E). A steep cliffy promontory with a narrow ravine situated on its W side.

2 Mys Karabush (46°37′N, 31°16′E). A high and cliffy promontory which rises to a height of 40 m and is conspicuous from E and W.

Tower (46°36′N, 31°21′E) of lattice construction which stands on Mys Adzhyyask. A group of houses stands round the tower.

3 **Major lights:**

Grigor'yevskiy Light (46°36′N, 31°00′E) (6.114).

Sychavskiy Light (grey metal framework tower on white building, 10 m in height) (46°37′N, 31°07′E).

Mys Karabush Light (black column on grey round concrete tower, 16 m in height) (46°37′N, 31°16′E).

Directions

(continued from 6.93)

6.127

1 **Leading lights.** The alignment (250½°), astern, of leading lights (6.93) leads ENE for 5½ miles from the entrance to Port Yuzhnyy to a position S of Mys Sychavskiy, passing between Anchorage areas Nos 357 and 358.

Recommended route No 1 then continues E for 11 miles to the entrance of the Bugsko-Dneprovsko-Limanskiy Kanal, 2½ miles SE of Mys Adzhyyask, passing (with positions from Mys Karabush Light (6.126)):

2 S of Mys Sychavskiy (5 miles W). Thence:
N of a buoy (isolated danger) marking a wreck lying on the N side of Odeskaya Banka (4¼ miles SW). Thence:
S of a light-buoy (S cardinal) (1¾ miles S) marking the S limit of Banka Trutayeva which extends S from Mys Karabush, and:
N of Anchorage area No 359 (3¼ miles S). Thence:
S of Mys Adzhyyask (4 miles E), a steep bluff point with an elevation of 43 m.

(Directions continue for the Bugso-Dneprovsko-Limanskiy Kanal at 6.144, and for Recommended route No 2 at 6.303)

MYS ADZHYYASK TO ADZHIGOL'SKAYA KOSA

General information

Chart 2200 (see 1.16)

Route

6.128

1 The route to Adzhigol'skaya Kosa leads generally E for about 20 miles from Mys Adzhyyask by way of the Bugsko-Dneprovsko-Limanskiy Kanal.

The part of the Bugsko-Dneprovsko-Limanskiy Kanal which forms this route consists of five reaches.

Topography

6.129

1 **Approaches to Dniprovs'kyy Lyman.** Between Mys Adzhyyask (46°36′N, 31°21′E) and Mys Ochakovskiy (8 miles E), the coast forms a bight at the head of which lies Berezans'kyy Lyman (6.154), which is entered between two sandy spits, the W of which is low lying.

2 Ostriv Berezan' (46°36′N, 31°25′E) lies within the bight and is connected with the shore N by a spit with depths of 0·4 m over it. The coast of the island is steep and reddish in colour; its S extremity is high and from it the island slopes down N to a low point on which there is a landing.

6.130

1 Dniprovs'kyy Lyman, which is entered between Mys Ochakovskiy (46°36′N, 31°33′E) (6.143) and Kinburnskiy Dopolnitel'nyy, the NW extremity of Kinburns'ka Kosa (2 miles SW) (6.298) is the largest inlet in the Black Sea. It is formed by the confluence of the Rika Yuzhnyy (Yuzhne) Bug (6.167) and Rika Dnipro (6.245).

2 The N shore of this estuary, has for its whole length, an almost even elevation of about 45 m and consists of dark yellow or reddish clay bluffs, broken by numerous gullies or valleys. There are many villages along the whole of this shore.

3 The S shore of the estuary, which is formed by Kinburns'ka Kosa, is low, sandy and desolate in appearance. In places there are sandy hillocks and in others small groves of trees and bushes. High rushes grow along almost the whole of this shore.

In the deeper parts of the estuary the nature of the bottom is mud with sandy ridges.

Depths and widths

6.131

1 **Bugsko-Dneprovsko-Limanskiy Kanal** dredged to 10·4 m (1992). Width 100 m except for a section of Koleno No 1 (6.145) between the meridians of 31°25′·2E and 31°27′·0E where the width is 80 m, and Koleno No 4 (6.148) and Koleno No 5 (6.150) where the width is reduced to 70 m.

Pilotage

6.132

1 **Pilots.** See 6.6.

Traffic regulations

6.133

1 **Maximum length of vessel:**
Bugsko-Dneprovsko-Limanskiy Kanal: 215 m.

6.134

1 **Times of entry with summer navigation aids:**
Bugsko-Dneprovsko-Limanskiy Kanal. 24 hours a day except for vessels with length more than 170 m and draught of more than 8 m, which may only navigate during daylight hours and when visibility is not less than 2 miles.

2 **Times of entry with winter navigation aids:**
Vessels with a draught of more than 5 m may only navigate at night if the leading lights are clearly visible at distances of at least 5 miles.
Entry to the canal is prohibited during conditions of poor visibility and when wind speeds exceed 29 kn. When such conditions occur, vessels in the channel must proceed to the nearest safe anchorage.

6.135

1 **Speed restrictions.** The following speed restrictions apply to vessels navigating in Bugsko-Dneprovsko-Limanskiy Kanal:

Length less than 170 m	Draught less than 7 m	12 kn
Length less than 170 m	Draught 7 to 9 m	10 kn
Length more than 170 m	Draught more than 9 m	8 kn

6.136

1 **Special signals**. Vessels with a draught of 8 m and above, when proceeding along the Bugsko-Dneprovsko-Limanskiy Kanal, must display signals in accordance with Rule 28 of the *International Regulations for Preventing Collisions at Sea (1972).*

2 Vessels with a draught of between 5 and 8 m, when proceeding along Bugsko-Dneprovsko-Limanskiy Kanal, must show a red all round light or black sphere in a visible position.

6.137

1 **Overtaking is permitted:**
When there are favourable conditions and with the agreement of the master of the vessel being overtaken.
Overtaking is prohibited:
If both vessels carry special signals. See 6.136.

2 When navigating in Kolenos Nos 2, 3 and 4 of the Bugsko-Dneprovsko-Limanskiy Kanal.
In turning zones, which are the stretches of the canal 5 cables either side of a bend in the channel, and in places where vessels are permitted to cross the channel.

6.138

1 **Passing is prohibited:**

In the turning zones of the Bugsko-Dneprovsko-Limanskiy Kanal.

Vessels proceeding with the current have right of way in the turning zones and vessels proceeding against the current must not enter a turning zone until the oncoming ship has passed.

6.139

1 **Ice.** When ice is present vessels, unless they have the appropriate ice classification, must navigate under the direction of an icebreaker, usually in convoy. Convoys are formed in the vicinity of Ostriv Berezan' (6.129) and in the ports.

Vessels proceeding from seaward must request pilotage in ice 48 hours before reaching Ostriv Berezan'.

Traffic control

6.140

1 Traffic in Bugsko-Dneprovsko-Limanskiy Kanal is regulated by the traffic control posts at Ochakiv (46°36′N, 31′33′E) and Russkaya Kosa (46°45′N, 31°56′E). See 6.5.

Regulated areas

6.141

1 **Areas which should be avoided:**

Area No 805, as shown on the chart, 5 cables SE of Mys Ochakiviskiy.

Area No 826, as shown on the chart, 1¾ miles ESE of Mys Ochakiviskiy.

2 **Former mined areas:**

Area No 14, as shown on the chart, extends E from Mys Adzhyyask to the meridian of 31°41′E.

Area No 15, as shown on the chart, 1 mile SSE of Adzhigol'skaya Kosa.

Natural conditions

6.142

1 **Water levels** in the estuary are highest between the middle of April and the middle of June and lowest in the autumn. Fresh winds raise or lower the water level by as much as 0·5 m above or below mean level.

2 **Current.** During the spring the current sets outward at a rate not exceeding 2 kn, except in the narrow channels and the mouth of the estuary where it may attain a rate of 3 kn. After the middle of May the current slackens and in the summer its rate is between ¼ and ¾ kn.

3 **Winds.** During winter NE winds prevail and in the summer they are mostly S. Gales, which are usually N or NW, occur most frequently in March, April and October and are rare in July.

Fog occurs most frequently from October to April and is rare between May and August.

4 **Ice** forms every year in Dniprovs'kyy Lyman covering the shoal and fresh water areas. Only the mouths of the rivers freeze over completely; in the estuary itself the ice often breaks up and even disappears for short periods.

Principal marks

6.143

1 **Landmarks:**

Monument (white obelisk, 12 m in height) (46°36′N, 31°25′E), standing at the S end of Ostriv Berezan' (6.129).

Water Tower (46°38′N, 31°26′E), standing at the entrance to Berenzans'kyy Lyman (6.154).

2 Chimney (46°37′N, 31°32′E).

Church (46°36′·5N, 31°32′·9E).

Mys Ochakivskiy (46°36′N, 31′33′E), a high and cliffy headland. A tower (44 m in height, the site of the VTS station), stands about 1 cable NE.

Ostrov Pervomayskiy (46°34′N, 31°34′E), an artificial island.

3 **Major lights:**

Viktorovskiy Rear Leading Light (46°39′N, 31°24′E) (6.146).

Adzhigol'skiy Middle and Rear Leading Lights (46°37′N, 31°43′E) (6.148).

Directions for Bugsko-Dneprovsko-Limanskiy Kanal

(continued from 6.127)

6.144

1 **Initial position.** 46°35′N, 31°21′E, 1 mile S of Mys Adzhyyask.

Routes. Vessels with a draught of more than 8 m enter and leave the canal at Berezanskiy Light-buoy (safe water), passing NNE of a light-buoy (N cardinal) (1 mile SSE) which marks the N-most of a group of wrecks lying on the N side of Odeskaya Banka.

2 All other vessels enter and leave at No 2 Buoy (port hand), 1 mile ENE of Berezanskiy Light-buoy.

Vessels with a draught of 4 m and over follow the buoyed channel throughout.

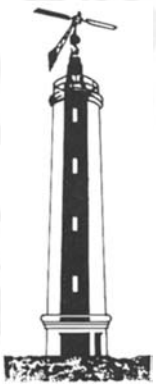
For vessels with a draught of less than 4 m, see 6.151.

Koleno No 1

6.145

1 **Ochakiv Leading Lights:**

Front light (wind generator on white round stone tower, black stripe, 19 m in height) (46°37′N, 31°32′E).



Ochakiv Front Leading Light (6.145)

Rear light (similar structure, 20 m in height) (820 m from front light). Signal station.

2 From a position close to Berezans'kyy Light-buoy the alignment (069°) of these lights leads ENE for 4¼ miles through the channel marked by buoys and light-buoys passing SSE of Ostriv Berezan' Light (black framework tower, 11 m in height).

Thence the track alters SE onto the Viktorovskiy Leading Lights.

Koleno No 2

6.146

1 **Viktorovskiy Leading Lights:**

Front light (wind generator and orange rectangle on white round concrete tower, 17 m in height) (46°38′N, 31°27′E).

Rear light (orange rectangle on white metal framework tower, 16 m in height) (2·4 miles from front light).

2 The alignment (314¾°), astern, of these lights leads through the channel, marked by buoys and light-buoys, for 1¾ miles to the entrance to Dniprovs'kyy Lyman passing close NE of the NW extremity of Kinburns'ka Kosa. Kinburnskiy Dopolnitel'nyy Light (black framework tower, 8 m in height) is exhibited 4 cables SSE of this extremity.

Thence the track alters E onto the Ostrov Pervomayskiy Leading Lights.

Kinburnskiy Dopolnitel'nyy Light (6.146)

Koleno No 3

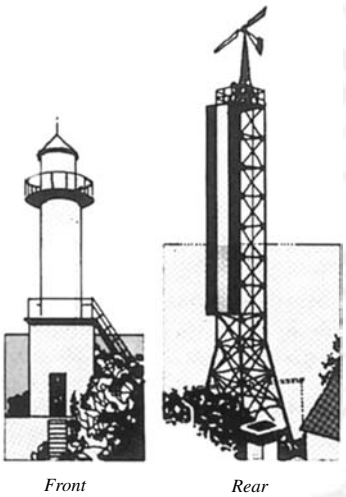
6.147

1 **Ostrov Pervomayskiy Leading Lights:**

Front light (white round metal tower, 12 m in height)

Rear light (black rectangle, white stripe on black metal framework tower, concrete base, 26 m in height) (73 m from front light).

2 The alignment (092½°) of these lights leads through the channel, marked by buoys and light-buoys, for 1 mile.



Leading Lights on Ostrov Pervomayskiy (6.147)

Thence the track alters ENE onto the Adzhigol'skiy Leading Lights.

Koleno No 4

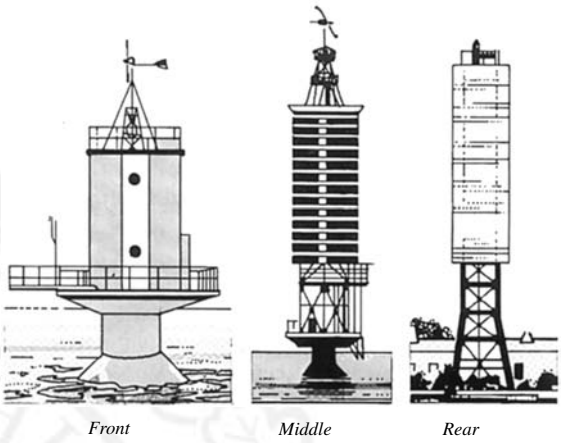
6.148

1 **Adzhigol'skiy Leading Lights:**

Front light (black rectangle, white stripe on grey square concrete tower, 15 m in height) (46°36′N, 31°39′E).

Middle light (black rectangle, white stripe on red metal framework tower, concrete base 32 m in height) (2·8 miles from front light).

Rear light (red square on red framework tower, 24 m in height) (5·4 miles from front light).



Adzhigol'skiy Leading Lights (6.148)

2 The alignment (069°) of these lights leads through the channel, marked by buoys and light-buoys, for 2¾ miles passing close NNW of Ostrov Pervomayskiy and SSE of Area No 826 (6.141).

Thence the track alters E onto the Vostochnyy Leading Lights.

3 **Cautions.** Underwater obstructions with depths of 9·9 m are situated 4 cables WNW of the N end of Ostrov Pervomayskiy.

Shoaling has taken place along the edges of this reach of the canal and vessels should keep to the centre of the channel. Vessels with a draught of over 5 m are advised not to navigate this reach of the canal during the hours of darkness.

6.149

1 **Useful mark:**

Tower (46°38′N, 31°35′E).

Koleno No 5

6.150

1 **Leading and Directional Lights:**

Zapadnyy Directional Light (orange rectangle, black stripe on grey metal framework tower, concrete base, 28 m in height) (46°35′·4N, 31°32′·9E).

Vostochnyy Front Light (black rectangle, white stripe on grey metal framework tower, concrete base, 16 m in height. Wind generator) (46°36′N, 31°49′E).

Vostochnyy Rear Light (black square, white stripe on similar structure, 31 m in height) (1·9 miles from front light).

2 The line of bearing astern (268¼°), astern, of Zapadnyy Directional Light and the alignment (088¼°) of Vostochnyy Leading Lights lead through the channel, marked by buoys and light-buoys, for 7¾ miles passing S of Anchorage area No 361 (6.153), to a position S of Adzhigol'skaya Kosa at the beginning of the Khersonskiy Morskoy Kanal.

Thence the track alters ENE onto the Khablovskiy Leading Lights.

3 **Caution.** Shoaling has taken place along the edges of this reach of the canal and vessels should keep to the centre of the channel. Vessels with a draught of over 5 m are advised

not to navigate this reach of the canal during the hours of darkness.

Route for shallow draught vessels

6.151

1 **Route** for vessels with a draught of less than 4 m is as follows:

Koleno No 1. In an area 1 cable wide either side of the edge of the channel.

Kolenos Nos 2, 3, and 4. Along the channel in both directions to and from the meridian of 31°36′E.

Koleno No 5. In an area 3 cables wide either side of the edge of the channel. In both directions for towing convoys and from seaward only for other vessels.

Useful mark:

6.152

1 Vasylivka Light (red framework structure, 6 m in height) (46°32′N, 31°46′E).

(Directions continue for Bugsko-Dneprovsko-Limanskiy Kanal at 6.162 and are given for the approaches to Rika Rvach at 6.258)

Anchorages

6.153

1 Area No 360, with depths of 9·2 to 11·2 m, is situated 1½ miles SE of Mys Adzhyyask.

Area No 361, with depths of 5·7 to 5·9 m, is situated 3¼ miles W of Adzhigol'skaya Kosa.

Side channels

Berezans'kyy Lyman

6.154

1 Berezans'kyy Lyman extends about 14 miles NNE from its entrance (46°37′N, 31°25′E) to its head, into which flows Rika Berezan'. There are numerous villages on the shores of the estuary but the only one that is visible from seaward is Viktorivka, which is situated on the W shore about 1½ miles within the entrance.

2 The entrance to Berezans'kyy Lyman is approached along a channel through the flat that fronts the entrance. In 1989 there was a least depth of 2·5 m in the channel. Leading beacons, whose positions may be seen on the chart, mark the channel.

3 There are 2 berths at Andreyevo-Zorino (46°46′N, 31°32′E) with depths alongside of 2·9 to 3·2 m, and 1 berth at Novoselivka (46°45′N, 31°27′E) with depths alongside of 2·5 to 2·9 m.

Minor harbours

Portpunkt Ochakiv

6.155

1 **Directions.** From the junction of Koleno Nos 1 and 2 (6.146), two sets of leading lights lead ENE and NE through the Ochakovskiy Kanal, with a depth of 4·7 m (1993), to Portpunkt Ochakiv.

Traffic. In 2002 the port was used by 24 vessels with a total deadweight of 783 309 tonnes.

Berths. There are 3 berths handling cargo, ferries and passengers with depths alongside of 3·8 to 4 m.

Mys Ochakivskiy

6.156

1 Leading lights (46°36′·2N, 31°33′·1E) lead WNW to a fishing harbour, with depths alongside of 3·5 to 4·3 m, close N of Mys Ochakivskiy.

Ochakiv

6.157

1 Leading lights (46°37′N, 31°34′E) lead NW from Koleno No 4, in depths of about 4·7 m, to Ochakiv. Breakwaters, at the heads of which are lights, stand either side of the entrance.

Gidrouzla Kovsh

6.158

1 Leading lights (46°38′N, 31°35′E) lead NNW, in depths of 3 to 4 m, to Gidrouzla Kovsh.

ADZHIGOL'SKAYA KOSA TO BUZ'KYY LIMAN

General information

Charts 2200, 2203 (see 1.16)

Route

6.159

1 From a position S of Adzhigol'skaya Kosa the route to Buz'kyy Liman leads generally ENE for about 6½ miles by way of the Bugsko-Dneprovsko-Limanskiy Kanal to the vicinity of position 46°39′N, 31°56′E.

The part of the Bugsko-Dneprovsko-Limanskiy Kanal which forms this route consists of two reaches.

Depths and widths

6.160

1 **Bugsko-Dneprovsko-Limanskiy Kanal** was dredged to 10·4 m (1992) with a width of 100 m except for sections of Koleno No 6 (6.162) between the meridians of 31°48′·1E and 31°49′·6E where the width is reduced to 70 m.

Principal marks

6.161

1 **Landmarks:**

Mast (45 m in height) (46°38′N, 31°52′E).

Major lights:

Khablovskiy Rear Leading Light (46°40′N, 32°02′E) (6.162).

Luparevskiy Light (46°41′N, 31°59′E) (6.164).

Kislyakovskiy Light (46°44′N, 32°02′E) (6.164).

Directions for Bugsko-Dneprovsko-Limanskiy Kanal

(continued from 6.152)

Koleno No 6

6.162

1 **Khablovskiy Leading Lights:**

Front light (white concrete column, orange stripe, 11 m in height) (46°38′N, 31°56′E).

Middle light (white square tower, red stripe, 11 m in height, floodlit) (2·6 miles from front light).

Rear light (red tower, black stripe, 24 m in height) (4·6 miles from front light).

2 From a position S of Adzhigol'skaya Kosa the alignment (064°) of these lights leads through the channel, marked by buoys and light-buoys, for 4½ miles.

Thence the track alters ENE onto the Luparevskiy and Kislyakovskiy Leading Lights.

Caution. Shoaling has taken place along the edges of this reach of the canal and vessels should keep to the centre of the channel.

6.163

1 **Useful mark:**

Adzhigol'skaya Leading Lights (black rectangle, white stripe on white stone towers, 7 and 9 m in height)

(46°37′N, 31°48′E), which mark the junction of Kolenos Nos 5 and 6 and also the junction of the Bugsko-Dneprovsko-Limanskiy and Khersonskiy Morskoy Kanals. They are exhibited when the channel light-buoys are withdrawn.

Koleno No 7

6.164

1 **Leading lights:**

Luparevskiy Light (floodlit) (46°41′N, 31°59′E).

Kislyakovskiy Light (3·2 miles from Luparevskiy Light).

The alignment (040¼°) of these lights leads through the channel, marked by buoys and light-buoys, for 2 miles.

2 Thence the track alters N onto the Limanoozharskiy and Russkaya Kosa Leading Lights into Buz'kyy Liman.

Caution. Shoaling has taken place along the edges of this reach of the canal and vessels should keep to the centre of the channel.

6.165

1 **Useful mark:**

Dniprovs'ke Leading Lights (46°38′N, 31°53′E), which mark the junction of Kolenos Nos 6 and 7.

(Directions for Bugsko-Dneprovsko-Limanskiy Kanal continue at 6.173 and for Port Mykolayiv Kanal at 6.181)

BUZ'KYY LIMAN AND RIKA YUZHNYY (YUZHNE) BUG

General information

Chart 2203 (see 1.16)

Route

6.166

1 From a position in the S entrance to Buz'kyy Liman, about 5½ miles WNW of Mys Bublikova (46°37′N, 31°03′E), the route leads generally N for about 30 miles by way of the Bugsko-Dneprovsko-Limanskiy, Port Mykolayiv and Spasskiy Kanals.

The section of the Bugsko-Dneprovsko-Limanskiy Kanal which forms the first part of this route consists of five reaches, Port Mykolayiv Kanal of two reaches, and the Spasskiy Kanal of four reaches.

Topography

6.167

1 Rika Yuzhnyy Bug, which rises in the W Ukraine and is 853 km in length, flows into the head of Buz'kyy Lyman.

The river estuary is winding and from 1 to 3 miles wide. The W bank is mainly composed of clay and is high and steep, while the E bank consists of gently undulating hills with low tongues of sand. In Rika Yuzhnyy Bug, the nature of the bottom is mud with sandy ridges.

2 The channel generally follows the W bank and its courses are marked by leading lights and buoys.

Depths and widths

6.168

1 **Bugsko-Dneprovsko-Limanskiy Kanal** dredged to 10·4 m (1992) is 100 m in width except for sections of Koleno Nos 7 and 8 (6.164 and 6.173) between the parallels of 46°39′·0N and 46°39′·4N, Koleno No 9 (6.175) between the meridians of 31°54′·2E and 31°55′·1E, and Koleno No 11 (6.177) between the parallels of 46°49′·6N and 46°49′·9N and the parallels of 46°52′·3N and 46°53′·2N where the width is reduced to 70 m.

2 **Port Mykolayiv Kanal** dredged to between 7·4 and 9·0 m (1983).

Spasskiy Kanal dredged to between 6·4 and 7·6 m (1987).

Caution. It is not safe to navigate in Spasskiy Kanal in vessels with draughts greater than 4 m.

Bridges

6.169

1 Varvarovskiy Most, a bascule bridge, spans the Spasskiy Kanal between Mykolayiv and Varvarivka.

Inhul'skiy Most spans the channel at the entrance to Rika Inhul (6.194).

Overhead cable

6.170

1 An overhead power cable, with a vertical clearance of 70 m, spans the channel at the junction of the Port Mykolayiv and Spasskiy Kanals.

Traffic regulations

6.171

1 **Areas in which anchoring, fishing, submarine and seabed operations are prohibited:**

Area No 609 (6 cables NNE of Spasskaya Kosa (6.187)).

Area No 610 (close NE of Varvarovskiy Most (6.187)).

Area No 611 (2 cables E of Inhul'skiy Most (6.187)).

Area No 612 (5 cables SSE of Russkaya Kosa (6.175)).

See Appendix II.

Principal marks

6.172

1 **Landmarks:**

Tower (46°41′·7N, 31°53′·9E).

Water tower (46°44′N, 31°59′E).

Water tower (46°44′N, 31°55′E).

Pylon (46°55′·2N, 31°57′·7E).

2 Chimney (46°57′N, 31°59′E).

Chimney (93·5 m in height with an elevation of 97 m) (46°57′N, 31°57′E).

Radio Mast (46°59′N, 31°56′E).

3 **Major lights:**

Khablovskiy Rear Leading Light (46°40′N, 32°02′E) (6.162).

Luparevskiy Light (46°41′N, 31°59′E) (6.164).

Kislyakovskiy Light (46°44′N, 32°02′E) (6.164).

Russkaya Kosa Light (46°45′N, 31°56′E) (6.173).

Siversov Leading Lights (46°54′N, 32°01′E) (6.177).

Directions for Bugsko-Dneprovsko-Limanskiy Kanal

(continued from 6.165)

Koleno No 8

6.173

1 **Limanoozharskiy Leading Lights:**

Front light (white concrete column, orange stripe, 11 m in height) (46°38′N, 31°56′E).

Rear light (1 mile from front light).

Russkaya Kosa Leading Lights:

Front light (46°44′·0N, 31°56′·3E).

Russkaya Kosa Light (9 cables from front light).

2 The alignment (183½°), astern, of Limanoozharskiy Leading Lights and the alignment (003½°) of Russkaya Kosa Leading Lights lead through the channel, marked by buoys and light-buoys, for 4½ miles.

Thence the track alters NW onto the Katalino Leading Lights.

3 Recommended route No 20 leads SE from the junction of Kolenos Nos 7 and 8 to Kherson (6.272).

Caution. Shoaling has taken place along the edges of this reach of the canal and vessels should keep to the centre of the channel.

6.174

1 **Useful mark:**

Mys Saken Leading Lights (46°40′N, 31°54′E), which mark the junction of Kolenos Nos 7 and 8.

Koleno No 9

6.175

1 **Katalino Leading Lights:**

Front light (46°45′N, 31°53′E).

Rear light (5 cables from front light).

The alignment (306°) of these lights leads through the channel, marked by buoys and light-buoys, for 2 miles, passing (with positions from Russkaya Kosa (46°44′·8N, 31°56′·1E)):

2 NE of Voloshakaya Kosa (1 mile SSW). Mooring buoys are laid N and W of the point, thence:

SW of Russkaya Kosa. A tower (signal station) stands on the point and Russkaya Kosa Light stands 2 cables farther E. Thence:

SW of the entrance channel to Port Dnipro-Buz'kyy (6.195) (1 mile WSW).

3 Thence the track alters N onto the Kozyr'ka Leading Lights.

Caution. Shoaling has taken place along the edges of this reach of the canal and vessels should keep to the centre of the channel.

Koleno No 10

6.176

1 **Kozyr'ka Leading Lights:**

Front light (46°49′N, 31°53′E).

Rear light (6 cables from front light).

2 The alignment (353¼°) of these lights leads through the channel, marked by buoys and light-buoys, for 3 miles passing close E of Anchorage area No 362 (6.188) and W of Ozharskaya Kosa (2 miles SE of front light).

Thence the track alters NE onto the Siversov Leading Lights.

Koleno No 11

6.177

1 **Leading Lights:**

Front light (46°47′N, 31°52′E).

Rear light (3 cables from front light).

Siversov Leading Lights:

Front light (46°54′N, 32°01′E).

Rear light (1½ miles from front light).

2 The alignment (222½°), astern, of leading lights and the alignment (042½°) of Siversov Leading Lights lead through the channel, marked by buoys and light-buoys, for 7 miles passing SE of Anchorage area No 363 (6.188) and NW of Port Oktyabr'sk (6.193).

Thence the track alters NNE onto the Konstantinovskiy Leading Lights.

Koleno No 12

6.178

1 **Konstantinovskiy Leading Lights:**

Front light (46°55′N, 32°02′E).

Rear light (3 cables from front light).

The alignment (023½°) of these lights leads through the channel, marked by buoys and light-buoys, for 2¼ miles.

Thence the track alters NW onto the Konstantinovskiy and Siversov Leading Lights.

Koleno No 13

6.179

1 **Leading Lights:**

Konstantinovskiy Light (46°55′N, 32°02′E).

Siversov Light (8 cables from front light).

The alignment (143¾°), astern, of these lights leads through the channel, marked by buoys and light-buoys, for 8 cables.

Thence the track alters NW into the Port Mykolayiv Kanal.

6.180

1 **Useful mark:**

Island (46°55′N, 32°00′E).

Directions for Port Mykolayiv Kanal

(continued from 6.180)

Pervoye Koleno

6.181

1 **Leading beacons:**

Front beacon (46°55′·9N, 32°01′·6E).

Rear beacon (240 m from front beacon).

The alignment (106¼°), astern, of these beacons leads through the channel, marked by buoys and light-buoys, for 9 cables passing SSW of Anchorage area No 364 (6.188).

Thence the track alters WSW into Vtoroye Koleno.

2 **Caution.** It was reported (1999) that the beacons had been destroyed.

Vtoroye Koleno

6.182

1 **Malyy Korenykhskiy Leading Beacons:**

Front beacon (46°55′N, 31°57′E).

Rear beacon (240 m from front beacon).

The alignment (241°) of these beacons leads through the channel, marked by buoys and light-buoys, for 1½ miles.

Thence the track alters W into Spasskiy Kanal.

Caution. It was reported (1999) that the beacons had been destroyed.

6.183

1 **Useful mark:**

Korenykhskiy Light (46°56′N, 31°59′E).

Directions for Spasskiy Kanal

(continued from 6.183)

Pervoye Koleno

6.184

1 **Mala Korenyhka Leading Beacons:**

Front beacon (46°55′N, 31°59′E).

Rear beacon (250 m from front beacon).

Leading beacons:

Front beacon (46°56′N, 31°55′E).

Rear beacon (250 m from front beacon).

2 The alignment (096½°), astern, of Mala Korenyhka Leading Beacons and the alignment (276½°) of leading beacons lead through the channel, marked by buoys and light-buoys, for 1 mile.

Thence the track alters NW into Vtoroye Koleno.

Caution. It was reported (1999) that the leading beacons (46°56′N, 31°55′E) had been destroyed.

Vtoroye Koleno
6.185

1 **Leading marks:**
Beacon (46°57′N, 31°54′E).
Korenykhskiy Rear Leading Light (200 m from beacon).
Leading beacons:
Front beacon (46°55′N, 31°56′E).
Rear beacon (290 m from front beacon).

2 The alignment (142½°), astern, of leading beacons and the alignment (322½°) of a beacon and Korenykhskiy Rear Leading Light lead through the channel, marked by buoys, for 1 mile passing NE of Anchorage area No 365 (6.188).
Thence the track alters NNE into Tret'ye Koleno.
Caution. It was reported (1999) that the rear leading beacon (46°55′·1N, 31°56′·6E) had been destroyed.

Tret'ye Koleno
6.186

1 **Leading beacons:**
Front beacon (46°56′N, 31°55′E).
Rear beacon (250 m from front beacon).
The alignment (192½°), astern, of these beacons leads through the channel, marked by buoys, for 1 mile.
Thence the track alters NE into Chetvertoye Koleno.
Caution. It was reported (1999) that the beacons had been destroyed.

Chetvertoye Koleno
6.187

1 **Korenykhskiy Leading Lights:**
Front light (46°57′N, 31°55′E).
Rear light (220 m from front light).
The alignment (231¾°), astern, of these lights leads through the channel, marked by buoys, for 4 miles into Rika Inhul, passing (with positions from Spasskaya Kosa (46°58′N, 31°56′E)):

2 NW of Spasskaya Kosa, thence:
Through Area No 609 (6 cables NNE) (6.171), thence:
Beneath Varvarovskiy Most (1¾ miles NE) (6.169), thence:
Through Area No 610 (2 miles NE) (6.171), thence:

3 Beneath Inhul'skiy Most (2¼ miles ENE) (6.169), thence:
Through Area No 611 (2½ miles ENE) (6.171), thence:
Through a floating barrier and to the berths in Rika Inhul (6.194).

Anchorages
6.188

1 Area No 362, with depths of 7 to 7·8 m, mud, is situated 1¼ miles WSW of Ozharskaya Kosa (6.176).
Area No 363, with depths of 6·8 to 7·8 m, mud and sand, is situated 1½ miles W of Portpunkt Oktyabr'sk (6.193).
Area No 364, with depths of 7·6 to 11 m, mud, is situated 1½ miles E of Mykolayiv (6.219).
Area No 365, with a depth of 5·6 m, is situated 1¾ miles SSW of Spasskaya Kosa (6.187).

Side channels

Lupareve
6.189

1 From a position about 2½ miles SSE of Voloshkaya Kosa (6.175) the alignment (075½°) of leading lights leads to a basin at Lupareve. Within the basin there are berths with depths alongside of 0·7 to 1·8 m.

Galitsinovskiy Kar'yer
6.190

1 From a position 2 miles N of Ozharskaya Kosa (46°47′N, 31°55′E) the alignment (167¾°) of Halytsynove Leading Lights leads for 1¾ miles through a channel, dredged to 4·6 m (1987) and marked by buoys, to Galitsinovskiy Kar'yer.
The port is used by tugs and non-self propelled barges but is closed with the onset of ice.

Balabanovka
6.191

1 From a position 3½ miles SW of Siversov Front Leading Light (6.177) the alignment (108½°) of leading lights leads for 1 mile through a channel, dredged to 2·6 m (1984), to Balabanovka.

Gavan' Zavoda
6.192

1 From a position 2¾ miles SW of Siversov Front Leading Light (6.177) the alignment (092¼°) of leading lights leads for 1 mile to Gavan' Zavoda passing S of buoys (isolated danger and S cardinal) marking shoal patches of 4·6 and 1·8 m respectively.

Minor harbours

Port Oktyabr'sk
6.193

1 **General information.** Port Oktyabr'sk (46°50′N, 31°57′E) is situated about 1 mile N of Krivaya Kosa (46°49′·4N, 31°56′·4E).
Traffic. In 2002 the port was used by 11 vessels with a total deadweight of 79 683 tonnes.

2 **Directions.** The alignment (284°), astern, of leading lights (46°50′N, 31°54′E) standing near Stara Bohdanivka mark the S limit of the dredged area.
Anchorage may be obtained in area No 363 (6.188) as shown on the chart.
Berths. Severnyy and Yuzhnyy basins dredged (1991) to 8·3 m.

Rika Inhul
6.194

1 **General information.** Rika Inhul (46°59′N, 32°00′E) is situated on the N side of Mykolayiv.
Directions. The berths are approached through the Spasskiy Kanal.
Berths. Six berths. No 1 berth is the deepest with a depth alongside of about 8 m.

PORT DNIPRO-BUZK'YY

General information

Chart 2203 plan of Port Dnipro-Buz'kyy

Position
6.195

1 Port Dnipro-Buz'kyy (46°46′N, 31°57′E) is situated on the E bank of Buz'kyy Liman 1 mile N of Russkaya Kosa (6.175).

Function
6.196

1 The port is open all year round and mainly handles bauxite and molasses. The population (2002) was 20 123.

Approach and entry
6.197

1 The port is approached through Buz'kyy Liman and entered through a dredged channel.

Traffic
6.198

1 In 2002 the port was used by 77 vessels with a total deadweight of 3 133 349 tonnes.

Port Authority
6.199

1 Dnipro-Buz'kyy Port Authority, State Sea Port, 327054 Mykolayiv, Ukraine.

Limiting conditions

Controlling depth
6.200

1 There is a channel dredged to 10 m (1984) leading from the Bugsko-Dneprovsko-Limanskiy Kanal.

The maximum draught allowed in the Bugsko-Dneprovsko-Limanskiy Kanal is 9·8 m fresh water.

Abnormal levels
6.201

1 Winds can affect the water level by up to 1 m.

Density of water
6.202

1 Density: 1·000 g/cm^3.

Maximum size of vessel handled
6.203

1 Length 215 m, draught 9·8 m fresh water.

Ice
6.204

1 Ice begins to form in in the second half of December and finally disappears in the channel and estuary in the first half of March. See 6.139.

Arrival information

Notice of ETA
6.205

1 See *Admiralty List of Radio Signals Volume 6(3)* for details.

Outer anchorages
6.206

1 Area No 362 (6.188) is close W of Koleno No 10, 2 miles N of the entrance channel to Port Dnipro-Buz'kyy.

Pilots
6.207

1 See 6.7. Harbour pilots board in the vicinity of No 73 buoy in Koleno No 8 about 3½ miles S of Russkaya Kosa (6.175).

Tugs
6.208

1 Tugs are available and their use is compulsory for all operations.

Regulations concerning entry
6.209

1 Tug assistance for transiting the Bugsko-Dneprovsko-Limanskiy Kanal is compulsory for vessels in excess of 187 m in length.

For regulations regarding navigation in ice see 6.139.

Harbour

General layout
6.210

1 All the berths are situated on the E side of a basin at the end of the approach channel.

Development
6.211

1 Works were in progress (2002) on the construction of two berths for handling alumina and mud, and a separate berth for molasses.

Principal marks
6.212

1 **Landmark:**
Tower (Signal Station) (46°45′N, 31°56′E) on Russkaya Kosa.
Major light:
Russkaya Kosa Light (46°45′N, 31°56′E).

Directions for entering harbour
(continued from 6.175)

Entrance channel
6.213

1 **Port Dnipro-Buz'kyy Leading Lights:**
Front light (46°46′·0N, 31°56′·8E).
Rear light (250 m from front light).
Leading lights:
Front light (46°44′·1N, 31°53′·9E).
Rear light (500 m from front light).

2 From a position 2 miles WSW of Russkaya Kosa (6.175), in Koleno No 9, the alignment (045½°) of Port Dnipro-Buz'kyy Leading Lights and the alignment (225½°), astern, of the second pair of leading lights lead for 3½ miles through a channel marked by light-buoys (lateral) into the basin, passing NW of Russkaya Kosa.

Basins and berths

Anchorages
6.214

1 No 1 anchorage at the outer roads for a vessel with a maximum length of 215 m and No 2 anchorage in the inner roads for a vessel with a maximum length of 200 m.

For outer anchorage see 6.188.

Alongside berths
6.215

1 Five berths, with a total length of about 750 m, with depths alongside of 4·5 to 11·5 m.

Port services

Repairs
6.216

1 Minor repairs only with more extensive facilities at Mykolayiv (6.219).

Other facilities
6.217

1 Medical facilities with hospitals at Mykolayiv (6.219).

Supplies
6.218

1 Fresh water at alongside berths.

MYKOLAYIV

General information

Chart 2203 plan of Mykolayiv

Position
6.219

1 Mykolayiv (46°57′N, 31°58′E) is situated on the E bank of Rika Yuzhnyy Bug, 21 miles above the river entrance.

Function
6.220

1 A major city with a population (2002) of 514 000, Mykolayiv is a commercial and river port handling dry and bulk cargoes and is open for navigation all year round.

Approach and entry
6.221

1 The port is approached through Buz'kyy Liman along the Bugsko-Dneprovsko-Limanskiy Kanal.

Traffic
6.222

1 In 2002 the port was used by 562 vessels with a total deadweight of 11 361 658 tonnes.

Port Authority
6.223

1 Mykolayiv Port Authority, 23 Zavodskaya Street, 327004 Mykolayiv, Ukraine.

Limiting conditions

Controlling depth
6.224

The maximum draught allowed in the Bugsko-Dneprovsko-Limanskiy Kanal is 9·8 m fresh water.

Deepest and longest berth
6.225

1 Nos 9 to 14 berths are the deepest with a depth alongside of 9·5 m. No 6 is the longest with a length of 250 m.

Density of water
6.226

1 Density: 1·005 g/cm^3.

Maximum size of vessel handled
6.227

1 Length 215 m, draught 9·8 m fresh water.

Ice
6.228

Ice begins to form in in the second half of December and finally disappears in the channel and estuary in the first half of March. See 6.139.

Arrival information

Notice of ETA
6.229

1 See *Admiralty List of Radio Signals Volume 6(3)* for details.

Outer anchorages
6.230

1 Area No 364 (6.188) is situated between Pervoye Koleno (6.181) and the berths.

Area No 365 (6.188) is situated 1½ miles W of Rechnoy Port (6.238).

Pilots
6.231

1 See 6.6. Harbour pilots board in the vicinity of No 128 buoy close SW of Konstantinovskiy Light (6.178) at the junction of Koleno No 13 and Pervoye Koleno.

Tugs
6.232

1 Tugs are available and their use is compulsory.

Regulations concerning entry
6.233

1 Tug assistance for transiting the Bugsko-Dneprovsko-Limanskiy Kanal is compulsory for vessels in excess of 187 m in length.

2 For regulations in ice see 6.139.

Harbour

General layout
6.234

1 The commercial port extends for 1¼ miles E and SE of Portovyy Mol and the river port is situated 1½ miles WSW of Portovyy Mol.

Natural conditions
6.235

1 **Ice.** See 6.228.

Local Weather. A feature of the port are the "black storms" that occur when strong dry E winds blow clouds of dust from the Ukrainian Steppes.

Principal marks
6.236

1 **Landmarks:**

Spire (46°57′N, 32°01′E).
Pylon (46°55′·9N, 31°57′·7E).
Chimney (46°56′·5N, 31°57′·7E).

Directions for entering harbour

(continued from 6.180)

Approaches
6.237

1 From a position at the junction of Koleno No 13, at the end of the Bugsko-Dneprovsko-Limanskiy Kanal, and Pervoye Koleno (6.181) at the start of the Port Mykolayiv Kanal the track leads generally N to the berths in the commercial port area.

Entrance channel to Rechnoy Port

6.238

1 **Rechnoy Port (River Port) Leading Lights:**
Front light (46°56′·3N, 31°57′·4E).
Rear light (35 m from front light)

From a position 4 cables W of the junction of the Port Mykolayiv and Spasskiy Kanals the alignment (020¾°) of these lights leads for 7 cables through a channel dredged to 4·5 m (1985), and marked by buoys, to Rechnoy Port.

Basins and berths

Alongside berths

6.239

1 **Commercial port**. Fourteen berths, with depths alongside of 5·4 to 9·5 m.

Rechnoy Port. Three berths with depths alongside of 3 to 4 m.

Port services

Repairs

6.240

1 All types of repairs available. There are dry docks in the port.

Other facilities

6.241

1 Deratting; hospitals; oily waste disposal.

Supplies

6.242

1 Fresh water by barge; provisions.

Small craft

6.243

1 Marinas, shown on the chart, are situated 1½ miles E and 3 miles NNW of Korenykhskiy Light (46°56′N, 31°59E).

ADZHIGOL'SKAYA KOSA TO RIKA RVACH

General information

Charts 2200, 2201

Route

6.244

1 The route leads generally E by way of the Khersonskiy Morskoy Kanal to the mouth of the Rika Rvach, the N arm of the estuary of the Rika Dnipro.

The Khersonskiy Morskoy Kanal consists of three reaches.

Topography

6.245

1 Rika Yuzhnyy Bug (6.167) and Rika Dnipro form the estuary of Dniprovs'kyy Lyman. The E shore of the estuary is formed by the marshy delta of the Rika Dnipro, which is entirely covered by reeds and bushes. This shore is fronted by a shallow bank which is constantly changing and is gradually extending into the estuary with the formation of new islands and the extension of existing ones.

2 In the deeper parts of the estuary the nature of the bottom is mud with sandy ridges whereas the shoals off the mouth of the Rika Dnipro are composed of hard sand.

For descriptions of the N and S parts of the estuary see 6.130.

3 **Rika Dnipro** rises in the Valdai Hills N of Smolensk. It is 2 240 km long and the third longest river in Europe. Since the construction of the Dneprovskiy power dam, it is navigable for most of its length and is connected by canals to the River Bug in Poland and thus with the Baltic.

Depths and widths

6.246

1 Khersonskiy Morskoy Kanal was dredged to 7·4 m (1991) with a width of 100 m (1987).

Pilotage

6.247

1 **Pilots.** See 6.6.

Traffic regulations

6.248

1 **Maximum length of vessel:**
Khersonskiy Morskoy Kanal 200 m.

6.249

1 **Times of entry with summer navigation aids:**
Khersonskiy Morskoy Kanal. 24 hours a day except for vessels with length more than 170 m and draught of more than 6·5 m, which may only navigate during daylight hours and when visibility is not less than 2 miles.

2 **Times of entry with winter navigation aids:**
Vessels with a draught of more than 5 m may only navigate at night if the leading lights are clearly visible at distances of at least 5 miles.
Entry to the Khersonskiy Morskoy Kanal is prohibited during conditions of poor visibility and when wind speeds exceed 29 kn. When such conditions occur, vessels in the channel must proceed to the nearest safe anchorage.

6.250

1 **Speed restrictions.** The following speed restrictions apply to vessels navigating in the Khersonskiy Morskoy Kanal:

Length more than 170 m.	8 kn
Length less than 170 m in first and second reaches (6.259 and 6.260).	10kn
All vessels in third reach (6.261) and Rika Rvach (6.264).	8 kn

6.251

1 **Special signals**. Vessels with a draught of 7 m and above, when proceeding along the Khersonskiy Morskoy Kanal, must display signals in accordance with Rule 28 of the *International Regulations for Preventing Collisions at Sea (1972).*

2 Vessels with a draught of between 5 and 7 m, when proceeding along the Khersonskiy Morskoy Kanal, must show a red all round light or black sphere in a visible position.

6.252

1 **Overtaking is permitted:**
When there are favourable conditions and with the agreement of the master of the vessel being overtaken.

Overtaking is prohibited:
If both vessels carry special signals. See 6.136.

2 When navigating in the second and third reaches of the Khersonskiy Morskoy Kanal and Rika Rvach.
In turning zones, which are the stretches of the canal 5 cables either side of a bend in the channel, and in places where vessels are permitted to cross the channel.

6.253

1 **Passing is prohibited:**

In the vicinity of the wreck (46°32′N, 32°09′E) lying close to the second reach of the Khersonskiy Morskoy Kanal.

In the third reach of the Khersonskiy Morskoy Kanal.

In turning zones of the Khersonskiy Morskoy Kanal.

Vessels proceeding with the current have right of way in the turning zones and vessels proceeding against the current must not enter a turning zone until the oncoming ship has passed.

6.254

1 **Ice.** When ice is present, vessels, unless they have the appropriate ice classification, must navigate under the direction of an icebreaker, usually in convoy. Convoys are formed in the vicinity of Ostriv Berezan' (6.129) and in the ports.

Vessels proceeding from seaward must request pilotage in ice 48 hours before reaching Ostriv Berezan'.

Traffic control

6.255

1 Traffic in the Khersonskiy Morskoy Kanal and through Rika Rvach to Kherson is regulated by the traffic control post at Shyroka Balka (46°35′N, 32°12′E). See 6.5.

Regulated areas

6.256

1 **Former mined areas:**

Area No 15, as shown on the chart, 1 mile SSE of Adzhigol'skaya Kosa.

An area, as shown on the chart, close S of the Khersonskiy Morskoy Kanal between the meridians of 32°07′·3E and 32°11′·8E.

Principal marks

6.257

1 **Landmarks:**

Tower (46°31′N, 31°54′E).

Mys Stanislav (46°33′N, 32°09′E), a high and cliffy headland.

Church (46°34′N, 32°08′E).

2 **Major lights:**

Adzhigol'skiy Middle Leading Light (46°37′N, 31°43′E) (6.148).

Stanislav-Adzhigol'skiy Leading Lights (46°36′N, 31°47′E) (6.259).

Directions for Khersonskiy Morskoy Kanal

(continued from 6.152)

6.258

1 **Initial position.** 46°36′N, 31°48′E. The alignment (350°) of Adzhigol'skaya Kosa Leading Lights (46°37′N, 31°48′E) (6.163) marks the start of the first reach of the Khersonskiy Morskoy Kanal.

Route. Vessels with a draught of 4 m or over follow the buoyed channel throughout. For vessels with a draught of less than 4 m, see 6.262.

First reach

6.259

1 **Stanislav-Adzhigol'skiy Leading Lights:**

Front light (black rectangle, white stripe, on square concrete tower with wind generator, 15 m in height) (46°36′N, 31°47′E).

Rear light (as for Adzhigol'skiy Middle (6.148)) (3·5 miles WNW of front light).

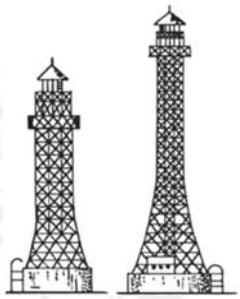
2 The alignment (289°), astern, of these lights leads ESE through the channel, marked by buoys and light-buoys, for 12¾ miles.

Another pair of leading lights, on the reciprocal (109°) of the above alignment and visible on the leading line only, is shown on request and in poor visibility by day:

3 Front light (dark red metal framework tower, 26 m in height) (46°31′N, 32°09′E).

Rear light (similar structure, 64 m in height) (3·6 miles ESE of front light).

Thence the track alters ENE onto the Kasperovskiy Leading Lights.



Stanisav – Adzhigol'skiy Leading Lights (6.259)

Caution. Underwater obstructions with depths of 4·5 and 4·3 m lie on the S edge of the canal 7 miles W and 4½ miles WSW, respectively, of Mys Stanislav (46°33′N, 32°08′E).

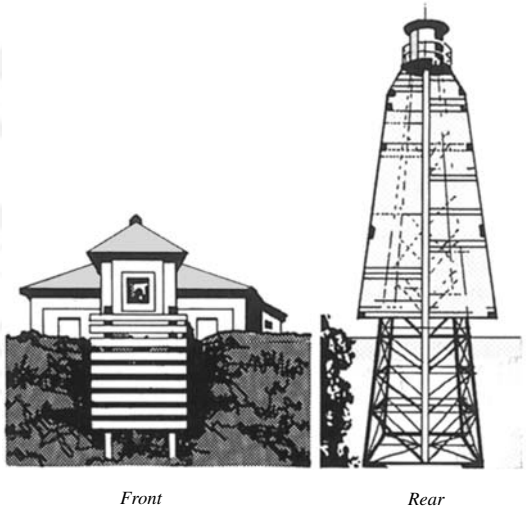
Second reach

6.260

1 **Kasperovskiy Leading Lights:**

Front light (square on white stone house, 6 m in height) (46°34′N, 32°19′E).

Rear light (red daymark on metal framework tower, 27 m in height) (9 cables from front light).



Kasperovskiy Leading Lights (6.260)

2 The alignment (076°) of these lights leads ENE through the channel, marked by buoys and light-buoys, for 8 miles, passing (with positions from Mys Stanislav (46°33′·4N, 32°08′·5E)):

Through Anchorage area No 366 (2 miles SSW) (6.263), thence:

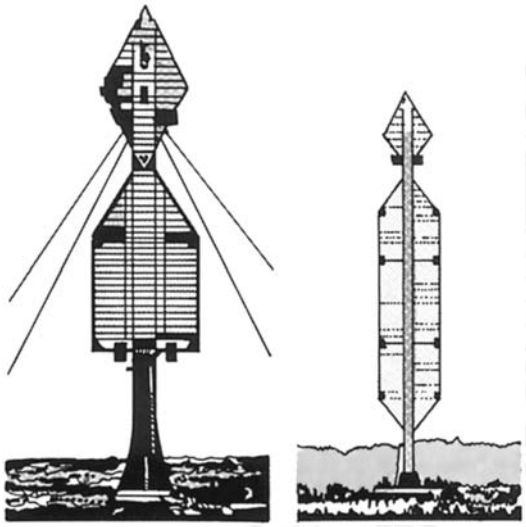
3 NNW of a buoy (isolated danger) (1½ miles SSE) marking a wreck with a depth of 2 m over it, thence:
SSE of Mys Stanislav, thence:
NNW of a former mine danger area (6.256).
Thence the track alters E onto the Malyy Kasperovskiy Leading Lights.

4 **Caution.** Vessels are prohibited from passing each other close to the wreck in position 46°32′N, 32°09′E and when navigating in this vicinity must keep on the leading line.

Third reach

6.261

1 **Malyy Kasperovskiy Leading Lights:**
Front light (black daymarks on white stripes, 11 m in height) (46°33′N, 32°19′E).
Rear light (similar structure, 19 m in height) (500 m from front light).



Front *Rear*

Malyy Kasperovskiy Leading Lights (6.261)

The alignment (096¼°) of these lights, visible on the leading line only, leads E through the channel, marked by buoys and light-buoys, for 7 cables to the mouth of the Rika Rvach.

Route for shallow draught vessels

6.262

1 **Route** for vessels with a draught of less than 4 m is as follows:
Pervoye Koleno. In an area 1 cable wide on either side of the edge of the channel.
Vtoroye Koleno and Tret'ye Koleno. Within the channel in both directions.
(Directions for Rika Rvach to Kherson continue at 6.269)

Anchorage

6.263

1 Area No 366, with three designated berths, in depths of 3·5 to 9·1 m, is situated 2 miles SSW of Mys Stanislav (6.260).

RIKA RVACH TO KHERSON

General information

Chart 2201

Route

6.264

1 The route to Kherson leads generally ENE for 15 miles by way of the Rika Rvach, Rika Ol'khovyy Dnipro and Rika Dnipro.

Topography

6.265

1 See 6.245.

Pilotage

6.266

1 **Pilots.** See 6.6.

Traffic control

6.267

1 Traffic between Rika Rvach and Kherson is regulated by the traffic control post at Shyroka Balka (46°35′N, 32°12′E). See 6.5.

Ice

6.268

1 **Ice.** When ice is present, vessels, unless they have the appropriate ice classification, must navigate under the direction of an icebreaker, usually in convoy. Convoys are formed in the vicinity of Ostriv Berezan' (6.129) and in the ports.
Vessels proceeding from seaward must request pilotage in ice 48 hours before reaching Ostriv Berezan'.

Directions

(continued from 6.262)

From Rika Rvach to Rika Ol'khovyy Dnipro

6.269

1 **Entrance.** The track leads ESE through the entrance to Rika Rvach (46°33′N, 32°18′E) between two embankments, the heads of which are in ruins. The N embankment is shorter than the S, with light-buoys (port and starboard hand) moored off the head of each. A light (metal column, 7 m in height) is exhibited from the root of each embankment.

2 Thence the track continues ESE in the middle of the river, marked by lights and light-buoys, for 1¾ miles passing NNE of Ostriv Zabych and then alters ENE onto No 12 Leading Lights.
No 12 Leading Lights:
Front light (two squares on metal column, 11 m in height) (46°32′·7N, 32°20′·5E).

3 Rear light (circle with white stripe on framework tower, 16 m in height) (140 m from front light).
The alignment (255°), astern, of these lights leads ENE through the channel, marked by lights and light-buoys, for 5 cables passing between Ostriv Borshchevyy and Ostriv Kozulikhskiy.
Thence the track alters ESE onto No 11 Leading Lights.

4 **No 11 Leading Lights:**
Front light (46°33′·0N, 32°21′·3E).
Rear light (420 m from front light).
The alignment (287½°), astern, of these lights leads ESE through the channel, marked by lights and light-buoys, for 6 cables passing between Ostriv Borshchevyy to the N and Ostriv Kozulikhskiy and Ostriv Nestryga to the S.

5 Thence the track alters E onto No 10 Leading Lights.
No 10 Leading Lights:
Front light (two squares on metal column, 10 m in height) (46°32′·8N, 32°21′·3E).

Rear light (diamond in circle, 12 m in height) (200 m from front light).

6 The alignment (269½°), astern, of these lights leads E through the channel, marked by lights and light-buoys, for 6½ cables passing between Ostriv Borshchevyy and Ostriv Nestryga.

Thence the track alters NE onto No 9 Leading Lights.

No 9 Leading Lights:

Front light (two squares on mast, 11 m in height) (46°33′·7N, 32°25′·2E).

7 Rear light (black mast, 19 m in height) (200 m from front light).

The alignment (056¼°) of these lights leads NE through the channel, marked by lights and buoys, for 1½ miles.

Thence the track alters E onto No 8 Leading Lights.

8 **No 8 Leading Lights:**

Front light (46°33′·5N, 32°24′·6E).

Rear light (950 m from front light).

The alignment (268¼°), astern, of these lights leads E through the channel, marked by lights and buoys, for 1¼ miles into Rika Ol'khovyy Dnipro and alters ENE onto No 7 Leading Lights.

From Rika Ol'khovyy Dnipro to Rika Dnipro

6.270

1 **No 7 Leading Lights:**

Front light (white diamond on black circle, white stripe, 11 m in height) (46°34′·5N, 32°29′·2E).

Rear light (similar structure, 19 m in height) (600 m from front light).

The alignment (060°) of these lights leads ENE through a wide and deep part of the river for 1½ miles.

Thence the track alters NE onto No 6 Leading Lights.

2 **No 6 Leading Lights:**

Front light (46°33′·8N, 32°27′·8E).

Rear light (270 m from front light).

The alignment (226½°), astern, of these lights leads NE through the channel for 1 mile.

Thence the track alters NE onto No 5 Leading Lights.

No 5 Leading Lights:

Front light (46°34′·6N, 32°28′·8E).

Rear light (640 m from front light).

3 **No 5 Obratnyy Leading Lights:**

Front light (46°35′·8N, 32°31′·3E).

Rear light (106 m from front light).

The alignment (235°), astern, of No 5 Leading Lights and the alignment (055°) of No 5 Obratnyy Leading Lights leads NE through the channel, marked by light-buoys, for 1 mile.

Thence the track alters E onto No 4 Leading Lights.

4 **No 4 Leading Lights:**

Front light (46°34′·5N, 32°30′·2E).

Rear light (200 m from front light).

The alignment (266°), astern, of these lights leads E through the channel, marked by light-buoys, for 1¼ miles.

Thence the track leads ENE through the middle of the river for 6 cables and alters E onto No 3 Leading Lights.

5 **No 3 Leading Lights:**

Front light (46°35′·9N, 32°33′·2E).

Rear light (137 m from front light).

The alignment (281¾°), astern, of these lights leads E through the channel, marked by light-buoys, for 7 cables passing between Ostriv Malyy Pot'omkins'kyy and Ostriv Velykyy Pot'omkins'kyy.

Thence the track alters ENE onto No 2 Leading Lights.

6 **No 2 Leading Lights:**

Front light (46°35′·6N, 32°30′·2E).

Rear light (120 m from front light).

The alignment (250°), astern, of these lights leads ENE through the channel, marked by light-buoys, for 7 cables into Rika Dnipro and alters NE onto No 1 Leading Lights.

(Directions continue for Kherson at 6.290)

Side channel

Rika Konka

6.271

1 Rika Konka (46°30′N, 32°30′E) extends about 12 miles WSW from its junction with Rika Staryy Dnipro to the S part of the Rika Dnipro estuary.

Small vessels use Rika Konka between Kherson and Hola Prystan' (6 miles SW) where are berths with depths alongside of up to 2·9 m.

KHERSON

General information

Chart 2201

Position and function

6.272

1 Kherson (46°38′N, 32°37′E), which in 2002 had a population of 328 000, is situated on the N bank of the Rika Dnipro (6.245), 15 miles upstream from the mouth of the river. It is an important river and sea port.

Port limits

6.273

1 The W or seaward limit of the port is formed by a line joining Seleniye Geroyskoye (46°31′N, 31°53′E) with the extremity of Mys Adzhigol'skaya Kosa, 6½ miles NW.

Khersonskiy Reyd consists of that part of the Rika Dnipro between the N suburbs of the town and Ostrov Malyy Pot'omkins'kyy (46°36′N, 32°34′E).

Traffic

6.274

1 In 2002 the port was used by 264 vessels with a total deadweight of 2 876 402 tonnes.

Port Authority

6.275

1 Kherson Commercial Sea Port, 4 Ushakov Avenue, 325000, Kherson, Ukraine.

Limiting conditions

Controlling depth

6.276

1 Khersonskiy Morskoy Kanal: see 6.246.

Abnormal levels

6.277

1 Maximum range of water level caused by winds may reach 2 m and by atmospheric pressure, 0·6 m.

Density of water

6.278

1 Density: 1·000 g/cm^3.

Maximum size of vessel handled

6.279

1 Length 200 m, draught 7·6 m, but may be altered at discretion of harbour authorities if weather conditions alter water level.

Ice

6.280

1 See 6.268.

Local weather and sea state

6.281

1 Mooring of large vessels may not take place when the wind strength exceeds 27 kn.

Arrival information

Port operations

6.282

Port radio and port control are situated near Nos 1 and 2 Quays. See *Admiralty List of Radio Signals Volume 6(3)* for details.

Notice of ETA

6.283

1 See *Admiralty List of Radio Signals Volume 6(3)* for details.

Outer anchorage

6.284

1 See 6.263.

Pilots

6.285

1 See 6.6. Pilots normally board 1¼ miles SW of Mys Adzhyyask (46°36′N, 31°21′E).

Tugs

6.286

1 Tugs are available and their use is compulsory.

Regulations concerning entry

6.287

1 See 6.248 et seq.

Harbour

General layout

6.288

1 The main berthing areas are situated on the N bank of the river, NE of the confluence of the Rika Koshova (6.290) and Rika Dnipro.

Natural conditions

6.289

1 **Ice** begins to form in the second half of December and finally disappears in the first half of March.

Climatic table. See 1.195 and 1.205.

Directions for entering harbour

(continued from 6.270)

6.290

1 **No 1 Leading Lights:**

Front light (46°35′·3N, 32°34′·8E).

Rear light (460 m from front light).

The alignment (218½°), astern, of these lights leads NE for 1¾ miles to the main berths.

Caution. Particular care must be taken when navigating in the area between the entrance to Rika Koshova (46°37′N, 32°37′E) and No 10 quay, 9 cables upstream.

Basins and berths

Basins

6.291

1 Basins Nos 1, 2 and 3, with depths alongside of 4·8 to 9 m, are situated on the S bank of the river. They are used by small vessels during the winter.

Baseyn Pyatnitskogo, with depths alongside of 4·5 to 9·2 m, is situated on the S bank of the river 1 mile S of the entrance to the Rika Koshova.

Anchorages

6.292

1 **Anchorages:**

Foreign vessels anchor between Areas Nos 614 and 615 in depths of 8 to 13 m.

Dry cargo vessels anchor between Area No 614 and No 120 light-buoy (1¼ miles SW) in depths of 6 to 9 m.

2 Tankers anchor between No 111 light buoy and Ostriv Malyy Pot'omkins'kyy (1½ miles ENE) in depths of 10 to 11 m.

Prohibited anchorages:

The alignments (142° and 154°) of lights (red circle, white band on black column, yellow bands) on the S bank of the Rika Dnipro (5 cables SW of Basin No 3) mark the W and E limits, respectively, of Area No 614.

3 The alignments (131° and 128°) of lights (similar structure) on the S bank of the Rika Dnipro (at Basin No 2) mark the W and E limits, respectively, of Area No 615.

The alignments (140° and 131°) of lights (similar structure) on the S bank of the Rika Dnipro (4 cables NE of Basin No 1) mark the W and E limits, respectively, of Area No 616.

Alongside berths

6.293

1 Quays Nos 1 to 10, the positions of which are shown on the chart, extend for 9 cables NE along the N bank of the river from the confluence of the Rika Koshova and the Rika Dnipro. Depths alongside range between 2·0 and 8·6 m.

There are two tanker berths, with depths alongside of 8·2 and 8·3 m, close SW of No 3 Leading Lights (46°36′N, 32°33′E). Maximum size of vessel handled is 125 m in length, draught 7·6 m.

Port services

Repairs

6.294

1 Only minor repairs can be carried out, there are no dry docks available.

Other facilities

6.295

1 Deratting: hospitals.

Supplies

6.296

1 Fuel; fresh water available at quays and by barge at the tanker berths; provisions.

COASTAL AND INSHORE WATERS BETWEEN KINBURNS'KA KOSA AND TENDRIVS'KA KOSA

General information

Charts 2232, 2212 (see 1.16)

Route

6.297

1 Recommended routes No 2, for vessels of up to 5 m draught, and No 59 lead S from Ostriv Berezan' (46°36′N, 31°25′E).

Topography

6.298

1 The waters between the NW extremity of Kinburns'ka Kosa (46°35′N, 31°31′E) and the N extremity of Tendrivs'ka Kosa (13 miles S), form the approaches to Yegorlytskiy Zakota (6.304) and Tendrivs'ka Zatoka (6.308).

The NW part of Kinburns'ka Kosa is low and sandy. The N part of Tendrivs'ka Kosa is also low with a few trees on it.

Traffic regulations

6.299

1 **Areas periodically dangerous for navigation:**

Area No 704 extends 1 mile offshore, 5 miles SSE of the NW extremity of Kinburns'ka Kosa.

Area No 705 extends 1½ miles either side of the neck of Tendrivs'ka Kosa about 5 miles S of its N extremity.

See Appendix II.

Natural conditions

6.300

1 **Winds.** The prevailing winds in autumn and winter are NW. From March to May, NW winds are more common than winds from other directions during daytime. Gales may occur in any month except June and July, but are most frequent in October and November.

Ice forms in Tendrivs'ka Zakota between the end of December and the end of February and attains a thickness of about 0·4 m. Offshore, ice, which is mostly drift ice, appears at the beginning of January and disappears towards the end of February.

Current. See 1.145.

Principal marks

6.301

1 **Major light:**

Tendrivskiy Light (black circles on white round tower, black bands, 31 m in height) (46°19′N, 31°31′E).

Other navigational aid

6.302

1 **Racon:**

Tendrivskiy Light — as above.

See *Admiralty List of Radio Signals Volume 2* for details.

Directions

(continued from 6.127)

6.303

1 **Recommended route No 2.** From a position 3½ miles W of Kinburnskiy Dopolnitel'nyy Light (46°35′N, 31°31′E), Recommended route No 2 leads S for 19 miles to its intersection with Recommended route No 4, passing (with positions from Tendrivskiy Light (6.301)):

W of Tendrivs'ka Severnyy Light (black metal framework tower, 20 m in height) (2½ miles N), thence:

2 W of Tendrivskiy Light, thence:

W of a light-buoy (W cardinal) (2½ miles S) marking a dangerous wreck, and:

Clear of Area No 705 (6.299), thence:

W of Tendrivs'ka South Light (framework tower, 10 m in height) (4 miles SSE).

3 **Recommended route No 59.** From a position 6 miles NNW of Tendrivs'ka Severnyy Light Recommended route No 59 leads S for 20 miles and thence SW for 14 miles to its intersection with Recommended routes Nos 81 and 82 (6.312). It then continues SW to Ust'-Dunaysk (5.120).

4 **Caution.** The lowness of Tendrivs'ka Kosa renders it difficult to detect. Care must be taken not to be set on to it by E currents which will be strongest with W winds.

(Directions continue for Karkinits'ka Zakota at 6.324)

Yegorlytskiy Zakota

Topography

6.304

1 Yegorlytskiy Zakota is entered between the S extremity of Kinburns'ka Kosa (46°26′N, 31°43′E) and the N shore of Pivostriv Yegorlytskiy Kut, a flat and marshy peninsula, 7½ miles SE.

Ostrov Kruglyy and Ostriv Dovhyy, two low sandy islands which appear as a continuation of the SW coast of Kinburns'ka Kosa, lie in the entrance of the bay.

6.305

1 The entrance channel to Yegorlytskiy Zakota lies between the S point of Ostriv Dovhyy and the shore 2½ miles S. The fairway within this entrance channel, which has a least depth of 3·7 m, is about 1 mile wide.

The shores of Yegorlytskiy Zakota are generally low. The N shore consists of some sand hills, some of which are wooded. Landing in the E part of the bay is impossible because the shore is fronted by a shallow bank of soft ooze.

Useful marks:

6.306

1 Pokrovskiy Beacon (46°28′N, 31°42′E), standing near the village of Pokrovka, which is situated among the sand hills at the NW corner of the bay.

Yegorlytskiy Beacon (46°22′N, 31°46′E), which stands on the S extremity of Ostriv Dovhyy. It was reported (2000) that the beacon had been destroyed.

Anchorage

6.307

1 Yegorlytskiy Zakota offers spacious shelter to small vessels from all but W winds, in depths of 2 to 5·4 m, soft mud, sand and shells.

The usual anchorage is about 2 miles E of Ostriv Dovhyy in depths of 3·7 to 4·9 m.

Caution. Weed growing from the bottom is very abundant and attains great length by mid summer. It is liable to foul propellers.

Tendrivs'ka Zatoka

Topography

6.308

1 Tendrivs'ka Zatoka is entered between the N extremity of Tendrivs'ka Kosa (46°22′N, 31°32′E) and the SW coast of Kinburns'ka Kosa, 8 miles NE.

The inner part of the bay is entered between the W end of Pivostriv Yegorlytskiy Kut (46°18′N, 31°45′E) and Kosa Belyye Kuchugury, a point on the N side of Tendrivs'ka Kosa, 4½ miles SW, within which there are some white sand dunes.

A flat with depths of about 1 m extends across this entrance and Ostrov Orlov, a low islet, lies on this flat.

Useful marks:

6.309

1 Kosa Belyye Kuchugury Light (framework tower, 12 m in height) (46°15′N, 31°40′E).

Radar reflectors (46°12′N, 31°52′E).

Dangers
6.310

1 Wrecks and obstructions, the positions of which can be seen on the chart, lie in the outer part of Tendrivs'ka Zatoka off the E shore of the N part of Tendrivs'ka Kosa.

Foul ground, which is indicated on the chart, extends 7½ cables offshore on the N side of Kosa Belyye Kuchugury.

Anchorage
6.311

1 Tendrivs'ka Zatoka provides good anchorage with shelter from all but NW winds, which send in a considerable sea.

The best berth is in depths of between 13 and 14 m, 1½ miles E of Tendrivskiy Light; stiff mud and large shells. Vessels can anchor closer inshore, but should approach with caution as the shore is steep-to within the 10 m depth contour.

ODES'KA ZAKOTA APPROACHES TO MYS KIKINEYZ

OFFSHORE WATERS BETWEEN APPROACHES TO ODES'KA ZAKOTA AND MYS KHERSONES'KYY (KHERSONES)

General information

Charts 2212, 2232

Recommended routes
6.312

1 Recommended routes Nos 81 and 82, which are shown on the chart, lead between the approaches to Odes'ka Zakota and the waters off Mys Khersones'kyy (44°35′N, 33°23′E) in the S part of Kryms'kyy Pivostriv.

Recommended route No 59 crosses Recommended routes Nos 81 and 82, as shown on the chart, 11 miles SE of the edge of the traffic roundabout in the approaches to Illichiv'sk and Odesa.

2 Recommended route No 60, for LASH vessels, to and from Ust'-Dunaysk (5.120) joins Recommended routes Nos 81 and 82, 12½ miles SE of the traffic roundabout.

Traffic regulations
6.313

1 A traffic roundabout and traffic separation schemes are situated in the approaches to Odes'ka Zakota. See 6.11.

Areas temporarily dangerous for navigation are situated as follows:

Area No 706. The SW limit of this area, the centre of which lies 14 miles SW of Tendrivskiy Light (46°19′N, 31°31′E), is situated 2½ miles NE of the traffic separation scheme at the NW end of Recommended route No 82.

2 Area No 707, through which Recommended route No 82 passes, is centred about 30 miles NW of Mys Tarkhankut.

Area No 723, through which Recommended routes Nos 81 and 82 pass, is centred about 25 miles W of Mys Tarkhankut.

Area No 710, through which Recommended routes Nos 81 and 82 pass, is situated to the W and NW of Mys Khersones'kyy

3 Areas Nos 703, 708, 709, 724 and 725. The NE limits of these extensive areas are situated SW of Recommended route No 81 between the parallels of 45°30′N and 44°18′N.

See Appendix II.

Areas in which anchoring, fishing, submarine and seabed operations are prohibited:

4 Areas Nos 663 and 668 which extend NW and WSW, respectively, from Mys Priboynyy.

Area No 634 which extends up to 12 miles from the coast between Sevastopol' and Mys Sarych as shown on the chart.

See Appendix II.

Oil and gas production
6.314

1 A number of platforms, the positions of which are shown on the chart, are situated between 18 and 40 miles NW and 30 miles W of Mys Tarkhankut (45°21′N, 32°30′E). Some of these platforms are interconnected by gas pipelines with one pipeline leading to the shore N of Karadzha Bay. See 6.316.

Caution. See 1.29.

Principal marks
6.315

1 **Major lights:**

Mys Tarkhankut Light (white round stone tower, 33 m in height) (45°21′N, 32°30′E).

Mys Khersones'kyy Light (white round masonry tower, 36 m in height) (44°35′N, 33°23′E).

Directions
(continued from 6.14)

Recommended routes Nos 81 and 82
6.316

1 **Initial position.** SW of No 1 Light-buoy (E cardinal) (46°08′N, 31°06′N) which marks the SE end of the traffic separation scheme which leads between Recommended routes Nos 81 and 82 and the traffic roundabout.

Route. Recommended route No 81 leads SE for 135 miles to the waters off Mys Khersones'kyy (Khersones) (44°35′N, 33°23′E), the extremity of a low shelving peninsula, passing (with positions from Mys Tarkhankut (45°21′N, 32°30′E)):

2 SW of Platforms Nos 2, 11 and 18 (40 miles WNW), from which lights are exhibited. Lights are exhibited from a number of other platforms which are situated between 6 and 23 miles E. Thence:

SW of a wreck (22½ miles WNW), with a depth of 5 m over it, thence:

Close NE of a buoy (special) (21 miles WNW) which marks an obstruction with a least depth of 14·6 m over it. Thence:

3 NE of Platform No 7 (27 miles WNW), from which a light is exhibited. Lights are exhibited from a number of other platforms which are situated 9 miles SW. Thence:

SW of Mys Tarkhankut, a low and rocky headland.

NW bound traffic follow Recommended route No 82 passing NE of Platforms Nos 2 and 18 and No 1 Light-buoy.

4 **Caution.** The charted platforms are situated in areas (No 707 and 723) which are temporarily declared dangerous for navigation.

(Directions for the coastal route to Mys Kikineyz continue at 6.401)

KARKINITS'KA ZAKOTA

General information

Chart 2232

Topography

6.317

1 Karkinits'ka Zakota is entered between the W extremity of Tendrivs'ka Kosa (46°20′N, 31°31′E) and Mys Tarkhankut (6.315) about 70 miles SE.

The W part of the N coast of Karkinits'ka Zakota is low whereas the E is high and precipitous. The S coast is predominantly high and precipitous.

2 The bay is divided into an outer and inner part by Bakal'skaya Banka, which extends N from Mys Pishchanyy, the N extremity of Bakal'skaya Kosa, a spit which extends from the S shore 40 miles NE of Mys Tarkhankut.

Pilots

6.318

1 Pilots for ports in Karkinits'ka Zakota are based at the pilot station at Skadovs'k (6.345).

Measured distance

6.319

1 See 6.327.

Currents

6.320

1 Currents in the bay are mainly due to the influence of the wind and attain a rate of ½ kn. NE winds drive the water out of the bay and SW winds have the opposite effect. The strongest current is caused by W winds.

North part of Karkinits'ka Zakota

Charts 2212, 2232

General information

6.321

1 **Topography.** The outer part of the N coast of Karkinits'ka Zakota is formed by Tendrivs'ka Kosa which leads SE for 32 miles to its junction with the mainland. There is a passage through the spit close to this junction. The spit is generally bare except for the occasional sheepfold.

2 From the junction with Tendrivs'ka Kosa the coast of the mainland trends ESE for about 14 miles and is more elevated; thence Dzharylhats'ka Kosa, a narrow strip of land extends E for about 22 miles to Mys Dzharylgachskaya this spit, which in its W part is only a cable wide, forms the S side of Dzharylhats'ka Zakota. The E part of this spit, which is wider, is known as Ostriv Dzharylhach.

Traffic regulations.

6.322

Area periodically dangerous for navigation:

Area No 705. See 6.299.

6.323

1 **Dangers.** A number of dangerous wrecks, some of which are marked, lie in the N waters of Karkinits'ka Zakota. Their positions are best seen on the chart.

Directions

(continued from 6.303)

6.324

1 From a position W of Tendrivs'ka South Light (6.303) Recommended route No 4 leads ESE, passing (with positions from Zaliznyy Light (46°07′N, 32°18′E)):

NE of a fish haven (35 miles WNW), thence:

SW of a buoy (isolated danger) (30 miles WNW) marking a wreck with a depth of 1·6 m over it, thence:

2 SSW of a fish haven containing submerged obstructions (uncharted) (23 miles WNW). It extends up to 2½ miles seaward from the S coast of Tendrivs'ka Kosa between Tendrivs'ka South Light and a position 16 miles ESE. The limits of the fish haven are marked by buoys (special; not charted). Thence:

3 SSW of Tendrivs'ka Zheleznyy Light (black square on mast, 12 m in height) (10 miles WNW), thence:

SSW of Zaliznyy Port Light. Recommended route No 70 leads S for 52 miles to Mys Tarkhankut from a position 5 miles WSW of the light. Thence:

SSW of Sofiyevskiy Light (10 miles ESE), thence:

SSW of Krasnyy Light (20 miles ESE).

4 Thence to the pilot boarding position S of Mys Dzharylgachskiy (46°01′N, 33°04′E) where Recommended route No 4 continues NW to Skadovs'k (6.345). East of Mys Dzharylgachskiy a branch of Recommended route No 4 leads E to Port Khorly (6.346).

South part of Karkinits'ka Zakota

Chart 2232 (see 1.16)

General information

6.325

1 **Topography.** The S shore of Karkinits'ka Zakota is formed by the NW coast of Kryms'kyy Pivostriv, within which are elevated plains. The whole stretch of the coast between Mys Tarkhankut (45°21′N, 32°30′E) and a point 3 miles W of Bakal'skaya Banka (38 miles NE), is steep-to.

2 Between Mys Tarkhankut and Mys Priboynyy (2½ miles N), the coast is red in colour, but E of the latter point, it changes and consists of whitish cliffs intersected by valleys.

6.326

1 Between Mys Priboynyy and Bukhta Uzkaya (6.331), 12 miles ENE, the cliffs are generally higher, but become lower towards Bukhta Yarylhach, about 5 miles farther ENE.

E of Bukhta Yarylhach the coast rises again to Mys Chernyy (45°35′N, 32°49′E) becoming rocky and reddish in colour. E of Mys Chernyy the coast gradually decreases in elevation to Mys Peschanyy, 16 miles ENE.

Measured distance

6.327

1 Measured distances are situated about 6 miles NE of Mys Priboynyy (45°24′N, 32°29′E) (6.325).

Limits are marked by pairs of beacons.

Distances: 1852 m and 3704 m.

Running track: 064¾°/244¾°.

Directions

6.328

1 From a position SSW of Mys Tarkhankut (6.316) Recommended route No 25 leads generally NNE, passing (with positions from Mys Chernyy (45°35′N, 32°49′E)):

WNW of a buoy (W cardinal) (20 miles SW). The buoy marks a rocky shoal, with a depth of 3·8 m over it, extending 1 mile WNW from Mys Tarkhankut. Thence:

2 WNW of Bukhta Uzkaya (6 miles WSW), thence:
NW of Mys Chernyy, from which a light is exhibited, thence:
ESE of Karkinitskaya-19 Platform (11 miles NNW), thence:
WNW of Isaicheva Light (11 miles ENE).

Thence the route continues NNE for about 11 miles to its junction with Recommended route No 4 (6.324).

6.329

1 **Useful marks:**
Beacon (with an elevation of 34 m) (45°24′N, 32°29′E).
Skalistyy Beacon (45°30′N, 32°39′E).

(Directions for Mys Tarkhankut to Mys Yevpatoriyskiy are given at 6.352)

Bukhta Karadzhynsk'a

6.330

1 Bukhta Karadzhynsk'a indents the coast between Mys Tarkhankut and Mys Priboynyy 3 miles N. Depths in the middle of the entrance are 22 to 24 m but shelve quickly towards the head of the bay.

2 **Anchorage.** Designated Anchorage area No 377 with depths of 10 to 14 m, sand, is situated on the N side towards the head of the bay. It is sheltered from winds between N and SE and particularly provides good shelter from storm force E winds.

Bukhta Uzkaya

6.331

1 **Topography.** Bukhta Uzkaya (45°31′N, 32°43′E) is entered between two headlands which lie 6½ cables apart. Chernomorsk, a port for small vessels and fishing vessels, stands on the S side of the bay.

The outer entrance headlands are about 6 m high and are rocky and reddish in colour; within them are two inner entrance points. There is a small cove on either side of the entrance between the outer and inner entrance points.

2 Banks with depths of less than 5·5 m over them extend for about 2 cables from either side of the entrance. Within the entrance the shores of the bay become low and shelving and are fringed by a shallow bank.

Ice. Bukhta Uzkaya sometimes freezes over.

Spoil ground. Area No 916, a circular area radius 6 cables centred at 45°35′·7N, 32°38′·1E is situated in the outer approaches. It is periodically marked by a buoy (special).

3 **Outer anchorage.** Designated Anchorage area No 375 is situated in the outer roadstead of Bukhta Uzkaya, 6 cables N of the E entrance headland. Depths 19 m to 23 m, sand.

Inner anchorage. Designated Anchorage area No 376 is situated 4 cables SSW of the E entrance headland. Depths 4 to 11 m, sand.

4 **Novosel'skov Leading Lights:**
Front light-beacon (45°31′·0N, 32°42′·8E)
Rear light-beacon (680 m from front light)

The alignment (131½°) of these lights (shown on request) leads between the entrance headlands. A light-buoy (E cardinal) is moored close to the W entrance headland.

Bukhta Yarylhach

6.332

1 **Topography.** Bukhta Yarylhach is entered between Mys Chernyy (45°35′N, 32°49′E) and a point 1¾ miles SW. Mys Chernyy is low and rocky with a dark extremity that stands out well against the whitish coloured coast in the vicinity.

Rocky ledges with depths of less than 5·5 m extend 4 cables from the SW entrance point. There are depths of 11 to 13·5 m, sand over rock, in the middle of the bay.

Chernomorsk

General information

6.333

1 **Position.** The port of Chernomorsk (Chornomors'ke) (45°33′N, 32°48′E) is situated in the SW part of Bukhta Yarylhach on the SW coast of Ozero Panskoye.

Function. The port handles timber, containers and general cargo, and is a base for oil and gas exploration in the Black Sea and Sea of Azov.

2 **Approach and entry.** The port is approached on a branch of Recommended route No 25 (6.328) on the alignment (138°) of leading beacons standing about 1¾ miles S of Mys Chernyy. Thence the track alters S onto the Ozero Panskoye Leading Beacons.

Port Authority. Port of Chernomorsk Authority, Chernomorsk Set, Chernomorsk 334360, Crimea, Ukraine.

Limiting conditions

6.334

1 **Deepest and longest berth** is No 1.

Maximum size of vessel handled is draught 6 m and masthead height 20·0 m.

Arrival information

6.335

1 **Port radio station** at Chernomorsk.

Notice of ETA. Notice of ETA should be given 48 and 12 hours before arrival to the harbour master and stating the maximum height of the vessel above sea level.

Outer anchorage in depths of up to 14 m, holding ground good, is available in the outer roadstead. The NE part of the bay is partly sheltered from seaward, but the bay is open to W winds and anchorage in it is untenable with strong winds between SW and NW.

2 **Pilotage** is compulsory for vessels over 100 grt and is undertaken during daylight only. The pilot embarks and disembarks near the entrance buoy to the approach channel.

Tugs are available and compulsory for vessels whose draught is greater than 5·5 m.

Climatic table

6.336

1 See 1.195 and 1.201.

Directions for entering harbour

6.337

1 **Ozero Panskoye Leading Beacons:**
Front beacon (45°32′·1N, 32°48′·3E).
Rear beacon (240 m from front beacon).

The alignment (183°) of these beacons leads S through a channel 980 m in length, which is marked by buoys. Depth in the channel is 8·1 m (1993).

Basins and berths

6.338

1 **Berths.** The port has 1600 m of quayage with depths alongside of 5·5 to 6·5 m.

Port services

6.339

1 **Repairs:** minor repairs can be undertaken; a floating dry-dock of 5000 tonnes capacity is available; floating crane with a 100 tonnes lifting capacity.

Supplies: fuel, but supply cannot be guaranteed; fresh water delivered by tugs; provisions.

Inner part of Karkinits'ka Zakota

Chart 2232 (see 1.16)

Topography

6.340

1 The inner part of Karkinits'ka Zakota is entered between Mys Dzharylgachskiy (46°01′N, 33°04′E) and Mys Pishchanyy (13 miles SSE). Its shores are much indented by shallow bays and fronted by extensive shallow flats which occupy about half its area. This part of Karkinits'ka Zakota terminates NE in Perekops'ka Zakota which is very shallow and not navigable. The isthmus which joins Kryms'kyy Pivostriv to the mainland lies at the head of this bay.

2 The shores of the inner part of Karkinits'ka Zakota are generally low and flat. In summer, especially about midday, identification of the coast is sometimes made difficult by mirages.

3 **Entrance channel.** The main entrance channel to the inner part of Karkinits'ka Zakota lies between Mys Dzharylgachskiy and the N extremity of Bakal'skaya Banka, 4 miles SE. The fairway of the channel is narrowed to a width of about 1 mile with depths of 7·6 m, by the coastal banks on either side.

6.341

1 **North shore.** Dzarylhats'ka Zakota is entered between Mys Dzharylgachskiy and a point on the mainland 6 miles NNW. The W part of the bay is shallow and flats with a depth of less than 5·5 m over them extend for more than 1 mile from the N and S shore of the E part of the bay.

2 Kalanchaks'ka Zakota (46°09′N, 33°11′E) is entered between the N entrance point of Dzarylhats'ka Zakota and the S extremity of Karabayskaya Kosa, a sandy spit 7½ miles E. Between Kalanchaks'ka Zakota and Perekops'ka Zakota (17 miles E) a number of spits extend from the shore and the whole of the coast is fronted by an extensive flat, and in many places landing is impossible.

6.342

1 **South shore.** From the E side of the root of Bakal'skaya Kosa (6.340), the S shore of the inner part of Karkinits'ka Zakota trends ENE for 20 miles. This stretch of the coast is low and flat and a bank fronting it extends about 2 miles off its W part, and as much as 4½ miles off farther ENE.

Natural conditions

6.343

1 **Weed.** The bottom of this part of Karkinits'ka Zakota is covered in weed which grows to great length. When fully grown in the late summer, this weed washes up on the shores of the bay in great masses, which rot and give off an offensive smell.

Ice. During the winter, navigation in Karkinits'ka Zakota may be interrupted by ice.

Principal mark

6.344

1 **Landmark:**

Pivostriv Gor'kiy Kut which terminates in Mys Khorly (46°05′N, 33°18′E), provides the only good landmark in the vicinity. This peninsula, which is high, rises from the sea in yellow cliffs and can be identified from about 8 miles.

Skadovs'k and approaches

6.345

1 **Position and approaches.** The port of Skadovs'k (46°07′N, 32°55′E) is situated on the N shore of Dzarylhats'ka Zakota and is approached along Recommended route No 4 by a channel, marked by light-buoys, about 1¼ miles long with depths of 5·6 m on the centreline (2002).

Traffic. In 2002 the port was used by 4 vessels with a total deadweight of 15 570 tonnes.

Directions. The alignment (011½°) of leading lights standing on the N shore leads through the channel into the harbour.

Useful mark: Mys Kumbatin Light (46°08′N, 33°08′E).

2 **Anchorage:** Designated Anchorage area No 371, as shown on the chart, is situated 1¾ miles SW of the harbour. The anchorage, with depths of 3·2 to 8·2 m is sheltered from all winds except from the E and provides good holding ground.

Berths. Five berths for cargo, oil and passengers handling vessels up to 120 m in length.

Facilities: hospital.

Supplies: limited quantities of fuel; fresh water; provisions.

Port Khorly and approaches

6.346

1 **Position and approaches.** Port Khorly (46°04′N, 33°18′E), which is an agricultural centre, is situated on the S end of Pivostriv Gor'kiy Kut and is approached by the Khorlovskiy Kanal.

2 Khorlovskiy Kanal consists of a sea and harbour reach. The sea reach, a continuation of Recommended route No 4, commences about 5¾ miles E of Mys Dzharylgachskiy and leads E for about 1½ miles through the outer roadstead and between the extremities of two banks, and thence ESE for 1½ miles to the inner roadstead. In 1947 this reach had a least depth of 6·4 m.

3 **Directions.** From the inner roadstead the alignment (011½°) of leading lights leads N to Port Khorly through the harbour reach, which extends for 2 miles through the coastal bank and had a least depth (1995) of 4·4 m.

Both reaches of the canal are marked by buoys.

Useful mark: Haumova Light (46°03′N, 33°24′E).

4 **Anchorages:**

Designated Anchorage area No 372, in the outer roadstead, is situated 5 miles E of Dzharylgachskiy Light. The anchorage, with depths of 7·4 to 10·4 m, shells, is open to SE and W winds but is reported to have good holding ground.

Designated Anchorage area No 373, in the inner roadstead, is situated a further 3½ miles ENE. The anchorage, with depths of 5·4 to 8 m, sand and shells, is sheltered and is reported to have good holding ground.

5 **Berths:** The harbour consists of a basin dredged to 3·9 m (1991) with three alongside berths capable of handling vessels up to 140 m in length and 4·5 m draught.

Facilities: hospital.

Supplies: fresh water alongside; limited provisions.

Caution. It was reported (2003) that all lighted navigation aids have been extinguished and that night navigation is not recommended.

Bakal's'ka Bukhta

6.347

1 Bakal's'ka Bukhta (45°50′N, 33°15′E), on the E side of Bakal'skaya Kosa, provides secure anchorage well sheltered from S and W winds but N winds send in a heavy sea.

Anchorage. Designated Anchorage area No 374, with depths of about 4 m, is situated 1½ miles W of Mys Lebyazhiy (45°51′·4N, 33°29′·5E).

Other name:
Avrora Light (45°45′N, 33°15′E).

COASTAL WATERS BETWEEN MYS TARKHANKUT AND MYS YEVPATORIYSKIY

General information

Chart 2232 (see 1.16)

Routes

6.348

1 Recommended route No 7 leads ESE from Mys Tarkhankut to Mys Yevpatoriyskiy. Recommended route No 27 leads N from Recommended route No 7 to Ozero Donuzlav.

Topography

6.349

1 Between Mys Tarkhankut (45°21′N 32°30′E) and the W end of Ozero Donuzlav, a salt lake 18 miles E, the coast is generally high and steep-to. A number of villages are visible from seaward.

2 Between Ozero Donuzlav and Mys Yevpatoriyskiy (20 miles SE) the coastal hills recede inland and the coast becomes low and sandy. Ozero Donuzlav and several other salt lakes are separated from the sea by low narrow strips of sand.

In some places the coast is so low that it can hardly be distinguished from 2 miles offshore and a village on the N coast of Ozero Donuzlav appears to stand on the shore of a bay extending far inland.

Measured distance

6.350

1 Between Mys Tarkhankut and Mys Uret (45°19′N, 32°40′E) there are 3 measured distances:
Limit marks: Pairs of beacons (black and white).
Distances (W to E): 3815 m, 1852 and 926 m.
Running track: 103½°/283½°.

Principal marks

6.351

1 **Major lights:**
Mys Tarkhankut Light (45°21′N, 32°30′E) (6.315).
Ozero Donuzlav Rear Leading Light (45°23′N, 33°06′E).
Mys Yevpatoriyskiy Light (white 8-sided concrete tower, 52 m in height) (45°09′N, 33°16′E).

Directions

(continued from 6.329)

6.352

1 From a position SSW of Mys Tarkhankut (6.316) Recommended route No 7 leads ESE, passing (with positions from Mys Yevpatoriyskiy Light (45°09′N, 33°16′E)):
SSW of a buoy (isolated danger) (33 miles WNW), marking a wreck with a depth of 38 m over it. Thence:

2 SSW of Mys Uret (27 miles WNW), thence:
SSW of the entrance to Ozero Donuzlav (16 miles NW), thence:
SSW of Popovka Light (white rectangle, black stripe on framework tower, 14 m in height) (13 miles NW). This light is fitted with a radar reflector. Thence:
SSW of Vitino Light (6 miles WNW), thence:

3 SSW of a buoy (S cardinal) (2½ miles SW). The buoy marks a bank with depths of less than 8 m over it extending 2 miles SW and 1 mile S from Mys Yevpatoriyskiy. Near its SW extremity are two rocks with depths of 9·5 and 10·6 m over them. Thence:
Clear of a wreck (2¾ miles S) with a depth of 11·4 m over it.

(Directions for coastal waters between Mys Yevpatoriyskiy and Mys Khersones'kyy continue at 6.359)

Minor harbour

Chart 2232 (see 1.16)

Ozero Donuzlav

6.353

1 **General information.** Ozero Donuzlav (45°23′N, 33°06′E) a salt lake 13 miles E of Mys Uret is separated from the sea by a sandy isthmus 200 to 400 m wide and 5 miles long.

Pilotage is compulsory, pilots board about 2 cables SE of No 1 Light-buoy (45°18′N, 32°57′E).

2 **Directions.** From a position about 15 miles SE of Mys Uret Recommended route No 27 leads N for 9 miles. Thence the alignment (052½°) of leading lights, situated in the central part of Ozero Donuzlav, leads for 1½ miles through a channel in the isthmus. Three other sets of leading lights then lead through deep water for about 7 miles to alongside berths in the NE part of the lake.

3 **Useful marks.** Water tower and chimney (29 m in height) (3½ miles NNW and 2¼ miles E of the entrance).

Anchorages. Designated Anchorage areas Nos 378 and 381, with depths of 8 to 18 m, are situated in the outer roadstead NW and SE, respectively, of the entrance channel. Designated Anchorage areas Nos 379 and 380, with depths of 4 to 15 m, are situated in the inner roadstead about 2 and 4 miles NE of the entrance.

4 **Berths.** Quay 350 m in length with depth alongside (1986) of 8·3 m on the inner side of the S entrance. Other berths, with depths alongside of up to 18 m, are situated further within the lake.

COASTAL WATERS BETWEEN MYS YEVPATORIYSKIY AND MYS KHERSONES'KYY

General information

Chart 2232 (see 1.16)

Route

6.354

1 Recommended route No 7 leads S from Mys Yevpatoriyskiy (45°09′N, 33°16′E) to the traffic roundabout off Sevastopol'skaya Bukhta (6.367).

Topography

6.355

1 Kalamits'ka Zatoka is entered between Mys Yevpatoriyskiy (45°09′N, 33°16′E) and Mys Lukull (22 miles SE).

The N shore of the bay is low and sandy and is backed by Ozero Sasyk, a salt water lake which extends over 5 miles inland. The town of Yevpatoriya is situated at the W end of the bay 4 miles NE of Mys Yevpatoriyskiy.

2 The E shore of the bay is at first low and sandy and within it are several salt lakes, the S most of which, Ozero Kyzyl-Yar', lies 8½ miles SSE of Ozero Sasyk.

Between Ozero Kyzyl-Yar' and Mys Lukull, 13 miles S, the coast becomes steep and reddish in colour. The S part of this stretch of coast, which is higher, is intersected by the valleys of Rika Bulganak and Rika Alma, which enter the sea 5 and 3 miles respectively NE of Mys Lukull.

3 Sevastopol'skaya Bukhta (44°37′N, 33°32′E) is approached between Mys Lukull (44°50′N, 33°33′E) (6.358) and Mys Khersones'kyy (17½ miles SSW).

Between Mys Lukull and Mys Kosa Severnaya, the W point of the headland forming the N side of the entrance to Sevastopol'skaya Bukhta, the coast is cliffy and reddish in colour. This stretch of the coast is intersected by the valleys of Rika Kacha and Rika Bel'bek, which flow into the sea 4 and 8 miles, respectively, NE of Mys Marhopulo, a headland that lies 3 miles SSW of Mys Lukull.

4 Between Mys Lukull and the mouth of Rika Kacha the depths are irregular for about 1 mile offshore, with many detached sunken rocks with depths of 5 to 9 m over them.

Between Mys Khersones'kyy (44°35′N, 33°23′E) (6.316) and Mys Aleksandrovskiy (5½ miles ENE), the headland forming the S entrance to Sevastopol'skaya Bukhta, the coast rises gradually to a moderate elevation and becomes rocky. It is also deeply indented by several bays.

Traffic regulations

6.356

1 **A traffic roundabout (6.4)**, centred on a light-buoy (special) in position 44°38′·8N, 33°17′·0E is situated in the approaches to Sevastopol'skya Bukhta.

A traffic separation scheme, consisting of 4 routes, extends WNW, NNW, ESE and SSW from the traffic roundabout.

2 The scheme has not been adopted by the IMO but the Ukrainian Authorities advise that the principles for the use of the routeing system as defined in Rule 10 of the *International Regulations for Preventing Collisions at Sea (1972),* apply.

3 **Area into which entry is prohibited:**

Area No 123 extends S from Solodunova Light to Sevastopol' and W from the shore to the meridian of 33°17′·6E.

See Appendix II.

Area temporarily dangerous for navigation:

4 Area No 710 (6.313), the E limit of which extends to Mys Khersones'kyy.

Area in which anchoring, fishing, submarine and seabed operations are prohibited:

Area No 634 (6.313).

See Appendix II.

Measured distances

6.357

1 Lukull'skaya measured distance is situated between Mys Marhopulo (6.355) and Lyubimovka Light (6.358) (5½ miles S).

N limit marks: Three beacons in line.

S limit marks: Two beacons in line.

Distance: 1 mile.

Running track: The line of bearing 181° of Pukupp'skiy Leading Lights (44°36′N, 33°30′E).

2 There are 2 other sets of measured distances (6.385) in Sevastopol'skya Bukhta.

Principal marks

6.358

1 **Landmarks:**

Radio Mast (45°00′N, 33°38′E).

Mys Lukull (45°50′N, 33°33′E). A remarkable headland with a crumbling formation that rises to an elevation of 36 m.

2 **Major Lights:**

Mys Yevpatoriyskiy Light (45°09′N, 33°16′E) (6.351).

Solodunova Light (45°08′N, 33°31′E).

Mys Lukull Light (white rectangle black stripe, on red framework tower, 16 m in height) is exhibited from Mys Lukull.

Lyubimovka Light (44°42′N, 33°33′E).

Mys Khersones'kyy Light (44°35′N, 33°23′E) (6.315).

Directions

(continued from 6.352)

6.359

1 From a position SSW of Mys Yevpatoriyskiy Recommended route No 7 continues S, passing (with positions from Mys Lukull Light (44°50′N, 33°33′E)):

W of Area No 123 (14 miles W), thence:

W of Nykolayivka Light (9 miles N), thence:

2 W of Mys Lukull, thence:

W of Mys Marhopulo (2½ miles SSW) (6.355), from which a light is exhibited. Thence:

W of Lyubimovka Light (8 miles S).

Thence to the traffic separation scheme in the approaches to Sevastopol'.

Dangers

6.360

1 The following dangers lie off this stretch of the coast:

Shoal water with depths of less than 6·5 m extends for 5 cables off the N shore and up to 1½ miles off the E shore of Kalamits'ka Zatoka.

A rocky ridge, ½ to 2 cables wide and 10 miles long lies about 3 miles off the E shore of Kalamits'ka Zatoka. This ridge, which has depths of between 9 and 12 m over it, rises abruptly from depths of about 20 m.

2 Foul ground extends for 1 mile off Mys Lukull. A rock with depths of 4·9 to 5·5 m over it lies about 5 cables NW of the cape.

Anchorages

6.361

1 Anchorage or shelter is available in the following bays that indent the coast between Mys Khersones'kyy and Sevastopol'skaya Bukhta (with positions from Mys Khersones'kyy):

Dvoynaya Bukhta (1½ miles ENE). Anchorage between entrance points in depths of 22 m.

2 Pisochna Bukhta (3 miles ENE). Anchorage in entrance in depths of between 11 and 18 m.

Strilets'ka Bukhta (4 miles ENE). Shelter and alongside berths are available.

Karatynna Bukhta (5 miles ENE). Shelter for small craft from all winds.

Yevpatoriya

General information

6.362

1 **Position.** Yevpatoriya (45°12′N, 33°22′E) is situated at the head of Yevpatoriya Bukhta in the N part of Kalamits'ka Zatoka.

Function. The town, which in 2002 had a population of 106 000, is an industrial town, seaport and popular resort. It handles general cargo and passenger vessels.

2 **Port limits.** The area bounded by an arc of a circle radius 2 miles measured from No 2 Berth to the coast.

Traffic. In 2002 the port was used by 4 vessels with a total deadweight of 88 289 tonnes.

Port Authority. Yevpatoriya Port Authority, 1 Pl Mozyakov, 334380 Yevpatoriya, Ukraine.

Limiting conditions

6.363

1 **Maximum size of vessel handled.** Dry cargo vessels up to 100 m LOA, draught up to 6·0 m. Passenger vessels up to 200 m LOA, draught up to 7·0 m.

Arrival information

6.364

1 **Anchorage.** Designated Anchorage area No 382 with depths of about 12 to 13 m, sand and shells, is situated 1½ miles SE of Cape Karantinnyy. Two beacons (red) stand on the coast, 2 miles E and 1½ miles ESE respectively from Cape Karantinnyy.

2 **Pilots.** Pilotage is compulsory for vessels over 200 grt. The pilot embarks and disembarks in the vicinity of the light-buoy (E cardinal) which marks a 10 m shoal SE of Cape Karantinnyy.

Tugs are available. One tug is compulsory for vessels up to 500 grt, two tugs for vessels over 500 grt.

3 **Caution.** It has been reported (2000) that all lighted navigation aids have been extinguished and that night navigation is not recommended.

Basins and berths

6.365

1 **Alongside berths.** The port has four berths. Three (Nos 2, 3 and 4) for passenger ships and one (No 5) for general cargo vessels.

Port services

6.366

1 **Facilities:** deratting; medical and hospital facilities.
Supplies: fresh water; provisions.

SEVASTOPOL' AND APPROACHES

General information

Chart 2232 (see 1.16)

Position

6.367

1 The port of Sevastopol' (44°37′N, 33°32′E) is situated on the SW coast of the Crimea peninsula. It occupies the bays of Sevastopol', Kozacha, Komysheva, Kruglaya, Strilets'ka, Pivdenna and Karatynna.

Function

6.368

1 Sevastopol, which in 2002 had a population of 342 000, is an important naval base, commercial and fishing port and holiday resort. The main town stands on a hill on the W side of Pivdenna Bukhta.

The port is open to navigation all year round and handles mainly bulk, metal, timber and packaged cargoes. There is an increasing passenger trade.

Topography

6.369

1 Sevastopol'skaya Bukhta extends inland for about 3 miles to the head of Inkermanskoye Ushchel'ye, the deepest ravine on the W side of Kryms'kyy Pivostriv. The average width of the harbour is about 4 cables. Depths within the harbour range from 17 m in the harbour entrance to 10 m in the inner part of the harbour.

On both sides of the harbour, which consists of chalk cliffs, projecting headlands form a number of coves and bays.

On the S shore Pivdenna Bukhta, an extensive creek, leads S for 12 cables from a position 8 cables within the harbour entrance. This creek has an average width of 1½ cables and depths of 15 m which come close to the shore.

Port limits

6.370

1 Outer port limits are a line drawn between Mys Khersones'kyy (44°35′N, 33°23′E) and the mouth of Rika Kacha (44°43′N, 33°33′E).

Inner port limits comprise all waters E of the two breakwaters at the entrance to Sevastopol'skaya Bukhta.

Approach and entry

6.371

1 The port is approached through the traffic separation scheme from the S sector of the traffic roundabout (6.356) and entered between a breakwater extending 1½ cables SW from Mys Kostyantynivs'kyy (44°37·6′N, 33°30·8′E), and a breakwater extending 2½ cables NNE from Martynova Bukhta (7 cables S).

Traffic

6.372

1 In 2002 the port was used by 249 vessels with a total deadweight of 5 186 582 tonnes.

Port Authority

6.373

1 Port of Sevastopol Authority, 5 Nahimova Square, 99011 Sevastopol, Crimea, Ukraine.

Limiting conditions

Deepest and longest berth

6.374

1 Longest is at the State Shipyard; deepest is in the fishing port (6.391).

Density of water

6.375

1 Density: Varies between 1·010–1·020 g/cm^3.

Maximum size of vessel handled

6.376

1 *Pobeda,* 243 m in length, 67 980 dwt.

Arrival information

Port radio

6.377

1 See *Admiralty List of Radio Signals Volume 6(3)* for details.

Notice of ETA

6.378

1 See *Admiralty List of Radio Signals Volume 6(3)* for details.

Outer anchorages

6.379

1 **Anchorage** may be obtained in the following areas, (with positions from Mys Kostyantynivsk'yy Light (44°37·6′N, 33°30·8′E)):

Area No 384 (2 miles N), for vessels of up to 1000 grt, in depths of 18 to 47 m.

Area No 386 (5 miles WNW), in depths of 80 m.

Area No 389 (4 miles WSW), in depths of 60 m.

2 **Areas in which anchoring, fishing, submarine and seabed operations are prohibited:**

Area No 625 is split into two areas extending for a total of about 7 cables E from close W of Pivdenna Bukhta (6.369). Both areas extend across Sevastopol'skaya Bukhta to the N shore.

Area No 627 extends E for about 5 cables from the entrance (44°37′·0N, 33°33′·5E) to Kilen Bukhta and across Sevastopol'skaya Bukhta to the N shore.

Pilots

6.380

1 **Pilotage** is compulsory for vessels over 500 grt. Pilots board vessels in the outer roads in position 44°37′·1N, 33°24′·2E, about 4½ miles W of the entrance. During bad weather, the place of embarkation and disembarkation of the pilot may be changed, subject to the Master's approval.

Tugs

6.381

1 The use of tugs is compulsory for any vessel over 500 grt with the tugs normally joining the vessel at the channel entrance.

Traffic regulations

6.382

1 **Areas into which entry is prohibited:**

Areas No 124 and 125 are situated close E of the entrance (44°37′·0N, 33°33′·5E) to Kilen Bukhta.

Area No 129 extends about 7 cables ENE from the N entrance breakwater (6.371) and encloses Kostyantynivs'ka Bukhta and Bukhta Matushenko.

2 **Areas in which anchoring, fishing, submarine and seabed operations are prohibited:**

Areas No 625 and 627 (6.379).

Regulations concerning entry

6.383

1 Maximum permitted draught is 9·1 m and LOA 185 m for the tanker berth. Larger vessels must obtain permission from the harbour authorities. Entry into the port is on a 24 hour basis, but during the hours of darkness, vessels over 120 m in length must obtain permission from the harbour authorities.

2 Vessels should proceed through the channel at a speed not exceeding 5 kn and within the inner roads at a speed not exceeding 9 kn.

Harbour

General layout

6.384

1 The main naval and commercial berths are situated in Sevastopol'skaya Bukhta and adjacent bays. The fishing berths are situated in Komysheva Bukhta.

Measured distances

6.385

1 Strilets'ka measured distance is situated between Kozacha Bukhta (44°35′N, 33°25′E) and Kruglaya Bukhta (2 miles NE).

Limit marks: Light-beacons or beacons in line mark each distance.

Distances (from W to E): 1·22 miles and 1·04 miles.

Running track: 078–258°.

2 Karatynna measured distance is situated N of Strilets'ka Bukhta.

Limit marks: Beacons in line.

Distance: 1·0 mile.

Running track: 094½°–274½° along the alignment of the Inkermanskiy Leading Lights (6.388).

Climatic table

6.386

1 See 1.195 and 1.210.

Principal marks

6.387

1 **Landmarks:**

Radio tower (44°35′N, 33°34′E).

Major lights:

Mys Khersones'kyy Light (44°35′N, 33°23′E) (6.315).

Inkermanskiy Leading Lights (6.388).

Kostyantynivs'kyy Vykhodnoy Rear Leading Light (6.389).

Directions for entering harbour

(continued from 6.359)

Approach and entry

6.388

1 **Inkermanskiy Leading Lights:**

Front light (white square stone building, 10 m in height) (44°37′·1N, 33°35′·4E).

Rear light (similar structure) (1¾ miles E of front light).

2 From a position in the S sector of the traffic roundabout (44°39′N, 33°17′E), the alignment (094½°) of these lights leads through the traffic separation scheme to the harbour entrance.

Directions for leaving harbour

Exit route

6.389

1 **Kostyantynivsk'yy Vykhodnoy Leading Lights.**

Front light (44°37′·7N, 33°30′·9E).

Rear light (white square stone building, 10 m in height) (3¼ miles E of front light).

2 From a position, clear of the harbour entrance, about 1½ miles W of Mys Kosa Severnaya (44°37′·9N, 33°30′·7E) the alignment (101°), astern, of these lights leads through the traffic separation scheme to the N sector of the traffic roundabout.

Basins and berths

Anchorages and moorings

6.390

1 Area No 387, with depths of 10 to 16 m, is situated about 4 cables ESE of Mys Kostyantynivsk'yy.

Area No 388, with depths of 6 to 11 m, is situated at the head of Sevastopol'skaya Bukhta.

These are short stay anchorages only and permission to use them must be obtained from the duty harbourmaster.

Numerous mooring buoys are situated within the harbour.

Alongside berths

6.391

1 **Berths.** Tanker berth 180 m in length, depth alongside 9 m. Fishing Port, length 185 m, depth alongside 9·1 m. Passenger berth, length 200 m, depth 9·0 m. An additional berth at the State Shipyard, used for cargo, has a length of 290 m and alongside depth of 6·0 m.

Port services

Repairs

6.392

1 Three dry docks; the largest is 290 m long, 36 m wide and 11 m deep. Three floating docks.

Other facilities

6.393

1 Deratting; medical and hospital facilities.

Supplies

6.394

1 Fuel oil; fresh water at the quays; provisions.

Communications

6.395

1 Nearest airport is located in Simferopol', 65 km distant.

COASTAL ROUTE BETWEEN MYS KHERSONES'KYY AND MYS KIKINEYZ

General information

Charts 2232, 2233, (see 1.16)

Route

6.396

1 Recommended routes Nos 81 and 82 and traffic separation scheme are shown on the chart.

Topography

6.397

1 Between Mys Khersonesk'yy (44°35′N, 33°23′E) (6.316) and Mys Fiolent 7 miles SE, the coast rises gradually and nearer Mys Fiolent, cliffs rise in regular steps from the sea.

Between Mys Fiolent and Mys Sarych (12½ miles SE), the coast in general consists of lofty and sheer cliffs which are broken in two places to form Balaklavskaya Bukhta (6.403) and Laspinskaya Bukhta (6.404).

Between Mys Sarch (44°23′N, 33°45′E) and Mys Kikineyz, 11 miles E, the coast is lower.

Traffic regulations

6.398

1 **Traffic separation scheme.** A traffic separation scheme, which is shown on the chart, passes off the S point of Kryms'kyy Pivostriv joining the SE end of Recommended routes Nos 81 and 82 to the W end of Recommended routes Nos 83 and 84. This traffic separation scheme is not IMO adopted but the Ukrainian Authorities advise that the principles for the use the routeing system, defined in Rule 10 of *The International Regulations for Preventing Collisions at Sea (1972),* apply.

2 **Areas into which entry is prohibited:**

Area No 104, a small area close inshore 1½ miles E of Mys Fiolent.

Area No 135 extends 1 mile E from Mys Sarych and up to 1 mile from the shore.

Area No 136 extends 2 miles E from a position 4¼ miles E of Mys Sarych and up to 2 miles from the shore.

Area No 197, a small area close inshore, close E of Mys Kikineyz.

3 **Areas temporarily dangerous for navigation:**

Area No 724. See 6.313.

Area No 727. The N limit of this area lies 2 miles S of the E bound lane of the traffic separation scheme.

4 **Area in which anchoring, fishing, submarine and seabed operations are prohibited:**

Area No 634 extends up to 10 miles offshore between Mys Khersones'kyy and Mys Sarych.

See Appendix II.

Measured distance

6.399

1 Khersonesskaya measured distance is situated between Mys Khersones'kyy and Mys Fiolent (7 miles SE).

Limit marks: Light-beacons or beacons in line mark each distance.

Distances (from N to S): 1·51 miles; 0·3 miles; 0·7 miles; 2·0 miles.

Running track: 137°–317°.

Principal marks

6.400

1 **Landmarks:**

Monument (4-sided, grey stone) (44°33′N, 33°26′E).

Radio Tower (44°35′N, 33°34′E) (6.387).

Mys Fiolent (44°30′N, 33°29′E). A precipitous headland, 160 m in height, the upper part of which is yellowish and lower part dark in colour. From NW and E the summit of the cape appears saddle shaped. From the NW, the cape can be identified by a large and distinctive pear-shaped rock that lies close offshore and from the E it can be identified by a sharply pointed rock near its foot.

Tower (44°30′N, 33°31′E).

2 Mys Ayya (44°26′N, 33°39′E). A dark coloured bluff, 585 m in height.

Mys Sarych (44°23′N, 33°44′E), which rises to Skala Lapsi, a large and prominent crag, about 1 mile N. From W or E, the point presents a very irregular outline with three rugged hummocks.

Hora Samnalykh (44°28′N, 33°46′E).

Church (44°24′N, 33′47′E).

Hora Lysaya (44°26′N, 33°49′E).

Hora Koshka (44°24′N, 34°00′E).

3 **Major lights:**

Mys Khersones'kyy Light (44°35′N, 33°23′E) (6.315).

Kayabashi Light (white rectangle, black stripe on red framework tower, 11 m in height) (44°29′N, 33°33′E).

Mys Sarych Light (white round metal tower, 11 m in height) (44°23′N, 33°45′E).

Directions

(continued from 6.316)

6.401

1 **Route.** From a position off Mys Khersones'kyy (6.316), Recommended route No 81 leads SE for about 15 miles and the traffic separation scheme (6.398) leads E for 21 miles, passing (with positions from Mys Sarych (44°23′N, 33°44′E)):

2 SW of Mys Fiolent Light (red metal framework tower, 4 m in height) (12½ miles NW), thence:

SW of Area No 104 (11 miles NW), thence:

SW of Kayabashi Light (10 miles NW) (6.400), thence:
SW of Mys Ayya (4 miles NW) (6.400), thence:
S of Mys Sarych (6.400), thence:
S of Mys Kikineyz (10½ miles E), which from the W appears as a wedge shaped headland and has a pointed hillock on its summit. Thence:
S of Area No 197 (10½ miles E) to a position SSE of Mys Kikineyz.

3 **Caution.** Vessels should give a wide berth to the coast between Mys Balaklavskiy (6.403) and Mys Ayya.

(Directions continue at 7.16)

Anchorages and harbours

Mys Fiolent
6.402

1 A sanatorium, formerly St George's monastery, which has a prominent bell tower, stands at the upper end of a deep cleft near the head of a bight, which is entered between Mys Fiolent and a reddish-coloured point 1 mile E. Goeriyevskaya Skala, a lofty rock, stands ½ cable offshore abreast the sanitorium. Landing is possible at the head of the bight.

Balaklavskaya Bukhta
6.403

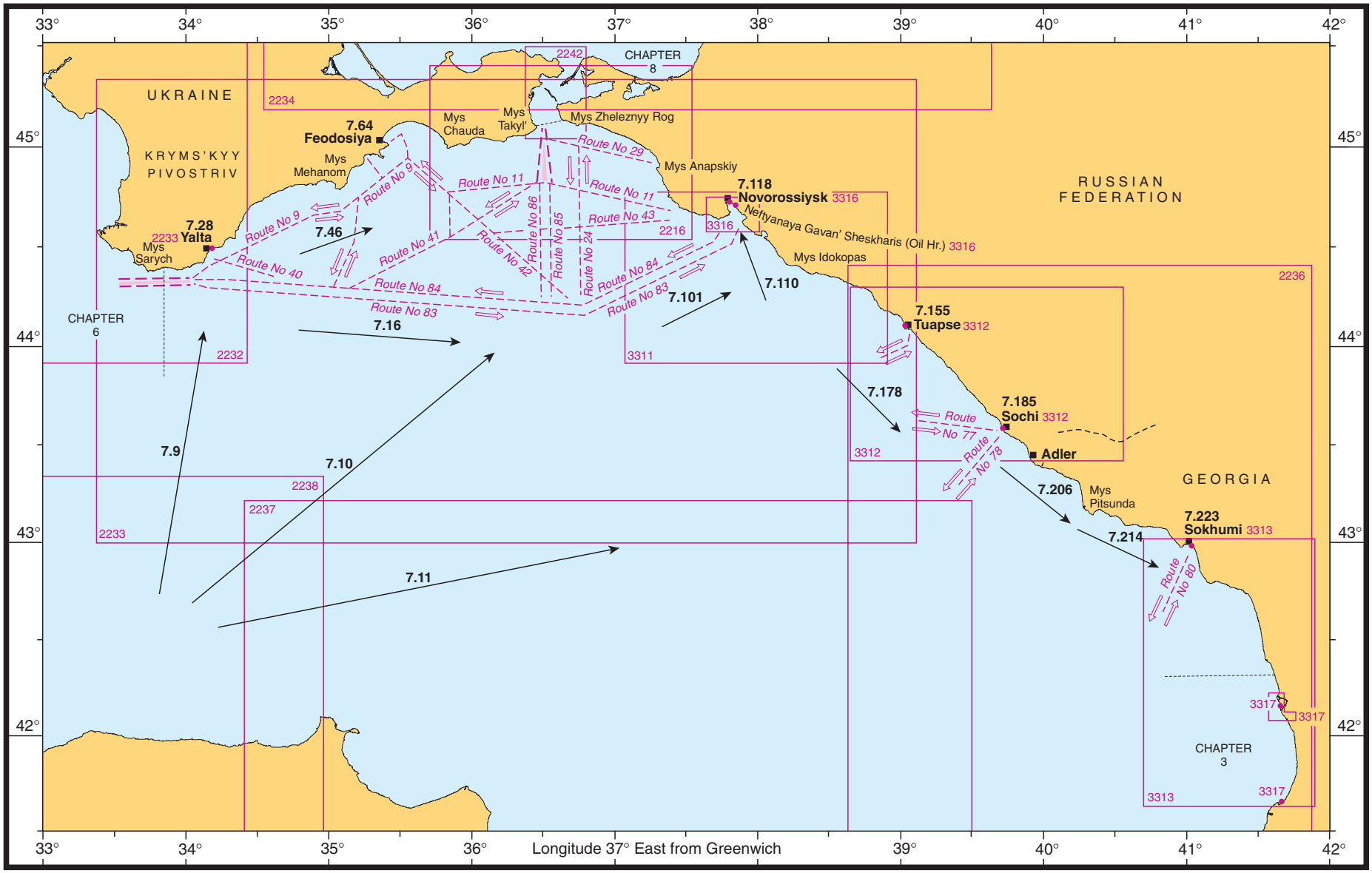
1 Balaklavskaya Bukhta is entered between Mys Georgiya (44°29′N, 33°36′E) and Mys Balaklavskiy about 1¼ cables ENE. Its entrance, which is marked by a pair of leading lights, is narrow and winding, and difficult to identify, especially from W, as it is backed by lofty cliffs. The shores of the harbour, which are lined with quays, rise close inland to steep, reddish-coloured, rocky hills.

2 **Anchorage,** in depths of 13 m and sheltered from all winds, is obtainable in the middle of the harbour W of the town. As a general rule, good holding ground is not found in the approach to Balaklavskaya Bukhta.

Laspinskaya Bukhta
6.404

1 Laspinskaya Bukhta is entered between the low E side of Mys Ayya (6.400) and Mys Lapsi in depths of 37 m, sand. During offshore winds vessels should anchor nearer the head of the bay. Good shelter is provided from winds between WNW, through N to SE. SSW winds render the anchorage dangerous.

Chapter 7 - North-east part of the Black Sea



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CHAPTER 7

NORTH-EAST PART OF THE BLACK SEA

GENERAL INFORMATION

Charts 2214, 2236, 2233

Scope of the chapter

7.1

1 The area covered by this chapter includes the NE part of the Black Sea between Kryms'kyy Pivostriv, in the vicinity of Mys Kikineyz (44°24′N, 33°59′E), to Reyd Redut-Kale (42°16′N, 41°36′E), about 8 miles N of P'ot'i (42°09′N, 41°39′E) (3.327).

Topography

7.2

1 **South-east Kryms'kyy Pivostriv.** The general character of the coast from Mys Kikineyz to Kerch Strait, about 110 miles ENE, is mountainous being for the greater part backed by the Taurus range, which rises to heights of over 1200 m.

7.3

1 **The Caucasian coast** from Mys Zheleznyy Rog (45°07′N, 36°44′E) to the vicinity of Mys Anaklia has a length of about 260 miles.

The first part of the coast to Anapa (44°54′N, 37°18′E) (7.99) is generally low and sandy. From Anapa to Mys Idokopas, about 50 miles SE, the coast is backed by sheer lofty cliffs remarkable for their white colour. Within these cliffs the mountains rise in an almost continuous wall, intersected by a number of valleys and ravines.

2 The white cliffs continue along the greater part of the coast between Mys Idokopas and Adler (43°26′N, 39°55′E) (7.212), 95 miles SE, but the mountains within them are less uniform in outline and elevation, becoming lower towards Adler.

Within the coast between Adler and Mys Kodori, 63 miles SE, there is a lofty and almost unbroken range of mountains. This range approaches the coast near Gagra, 14 miles ESE of Adler and then recedes inland, and the remainder of the stretch of the coast is low and wooded.

3 A narrow shingle beach extends along the whole of the cliffy parts of this coast.

For about 70 miles SE of Mys Kodori, an extensive wooded plain lies within the coast.

Georgia and Ukraine – navigational information

7.4

1 **Caution.** Owing to insufficient information it is not always possible to ensure that charts covering Georgian and Ukrainian waters are completely up to date for new dangers or changes to aids to navigation. Mariners are therefore advised to exercise particular caution when navigating in these waters.

Harbours

7.5

1 **Open to foreign vessels.** The following ports which are open to international trade and visits by foreign tourist ships are described in this chapter:

Yalta (44°30′N, 34°10′E) (7.28).
Feodosiya (45°02′N, 35°23′E) (7.64).
Anapa (44°54′N, 37°19′E) (7.99).
Gelendzhik (44°34′N, 38°05′E) (7.117).
Novorossiysk (44°43′N, 37°47′E) (7.118).
Tuapse (44°06′N, 39°04′E) (7.155).
Sochi (43°35′N, 39°43′E) (7.185).
Sokhumi (43°00′N, 41°01′E) (7.223).

2 **Caution.** It was reported (2003) that the ports of Sokhumi (7.223) and Ochamchira (7.252) and all waters within 12 miles of the coast between the Russian/Georgian border (43°23′N, 40°00′E) and Mys Anaklia (42°23′N, 41°34′E) were closed to navigation to all vessels except those carrying humanitarian aid. Such vessels should anchor off P'ot'i (42°09′N, 41°39′E) (3.327) to obtain clearance prior to entry.

7.6

1 **Seaside resorts.** The area described in this chapter contains many seaside resorts. While no up to date information is available about their detailed facilities, it is known that many of these resorts are capable of handling vessels that allow them to maintain sea communications with other Black Sea ports.

Navigational aids

7.7

1 See caution at 1.18 concerning the reliability of navigational aids.

Natural conditions

7.8

1 **Currents.** See 1.145 and 7.49.

Winds. On the Caucasus coast in autumn and winter, the most frequent winds are NE and E. When such winds are strong, severe squalls sweep down the coast. See 7.50.

Ice. The area covered by this chapter is generally free of ice, except during very severe winters when thin coastal ice may be formed. See 1.158.

PASSAGES ACROSS THE BLACK SEA

ROUTES

Charts 2214, 2233

Central Black Sea to Kryms'kyy Pivostriv

(continued from 3.8)

7.9

1 From a position about 80 miles SSW of Mys Ay-Todor (44°26′N, 34°07′E) the through route to Kryms'kyy Pivostriv proceeds generally NNE, through waters clear of charted dangers, passing E of three areas periodically declared dangerous for navigation (Nos 724, 727 and 729) and W of a similar area (No 730), towards the E end of the traffic separation scheme indicated on the chart. See Appendix II.

(Directions continue for the recommended route to the NE Black Sea and Sea of Azov at 7.16, and for Yalta and its approaches at 7.22)

Central Black Sea to north-eastern Black Sea

(continued from 3.8)

7.10

1 From a position about 80 miles SSW of Mys Ay-Todor (44°26′N, 34°07′E) the through route to ports in the NE Black Sea and Sea of Azov proceeds generally ENE, through waters clear of charted dangers, passing SSE of an area periodically declared dangerous for navigation (No 730) (See Appendix II) until it reaches the junction of Recommended routes Nos 83/84 and 85/86 in position 44°10′N, 36°30′E.

(Directions continue for Kerch Strait and Sea of Azov at 8.28, and for the ports in NE Black Sea at 7.107)

Charts 2214, 2236, 2233

Central Black Sea to eastern Black Sea

(continued from 3.9)

7.11

1 From a position about 130 miles SE of Mys Ay-Todor (44°26′N, 34°07′E) the through route to the Caucasian ports between P'ot'i (42°09′N, 41°39′E) (3.317) and Novorossiysk (44°43′N, 37°47′E) (7.118) leads generally NE or E through waters clear of charted dangers. An area of military training (GEORGIA), shown on the charts, which is occasionally dangerous for navigation lies between 10 and 30 miles offshore between the vicinity of Sochi (7.185) and P'ot'i, 120 miles SE. See Appendix IV.

(Directions continue for Tuapse at 7.172, for Sochi at 7.202, and for Sokhumi at 7.238)

WATERS SOUTH-EAST OF KRYMS'KYY PIVOSTRIV

OFFSHORE PASSAGE SOUTH-EAST OF KRYMS'KYY PIVOSTRIV

General information

Charts 2233, 2216

Routes

7.12

1 Recommended routes Nos 83 and 84 as shown on the chart. From the vicinity of 44°18′N, 35°05′E on Recommended route No 83, Recommended routes Nos 39 and 41 lead N to Feodosiya (7.64) and ENE to the S approach (8.28) to Kerch Strait.

Topography

7.13

1 From Mys Kikineyz (44°24′N, 33°59′E) to Mys Ayudah (18 miles NE) the coastline N of the W end of Recommended routes Nos 83 and 84 is backed by mountains rising to heights of over 1000 m which shelter the seaward slopes from N winds.

On this stretch of coast, which is heavily populated, there are numerous villages and the land is covered with luxuriant and varied vegetation.

Traffic regulations

7.14

1 **Traffic separation scheme.** See 6.398 for details of the traffic separation scheme that joins the W end of Recommended routes Nos 83 and 84.

Areas into which entry is prohibited:

Area No 137 lies close inshore 1½ miles WSW of Mys Ay-Todor.

Area No 115 extends up to 12 miles offshore between Mys Chauda (7.56) and Mys Takyl' (8.27).

2 **Areas periodically dangerous for navigation:**

Area No 731, as shown on the chart, extends up to 40 miles offshore, and 80 miles E, between Mys Ayudah (7.15) and Mys Takl (8.27). Its S limit lies between 6 and 12 miles N of the E bound Recommended route No 83.

3 Area No 743 extends up to 15 miles offshore between Mys Chauda (7.56) and a position 17 miles W of Mys Mehanom (7.51)

See Appendix II.

Area of scientific research:

An area, 3 miles radius, is centred on position 44°12′N, 34°22′E. Submerged scientific instruments, at different depths, are marked by buoys with radar reflectors.

Principal marks

7.15

1 **Landmarks:**

Hora Ay-Petri (44°27′N, 34°03′E). A light coloured peak which from E and W appears as several vertical cliffs and from S appears as a precipitous wall. A conspicuous mast and aerial ropeway stand on summit.

2 Television mast (44°28′N, 34°06′E).

Mys Ay-Todor (44°26′N, 34°07′E). A headland consisting of 2 projections, with a castellated building on the E projection and a lighthouse (white 8-sided metal tower, 9 m in height) on the W projection.

3 Mys Ayudah (44°33′N, 34°21′E). A prominent cape which rises to Hora Ayudah, a detached mountain 572 m high. From a distance the cape, which has a knob on its extremity, resembles a bear lying down. A conspicuous building stands 5½ miles W of Mys Ayudah.

Chatyr Dag (44°44′N, 34°17′E) is one of the highest peaks in Kryms'kyy Pivostriv. The summit has two peaks, the highest of which is 1526 m high.

4 **Major lights:**

Mys Ay-Todor Light — as above.

Rybache Light (44°46′N, 34°35′E) (7.51).

Mys Mehanom Light (44°48′N, 35°05′E) (7.51).

Directions

(continued from 6.401 and 7.9)

7.16

1 From a position SSE of Mys Kikineyz (6.401) Recommended routes Nos 83 and 84, shown on the chart, lead E and W respectively, through waters clear of charted dangers, between the E termination of the traffic separation scheme (44°20′N, 34°01′E) and their junction with Recommended routes Nos 85 and 86 in the vicinity of position 44°10′N, 36°30′E, 108 miles E, passing:

2 S of Mys Ay-Todor (44°26′N, 34°07′E) (7.15), thence:

S of Mys Ayudah (44°33′N, 34°21′E) (7.15), thence:

N of the area designated for scientific research (7.14), thence:

S of Area No 731 (7.14).

(Directions continue for E approach to Yalta at 7.23, for SW approaches to Novorossisysk at 7.107, and for the approaches to Kerch Strait at 8.28)

APPROACHES TO YALTA

General information

Chart 2233 (see 1.16)

Routes

7.17

1 **Yalta** (44°30′N, 34°10′E) is approached between Mys Ay-Todor (44°26′N, 34°07′E) and Mys Nikitin (7 miles NE), by two recommended routes, which are shown on the chart.

Traffic regulations

7.18

1 **Areas into which entry is prohibited:**

Area No 132 lies close offshore of Mys Nikitin (44°30′N, 34°15′E) (7.23). See Appendix II.

Vessels are prohibited from passing over the pipeline, shown on the chart, marked by a light-buoy (E cardinal).

Principal marks

7.19

1 **Landmarks:**

Hora Koshka (44°24′N, 34°00′E).
Hora Ay-Petri (44°27′N, 34°03′E) (7.15).
Mys Ay-Todor (44°26′N, 34°07′E) (7.15).
Television mast (44°28′N, 34°06′E) (7.15).

2 Mys Ayudah (44°33′N, 34°21′E) (7.15).

Major lights:

Mys Ay-Todor Light (7.15).
Rybache Light (7.51).

Current

7.20

1 The general W-going current, which is chiefly due to E winds, is felt at its greatest strength off Mys Ayudah.

Winds

7.21

1 Between Mys Ayya (44°26′N, 33°39′E) (6.400) and Yalta, NE winds prevail in winter and winds from the S and W are infrequent. A precipitous coastal ridge screens the sea near the shore so that weather close in is frequently calm.

Directions

South-west approach

(continued from 6.401 and 7.9)

7.22

1 **Initial position.** 44°21′N, 34°01′E at E end of traffic separation scheme (6.398).

Route. Recommended route No 8, which is shown on the chart, leads NE and thence NNE through waters clear of charted dangers, to Yaltinskiy Zatoka, passing:

2 SE of Mys Kikineyz (44°24′N, 33°59′E). A wedge-shaped headland from W with a pointed hillock on summit; within the headland are several prominent and irregularly shaped peaks. The headland is fringed by a number of detached rocks which extend 1 cable E from it. Thence:

SE of Mys Ay-Todor Light (44°26′N, 34°07′E) (7.15).

(Directions for Yalta continue at 7.41)

East approach

(continued from 7.16)

7.23

1 **Initial position.** 44°19′N, 34°47′E, about 28 miles ESE of Yalta.

Route. Recommended route No 40, which is shown on the chart, leads WNW through waters clear of charted dangers to Yaltinskiy Zatoka, passing:

SSW of Mys Ayudah (44°33′N, 34°21′E) (7.15), thence:

SSW of Prohibited Area No 132 (7.18) off Mys Nikitin (44°30′N, 34°15′E). The cape is formed by the termination of a spur and is fringed by above water rocks which extend about ¾ cable offshore.

(Directions continue for Yalta at 7.41 and for the SW approaches to Feodosiya at 7.52)

7.24

1 **Useful marks:**

Skelya Belyye Kamni (44°32′N, 34°18′E). Two white detached rocks, 52 m high, lying 2½ cables offshore 2¼ miles W of Mys Ayudah.

Anchorages

Alupka

7.25

1 **Anchorage** may be obtained off the village of Alupka (44°25′N, 34°03′E), in depths of 37 m, with Mys Ay-Todor bearing 074°. Closer inshore there are depths of 18 to 26 m, mud and sand on mud and shells.

Hurzuf

7.26

1 **Anchorage** may be obtained SSE of the seaside resort of Hurzuf (44°33′N, 34°17′E). The best berth is in a depth of 27 m with the mouth of a river bearing 333°, distant 5 to 6 cables. This berth is sheltered from SW, through N, to ENE.

A pier stands abreast the village.

Artek

7.27

1 **Anchorage,** sheltered from the SW, through N, to NE, may be found in the bight between Skelya Belyye Kamni (7.24) and Mys Ayudah. The best berth is in a depth of 29 m, close inshore on the E side of the bight.

YALTA

General information

Chart 2233 with plan of Yalta, (see 1.16)

Position

7.28

1 Yalta (44°30′N, 34°10′E) is situated at the head of Yaltinskiy Zatoka close W of Mys Ionna. The central part of the town stands on a small plain that is formed by the junction of two ravines, which descend from the hills that back the town.

The white buildings of the old town, on the NE side of the harbour, are visible from a considerable distance seaward. The new town, which contains the commercial quarter, is situated on the W side of the harbour.

Function

7.29

1 **Yalta,** which, in 2002 had a population of 82 000, is an important tourist resort and commercial port. It is regularly visited by passenger ships carrying out tourist cruises and also has facilities for handling dry cargo vessels.

Port limits

7.30

1 The port area consists of the waters enclosed by the two moles, and Anchorage area No 393 (7.36).

Traffic

7.31

1 In 2002 the port was used by 4 vessels with a total deadweight of 36 472 tonnes.

Port Authority

7.32

1 The Port of Yalta Authority, 5 President Roosevelt Street, Yalta 98600, Crimea, Ukraine.

Limiting conditions

7.33

1 **Maximum size** of vessels permitted. Draught 8·7 m. Length 215 m.

Density of water. 1·025 g/cm^3.

Ice. The harbour is ice free.

Weather. Strong NW squalls from the mountains can make berthing and unberthing difficult. These winds occur on about 30 days of the year. See 7.38.

Arrival information

Port radio

7.34

See *Admiralty List of Radio Signals Volume 6(3)* for details.

Notice of ETA

7.35

1 See *Admiralty List of Radio Signals Volume 6(3)* for details.

Outer anchorages

7.36

1 **Outer roads** are situated in Yaltinskiy Zatoka S of the port entrance.

Anchorage area No 393 lies between 4 and 9 cables ESE of the harbour entrance for use November to April. This anchorage has depths of 26 to 45 m, mud and sand. An appreciable current has been experienced in this roadstead. See 7.38.

Pilots and tugs

7.37

1 **Pilotage** is compulsory for all vessels entering or leaving harbour. Pilots board 1 mile SE of the harbour entrance.

Tugs are available. Their use is compulsory.

Regulations concerning entry

7.38

1 **Time of entry.** No restrictions as long as weather is favourable.

Speed limit. Minimum speed at which vessel can be controlled.

Under-keel clearance. Not less than 0·6 m.

Entry may be prohibited if wind speeds exceed 23 kn or in poor visibility.

2 **Turning.** Vessels not exceeding a length of 130 m may, with the assistance of tugs, turn within the harbour.

Only gas free oil tankers may enter the port.

Anchorage area No 393. Except for short term anchoring with the permission of the harbour authorities, anchorage in this area is prohibited between May and October to prevent pollution of the beaches.

Harbour

General layout

7.39

1 The harbour is formed by two moles. The E mole extends about 3 cables SSW from Mys Ionna. The S mole extends ¾ cable SE from a position on the shore 2 cables NW of the E mole.

The main berths are situated on the inner side of the E mole and along the town waterfront on the N and W side of the harbour.

Natural conditions

7.40

1 **Water level.** The water level in Yaltiniskiy Zatoka fluctuates within the limits of 0·6 m. It falls with the NE winds and rises with S and SW winds.

2 **Climatic table.** See 1.195 and 1.215.

Directions

(continued from 7.22 and 7.23)

7.41

1 **Initial position.** 44°27′N, 34°11′E.

Route. From the inshore end of the recommended routes, the final approach to Yalta leads N through waters clear of charted dangers, passing:

E of a light-buoy (E cardinal) which marks the edge of a coastal bank, with depths of less than 5 m over it, that extends seaward from the mouth of the Rika Vodopadnaya 6 cables SW of Mys Ionna. Thence:

2 Between the head of the E and S mole. The head of the E mole, from which a small spur extends NW, is marked by Yaltinskiy light (white 8-sided stone tower, 12 m in height). Large vessels should not pass within 25 m of the spur at the head of the E mole.

Useful mark:

Church (1·4 cables NNE of Mys Ionna).

Berths

Alongside berths

7.42

1 The Port of Yalta has four deep water passenger berths and one deep water cargo berth. The main part of the harbour was dredged to 9·1 m in 1991 but depths alongside range from 4·5 to 8·2 m.

The main cargo berth is 280 m in length with a depth alongside of 7 m.

Port services

Facilities

7.43

1 Deratting (exemption certificates only); ballast and slops reception; hospitals.

Supplies

7.44

1 Fresh water at berths; provisions; no fuel available.

Porto Punkt Massandra

7.45

1 Porto Punkt Massandra lies 1½ miles ENE of Yalta and is protected by a L-shaped breakwater. There are 4 quays: Nos 1 and 2 for naval vessels, depths alongside of 5 to 13·6 m, and Nos 3 and 4 for general cargoes with depths alongside of 7 to 8 m.

2 It has been reported (2000) that work to extend the port was in progress. The alignment (047°) of Massandrovkiy

Leading Lights (white rectangles on red square metal towers, 16 and 14 m in height) (44°30′N, 34°12′E) leads in the entrance to the port.

OUTER APPROACHES TO FEODOSIYA

General information

Charts 2233, 2216 (see 1.16)

Topography

7.46

1 The coast between Mys Ayudah and Feodosiya (45°02′N, 35°23′E) is backed by the Krymskiye Gory range, the peaks of which rise to over 1200 m. In many places, cliffs rise precipitously from the sea. E of Feodosiya, the coast is low with hills rising inland.

Traffic regulations

7.47

1 **Area into which entry is prohibited:**

Area No 115 extends up to 12 miles offshore between Mys Chauda (7.56) and Mys Takl (8.27).

Areas which should be avoided:

Area No 830, a circular area radius 2 miles centred 3 miles WSW of Mys Chauda (7.56).

2 Area No 818, a circular area radius 1¼ miles centred 15 miles ESE of Mys Mehanom.

Areas temporarily dangerous for navigation:

Area No 731 extends up to 40 miles offshore, and 80 miles E, between Mys Ayudah (7.15) and Mys Takl (8.27).

3 Area No 743 extends up to 15 miles offshore between Mys Chauda (7.56) and a position 17 miles W of Mys Mehanom (7.51).

Area No 787 is a small area 7 miles WSW of Mys Chauda.

4 **Areas in which anchoring, fishing, submarine and seabed operations are prohibited:**

Area No 640, contained almost entirely within Area 743, extends up to 15 miles offshore between Mys Mehanom (44°48′N, 35°05′E) (7.51) and Mys Il'i (44°01′N, 35°26′E).

5 Areas No 630 and No 635, contained within Area 743, are situated in Feodosiys'ka Zatoka and border Recommended route No 9 SSE of the Feodosiya pilot boarding point.

Area No 636, contained within Area 743, extends up to 12 miles offshore to the W of Mys Mehanom.

6 See Appendix II for details of the above areas.

Feodosiya (7.64) is the only port on this coast open to international shipping.

Measured distance

7.48

1 Solnechnogorskaya measured distance is situated 14½ miles NE of Mys Ayudah.

Limits are marked by pairs of beacons.

Distances: 1482 and 3889 m.

Running track: 052½°–232½°.

Currents

7.49

1 The general current of the main Black Sea circulation, supplemented by water from the Sea of Azov, sets W along the coast. It is especially strong off the headlands and off the stretch of coast between Mys Chauda (45°00′N, 35°50E) and Mys Kyz-Aul, 23 miles E, where an inshore set is sometimes experienced. The normal rate of this current is from ½ to ¾ kn, but in certain conditions it is as much as 2 kn. In the offing, the current is weak and imperceptible. See 1.145.

Winds

7.50

1 Off the SE coast of Kryms'kyy Pivostriv, NE winds prevail in winter, and when strong usually blow harder near the coast than in the offing. Winds from S and SW are infrequent in winter and of short duration.

Principal marks

7.51

1 **Landmarks:**

Hora Kastel (44°38′N, 34°23′E), a peak 436 m high that is prominent from the SE, from which direction it resembles a blunted cone.

Hora Demerdzhi (1239 m high) (44°45′N, 34°25′E).

Hora Tay-Koba (1253 m high) (44°50′N, 34°31′E).

Radio mast (44°49′N, 34°49′E).

Mys Mehanom (44°48′N, 35°05′E). A prominent rugged headland joined to the mainland by low ground and which appears as an island from seaward. Mys Mehanom Lighthouse (white 8-sided stone tower, 12 m in height) stands on the S extremity of Mys Mehanom.

Hora Chalka (44°54′N, 35°08′E), a peak with three summits which are visible from all directions.

Hora Karadag (44°56′N, 35°14′E), a dark coloured summit that rises from the sea in a series of irregular jagged cliffs.

2 **Major lights:**

Rybache Light (44°45′N, 34°35′E) (7.52).

Sudakskiy Light (44°50′N, 34°58′E) (7.52).

Mys Mehanom Light — as above.

Mys Il'i Light (45°01′N, 35°26′E) (7.52).

Mys Chauda Light (45°00′N, 35°50′E) (7.56).

Directions

(continued from 7.23)

South-west approach

7.52

1 **Initial position.** SSW of Prohibited Area No 132 (7.18) off Mys Nikitin (44°30′N, 34°15′E).

Route. Recommended route No 9 leads ENE, passing (with positions from Rybache Light (44°45′N, 34°35′E)):

SSE of Mys Ayudah (16½ miles SW) (7.15), thence:

SSE of Mys Mayachnyy (11 miles SW), thence:

SSE of Rybache Light (white round stone tower, 21 m in height), thence:

SSE of Mys Bashennyy (8 miles ENE). A light and the prominent ruins of a tower stand on this point, thence:

2 SSE of Mys Peshchernyy (13½ miles ENE), a headland composed of jagged rocks. Thence:

SSE of Sudakskiy Light (white square with black stripe on red square metal tower, 13 m in height) (17 miles ENE), thence:

SSE of Mys Mehanom Light (21 miles E).

3 Thence the track leads NE along Recommended route No 9, passing (with positions from Mys Mehanom Light (44°48′N, 35°05′E)):

SE of Mys Mehanom Light, thence:

SE of Mys Tolstyy (3 miles NE), thence:

SE of Shchebetovka Light (8 miles NNE), thence:

SE of Mys Kyyik-Atlama Light (grey square, white band on grey concrete column, 6 m in height) (16 miles NE), thence:

4 SE of Mys Il'i (19½ miles NE), a high bluff headland on which stands Mys Il'i Lighthouse (round brick tower, 15 m in height). This headland is fringed by a rocky bank which extends 1¼ cables ESE and 1 cable N. Thence:

To a position close to Mysa Il'i Light-buoy (7.82).

7.53

1 **Useful marks:**

Tower (61 m in height) (44°39′N, 34°24′E).

Alushta Light (44°40′N, 34°25′E) (7.58).

South approach

7.54

1 **Initial position.** (44°15′N, 35°00′E).

Route. Recommended route No 39 leads NNE for 33 miles where it joins Recommended route No 9 about 5 miles ESE of Mys Mehanom (44°48′N, 35°05′E) (7.51).

South-east approach

7.55

1 **Initial position.** (44°12′N, 36°41′E).

Route. Recommended route No 42 leads NW for 51 miles where it joins Recommended route No 11 about 14 miles S of Mys Chauda (45°00′N, 35°50′E) (7.56).

East approach

7.56

1 **Initial position.** (44°49′N, 36°30′E).

Route. Recommended route No 11 leads W then NW, passing (with positions from Mys Chauda (45°00′N, 35°50′E)):

S of Mys Kyz-Aul (23 miles E) (8.28), thence:

2 S of Mys Opuk (17 miles E). A low cape within which, 1 mile N, Hora Opuk rises to a height of 184 m. This hill has a flat summit covered with rocky projections resembling fortifications. Thence:

S of Skaly Korabl'-Kamen' (14 miles E). A group of 4 high rocks, the largest of which appears as a schooner from E and W and sloping column from S. Thence:

3 S of Mys Chauda. A low flat bluff headland, fringed by a narrow reef, on which stands Mys Chauda Lighthouse (white 8-sided tower and dwelling, 11 m in height). Another reef, with depths of less than 9 m over it, extends 7½ cables SW from a point 1½ miles NW of Mys Chauda. Thence:

4 S of a wreck with 3 m of water over it (3 miles W), thence:

To a position close to Mysa Il'i Light-buoy (7.82).

(Directions for Feodosiya continue at 7.82)

Anchorages and harbours

Ayudag to Mys Mehanom

7.57

1 **Partenit** (1¼ miles SW of Mys Plaka) (44°35′N, 34°22′E). A village which lies at the foot of a bluff rising precipitously from the sea.

2 Anchorage may be obtained off this village, the best berth being in a depth of 14 m, black sand, with the summit of the bluff bearing 315°, distant about 3 cables.

7.58

1 **Alushta** (44°41′N, 34°25′E), a large seaside resort.

Anchorage. The best position is in depths of 27 m, mud and shells, with Alushta Light (red metal structure with white bands, 4 m in height) bearing 315°. The anchorage is open from NE, through S to SW. The wind may blow off the mountain in heavy squalls.

Facilities: hospital, alongside berths.

7.59

1 **Mys Sotera** (44°45′N, 34°32′E) to Mys Peshchernnyy (15 miles ENE). Anchorage may be obtained, in summer, off the sandy beaches at the mouths of the gullies between these two points. Depths in these anchorages are between 27 and 36 m, mud or mud and shells.

Caution. Area No 743 which is periodically declared dangerous for navigation covers the N half of this area.

7.60

1 **Sudak** (44°50′N, 34°59′E), a health resort.

Anchorage. The best position is in depths of 24 to 26 m, sand and mud, with the tower of Sudakskaya Skala, a large crag with fortifications on its slope, bearing 335°. There are obstructions and a wreck in the approaches to this bay as shown on the chart. During winds from E and NE good anchorage may be obtained in the E part of the bay, in depths of 22 to 33 m, sand and mud.

Facilities and supplies: hospital; fresh provisions and alongside berths.

Mys Mehanom to Mys Opuk

7.61

1 **Otuskaya Rechka** (R. Otuz) (44°54′N, 35°12′E).

Anchorage may be obtained off the mouth of the river in depths of 22 m, mud and shells.

7.62

1 **Bukhta Koktebel'** (44°57′N, 35°17′E).

Anchorage may be obtained in the NW corner of the bay in depths of 9 m. This berth is sheltered from SSW, through N to E.

A local magnetic anomaly is stated to exist in the vicinity of this bay.

Dangers. Groups of rocks, with depths of 0·9 to 2·4 m over them, lie up to 5 cables off the N shore of the bay.

7.63

1 **Feodosiys'ka Zatoka.** This gulf is entered between Mys Il'i (45°01′N, 35°26′E) (7.52) and Mys Chauda, 17 miles E. It has convenient depths for anchorages. There are numerous marine farms in the E part of this bay.

To the W of Mys Il'i, a white radar dome, approximately 15 m in diameter, stands in position 45°00′·6N, 35°21′·6E.

FEODOSIYA

General information

Chart 2233 (see 1.16)

Position

7.64

1 The port and health resort of Feodosiya (also known as Theodosiya) (45°02′N, 35°23′E) is situated at the head of Feodosiyskaya Bukhta in the W part of Feodosiys'ka Zatoka.

Function

7.65

1 The port handles general cargo and tankers and is open all year round. In 2002 Feodosiya had a population of 75 000.

Traffic

7.66

1 In 2002 the port was used by 153 vessels with a total deadweight of 8 243 038 tonnes.

Port limits

7.67

1 The port limits are as follows:

The area contained between the shore and the meridians of 35°23′·6E and 35°23′·1E along the parallel of 45°02′N.

Circular areas of 2 cables radius encompassing the mooring buoys N of the harbour entrance.

An area encompassing the offshore oil berths 2 miles N of the harbour entrance.

Port Authority

7.68

1 Port of Feodosiya Authority, 14 Gorkogo Street, 98100 Feodosiya, Crimea, Ukraine.

Limiting conditions

Deepest and longest berth

7.69

1 No 3 Berth (7.84) within the harbour and the N berth (7.85) at the offshore oil terminal.

Abnormal levels

7.70

1 S winds raise and N winds lower water levels by as much as 0·6 m. In general, the level is high in summer and low in winter.

Density of water

7.71

1 The density of the water is 1·012–1·013 g/cm^3.

Maximum size of vessel handled

7.72

1 Cargo vessels of 150 m length and 7·0 m draught; tankers of 100 000 dwt and 12·5 m draught.

Local weather

7.73

1 Winds are normally from the NE but strong SE winds can present a danger for vessels in the port.

Arrival information

Port radio

7.74

1 See *Admiralty List of Radio Signals Volume 6(3)* for details.

Notice of ETA

7.75

1 Report ETA 72, 48, 24 and 12 hours in advance.

Anchorages

7.76

1 Anchorage may be obtained in the vicinity of Feodosiyskiy Light-buoy in depths of 13 to 18 m.

The following designated anchorage areas, the limits of which are shown on the chart, and to which pilotage is compulsory, are situated in the outer harbour with positions from Mys Il'i (45°01′N, 35°26′E) (7.52):

2 Area 400 (1¾ miles NNW), with depths of 17 to 19 m, mud and sand. This anchorage is for no more than two ships and only then with special permission from the harbour master.

Area 401 (2 miles N), with depths of 19 to 21 m, mud and sand. There are 13 designated anchor berths with Nos 1–6 for vessels up to 125 m in length and Nos 7–13 for vessels up to 210 m in length.

3 Anchoring outside the above areas is not recommended as there are former mine danger areas in the vicinity.

Pilots and tugs

7.77

1 **Pilotage** is compulsory. Pilots board close NE of Feodosiyskiy Light-buoy (safe water), 4½ miles NE of Mys Il'i, and are available 24 hours.

Tugs are available and are compulsory for vessels over 500 grt.

Regulations concerning entry

7.78

1 **Speed limit** 8 kn within the harbour and approach channel.

Harbour

General layout

7.79

1 The harbour is formed by a breakwater and a main jetty. The breakwater extends about 3 cables N from the shore 1½ miles NW of Mys Il'i. The main jetty extends 2 cables E from a position on the shore 4 cables WSW of the head of the breakwater. The principal berths are situated on the N side of the main jetty.

2 **Caution.** A dangerous wreck, marked by a buoy (isolated danger) lies between the breakwater and the main jetty.

There are offshore berths for oil tankers (7.85).

Development

7.80

1 It was reported (2002) that a new passenger terminal was under construction.

Principal marks

7.81

1 **Major light:**

Mys Il'i Light (45°01′N, 35°26′E) (7.52).

Directions

(continued from 7.56)

Approaches

7.82

1 **Initial position.** Mysa Il'i Light-buoy (safe water) (44°57′N, 35°33′E), 6½ miles SE of Mys Il'i at the junction of Recommended routes Nos 9 and 11.

Routes. From a position in the vicinity of Mysa Il'i Light-buoy Recommended route No 9 leads NNW for 8 miles, passing (with positions from Mys Il'i (45°01′N, 35°26′E)):

2 ENE of Mys Kyyik-Atlama Light (4 miles SSW) (7.52), thence:

ENE of Mys Il'i (7.52), thence:

To the pilot boarding position (7.77).

Recommended route No 23 is an inshore route direct to the harbour entrance but great care should be taken as there are numerous dangers close offshore and in the vicinity of the breakwater.

Entrance

7.83

1 **Leading lights:**

Front light (45°01′·8N, 35°23′·9E), standing on the head of the breakwater.

Rear light (1 mile from front light).

2 From the vicinity of Feodosiyskiy Light-buoy (4½ miles NE of Mys Il'i) which marks junction "C" of Recommended route No 9, the alignment (237½°) of these lights leads

WSW into the harbour, passing (with positions from Mys Il'i (45°01′N, 35°26′E)):
SSE of Anchorage area No 401 (2 miles N), thence:
SSE of Anchorage area No 400 (1¾ miles NNW), thence:
NNW of Mys Il'i.

Berths

Alongside berths
7.84

1 There are 15 berths in the harbour of which 4 (Nos 1–3 and 14) are used by foreign vessels.

No 3 berth is 149 m in length with a depth alongside of 7·3 m.

Oil terminal
7.85

1 There are 2 berths, situated about 2½ cables offshore, 2 miles NNE of the harbour entrance. The N berth has a depth alongside of 14 m.

Tankers moor on a heading of 120° using both anchors, approximately 8 shackles on each, with two mooring lines from each quarter to two buoys.

Port services

Repairs
7.86

1 Minor repairs available.

Other facilities
7.87

1 Deratting; hospital; oily waste disposal.

Supplies
7.88

1 Fuel oil available by barge or road tanker; fresh water available at the quays and by barge; limited supply of provisions available.

Communications
7.89

1 Nearest airport is at Simferopol', 100 km from Feodosiya.

Other name
7.90

1 Prymors'kyy Light (45°08′N, 35°29′E).

APPROACHES TO NOVOROSSIYSKAYA BUKHTA AND ADJACENT WATERS

MYS ZHELEZNYY ROG TO MYS UTRISH

General information

Charts 2233, 2216, 3311 (see 1.16)

Restrictions
7.91

1 On this stretch of coast Anapa is the only port open to international trade or visits by foreign vessels.

Topography
7.92

1 Between Mys Zheleznyy Rog (45°07′N, 36°44′E) (8.28) and Mys Anapskiy (44°53′N, 37°18′E), 27 miles ESE, the coast is generally very low and sandy with a number of detached hills rising to heights of about 100 m. The coastal hills become less marked as Mys Anapskiy is approached.

Between Mys Anapskiy and Mys Utrish (9 miles SSE), the shore is backed by white cliffs which rise to lofty hills extending inland.

Traffic regulations
7.93

1 **Area temporarily dangerous for navigation:**
Area No 744, situated between Recommended routes Nos 11 and 29, extends about 20 miles WNW from a position 2 to 5 miles offshore between Mys Anapskiy and Mys Utrishenok (44°42′N, 37°27′E).
See Appendix II.

Measured distance
7.94

1 See 7.104.

Currents
7.95

1 See 1.145.

Principal marks
7.96

1 **Major lights:**
Mys Zheleznyy Rog Light (45°07′N, 36°44′E) (8.27).
Yantarnyy Light (red metal framework tower, 6 m in height) (45°07′N, 36°53′E).
Mys Anapskiy Light (black truncated pyramid, 20 m in height) (44°53′N, 37°18′E).
Ostrov Utrish Light (44°45′N, 37°23′E) (7.106).

Directions

Mys Zheleznyy Rog to Mys Anapskiy
7.97

1 **Initial position.** 45°01′N, 36°40′E, 6½ miles SSW of Mys Zheleznyy-Rog.

Route. Recommended route No 29, which is shown on the chart, leads ESE to Anapa, passing (with positions from Kubanskiy Light (45°04′N, 37°04′E)):

2 SSW of a light-buoy (S cardinal) (16½ miles W). The buoy marks the SW extremity of dangerous shoal water extending 5 miles SSW of Mys Zheleznyy Rog (8.28). Thence:
SSW of a buoy (S cardinal) (13 miles W), marking Rif Kishla. Banka Chernysh, with below-water rocks, lies 1 mile ESE. Thence:
SSW of Yantarnyy Light (9 miles WNW) (7.96), thence:
NNE of Area No 744 (7.93), thence:

3 SSW of Banka Mariya Magdalina (3½ miles W), with a least depth of 1·2 m over it, marked by light-buoys (N and S cardinal). Thence:
SSW of a wreck (1½ miles W), marked by a light-buoy (S cardinal), thence:
SSW of Kubanskiy Light, thence:
SSW of Blagoveshchenskiy Light (9¼ miles ESE), thence:

4 N of Mys Anapskiy (14 miles SE), a flat-topped headland faced by steep white cliffs about 200 m high, which make the headland easy to identify. A

lighthouse (7.96), adjoining a dwelling, stands 3 cables SSE of the W extremity of the headland. A rocky flat, with depths of less than 9 m, extends 4 cables N and NW and 2 cables W and is marked on the W side by No 6 Buoy (W cardinal). A rock, with a depth of 8 m over it, lies 9 cables NNW.

Mys Anapskiy to Mys Utrish

7.98

1 **Route.** Recommended route No 26, which is shown on the chart, leads SSE to Mys Utrish, passing (with positions from Ostrov Utrish Light (44°45′N, 37°23′E)):

WSW of Mys Anapskiy Light (8½ miles NNW), thence:

2 WSW of Ostrov Utrish Light, standing on the head of Ostrov Utrish, a peninsula connected to the mainland by a narrow rocky ridge. A bank fringing the peninsula, with depths of less than 9 m over it, extends 6 cables N, 3 cables W and 5 cables S. A patch, with a depth of 2·8 m over it, lies 2 cables WNW. A dangerous wreck and detached shoal lie off the entrance to a cove close S.

Anchorages and harbours

Charts 2233, 2216 (see 1.16)

Anapa

7.99

1 **Position.** The walled town of Anapa stands close E of Mys Anapskiy (44°53′N, 37°18′E). On the S and W side of the point the town walls rise from the cliffs. On the N side the land slopes down towards the roadstead.

Function. A major holiday resort which has a harbour, protected by a mole, with alongside berths. It is a port of entry and in 2003 had a population of about 57 000.

2 **Traffic.** In 2002 the port was used by 1 vessel with a deadweight of 2121 tonnes.

Directions. The alignment (098°) of leading lights, 1¼ miles NE of Mys Anapskiy, leads E clear of the rocky flat (7.97). Thence the alignment (180°) of leading lights leads S, passing E of a rocky shoal with a least depth of 3·2 m over it, towards the harbour entrance.

3 **Anchorage** in Anapskiy Reyd, 1 mile NNE of Mys Anapskiy, may be obtained in depths of 11 m, sand with patches of rock.

Pilotage. Pilots board in position 44°54′·4N, 37°18′·0E.

Tugs are compulsory.

4 **Berths** with depths alongside of about 5 m. Vessels of up to 114 m in length and draught 3·5 m can use the port.

Other facilities: hospital.

Supplies: fresh water; provisions.

Caution. See 7.97 for dangers in the vicinity of the roadstead.

Ostrov Utrish

7.100

1 **Anchorage** for small craft may be obtained in depths of 9 to 11 m in coves N and S of the isthmus.

Caution. See 7.98 for dangers in the vicinity of the harbour.

SOUTH-WEST APPROACHES TO NOVOROSSIYSKAYA BUKHTA

General information

Charts 2233, 3311, 3316

Route

7.101

1 The SW approach to Novorossiyskaya Bukhta follows Recommended routes Nos 83 and 84 from E of their junction with Recommended routes Nos 85 and 86 (44°10′N, 36°30′E) to the precautionary area and inshore end of the traffic separation scheme (7.103), as shown on the chart.

Topography

7.102

1 Between Ostrov Utrish (44°45′N, 37°23′E) (7.98) and Mys Myskhako (17 miles ESE) the coastline N of the inshore end of Recommended routes Nos 83 and 84 consists of whitish or grey coloured cliffs, intersected by valleys.

Farther inshore, mountains, some of which are conical, rise to heights of over 500 m.

Traffic regulations

7.103

1 **Precautionary area and a traffic separation scheme,** which are shown on the chart, are situated at the inshore end of Recommended routes Nos 83 and 84 and lie SW of the entrance to Novorossiyskaya Bukhta. The traffic separation scheme is not IMO adopted but the Russian Authorities advise that the principles for the use of the routeing system defined in Rule 10 of *The International Regulations for Preventing Collisions at Sea (1972)* apply.

2 **Areas temporarily dangerous for navigation:**

Area No 745 centred about 25 miles WSW of Reka Ozereyevskiy Light (44°40′N, 37°38′E).

Area No 746 centred about 30 miles WSW of Reka Ozereyevskiy Light (44°40′N, 37°38′E).

Area No 747 centred about 23 miles WSW of Reka Ozereyevskiy Light (44°40′N, 37°38′E).

3 Area No 748, centred about 32 miles SW of Reka Ozereyevskiy Light (44°40′N, 37°38′E).

Area No 749 centred about 15 miles SW of Reka Ozereyevskiy Light (44°40′N, 37°38′E).

Areas 746 to 749 lie entirely within Area 745.

Area No 750 centred about 24 miles SSW of Mys Tolstyy Light (44°33′N, 38°03′E).

4 Area No 751 centred about 30 miles SSW of Mys Tolstyy Light (44°33′N, 38°03′E).

Area No 752 centred about 17 miles SW of Mys Tolstyy Light (44°33′N, 38°03′E).

5 Areas 750 and 752 lie entirely within Area 751.

For further details See Appendix II.

Areas in which anchoring, fishing, submarine and seabed operations are prohibited:

Area No 664 lies close S of the inshore end of Recommended route No 83.

6 Area No 648 lies at the NE end of Recommended routes Nos 83 and 84.

Area No 670 enclosing the offshore oil terminal W of Novorossiysk.

For further details See Appendix II.

Area No 89, a disused explosives dumping area, lies at the inshore ends of Recommended routes Nos 83 and 84.

Measured distance

7.104

1 Measured distances, shown on the chart, are situated S of Reka Ozereyevskiy Light (44°40′N, 37°38′E) (7.107).

Limits are marked by pairs of beacons.

Distances: 1482 and 3889 m.

Running track: 098¼°/278¼°.

Current

7.105

1 The current in the approaches to Novorossiyskaya Bukhta flows NW in a band about 30 miles wide at a rate of about ½ kn, but there may be a drift current SE at the same rate.

Principal marks

7.106

1 **Landmarks:**

Gora Kobyla (44°45′N, 37°26′E).

Gora Sakharnaya Golova (44°43′N, 37°31′E).

Gora Kruglaya (44°40′N, 37°37′E).

Gora Koldun (44°40′N, 37°43′E). A bare peak which is very prominent from S and SW owing to a large grey triangular cliff face. Three conspicuous white domes stand on the summit of this mountain.

2 Gora Bol'shaya Markotkh (44°43′N, 37°53′E).

Gora Doob (44°37′N, 37°58′E). A dark peak, which from NW and SE appears to have 3 summits, but from other directions appears rounded. A white cliff face runs from its foot towards Mys Doob.

3 **Major lights:**

Ostrov Utrish Light (white column, 17 m in height) (44°45′N, 37°23′E).

Doobskiy Light (white 8-sided stone tower, 23 m in height) (44°38′N, 37°55′E).

Mys Tolstyy Light (44°33′N, 38°03′E) (7.114).

Directions

(continued from 7.16)

Route

7.107

1 Recommended routes Nos 83 and 84, shown on the chart, lead generally ENE and WSW for 65 miles, respectively, through waters clear of charted dangers, between their junction with Recommended routes Nos 85 and 86 (41°10′N, 36°30′E) and the precautionary area and traffic separation scheme in the entrance to Novorossiyskaya Bukhta, passing (with positions from Reka Ozereyevskiy Light (44°40′N, 37°38′E)):

2 Between the S limits of Area No 745 (25 miles SW) (7.103) and the W limits of Area No 751 (30 miles SSW) (7.103).

SSE of Mys Utrishenok Light (white rectangle on framework tower, 12 m in height) (8 miles WNW). A light-buoy (W cardinal) marks the outer edge of a bank that extends 1 mile SW from this headland. Thence:

3 SSE of Reka Ozereyevskiy Light, which is situated 2½ cables E of the mouth of the river Ozereyevka. This river flows in the widest valley, which is easy to identify, on this stretch of the coast. Thence:

SSE of Mys Myskhako (4½ miles ESE). The headland rises to Gora Koldun (7.106), 1 mile NW and from a distance the high land within Mys Myskhako appears as an island.

4 **Caution.** Attention is drawn to the obstruction that lies 1 mile offshore, 3½ miles SE of Mys Utrishenok Light.

(Directions for Novorossiyskaya Bukhta continue at 7.135)

Anchorages

7.108

1 Anchorage areas Nos 408 and 410 lie 6 and 1 miles respectively, W of Mys Myskhako. Their limits are shown on the chart. See 7.128.

Oil terminal

7.109

1 **Offshore oil terminal,** consisting of two SBMs connected to the shore by submarine pipelines, lies 2½ miles S of Reka Ozereyevskiy Light (44°40′N, 37°38′E).

Anchoring, fishing, submarine and seabed operations are prohibited in an area (No 670) enclosing the terminal, as shown on the chart.

2 **Function.** Exportation of crude oil.

Berths:

SBM–1 (44°37′·8N, 37°38′·3E)

SBM–2 (44°37′·3N, 37°39′·7E)

Each SBM is fitted with light and fog signal.

Prohibited areas. Prohibited areas, radius 5½ cables, are centred on each of the SBMs. Entry is restricted to those vessels using or servicing the oil terminal facilities.

3 **Approach and entry.** From position 44°27′·6N, 37°38′·4W, a branch of Recommended route No 83, shown on the chart, leads 8½ miles N to the terminal.

Pilotage. Pilots board in position 44°34′·1N, 37°38′·5E, close E of the recommended track.

SOUTH-EAST APPROACH TO NOVOROSSIYSKAYA BUKHTA

General information

Charts 3311, 3316 (see 1.16)

Topography

7.110

1 Between Mys Idokopas (44°25′N, 38°12E) and Mys Doob (18 miles NW), the coast is generally steep-to and faced by white cliffs. These cliffs are intersected by the entrance to Gelendzhikskaya Bukhta (7.116) and a number of valleys and gorges, through which the river enters the sea.

Inland, mountains rise to heights of over 750 m within 5 miles of the coast.

Traffic regulations

7.111

1 **Precautionary area and traffic separation scheme.** See 7.103.

Areas into which entry is prohibited:

Area No 133, radius 4 cables, centred on position 44°30′·4N, 37°58′·7E) and marked by a light-buoy (special).

Areas temporarily dangerous for navigation:

Areas Nos 750, 751, and 752. See 7.103.

Area No 753 is centred about 4½ metres W of Mys Tolstyy (44°33′N, 38°03′E).

2 **Areas in which anchoring, fishing, submarine and seabed operations are prohibited:**

Area No 651 lies 4 cables WNW of the jetty in Glendzhikskaya Bukhta (7.116).

Area No 666 lies close off Bukhta Rybatskaya (44°34′N, 37°59′E).

Area No 671, radius 2·7 cables, lies about 2 miles SW of Doobskiy Light (44°38′N, 37°55′E).

Current

7.112

1 See 7.105.

Principal marks

7.113

1 **Landmarks:**

Gora Tkhachegochuk (44°31′N, 38°17′E). A conical peak, visible from close inshore on all bearings and particularly prominent from S. This mountain is separated by a saddle from an otherwise unbroken range which extends NW. Gora Mikhaylovka stands 1 mile WNW.

Gora Dzhankhot (44°28′N, 38°10′E). A beacon (7.114) stands on the summit.

Gora Dimegina (44°29′N, 38°09′E).

Gora Ploskaya (44°38′N, 38°04′E).

Gora Doob (44°37′N, 37°58′E) (7.106).

Gora Bol'shaya Markotkh (44°43′N, 37°53′E).

2 **Major lights:**

Mys Tolstyy Light (44°33′N, 38°03′E) (7.114).

Doobskiy Light (44°38′N, 37°55′E) (7.106).

Directions

Route

7.114

1 From a position SW of Mys Idokopas (44°25′N, 38°12′E) Recommended route No 11 leads WNW for 17 miles, in waters clear of charted dangers, to its junction with Recommended route No 83 (7.107), passing (with positions from Mys Tolstyy Light (44°33′N, 38°03′E)):

2 NNE of the N limits of Areas No 750, 751 and 752 (12 miles S) (7.103), thence:

SSW of Former Mined Area No 29 (radius 7 cables) (10¼ miles SE), thence:

SSW of Mys Tolstyy Light (white round concrete tower, 12 m in height), standing on the S entrance to Gelendzhikskaya Bukhta) (7.116). Thence:

3 SSW of Prohibited Area No 133 (4 miles SW) (7.111), thence:

SSW of Area No 753 (4½ miles W) (7.111), thence:

To a position about 9 miles W of Mys Tolstyy Light, at the junction of Recommended routes Nos 11 and 83, whence the track leads N to the precautionary area and traffic separation scheme (7.103).

4 **Useful marks:**

Dzhankhot Beacon (44°28′N, 38°10′E) (Open framework metal structure with black rectangular daymark, 16 m in height, standing at an elevation of 324 m).

(Directions for Novorossiyskaya Bukhta continue at 7.135, and for coastal passage to Tuapse at 7.147)

Anchorages

7.115

1 Anchorage area No 416, for tankers and vessels with dangerous cargoes, lies SSE of Mys Doob. Its limits are shown on the chart. See 7.128.

Gelendzhikskaya Bukhta

General information

7.116

1 **Position.** Gelendzhikskaya Bukhta is entered between Mys Tonkiy (44°34′N, 38°02′E) and Mys Tolstyy (1 mile SE).

Approach. Mys Tonkiy, which is low, sandy and whitish in colour is difficult to distinguish from W or WSW as it merges with the E side of the bay. Mys Tolstyy is also whitish in colour, but is higher and bolder.

2 **Current.** In normal weather or during S winds, the current sets NW with moderate strength across the harbour entrance.

Winds. The bay is exposed to winds from SW to NW and winds from seaward send in a heavy sea.

Directions. The alignment (049°) of Gelendzhik Light and a beacon (7 cables NE) leads through the entrance and into the bay.

3 **Traffic.** In 2002 the port was used by 12 vessels with a total deadweight of 46 470 tonnes.

Anchorage may be obtained in depths of 9 m in the SE corner of the bay with Mys Tolstyy bearing 227°.

Pilots board 1½ miles WSW of Gelendzhik Light (44°34′·4N, 38°04′·2).

Gelendzhik

7.117

1 The town of Gelendzhik is a favourite summer resort. It stands at the mouth of a deep valley on the SE side of the bay and is a port of entry.

A jetty, with depths alongside of 6·7 to 7·4 m, extends 2 cables W from the shore opposite the town. There is a hospital in the town.

NOVOROSSIYSK

General information

Chart 3316

Position

7.118

1 Novorossiysk (44°43′N, 37°47′E) is situated in the NE part of the Black Sea at the head of Novorossiyskaya Bukhta, a bay which provides one of the best natural harbours on the Caucasian coast.

2 Novorossiyskaya Bukhta is entered between Sudzhukskaya Kosa (44°41′N, 37°49′E) and Mys Doob, about 5 miles SE. The NE side of the bay is backed by the Varada range. The spurs of this range terminate at the shore of the bay in sheer, white, triangular shaped cliffs. The whole of the W shore of the bay is fronted by a low pebble beach, which is rocky in places.

The port consists of two harbours. The dry cargo harbour and Neftyanaya Gavan' Sheskharis, the oil harbour.

Function

7.119

1 Novorossiysk, which in 2003 had a population of about 207 000, is a town of great commercial and industrial importance and is a port of entry. It has the best equipped harbour on the Caucasian coast and handles grain, sugar, metal, scrap, mineral fertilizers, refrigeration, timber and oil cargoes.

Port limits

7.120

1 Novorossiysk port area consists of all the waters bounded by the coastline of Novorossiyskaya Bukhta and a line joining the following co-ordinates:

44°34′·6N, 37°58′·5E (shore),
44°31′·9N, 37°55′·3E,
44°36′·7N, 37°34′·0E,
44°40′·6N, 37°34′·0E (shore).

Approach
7.121

1 A recommended route, shown on the chart, leads from the inshore end of the traffic separation scheme to the entrance of Novorossiyskaya Bukhta.

Traffic
7.122

1 In 2002 the port was used by 1370 vessels with a total deadweight of 94 047 547 tonnes.

Port Authority
7.123

1 The Port Authority of Novorossiyskaya, 19 Sovetov Str, 353900 Novorossiysk, Russia.

Limiting conditions
7.124

1 **Maximum size of vessel** permitted:
Dry cargo harbour: Length 250 m, draught 11·0 m.
Neftyanaya Gavan' Sheskharis: 250 000 dwt, length 300 m, draught 19 m.

Abnormal water levels are caused by wind surges and a seiche. The maximum range of the surge is 1·2 m and of the seiche 1·2 m.

Density of water reported 1·010 to 1·014 g/cm^3.

Ice. Harbour is ice free except in very severe winters when coastal ice may be formed.

Local weather
7.125

1 The area is particularly liable to strong NE gales known as Bora, which sometimes reach hurricane force. These gales occur from late autumn to early spring when they can whip up freezing spray. This quickly forms a thick coating of ice on vessels and has caused small craft to founder. See 1.159 and 1.175.

2 Apart from the usual radio warnings, warning of the approach of a Bora is given by small clouds forming and then massing on the summits of the Varada range. When a Bora is expected, vessels should put to sea or proceed to the storm anchorages (7.128).

The Bora can last from several hours to fifteen days. While it is blowing, entry into Novorossiyskaya Bukhta is impractical and should not be attempted.

Arrival information

Port radio
7.126

1 See *Admiralty List of Radio Signals Volume 6(3)* for details.

Notice of ETA
7.127

1 See 1.46.

Outer anchorages
7.128

1 The following anchorage areas are situated within or close to the entrance to Novorossiyskaya Bukhta. Their limits are shown on the charts.

No	*Position*	*Depth*	*Remarks*
408 (Chart 3311)	44°40′N, 37°36′E	19–45 m, pebbles and sand	For use by vessels during NE gales.
410	44°39′N, 37°42′E	20–51 m and 10·4 m patch	For use by vessels during NE gales.
412	44°41′N, 37°49′E	16–24 m	Cargo vessels up to 20 000 grt
413	44°43′N, 37°49′E	20–24 m	
414	44°41′N, 37°51′E	16–27 m	
415	44°39′N, 37°54′E	15–28 m, mud	Waiting anchorages if pilot not available.
416	44°35′N, 37°56′E	23–40 m, mud,sand, shells and rock	For use by tankers and ships with dangerous cargoes.

Prohibited anchorage
7.129

1 Anchoring and fishing are both prohibited in Area No 648 (See 7.131 and Appendix II), shown on the chart, that lies at the entrance to Novorossiyskaya Bukhta. This area contains a large number of obstructions, some of which are shown on the chart.

Pilots and tugs
7.130

1 **Pilotage** and radar pilotage are both compulsory for all vessels entering or leaving harbour. Pilots board either 15 miles SW, 12 miles WSW or 2 miles W of Doobskiy Light (44°38′N, 37°55′E).

Pilots are available 24 hours a day and should be ordered 24 hours before and confirmed 2 hours prior to arrival.

2 **Tugs** are available and should be ordered 2 hours before they are needed. Their use is compulsory for vessels over 200 grt when berthing.

Vessels of over 60 000 tonnes displacement, must also employ tugs when manoeuvring, anchoring or weighing anchor in the outer roadstead (7.133).

Traffic regulations
7.131

1 **Vessel Traffic Service.**
The movements of all vessels within the Regulated Movement Area (7.120) are controlled by the Vessel Traffic Service in Novorossiysk. See *Admiralty List of Radio Signals Volume 6(3)* for details.

Areas into which entry is prohibited:

2 Area No 113, the NE and SW limits of which are marked by light-buoys (special), extends about 6 cables E from Mys Lyubvi.
Area No 146, situated close S of Mys Penay (44°41′N, 37°53′E).

3 **Areas in which anchoring, fishing, submarine and seabed operations are prohibited:**
Area No 670, the limits of which are shown on the chart, surrounds the oil terminal (7.109) S of Ozereyevskiy Light.

4 Area No 648, the limits of which are shown on the chart, extends across the entrance to

Novorossiyskaya Bukhta between Mys Myskhako (7.107) and Mys Doob (7¼ miles E).

Area No 649, the limits of which are shown on the chart, surrounds Neftyanaya Gavan' Sheskharis (7.139).

5 **Time of entry.** No restrictions.

Minimum under-keel clearance. Dry cargo harbour, 0·3 m. Neftyanaya Gavan' Sheskharis, 0·6 m.

Anchoring is prohibited in the inner roadstead without permission of the Port Authorities.

Gas free tankers only may enter the inner roadstead.

Speed limit in inner roadstead. Minimum required to maintain steerage way.

6 **Constant watch** on VHF when in Regulated Movement Area.

Wind restrictions on berthing:

Dry cargo harbour. Berthing and unberthing. It was reported (1995) that berthing and unberthing in both the dry cargo harbour and Neftyanaya Gavan Sheskharis cannot be carried out when S or NE winds exceed 33 knots.

Quarantine regulations

7.132

1 Communicate with quarantine authorities 6 hours before ETA.

No visitors, except for pilot, until ship cleared by medical authorities.

Harbour

General layout

7.133

1 Novorossiysk has an inner and outer roadstead.

Inner roadstead consists of the dry cargo harbour at the head of the bay within Zapadnyy Mol and Vostochnyy Mol. This roadstead contains the principal alongside berths for dry cargo vessels.

2 **Outer roadstead** consists of the remainder of the port area and contains Neftyanaya Gavan' Sheskharis, situated on the NE shore of the bay 2 miles SE of the dry cargo harbour, and Anchorage areas Nos 412, 413 and 414 (7.138).

3 Two recommended approach channels to the inner part of the port, which are shown on the chart, pass either side of Penayskiye Banki, a group of three shoals that lie in the entrance of Novorossiyskaya Bukhta.

Climatic table

7.134

1 See 1.195 and 1.206.

Directions for entering harbour

(continued from 7.107 and 7.114)

West of Penayskiye Banki

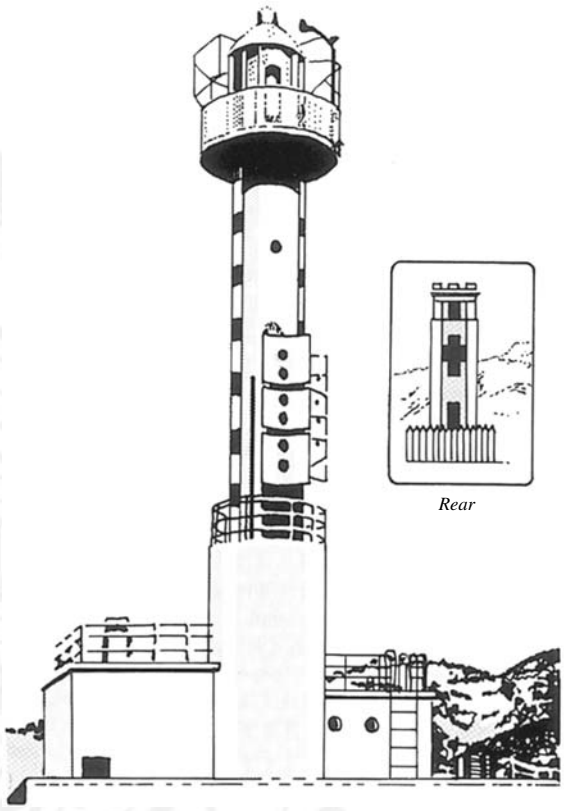
7.135

1 **Initial position.** Pilot boarding position (44°38′N, 37°52′E).

Leading lights:

Front light. Head of Vostochnyy Mol (white round concrete tower, red bands and red stripe, 21 m in height) (44°43′·3N, 37°48′·1E).

Rear light. (white square masonry tower, red stripe, 13 m in height) (1½ miles NNW of front light).



Vostochnyy Mol Leading Lights (7.135)

2 The alignment (334¼°) of these lights leads NNW into Novorossiyskaya Bukhta, passing (with positions from Sudzhukskiy Light (44°39′·8N, 37°49′·5E)):

W of No 1 Light-buoy (1¼ miles ESE), marking the SW edge of Penayskiye Banki, thence:

Between light-buoys (port and starboard hand) (9 cables E) which mark the channel between the W shoal of Penayskiye Banki and Sudzhukskiy Rif. Thence:

3 E of Sudzhukskiy Light (white round concrete tower, grey base, 13 m in height), thence:

E of Ostrov Sudzhuk (8 cables W) a low island composed of shingle and connected to Sudzhukskiy Kosa by the remains of a masonry mole. Thence:

To berths in Anchorage area No 414 (7.138) or Neftyanaya Gavan' Sheskharis; or:

4 E of Mys Lyubvi Light (lantern on yellow building, 15 m in height) (3 miles NNW) and thence to berths in Anchorage area No 413 or the dry cargo harbour.

This leading line (334¼°) should also be used by vessels proceeding from Anchorage areas Nos 412, 413 and 414 to berths in dry cargo harbour. These vessels should remain within 1 cable to starboard of the leading line.

5 **Useful marks:**

Chimney (44°40′·9N, 37°46′·7E).

Chimney (44°41′·6N, 37°46′·6E).

Caution. Before passing Penayskiye Banki, vessels should not diverge more than 1 cable from the leading line.

East of Penayskiye Banki

7.136

1 Entry to the port by this route may only be carried out with the permission of the VTS.

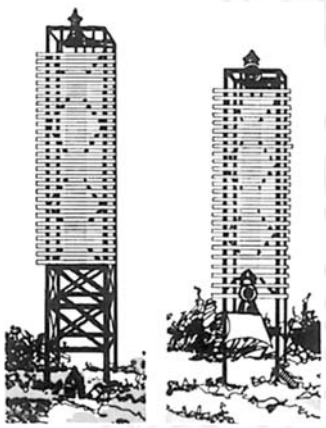
7.137

1 **Initial position.** Pilot boarding position 2 miles W of Doobskiy Light.

Mys Penay Leading Lights:

Front light (white rectangle, red stripe on metal framework, 20 m in height) (44°40′·8N, 37°52′·9E). The light stands on a low whitish cliff, with higher triangular shaped cliffs of the same colour on either side.

2 Rear light (similar structure, 10 m in height) (425 m N of front light).



Front *Back*

Mys Penay Leading Lights (7.137)

The alignment (002°) of these lights leads N passing:

E of a light-buoy (E cardinal), which marks the E limit of Penayskiye Banki, and W of Anchorage area No 415.

3 **To pass north-east of Penayskiye Banki:**

Kabardinskiy Leading Lights:

Front light. (white rectangle on square metal framework tower, 9 m in height) (44°38′·5N, 37°55′·6E).

Middle light (similar structure, 10 m in height) (305 m SE of front light).

Rear light (similar structure, 9 m in height) (670 m SE of front light).

4 The alignment (130°), astern, of these lights, visible on the leading line only, leads into Novorossiyskaya Bukhta, passing:

NE of detached rocks forming the N shoals of Penayskiye Banki, which are marked by a beacon (isolated danger) and light-buoy (N cardinal). Thence:

SW of Area No 146 (shown on the chart) in which lies a wreck containing explosives. A light-buoy (S cardinal) marks the wreck. Thence:

To berths in Anchorage areas Nos 414, 413 and Neftyanaya Gavan' Shekharis.

Useful marks:

Statue (grey stone figure) (about 9 cables NW of Mys Penay).

White monument (1¾ miles NW of Mys Penay).

Berths

Anchorages

7.138

1 The following anchorage areas are situated NW of Penayskiye Banki. Their limits and the position of anchor berths are shown on the chart:

No	*Position*	*Depth*	*Remarks*
414	44°41′N, 37°51′E	11–27 m, mud and shells	
413	44°43′N, 37°49′E	16–24 m, mud and shells	Mooring buoys
412	44°41′N, 37°49′E	22–24 m, mud	

Alongside berths

7.139

1 **Neftyanaya Gavan' Sheskharis,** the oil harbour, has eight berths. No 1 berth is 490 m in length with a depth alongside of 24·4 m and can accommodate tankers of up to 250 000 tonnes.

7.140

1 **Dry cargo harbour** has over 30 berths with depths alongside of up to 12·6 m. These berths can handle a wide variety of general and bulk cargoes.

Caution. A stranded wreck lies at the E end of No 7 B berth, between Shirokiy Pirs No 2 and Importnyy Pirs.

2 **Developments.** Works were in progress in 2001 and 2002 on new berths in the E of the dry cargo harbour.

Port services

Repairs

7.141

1 **Repairs** of all kinds can be carried out on vessels of up to 60 000 dwt.

Floating docks. There are two floating docks, the largest of which can accommodate vessels of 150 000 dwt.

Other facilities

7.142

1 Container handling facilities; compass adjustment; deratting; firefighting tugs; hospitals; inshore rescue boats; measured distance (7.104); oily waste disposal.

Supplies

7.143

1 Fuel**:** Most grades available with tankers supplied from shore and dry cargo vessels normally supplied by barge; fresh water at quays; provisions and technical supplies.

MYS IDOKOPAS TO MYS KODOSH

General information

Charts 3311, 3312 (see 1.16)

Topography

7.144

1 Between Mys Idokopas (44°25′N, 38°12′E) and Mys Kodosh (40 miles ESE) the shore is backed by cliffs, which in many places are intersected by gorges and gullies. Behind the coastal hills, forest covered mountains rise to heights of over 600 m within 5 miles of the coast.

Traffic regulations

7.145

1 **Areas in which anchoring, fishing, submarine and seabed operations are prohibited:**

Area No 652, as shown on the chart, surrounds the start of the gas pipeline which extends across the Black Sea from Arkhipo-Osipovka in Russia to Samsun in Turkey.

Principal marks

7.146

1 **Landmarks:**

Gora Tkhachegochuk (44°31′N, 38°17′E) (7.113).

Gora Gebeus (44°24′N, 38°38′E). There is a tooth-like projection on its summit, which has several peaks.

2 Gora Lysaya (44°15′N, 39°00′E) which is very prominent and from the WNW appears to have two summits, the E being the higher. From SW or SE it appears as a truncated cone with a broad base.

Chimney (44°15′N, 38°50′E).

Gora Tu (44°12′N, 38°53′E).

Tower (44°10′N, 38°58′E).

3 **Major lights:**

Dzhubga Light (white round metal hut with masonry base, 3 m in height) (44°18′N, 38°42′E).

Mys Gryaznova Light (beacon) (44°11′N, 38°53′E).

Kodoshskiy Light (white 8-sided tower and dwelling, 14 m in height) (44°06′N, 39°02′E).

Directions

(continued from 7.114)

7.147

1 From a position SW of Mys Idokopas (44°25′N, 38°12′E), a cape which slopes gently down to the sea, the coastal passage to Mys Kodosh proceeds generally ESE for 40 miles, in waters clear of charted dangers, passing (with positions from Mys Chugovkopas (44°22′N, 38°23′E)):

SSW of Mys Chugovkopas, which slopes gently to the sea, thence:

2 SSW of Dzhubga Light (14 miles ESE), thence:

SSW of Mys Gryaznova Light (24 miles ESE), thence:

W of Kodoshskiy Light (44°06′N, 39°02′E). The light stands on Mys Kodosh, a bluff headland covered in dense forest and terminating in reddish, rocky cliffs.

7.148

1 Useful marks:

Beacon (metal framework tower, 7 m in height) (44°24′·7N, 38°13′·3E).

Disused lighthouse (44°23′·4N, 38°20′·0E).

Leading lights (44°20′·3N, 38°36′·0E) marking a gas pipeline (7.145).

(Directions continue for Tuapse and approaches at 7.172, and for the coastal passages to Mys Uch-Dere at 7.180)

Anchorages and small harbours

Bukhta Pshada

7.149

1 **Anchorage** can be obtained off the mouth of Rika Pshada (44°23′N, 38°20′E) in depths of 22 m, mud and sand, with S extremity of land in the vicinity of Mys Chugovkopas (7.147) bearing 100°.

The entrance to the river valley can be identified by a broad light yellow shingle beach, a rounded hill on its W side and a hill terminating in a grey-coloured cliff on its E side.

Bukhta Vulan

7.150

1 **Anchorage** can be obtained abreast the mouth of the Rika Vulan (44°21′N, 38°32′E) in a depth of 27 m, mud and shells. Depths decrease gradually, there being depths of 9 m, 3 cables from the shore.

Caution. An outfall extends 1½ miles S from the river mouth and a gas pipeline extends about 6 miles WNW from a position 3 miles SE of the river mouth.

The mouth of the river, which is 5 cables wide, can be identified by Gora Gebeus (7.146), 5 miles ENE.

Small craft and sometimes lighters can enter the river.

Bukhta Dzhubga

7.151

1 Bukhta Dzhubga (44°19′N, 38°42′E) is a small bight at the mouth of the Rika Dzhubga, which enters the sea through a wide valley.

The harbour may be identified by Dzhubga Light (7.146), which stands about 5¾ cables ESE of the mouth of the Rika Dzhubga. There is a pier and regular sea communications with other Black Sea ports.

2 **Fog.** Between September and November inclusive, the river valley is frequently enveloped in thick fog.

Minor anchorages

7.152

1 **Bukhta Tenginskaya** (44°18′N, 38°45′E). Anchorage may be obtained 6 to 7 cables offshore, midway between the entrance points, in depths of 9 to 11 m, sand and rock.

Caution. Rocky reefs extend about 2¼ cables from each entrance point, which should be given a wide berth of at least 5 cables. Dzhubga Light is obscured over these dangers.

7.153

1 **Bukhta Mikhaylovskaya** (44°14′N, 38°50′E). A small cove at the mouth of Nechepsukho river which is entered between Mys Guavga and Mys Beskrovnyy, (8 cables SE).

Anchorage may be obtained 3 to 4 cables offshore in depths of 6 to 7 m, mud and sand. The holding ground is good, but space is restricted and it is open to the W and SW.

2 A reef extending about 1¾ cables from Mys Beskrovnyy shelters the SE of the cove, which is much frequented by fishing craft in the summer.

Directions. Vessels should approach the anchorage from the SW, passing midway between the entrance points.

Caution. Former Mined Area No 30, radius 1 mile, is centred 9 cables SSW of Mys Guavga.

Other name

7.154

1 Shirokiy, Mys (44°10′N, 38°58′E).

TUAPSE AND APPROACHES

General information

Chart 3312, with plan of Tuapse

Position

7.155

1 Tuapse is situated at the head of Bukhta Tuapse, an indentation on the coast between Mys Kodosh (44°06′N, 39°02′E) (7.147) and the mouth of Rika Tuapse (2 miles ESE).

The town of Tuapse stands on a flat topped hill which slopes down to the bay between Rika Tuapse and Rika Pauk (11¼ miles WNW).

Function

7.156

1 Tuapse, which in 2003 had an estimated population of 67 500, is a major petroleum port connected by pipeline to the Baku and other Caspian oilfields. It is the second largest Russian Black Sea port after Novorossiysk and a port of entry.

It is the centre of local administration and a holiday resort.

Main exports. Oil and oil products, coal and sugar; 12 million tonnes of oil and 4 million tonnes of dry cargo were handled in 2000.

Port limits

7.157

1 The port area of Tuapse, as shown on the chart, is bounded on the W and E by the meridians passing through the mouths of the Rika Pauk (39°03′·3E) and Rika Dederkoy (39°07′·6E), respectively, and to seaward by the 40 m depth contour.

Approaches

7.158

1 The track (Recommended routes Nos 76 and 14) for approaching Tuapse is shown on the chart.

Caution. The approach route passes through Former Mined Area No 31 (1.5) that extends up to 8 miles off the coast W of Mys Kodosh (7.147).

Traffic

7.159

1 In 2002 the port was used by 336 vessels with a total deadweight of 18 471 684 tonnes.

Port Authority

7.160

1 The Port of Tuapse Authority, 2 Maxim Gorky Street, 352800 Tuapse, Russia.

Limiting conditions

7.161

1 **Controlling depth.** Entrance channel, which is 10 m wide, dredged to 13·3 m (1997).

Maximum size of vessels. Dry cargo berths, length 220 m. Oil berths, length 250 m.

Density of water. 1·011 to 1·015 g/cm^3.

2 **Abnormal water levels.** Fluctuations of 0·4 to 0·6 m, which are in the main surges. Seiche fluctuations also occur. See 1.147 and 1.148.

Tyagun. See 1.152.

Ice. Harbour is ice-free.

Wind speed. Berthing is prohibited when wind speeds exceed Force 7.

Arrival information

Port radio

7.162

See *Admiralty List of Radio Signals Volume 6(3)* for details.

Notice of ETA

7.163

1 See *Admiralty List of Radio Signals Volume 6(3)* for details.

Anchorage

7.164

1 Foreign vessels normally anchor in Anchorage area No 418, the limits of which are shown on the chart. Russian vessels normally anchor in Anchorage area No 417, the limits of which are shown on the chart.

Pilots and tugs

7.165

1 **Pilotage** is compulsory for all foreign vessels and all Russian vessels exceeding 500 grt, unless holding an exemption certificate. Pilots normally embark 1½ miles S of the harbour entrance or in Anchorage areas Nos 417 and 418.

Pilots are available 24 hours a day and should be ordered at least 2 hours in advance.

7.166

1 **Tugs** are available and their use is compulsory. The number of tugs required will be decided by the Pilot.

Vessels are prohibited from using their own engines while being towed.

Regulations concerning entry

7.167

1 **Time of entry.** No restrictions.

Movement. The movement of vessels in the entrance channel and inner roadstead is regulated by the Port Director.

Speed. Moderate, sufficient to ensure manoeuvrability.

Reduced visibility. Except in exceptional circumstances entry is prohibited if the leading light-beacons are obscured.

Harbour

General layout

7.168

1 **Tuapse** has an outer and inner roadstead. The inner roadstead, which consists of the waters protected by the breakwaters, is divided into two by Shirokiy Mol, with Staryy Port (old port) on the NW side and Novyy Port (new port) on the SE.

The main oil and general cargo berths are situated in Novyy Port.

Climatic table

7.169

1 See 1.195 and 1.213.

Principal marks

7.170

1 **Landmarks:**

Mys Kodosh (44°06′N, 39°02′E).

Gora Pauk (peak, 254 m high) (44°07′N, 39°03′E), which is covered in trees.

Gora Lysaya (44°15′N 39°00′E).
Gora Bal'shoy Pseushkho (44°05′N, 39°17′E).

7.171

1 **Major light:**
Kodoshskiy Light (44°06′N, 39°02′E) (7.146).

Directions for entering harbour
(continued from 7.11 and 7.147)

Final approach route

7.172

1 **Novyy Port Leading Lights:**
Front light (white trapezium on metal framework structure, 17 m in height) (44°05′·7N, 39°04′·2E).
Rear light (similar structure, 11 m in height) (274 m from front light).

The alignment (006½°) of these lights, visible on the leading line only, leads N to the breakwater entrance, passing (with positions from front leading light):

2 W of Anchorage area No 418 (7.164) (1¼ miles SSE) and E of Anchorage area No 417 close SW of the entrance.
W of Tuapsinskiy Light-buoy (W cardinal) and the W end of Pervomayskiy Volnolom (8 cables S).

Caution. It was reported (1997) that Pervomayskiy Volnolom had been destroyed.

3 The inner roadstead is entered between lights marking the heads of Yugo-zapadnyy Volnolom (red metal framework tower, 6 m in height) and Yuzhnyy Mol (green metal framework tower, 6 m in height).

Berths

Staryy Port

7.173

1 There are 8 berths. The deepest has a depth alongside of 9·8 m.

Novyy Port

7.174

1 There are 6 tanker berths. The longest is 250 m with a depth alongside of 13 m.

There are four cargo berths on Shiroky Mol with a total length of 640 m and depths of 6·9 to 13·3 m alongside.

There are two passenger berths with depths of 5·5 to 8 m alongside.

Port services

Repairs

7.175

1 Repairs of all kinds can be carried out to vessels of up to 20 000 dwt.

Other facilities

7.176

1 Compass adjustment; deratting; hospitals; oily waste disposal.

Supplies

7.177

1 Fuel oil, gas oil, diesel oil and coal; fresh water at quays and boiler water by barge to outer roads; provisions.

BUKHTA TUAPSE TO MYS UCH-DERE

General information

Chart 3312

Topography

7.178

1 Between Bukhta Tuapse (44°05′N, 39°04′E) and Mys Uch-Dere (43°40′N, 39°37′E), 35 miles SE, the coast is intersected by numerous gorges and gullies.

For about 15 miles SE of the mouth of the Rika Tuapse, the coast is backed by cliffs, which in places are very white, moderately high and precipitous. Farther SE between Lazarevskiy (43°54′N, 39°20′E) and Golovinka (9 miles SE) the cliffs become reddish or orange in colour.

2 Behind the coastal hills, forest covered mountains rise to heights of over 1 000 m within 5 miles of the sea.

A number of holiday resorts are situated along this stretch of coast.

Principal marks

7.179

1 **Landmarks:**
Gora Bal'shoy Pseushkho (44°05′N, 39°17′E), the highest peak in the area. From the WNW it appears as a marquee with saddle, the E part being higher than the N part.
Gora Lysaya (43°58′N 39°19′E).

2 Gora Boztepe (43°58′N, 39°22′E). From the NW and the S two summits are visible, the N being the higher. From the SW it appears conical.
Utës Belyy Kamén (43°53′N, 39°27′E).
Gora Zhemsi (43°54′N, 39°29′E). From the W it appears as a sharp conical peak whilst from the SW it appears as a blunt summit with cleft. From the SE it appears conical with a rounded top in which there is a sharp cleft.

3 Gora Chugush (43°48′N, 40°12′E). The highest peak in the area with a sharply pointed and jagged summit which is covered in perpetual snow.

Major lights:
Lazarevskiy Light (white rectangle, black stripe on metal framework tower, 14 m in height) (43°54′N, 39°21′E). Fitted with radar reflector.
Sochinskiy Light (43°35′N, 39°43′E) (7.200).

Directions
(continued from 7.147)

7.180

1 From a position SW of Bukhta Tuapse (44°05′N, 39°04′E) the coastal passage to Mys Uch-Dere proceeds generally SE for 35 miles, in waters clear of charted dangers, passing (with positions from Lazarevskiy Light (7.179)):

2 SW of Ashe Light (on roof of building, 43 m in height) (6 miles NW). The light stands 1 mile NW of the mouth of the Rika Ashe, the valley of which is distinguished by its steep sides and great depth. Thence:
SW of Lazarevskiy (43°55′N, 39°20′E). This holiday resort lies NW of the mouth of Rika Psezuapse, and is visible from seaward. Thence:

3 SW of Mys Uch-Dere Light (red framework tower on 6-sided pedestal, 25 m in height) (18 miles SE). This light stands on a headland which rises in a gentle slope and is covered with tall trees. At the end of the headland there is a yellow cliff. A bank, with depths of less than 10 m, extends 3 cables offshore from this headland.

7.181

1 **Useful marks:**

Gora Autl' (43°56′N, 39°41′E), which has two large, bare, grey coloured summits, separated by a wide gorge.

Radio mast (red and white, with an elevation of 175 m) (43°47′N, 39°29′E) marked by red obstruction lights.

(Directions continue for Sochi and approaches at 7.201, and for the coastal passage to Mys Pitsunda at 7.209)

Anchorage and small harbour

Rika Psezuapse

7.182

1 **Anchorage** may be obtained abreast the mouth of Rika Psezuapse (43°54′N, 39°20′E) in depths of less than 22 m, mud. There is a sandy beach on the SE side of the river mouth and Gora Boztepe (7.179) and Lazarevskiy Light (7.179) are good marks for making the anchorage.

Loo

7.183

1 **Berth.** A jetty at Loo (43°42′N, 39°35′E) 153 m in length with a depth alongside of 4·4 m is used by passenger vessels of up 40 m in length with a draught of 3·5 m.

Other names

7.184

1 Golovinka (43°48′N, 39°28′E), a village.
Golubeva, Gora (44°00′N, 39°16′E).
Shakhe, Rika (43°47′N, 39°28′E).
Shepsi, Rika (44°02′N, 39°09′E).
Vardane (43°44′N, 39°33′E), a village.

SOCHI AND APPROACHES

General information

Chart 3312, plan of Sochi

Position

7.185

1 Sochi (43°35′N, 39°43′E) is situated at the mouth of the Rika Sochi, 7 miles SE of Mys Uch-Dere (7.180).

The town of Sochi stands on the banks of Rika Sochi and on a plateau SE of the river. The suburbs of the town stretch for a considerable distance along the coast in either direction.

Function

7.186

1 Sochi, which in 2003 had a population of about 370 000, is the largest health and summer resort on the Caucasian coast. It is the administrative centre of the district and a port of entry.

Port limits

7.187

1 The port area is contained by the arc of a circle, 1½ miles radius, centred on Sochinskiy Lighthouse.

Approaches

7.188

1 Sochi is approached by Recommended routes Nos 14 and 77 from the W and Recommended route No 78 from the S which are shown on the chart.

Traffic

7.189

1 In 2002 the port was used by 50 vessels with a total deadweight of 504 014 tonnes.

Port Authority

7.190

1 The Port of Sochi Authority, Voykov ul. 1, 35400 Port of Sochi, Kalmyk, Russia.

Limiting conditions

7.191

1 **Controlling depth.** Least depth in entrance channel 9·3 m (2000).

Maximum size of vessel. Draught 8 m, length 190 m, beam 25 m. Larger vessels may be permitted to enter harbour with the permission of the port authorities.

Ice. The harbour is free of ice.

Weather. Entry prohibited if wind speed exceeds 27 kn or visibility is less than 5 cables.

Arrival information

Traffic regulation post

7.192

1 The movement of all vessels within the port area is regulated by a traffic regulation post, which is situated at Berth 3.

Port radio

7.193

1 See *Admiralty List of Radio Signals Volume 6(3)* for details.

Notice of ETA

7.194

1 See *Admiralty List of Radio Signals Volume 6(3)* for details.

Outer anchorage

7.195

1 **Deep draught** vessels anchor in Anchorage area No 419, 6 cables WSW of the N mole. The limits of this area are shown on the chart. An outfall extends 1½ miles WSW from the shore about 2 cables N of the anchorage.

Depths in the anchorage area are 11 to 25 m, mud and sand.

Caution. The roadstead off Sochi is completely open from NW, through W to SW. Vessels are advised to proceed to sea when S winds get up.

Pilots and tugs

7.196

1 **Pilotage** is compulsory for all foreign vessels and all Russian vessels over 200 grt unless a passenger vessel on a regular run. Pilots normally embark 1 mile S of the harbour entrance. In the event of bad weather or restricted visibility, vessels should anchor or heave to until the pilot arrives.

Pilots are available 24 hours a day and should be ordered 2 hours in advance.

2 **Tugs** are available and should be ordered 1 hour in advance; their use is compulsory for vessels of 2000 grt or more. Vessels of 4000 grt or more are required to take 2 tugs.

Regulations concerning entry

7.197

1 **Entry** to the port area is prohibited until permission has been received from the traffic regulation post.

Time of entry. No restrictions.
Speed limit. Minimum to ensure manoeuvrability.

Harbour

General layout
7.198

1 Sochi has an inner and outer roadstead. The waters of the inner roadstead are protected by Severnyy Mol and Yuzhnyy Mol.

The main alongside berths lie on the inner side of Yuzhnyy Mol and on the E side of the harbour.

Signal station
7.199

1 A signal station is situated at Sochinskiy Lighthouse (7.200), from which visual signals are shown.

Principal marks
7.200

1 **Landmarks:**
Gora Bytkha (43°33′N, 39°47′E) (7.208).
Gora Akhun (43°33′N, 39°51′E) (7.208).
Marine station (spire) (43°34′·9N, 39°43′·2E).
Building (43°34′·3N, 39°43′·9E).

2 **Major light:**
Sochinskiy Light (white stone tower and dwelling, 15 m in height) (43°34′·7N, 39°43′·4E), which stands on the summit of a cliff.

Sochinskiy Light (7.200)

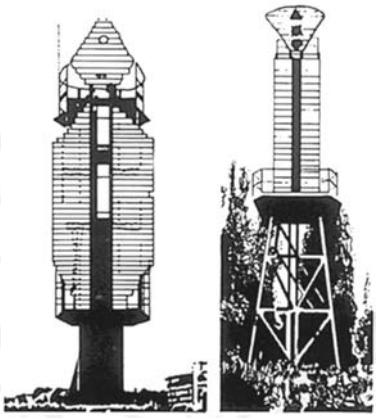
Directions for entering harbour
(continued from 7.11 and 7.180)

Outer approach routes
7.201

1 Recommended routes Nos 77 and 78, which form the W and SW approach and are shown on the chart, lead through waters clear of charted dangers to the seaward end of the final approach channel, approximately 3 cables S of the breakwater entrance.

Final approach channel
7.202

1 **Leading lights:**
Front light (white diamond on circle, black stripe, on metal mast, 10 m in height) (43°34′·9N, 39°43′·0E).
Rear light (white triangle point down, on rectangle, black stripe, on black metal framework structure, 17 m in height) (540 m from front light).



Leading Lights (7.202)

2 The alignment (356¾°) of these lights leads along the centre of the channel through the breakwater entrance.

The E and W limits of the channel are marked by the alignments (354¼° and 359¾°) of the rear leading light-beacon and 2 light-beacons (red triangles, points down, black metal masts, 8 m in height) standing on the base of Severnyy Mol close to the front leading light-beacon.

3 The inner harbour is entered between lights marking the heads of Severnyy Mol (white round concrete tower with gallery, 16 m in height) and Yuzhnyy Mol (green framework tower, 10 m in height).

Berths

Alongside berths
7.203

1 There are 10 berths for passenger vessels. The longest is 193 m with a least depth alongside of 8·1 m.

There are 5 other berths. The longest is 147 m with a depth alongside of 6·9 m.

Port services

Facilities
7.204

1 Compass adjustment; deratting (exemption certificates only); hospitals; oily waste disposal.

Supplies
7.205

1 Fuel; fresh water at most berths; provisions.

SOCHI TO REYD REDUT-KALE

SOCHI TO MYS PITSUNDA

General information

Chart 2236

Topography

7.206

1 From Sochi (43°35′N, 39°43′E) to Mys Pitsunda (38 miles SE) the coast forms two bights which are backed by forest covered mountains. These mountains recede inland in the S part of this stretch of coast.

2 A number of holiday resorts are situated between Sochi and Mys Pitsunda.

A deep cleft in the Gagry mountains (43°20′N, 40°16′E) is very prominent from seaward.

Traffic regulations

7.207

1 **Area into which entry is prohibited:**

Area BZYB, extending about 3½ miles to seaward, lies between 1 and 6 miles NW of Mys Pitsunda. See Appendix IV.

2 **Area periodically dangerous for navigation:**

Area GEORGIA lies off this coast as shown on the chart. See Appendix IV.

Principal marks

7.208

1 **Landmarks:**

Gora Bytkha (43°33′N, 39°47′E), which appears clear and pointed from the NW. From other directions it merges with Hora Akhun.

Gora Akhun (43°33′N, 39°51′E), which has a rounded outline and dark colouring with a grey circular stone tower on its summit. It is one of the best marks on this stretch of the coast.

Buildings at Kurortynyy Gorodok (43°28′N, 39°54′E).

Gora Dzykhra (43°33′N, 40°04′E).

Gora Akhakhcha (43°32′N, 40°09′E).

2 **Major lights:**

Sochinskiy Light (43°35′N, 39°43′E) (7.200).

Gagra Light (43°20′N, 40°13′E).

Mys Pitsunda Light (white framework tower with central column, 31 m in height) (43°09′N, 40°21′E).

Directions

(continued from 7.180)

7.209

1 From a position SW of Sochi (43°35′N, 39°43′E), the coastal passage to Mys Pitsunda proceeds generally SE for 37 miles in waters clear of charted dangers, passing (with positions from Leselidze Light (43°23′N, 40°01′E)):

2 SW of Mys Vidnyy (10½ miles NW). A wreck with a depth of 23 m over it, marked by a buoy (isolated danger), lies 1¾ miles SSW. Thence:

SW of Adler Light (white lantern, with red stripe and gallery, on metal framework tower, 7 m in height) (5 miles WNW). Fitted with radar reflector. Thence:

3 SW of Leselidze Light (lantern on white chimney with ladder and platform), 24 m in height standing at the W end of an extensive built-up area. Thence:

SW of Area BZYB (17 miles SE) (7.207), thence:

SW of Mys Pitsunda (20 miles SE), a low sandy promontory. A holiday resort in which there are a number of high buildings, is situated in the vicinity of this headland.

(Directions for the coastal passage to Mys Sokhumskiy continue at 7.217)

Anchorages and small harbours

Khosta

7.210

1 The health resort of Khosta (43°31′N, 39°52′E) is situated on either side of the mouth of Rika Khosta.

Shelter for small craft, from NW winds, may be found in Bukhta Khosta in depths of 6 m, fine sand.

Small craft with local knowledge may enter Rika Khosta in calm weather. There is a pier NW of the mouth of the river 147 m in length handling passenger vessels of up to 45 m in length and draught 3·5 m.

Kurgorodok

7.211

1 **Berth.** A jetty at Kurgorodok (43°28′N, 39°54′E) 130 m in length with a depth alongside of 4·4 m is used by passenger vessels of up 40 m in length with a draught of 3·5 m.

Adler

7.212

1 The health resort of Adler (43°26′N, 39°55′E) is situated on either side of the mouth of Rika Mzymta in an important agricultural area.

The harbour has an alongside berth handling cargo and passenger vessels of up to 50 m in length with a draught of 3·5 m.

Cables. Submarine cables are laid from Adler NW to Tuapse and SE to Sokhumi. Local knowledge is required to anchor off the town.

Climatic table. See 1.195 and 1.197.

Gagra

7.213

1 The harbour and resort of Gagra (43°20′N, 40°13′E) is situated at the mouths of the rivers Gagripshi and Tskherva.

Leading lights (43°19′·5N, 40°13′·6E) lead NNE into the harbour.

Anchorage off the town is restricted by depth. Vessels normally anchor about 3 cables offshore in depths of 36 m, ooze.

Facilities and supplies. Hospital; fresh provisions.

MYS PITSUNDA TO MYS SOKHUMSKIY

General information

Charts 2236, 3313

Topography

7.214

1 From Mys Pitsunda (43°09′N, 40°21′E) to Mys Sokhumskiy (30 miles ESE), the coast, which in places is low and well wooded, forms a series of bights which are backed by mountains rising to heights of over 2000 m.

A number of holiday resorts are situated on this stretch of coast.

Traffic regulations

7.215

1 **Area into which entry is prohibited:**

Area SOKHUMI, shown on the chart, extends about 1½ miles NW and 1¾ miles SE of Mys Sokhumskiy.

2 **Former mine danger area:**
An area for demagnetised vessels only exists between 4½ and 7½ miles off the coast W of Mys Souk-Su (7.217) See 1.5.
For Georgian Regulated Areas see Appendix IV.

Principal marks
7.216

1 **Landmarks:**
Gora Iverskaya (43°06′N, 40°49′E), which is covered in trees. From the SW it appears as a cupola and from the SE as a sharp cone. The remains of a Roman fort stand on the summit.
Gora Chumkuzba (43°09′N, 41°07′E), a conical shaped summit.
Two summits (centred 43°03′N, 41°03′E) (7.237).

2 **Major lights:**
Mys Pitsunda Light (43°09′N, 40°21′E) (7.208).
Bambora Light (lantern on roof of building, 35 m in height) (43°06′N, 40°36′E).
Mys Sokhumskiy Light (white round metal tower, 34 m in height) (42°59′N, 40°58′E).

Directions
(Continued from 7.209)

7.217

1 From a position SW of Mys Pitsunda (43°09′N, 40°21′E), the coastal passage to Mys Sokhumskiy proceeds generally ESE for 30 miles in waters clear of charted dangers, passing (with positions from Mys Pitsunda):
SSW of Mys Tolstyy (5½ miles E). A bluff promontory, on the E side of which there are some white cliffs, thence a plain covered with dense forest. For details of a former mine danger area see 7.215. Thence:

2 SSW of Bambora Light (12 miles ESE), which stands 1 mile E of Mys Souk-Su, a low headland covered with forest. This headland is fringed by an extensive rocky bank which extends 8 cables W, 7 cables SW and 4 cables S. Thence:

3 SSW of Mys Sokhumskiy Light (30 miles ESE). Mys Sokhumskiy is a low sandy promontory, covered in vegetation, which is steep-to, especially on its SE side.

Useful marks
7.218

1 Former monastery at Novyy Afon (43°05′N, 40°49′E) which is visible from 25 miles. Novyy Afon light (22 m in height) stands on the roof of this building.
Eshera Light (on roof of building, 27 m in height) (43°01′N, 40°56′E).
(Directions continue for Sokhumi at 7.238, and for the coastal passage to Reyd Redut-Kale at 7.249)

Anchorages and small harbours

Pitsunda
7.219

1 The roadstead is entered between Mys Pitsunda (7.209) and Mys Tolstyy (5½ miles E). It is open from SE to WSW through S.
Depths about 46 m between the entrance points, decrease fairly regularly towards the head of the roadstead.

2 **Dangers.** The NE shore of the roadstead is fringed by a bank, with depths of less than 10 m, which extends about 4 cables offshore. Sunken rocks lie up to 5 cables offshore in this part of the roadstead.
Cables. Submarine cables are landed on the N shore of the roadstead, 2 miles NE of Mys Pitsunda Light.
Anchorage. Local knowledge is required.

Roadstead south-east of Mys Tolstyy
7.220

1 The roadstead is entered between Mys Tolstyy (7.217) and Mys Souk-Su (5¾ miles ESE). The roadstead is open from SE through S to NW.
Depths of about 20 m between the entrance points, decrease regularly towards the shore. Bottom is sand and in greater depths, mud and sand.

2 **Dangers.** A bank, on which there are several rocks with depths of 3 to 7 m over them, extends 1½ miles SE of Mys Tolstyy. A similar bank, near the outer edge of which there are rocks with depths of 4·8 m over them, extends about 1 mile offshore up to 2½ miles NW of Mys Souk-Su.
Anchorage. Local knowledge is required.

Gudauta
7.221

1 **Anchorage** may be obtained in a bay off the town of Gudauta (43°06′N, 40°38′E), a resort about 2½ miles E of Mys Souk-Su (7.217). Foul ground extends 5 cables offshore.
Gudauty Light (red hut, white stripe on framework tower, red square, white stripe, 4 m in height) stands in the town.
Local knowledge is required.
Facilities. Alongside berth; hospital.

Psyrtskha
7.222

1 **Anchorage** may be obtained S of the former monastery at Novyy Afon (43°05′N, 40°49′E) (7.218), in a depth of 10 m.
Caution. Rocks with depths of 3 to 7 m over them lie within 5 cables of Mys Psyrtskha (43°05′·0N, 40°47′·5E).

SOKHUMI AND APPROACHES

General information

Chart 3313, with plan of Sokhumi

Position
7.223

1 Sokhumi (43°00′N, 41°01′E), stands at the head of Zaliv Sokhumi, a bay which is entered between Mys Sokhumskiy (7.217) and Mys Kodori (10 miles SSE).

Function
7.224

1 Sokhumi, which in 2003 had a population of about 110 000, is an important holiday resort which is regularly visited by tourist ships.
It is the administrative centre of the region.

Port limits
7.225

1 The port area lies within a line joining Mys Sokhumskiy and the mouth of the Reka Kelasuri (5 miles ESE).

Approaches
7.226

1 Sokhumi is approached by the SW and SS Recommended routes (7.238).

Traffic regulations

7.227

1 **Area into which entry is prohibited:**
Area SOKHUMI (7.215).
Area temporarily dangerous for navigation:
Area BIRTS lies in the SW approaches to Sokhumi.

Port Authority

7.228

1 The Port of Sokhumskiy Authority, Rustaveli ul. 66, Sokhumi, 384900, Georgia.

Traffic

7.229

1 In 2002 the port was used by 10 vessels with a total deadweight of 39 419 tonnes.

Limiting conditions

7.230

1 **Maximum size of vessel.** Length 190 m. Draught 7·8 m.
Ice. The harbour is ice free.
Wind. Entry is prohibited if wind speeds exceed 22 kn. Alongside berths and anchorage exposed to onshore winds.
Visibility. Entry is prohibited if visibility is less than 5 cables.

Arrival information

Port radio

7.231

1 See *Admiralty List of Radio Signals Volume 6(3)* for details.

Notice of ETA

7.232

1 See *Admiralty List of Radio Signals Volume 6(3)* for details.

Pilotage

7.233

1 Pilotage is compulsory. Pilots embark 1¼ miles S of the pier in the outer roadstead on the passenger pier leading line (352¾°).
Pilots should be ordered 24 hours in advance and confirmed 2 hours before arrival.

Regulations concerning entry

7.234

1 Vessels may not moor at the passenger piers in poor visibility when navigational lights and current indicators cannot be seen. In these conditions, vessels should anchor and disembark passengers in the outer roadstead. See 7.230.

Harbour

General layout

7.235

1 Sokumi consists of an outer roadstead, in which lies the anchorage area, and a number of alongside berths situated on the N shore of Zaliv Sokhumi. There are no breakwaters giving protection to these alongside berths.

Current

7.236

1 **Direction** of the current in the vicinity of the passenger pier is indicated:
By day. By the inclination of a spar-buoy lying off the head of the pier.
By night. Lights below the front passenger pier light-beacon.
Green light. E current.
Red light. W current.

2 **Caution.** The direction may change suddenly and may be different at the head and base of the pier.
Speed of the current is indicated by the angle of inclination of the spar-buoy as follows:

5° to 20°	Up to 0·2 kn.
20° to 30°	0·2 to 0·5 kn.
30° to 40°	0·5 to 0·8 kn.

3 **Caution.** Berthing at the quay is not recommended if the angle of inclination is more than 50°.

Principal marks

7.237

1 **Landmarks:**
Two summits. Gora Yashtukhorkhu (513 m) and Gora Byrts (593 m), (situated respectively 5 miles NNE and 5 miles NE of Mys Sokhumskiy).

2 Television mast (43°01′N, 41°02′E), which stands on the summit of Gora Sokhumi.
Tower (42°56′N, 41°05′E), which is conspicuous against a background of trees.
Major light:
Mys Sokhumskiy Light (42°59′N, 40°58′E) (7.216).

Directions

(continued from 7.11 and 7.217)

Outer approach route

7.238

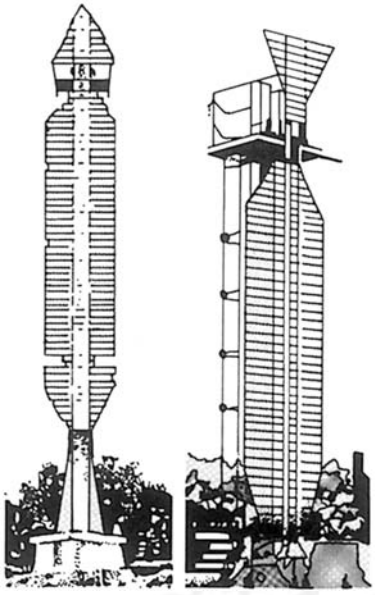
1 Sokhumi is approached by SW and SS Recommended routes, which lead clear of charted dangers and clear of Area SOKHUMI (7.215), as follows:
Recommended route SW, from position 42°49′N, 40°49′E and leading 047° for 13 miles to a position 2 miles S of the port.
Recommended route SS, from position 42°45′N, 41°04′E and leading 352¾° for 13 miles to a position 2 miles SSE of the port.

Anchorage in Sokhumskiy roads

7.239

1 **Sokhumskiy Leading Lights:**
Front light (red rectangle with triangle (point up), white stripe on metal post, concrete base, 11 m in height) (42°59′·6N, 41°01′·2E).
Rear light (red rectangle with triangle (point down), white stripe on metal post, 10 m in height) (95 m from front light).

2 The alignment (285½°) of these lights, visible on the leading line only, leads to the anchorage and also marks the S limit of the anchorage area.



Front *Rear*

Anchorage Leading Lights (7.239)

Caution. Care must be taken to anchor on or inshore of the leading line as depths increase rapidly to 130 m, 2 cables S of the leading line.

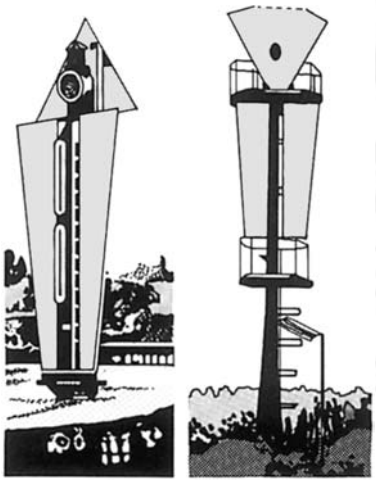
Alongside berths

7.240

1 **Leading lights:**

Front light (white shape on roof of building at head of passenger pier, 6 m in height) (42°59′·6N, 41°01′·5E).

Rear light (white shape on mast, 15 m in height) (120 m from front light).



Front *Rear*

Passenger Pier Leading Lights (7.240)

2 The alignment (352¾°) of these lights, visible on the leading line only, leads N to the passenger piers.

Caution. Care must be taken to establish direction and strength of current when berthing alongside. See 7.236.

Berths

Anchorage

7.241

1 In outer roads in the N part of Zaliv Sokhumi on, or to the N, of Sokhumskiy leading line (7.239) in depths 12 to 70 m, mud. See caution (7.239).

Alongside berths

7.242

There are six berths for passenger vessels with depths alongside of 1·8 to 7·5 m.

There are two cargo berths with depths alongside of 2·4 to 6·0 m.

Port services

Facilities

7.243

1 Deratting (exemption certificates only); hospitals.

Supplies

7.244

1 Fuel by barge; fresh water at passenger piers; provisions.

MYS KODORI TO REYD REDUT-KALE

General information

Charts 2236, 3313

Routes

7.245

1 From a position about 3½ miles S of Mys Sokhumskiy (7.217) Recommended routes GS–6 and GN–3 lead SSE and NNW.

Topography

7.246

1 Between Mys Kodori (42°50′N, 41°07′E) and Reyd Redut-Kale (42°16′N, 41°38′E), 40 miles SSE, the coastal range of the Caucasian mountains trends E and an extensive low lying plain, covered with primeval forest, extends SE within the coast. In places this plain is marshy.

Traffic regulations

7.247

1 **Areas periodically dangerous for navigation:**

Area GEORGIA. The E boundary of this area lies from 15 to 20 miles offshore between Mys Sokhumskiy and Mys Anaklia (42°23′N, 41°34′E) (7.249).

Area GAGIDA. Extends about 10 miles from the coast to about 14 miles N of Mys Anaklia.

Area ANAKLIYA. Extends about 7 miles from the coast to about 6 miles S of Mys Anaklia.

2 **Areas temporarily dangerous for navigation:**

Area KODORI lies between Mys Kodori (7.249) and Mys Iskuriya (7.248).

Area OCHAMCHIRA lies in the SW approaches to Ochamchira.

Principal marks

7.248

1 **Landmark:**

Gora Olen' (42°24′N, 41°51′E) (3.318), which is a good mark when viewed from S of Mys Iskuriya (42°48′N, 41°11′E).

Major light:

Mys Sokhumskiy Light (42°59′N, 40°58′E) (7.216).

Directions

(continued from 7.217)

7.249

1 From a position S of Mys Sokhumskiy Recommended route GS–6 leads SSE to Reyd Redut-Kale for about 40 miles in waters clear of charted dangers, passing (with positions from Ochamchirskiy Light (42°41′N, 41°29′E)):

2 WSW of Mys Kodori Light (white rectangle, black stripe on black metal framework tower, 20 m in height) (19 miles NW). Mys Kodori, which is low and tree covered, lies 2½ miles N of the delta of the Reka Kodori. This wide and rapid river flows through a gorge that is prominent from offshore when S of Mys Kodori. Thence:

WSW of Akhali-Kindgi Light (10½ miles NW), which stands SE of the village. Thence:

WSW of Ochamchirskiy Light (white framework tower, 18 m in height), thence:

3 WSW of Mys Anaklia Light (white triangle, black stripe on red square metal tower, 13 m in height) (17½ miles S), which stands on the wall of a ruined fort at the mouth of the Reka Inguri. Thence:

W of Kulevi Light (square tower on brown metal framework tower, 13 m in height) (42°16′N, 41°38′E), standing on the S side of the mouth of Reka Khobi, which flows into Reyd Redut-Kale.

Useful mark

7.250

1 Gagida Light (white rectangle on framework tower, 12 m in height) (42°31′N, 41°32′E).

(Directions continue for P'ot'i at 3.323, and for Bat'umi at 3.295)

Anchorages and small harbours

Zaliv Skurdzha

7.251

1 Zaliv Skurdzha is entered between Mys Iskuriya (42°48′N, 41°11′E) and Mys Tamysh, 6 miles E.

Danger. A group of dangerous rocks lies 9 cables SW of Akhali Kindgi Light (7.249).

Anchorage, with good holding ground and shelter from NW, can be obtained in convenient depths.

Ochamchira

7.252

1 **Position.** Portovyy Punkt Ochamchira lies 5 miles ESE of Mys Tamysh (42°44′N, 41°26′E) and consists of a basin built on the left bank of the mouth of Reka Dzhigmuri and linked to the sea by a channel 3·7 cables long and 50 m wide. This channel is subject to silting and local authorities must be consulted about current depths.

Function. Export of coal.

2 **Leading lights:**

Front light (white ball on white tripod, 10 m in height) (42°44·7′N, 41°25·5′E).

Rear light (similar structure, 15 m in height) (260 m from front)

The alignment (359½°) of these lights leads N along the axis of the main channel.

3 The entrance to Reka Dzhigmuri is protected by two moles; the E mole (42°44·4′N, 41°25·6′E) has a light-beacon at its head.

Reyd Ochamchira

7.253

1 **Anchorage** may be obtained abreast the town jetty of Ochamchira (42°42′N, 41°28′E). The anchorage is exposed to S and W winds and is dangerous during winter months.

Depths shoal gradually from 16 to 18 m 1½ miles offshore, to 9 m 6 cables offshore, ooze, mud and sand.

Reyd Anaklia

7.254

1 **Anchorage** is available in depths of 27 m, mud, about 1 mile off the mouth of the Reka Inguri, with Anaklia Light (42°24′N, 41°34′E) (7.249) bearing between 045° and 088°. The anchorage is open and unsafe with onshore winds and swell.

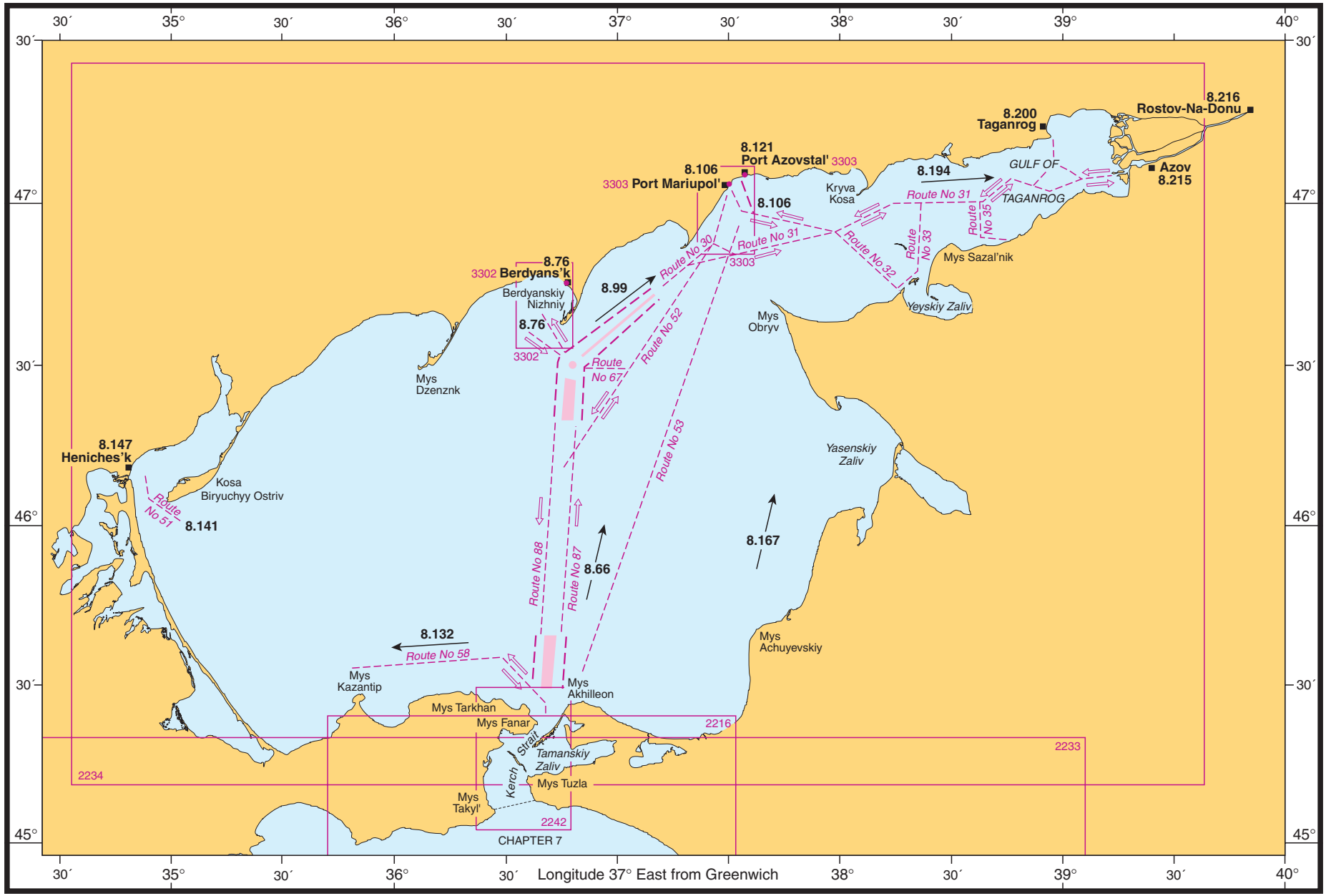
Caution. Vessels should not attempt to anchor S of the river mouth as depths there are too great.

Reyd Redut-Kale

7.255

1 **Anchorage** may be obtained in depths of 22 m, mud, 1½ miles off the mouth of the Reka Khobi (42°17′N, 41°38′E) with Mys Anaklia bearing 343° and Gora Olen' (3.318) bearing 053°.

Current. An almost constant current sets NNW at a rate of up to 1½ kn. Prolonged winds may increase this to 2 kn. Local knowledge is essential.



December 2003

CHAPTER 8

KERCH STRAIT AND SEA OF AZOV

GENERAL INFORMATION

Charts 2234, 2216, 2242

Scope of the chapter

8.1

1 The area covered by this chapter includes Kerch Strait and its S approaches, Kerch-Yenikal'skiy Kanal and Sea of Azov.

Topography

8.2

1 Sea of Azov, known to the Russians as Azovskoye More, which is joined to the Black Sea by Kerch Strait, a strait that separates the Kerch and Taman peninsulas, has an area of about 38 000 km^2. It has a maximum depth of 14 m and is the world's shallowest sea.

The districts bordering this sea are remarkable for their agricultural and mineral wealth. There are large coal and iron deposits in the basin of Reka Don (8.203) and oil reserves in the basin of Reka Kuban'.

2 The waters of Sea of Azov have a greenish muddy colour, and are very opaque on account of the large amount of silt carried down by the rivers which flow into the sea. There are also large quantities of plankton and by the end of the summer, the surface becomes almost completely covered with a greenish brown seaweed.

Ukraine – navigational information

8.3

1 **Caution:** Owing to insufficient information it is not always possible to ensure that charts covering Ukrainian waters are completely up to date for new dangers or changes to aids to navigation. Mariners are therefore advised to exercise particular caution when navigating in Ukrainian waters.

Ports

8.4

1 The following ports, which are open to international trade, are described in this chapter:

Port Kavkaz (45°20′N, 36°40′E) (8.57).
Kerch' (45°22′N, 36°29′E) (8.59).
Berdyans'k (46°45′N, 36°46′E) (8.76).
Port Mariupol' (47°03′N, 37°30′E) (8.106).
Port Temryuk (45°19′N, 37°23′E) (8.164).
Yeysk (46°44′N, 38°16′E) (8.192).
Taganrog (47°12′N, 38°57′E) (8.200).
Azov (47°07′N, 39°25′E) (8.215).
Rostov-Na-Donu (8.216).

Pilotage

8.5

1 Pilotage is compulsory, under Ukrainian regulations, for all vessels in the Kerch-Yenikal'skiy Kanal, Kerch Strait and to and from the ports of Berdyans'k (8.76) and Mariupol (8.106) and includes entry to, and departure from, all Ukrainian ports within Sea of Azov.

2 Pilotage is compulsory, under Russian Federation regulations, between Kerch Strait and all Russian Federation ports within Sea of Azov.

The pilotage service for Kerch-Yenikal'skiy Kanal and Sea of Azov is based on the port of Kerch' (45°22′N, 36°29′E) which is the base of the Eastern Black Sea Pilotage District and provides pilots for all vessels proceeding from the Black Sea to ports in Sea of Azov.

Navigational aids in winter

8.6

1 See 1.18.

Pollution

8.7

1 See 1.31.

Natural conditions in Sea of Azov

8.8

1 **Currents** in Sea of Azov are due to the combined effects of two independent causes: the discharge from Reka Don into Gulf of Taganrog and the action of the wind.

2 The outflow from Reka Don, issuing from Gulf of Taganrog, travels W along the N coast, trends S along Kosa Arabats'ka Strilka (8.141) and is then diverted E along the S shore, where part of it is deflected through Kerch Strait into the Black Sea. Beyond Kerch Strait the current trends NE and N, strengthened by the discharge from Reka Kuban'. Around the circumference of the sea, clockwise eddies, formed within prominent points, produce the characteristically shaped spits and flats.

3 The prevailing winds in Sea of Azov are mostly NE and SW, their influence upon the currents being greater than that of the Reka Don outflow. With a NE wind, a SW current occupies most of the sea and the NE current is squeezed against the E coast. A SW wind produces a similar current in the opposite direction, thus enhancing the anti-clockwise circulation.

4 The mean current speed in Sea of Azov is less than ½ kn, but the current caused by winds, especially after gales, can attain speeds of 1½ to 2 kn.

8.9

1 **Ice.** Between mid December and late February, navigation in Sea of Azov is often greatly hindered by ice and in many cases can only be maintained with the aid of icebreakers. Navigation is likely to be most difficult off the N shore, the entrance to Gulf of Taganrog, and also with prolonged N or NE winds, in the approach to Kerch Strait. See 1.158 and diagrams (1.158.1 and 2).

8.10

1 **Water level.** The water level in Sea of Azov is subject to considerable change. The water level is highest in June and lowest in the autumn. The mean yearly range is between 0·25 and 0·5 m, but these figures are likely to be exceeded in the gulf and narrow inlets.

KERCH STRAIT

GENERAL INFORMATION

Charts 2234, 2216, 2242

Route and topography

8.11

1 Kerch Strait, known to the Russians as Kerchens'kyy Pivostriv, separates the E part of Krymsk'yy Pivostriv (Crimea) from Tamanskiy Poluostrov and connects the Black Sea with Sea of Azov. The strait varies much in width and is encumbered by extensive shallow banks and shoals, through which the Kerch-Yenikal'skiy Kanal has been dredged.

Limiting depths

8.12

1 The limiting depths in Kerch Strait are those in Kerch-Yenikal'skiy Kanal. See 8.41.

Railway ferry

8.13

1 Railway ferry crossing area (45°21′N, 36°39′E). See 8.44.

Principal marks

8.14

1 The following peaks are visible from all parts of the strait:

Hora Mitridat (45°21′N, 36°28′E) (8.47).
Gora Gorelaya (45°20′N, 36°49′E) (8.47).
Hora Khrony (45°23′N, 36°36′E) (8.47).

Pilotage

8.15

1 North-bound, Pilots embark at No 1 Light-buoy (W cardinal) (45°12′N, 36°28′E), close S of the entrance to the Kerch-Yenikal'skiy Kanal.

South-bound, Pilots board in position 45°27′·5N, 36°41′·5E.

Ship Movement Control Service.

8.16

1 **Location.** A Ship Movement Control Service is controlled from the Mys Zmeynyy Control and Radar Centre (45°20′·8N, 36°32′·7E) that controls and coordinates shipping movements in the area between Anchorage area No 450 (45°11′N, 36°29′E) and Anchorage areas No 453 (45°29′N, 36°38′E) and No 454 (45°29′N, 36°45′E).

2 **GMDSS.** A GMDSS station is located within the Mys Zmeynyy Control and Radar Centre.

Communications. All vessels approaching this area must keep constant watch on VHF. See *Admiralty List of Radio Signals Volume 6(3)* for details.

Regulations for navigation of Kerch Strait

8.17

1 The following instructions are extracts from the Regulations of the Port of Kerch' (1978 edition):

Notice of ETA. See *Admiralty List of Radio Signals Volume 6(3)* for details.

No vessels may enter the area (8.16) controlled under the Traffic Management System without permission.

This permission is in force for 30 minutes, after which time, permission must be requested again.

2 The passage draught allowed for the navigation of Kerch Strait will be promulgated by the Harbour Master at Kerch'.

Speed limitations:

Vessels with draught of less than 5 m—11 kn.
Other vessels—9 kn.

except between the meridians 36°35′·0E and 36°37′·5E, where the speed of ships must not exceed 6 kn.

3 Vessels with a draught of 7·5 m and above must carry lights and shapes as prescribed by Rule 28 of *The International Rules for Preventing Collisions at Sea (1972).*

During fog, haze and falling snow, navigation in the channel is prohibited except where carried out with permission under the Ship Movement Control Service.

4 Vessels leaving lateral channels to join the main channel, and leaving the main channel to join lateral channels, must give way to vessels proceeding along the main channel.

Overtaking of ships in the channel is permitted.

Right of way at canal turns:

Vessels with a draught of less than 7·5 m give way to other vessels.

5 If both vessels have a draught of 7·5 m or more, the vessel making a turn to port has right of way.

Vessels giving way must remain 5 cables from the turn until the other vessel is clear.

Natural conditions

8.18

1 **Ice** appears almost every year in Kerch Strait in the second half of December. The ice cover is often broken up under the influence of the current and winds. In very severe winters when the winds are from the NW, the passage is covered by relatively firm ice. Ice normally clears in the second half of March.

2 Ice from Sea of Azov usually enters the passage in masses and piles up on the Kosa Chushka (45°23′N, 36°44′E) (8.52) and Kosa Tuzla (45°16′N, 36°33′E). A considerable amount of the ice penetrates into the S part of the strait.

8.19

1 **Currents** in Kerch Strait depend mainly on the winds and to a lesser extent on the flow of water from Sea of Azov. A S current is most common particularly when winds are from the N. A N current from the Black Sea is less common and usually occurs when the winds are S.

2 Mean speed of currents is between 0·1 and 0·5 kn, but in the narrows when there is a strong wind, the strength of the current may reach 3 kn. The strongest and best established current has been observed between Mys Fanar (45°23′N, 36°39′E) (8.47) and Kosa Chushka and between Mys Pavlovskyy (45°18′N, 36°29′E) (8.47) and Kosa Tuzla, 2 miles SE.

8.20

1 **Water level.** Strong NE winds lower, and SW winds raise the level of the water in the strait. A difference of as much as 1 m has been observed in this level.

8.21

1 **Local magnetic anomaly** is reported to exist in the strait.

SOUTH APPROACHES TO KERCH STRAIT

General information

Charts 2233, 2216, 2242

Route

8.22

1 Recommended routes Nos 85 and 86 lead N and S, respectively, between their junctions with routes Nos 83 and 84 (44°10′N, 36°30′E) and the S end of the traffic separation scheme (44°50′N, 36°30′E) (8.25) as shown on the chart.

Topography

8.23

1 From Mys Opuk (45°02′N, 36°14′E) (7.56) to Mys Takyl' (11 miles ENE), the coast, which is backed by fairly high uplands is marked by several landslips that are reddish or ash grey in colour.

From Mys Zheleznyy Rog (45°07′N, 36°44′E) (8.28) to Mys Panagiya (5 miles WNW) the coast is backed by uplands rising to heights of over 100 m.

Fish haven

8.24

1 A fish haven, the limits of which is shown on the chart, is centred 1¼ miles SSE of Mys Takyl'. Buoys (special) mark the limits.

Traffic regulations

8.25

1 **Traffic separation scheme,** which is shown on the chart, is situated at the N end of Recommended routes Nos 85 and 86 at the entrance of Kerch Strait. This scheme is IMO-adopted and Rule 10 of the *International Regulations for preventing Collisions at Sea (1972)* apply.

2 **Area into which entry is prohibited:**

The E limit of Prohibited Area No 115 (7.14) lies close W of the traffic separation scheme.

Areas periodically dangerous for navigation:

The E limit of Area 731 lies 1½ miles W of Recommended route No 86 between the parallel of 44°22′N and the S end of the traffic separation scheme. See Appendix II.

Natural conditions

8.26

1 NE winds prevail throughout the greater part of the year, giving place in summer to SW winds which blow only during the day. Gales are mainly NE and are most frequent in autumn and winter.

Fogs are most frequent during the spring, especially during May.

Principal marks

8.27

1 **Landmarks:**

Mys Takyl' (45°06′N, 36°27′E). A high rounded bluff with cliffs.

Hora Khoruchuoba (45°06′N, 36°24′E).

Gora Zelenskogo (45°09′N, 36°42′E).

Major lights:

Kyz-Aul'skiy Light (white 8-sided tower, black stripes, 31 m in height) (45°04′N, 36°22′E).

2 Takil'skiy Light (black square metal framework tower, 11 m in height) (45°06′N, 36°27′E).

Mys Zheleznyy Rog Light (black daymark on metal framework tower, 16 m in height) (45°07′N, 36°44′E).

Directions

(continued from 7.10 and 7.16)

8.28

1 **Initial position.** 44°10′N, 36°30′E.

Recommended route No 85 and the traffic separation scheme lead N for 56 miles to the S entrance of Kerch Strait, passing (with positions from Takil'skiy Light (8.27)):

E of Area No 731 (8.25), thence:

E of a light-buoy (S cardinal) (16 miles SSE) which marks the S end of the traffic separation scheme. Thence:

2 E of Prohibited Area No 115 (7.14), thence:

E of a light-buoy (S cardinal) (5½ miles S) which marks the S limit of Banka Anisimova. Thence:

E of Banka Kyz-Aul'skaya (4 miles SW), thence:.

E of Mys Kyz-Aul (4 miles SW). The point is formed by high, light coloured landslip. Attention is drawn to unmarked dangerous rocks and a wreck which lie 2½ miles E of Mys Kyz-Aul Light. Thence:

3 W of a light-buoy (S cardinal) (10½ mile ESE) which marks the S extremity of a number of banks that extend up to 5 miles SW of Mys Zheleznyy Rog. Thence:

W of Mys Zheleznyy Rog (12 miles E), a broad bluff reddish coloured headland. Thence:

4 W of 3 platforms (10 miles E). In 2002 works were in progress in this area on the construction of a liquid ammonia transhipment terminal. Thence:

E of Mys Takyl' (8.27). This headland is fringed by a rocky bank, with depths of less than 2 m over it, which extends 5 cables E and 1 mile SSE. The E side of the bank is marked by a light-buoy (E cardinal). A dangerous wreck lies 5 cables ESE of the light-buoy. Thence:

5 Close W of a wreck with a depth of 12 m over it (2¾ miles E), which lies close to the E edge of the TSS. A dangerous wreck lies 3 cables farther E. Thence:

W of Mys Panagiya (8 miles ENE); a light (red metal column, 8 m in height) stands on this headland. Rif Trutayeva, on which there are numerous wrecks and obstructions, extends 2 miles W from the headland and is marked by a buoy (W cardinal). Thence:

6 E of a light-buoy (N cardinal) (2 miles ENE) which marks the N end of the traffic separation scheme.

S-bound traffic follows the traffic separation scheme passing W of the light-buoys marking its ends and then follows Recommended route No 86, 3 miles W of Recommended route No 85.

(Directions for the S part of Kerch Strait continue at 8.37)

SOUTH PART OF KERCH STRAIT

General information

Chart 2242

Route

8.29

1 Recommended route No 12, which is shown on the chart, consists of two legs which lead NNW and then N from the N end of the traffic separation scheme (45°07′N, 36°30′E) to the S entrance of the Kerch-Yenikal'skiy Kanal (45°12′N, 36°28′E), a distance of 5½ miles.

Topography

8.30

1 The coast on either side of the S part of Kerch Strait is high, with cliffs, The W side is reddish in colour and indented by two valley.

Dangers. Both shores are encumbered by shallow banks and obstructions, the details of which can best be seen on the chart.

Fish havens

8.31

1 Fish havens, the limits of which are shown on the chart, are situated 2 and 5 miles N of Mys Takyl'. Buoys (special) mark part of the limits of these havens.

Pilotage

8.32

1 See 8.5.

Traffic regulations

8.33

1 Ship movement control service controls the movement of vessels in the S part of Kerch Strait. See 8.16.

Anchorages

8.34

1 Two anchorage areas are situated in the S part of Kerch Strait (with positions from Mys Takyl' (45°06′N, 36°27′E):

Area No 451 (5½ miles NE), for large vessels and vessels with dangerous cargoes.

Area No 450 (5 miles NNE).

Natural conditions

8.35

1 See 8.8.

Principal marks

8.36

1 **Landmarks:**

Hill (58 m high) (45°10′N, 36°25′E) standing 2 cables SW of Mys Malyy, which is a cliff between a valley and a sandy beach.

Lattice tower (45°12′N, 36°36′E) standing close NE of Mys Tuzla, a low bluff point.

2 Gora Lysaya (45°13′N, 36°42′E). The N face appears as a blunt headland with a white cliff face.

Major lights:

Takil'skiy Light (45°06′N, 36°27′E) (8.27).

Burunskyy Directional Light (45°14′N, 36°24′E) (8.37).

Pavlovskyy Leading Lights (45°18′N, 36°27′E) (8.37).

Directions

(continued from 8.28)

8.37

1 **Initial position.** In the vicinity of the light-buoy (45°07′N, 36°30′E) marking the N end of the traffic separation scheme.

Burunskyy Directional Light:

(White 8-sided stone tower, 11 m in height) (45°14′N, 36°24′E).

2 The line of bearing (329°) of this light leads NW for 2½ miles to a buoy (safe water), passing NE of a charted obstruction with a depth of 6·2 m over it.

Pavlovskyy Leading Lights:

Front light (white 8-sided stone tower, 17 m in height) (45°18′N, 36°27′E).

Rear light (black square, on metal framework tower, 15 m in height) (640 m from front light).

3 The alignment (356½°) of these lights leads N along the recommended track for 2¾ miles to the S entrance of Kerch-Yenikal'skiy Kanal at Nos 1 and 2 Light-buoys (W cardinal and port hand, respectively) and the pilot boarding point, passing:

Between two obstructions, 3 cables apart, with charted depths of 10 and 9·2 m, respectively.

W of Anchorage area No 450 (8.34).

4 **Caution.** There are many dangers in this part of Kerch Strait and deep draught vessels must adhere closely to the leading line. Owing to the short distance between the light-structures and the great difference of their elevation, this leading line is not sensitive, and care should be taken when using it.

(Direction for the Kerch-Yenikal'skiy Kanal continue at 8.50)

KERCH-YENIKAL'SKIY KANAL

General information

Chart 2242 (see 1.16)

Route

8.38

1 The Kerch-Yenikal'skiy Kanal leads generally NE along Recommended route No 12 for 18½ miles through a buoyed channel from Nos 1 and 2 Light-buoys (45°12′N, 36°28′E) to Nos 51 and 52 Light-buoys (45°26′N, 36°41′E).

The canal is divided into four reaches named, from S to N, Pavlovskoye, Burunskoye, Yenikal'skoye and Chushkinskoye.

Topography

8.39

1 The coast on both sides of the canal is generally high. On the W side, the coast is indented by a number of bays and inlets. On the E side, sandy spits, which are low lying, extend from the coast.

Dangers. For almost the entire length of the canal. there are a large number of dangers close to its edge.

Buoyage

8.40

1 The canal is marked by pairs of buoys and light-buoys which are numbered consecutively from the S entrance. The majority of these marks are lateral buoys, but cardinal marks indicate the end of each reach.

Least depth and width

8.41

1 Least depths in the canal, which is surveyed frequently, are promulgated about twice a year. The most recent information available (2001) gives the following least depths and widths. Latest depths should be obtained from local authorities.

Reach	*Least depth (m)*	*Width (m)*
Pavloskoye 45°15′N, 36°27′E	8·3	120
Burunskoye 45°17′N, 36°28′E	8·3	120
Yenikal'skoye 45°20′N, 36°35′E	8·0	120
Chushkinskoye 45°22′N, 36°39′E	8·0	120

Pilotage

8.42

1 See 8.5.

Traffic regulations

8.43

1 **Areas which should be avoided:**

Area No 850 situated 2½ miles WSW of Mys Pavlovskyy (8.47).

Area No 851 situated 1¼ miles WSW of Mys Pavlovskyy (8.47).

Area No 852 extending SE from Port Krym (45°22′N, 36°38′E).

2 Area No 853 extending SE from Mys Yenykale (45°21′N, 36°36′E) (8.47).

See Appendix II.

Rail ferry crossing zone

8.44

1 A rail ferry crosses Kerch Strait between Port Krym (45°22′N, 36°38′E) and Port Kavkaz (2½ miles SE). The following regulations apply in the railway ferry crossing zone, an area about 1 mile wide, the position of which is shown on the chart:

All vessels, irrespective of draught, must navigate within the limits of the canal and keep not less than 5 cables apart.

2 Anchoring and fishing are prohibited within the ferry zone.

Signals. Vessels with a draught of more than 4 m or length of 90 m must exhibit in addition to the usual signals:

By day—Black ball

By night—All round red light visible 3 miles.

3 Ferries exhibit 2 all round green lights, vertically disposed.

Right of way. Ferries give way to vessels showing a black ball or red light. Smaller vessels give way to ferries except in limited visibility, when ferries give way to all vessels navigating in the canal.

Regulations governing navigation of canal

8.45

1 See 8.17.

Natural conditions

8.46

1 See 8.8.

Principal marks

8.47

1 **Landmarks:**

Monument (45°14′N, 36°25′E).

Mys Pavlovskyy (45°18′N, 36°29′E), which is bluff and rises in whitish cliffs that are visible from S entrance of strait.

Obelisk (45°18′N, 36°28′E), which is white and square and is surmounted by a spire 5 m in height. It stands on a burial ground.

2 Tower (45°19′N, 36°29′E).

Mys Belyy (45°19′N, 36°30′E). A cliff face composed of white rocks that are conspicuous from S.

Hora Mitridat (45°21′N, 36°28′E). An obelisk war memorial stands on the summit above a conspicuous building with a glass facade.

Tower (45°21′N, 36°33′E).

Tower (45°21′N, 36°32′E).

3 Monument (45°21′N, 36°36′E).

Mys Yenykale (45°21′N, 36°36′E), a gentle sloping headland. The village of Sipyagino and the walls of an ancient ruined fortress stand within the headland.

Gora Gorelaya (Chart 2216) (45°20′N, 36°49′E), conical in shape and the W peak of a range of hills that extends E.

4 Obelisk (45°23′N, 36°38′E).

Mys Fanar (45°23′N, 36°39′E), a steep rocky point that rises to a hill about 4 cables WNW which from a distance appears as an island. Yenykal'skyy Light stands on the hill. The S side of the cape rises from the plain in a steep white bluff.

5 Hora Khrony (45°23′N, 36°36′E) which rises from the E end of a ridge and is visible from the S entrance of the strait.

Mys Akhilleon (45°27′N, 36°47′E), a headland with cliffs that are coloured reddish grey in places.

8.48

1 **Major lights:**

Pavlovskyy Leading Lights (45°18′N, 36°27′E) (8.37).

Churubashskyy Light (41°15′N, 36°18′E) (8.53) (Chart 2216).

Tamanskiy Leading Lights (45°23′N, 36°44′E) (8.53).

Yenykal'skyy Light (white round stone tower, 27 m in height) (45°23′N, 36°38′E).

Akhilleonskiy Light (black square on framework tower, 20 m in height) (45°26′N, 36°47′E).

Other navigational aids

8.49

1 **DGPS:**

Yenykal'skyy Light — as above.

See *Admiralty List of Radio Signals Volume 2* for details.

Directions

(continued from 8.37)

8.50

1 **Initial position.** 45°12′N, 36°28′E, S of No 1 Light-buoy (W cardinal).

Routes. Vessels with draught over 4·5 m follow the buoyed channel throughout. Vessels with a lesser draught follow Recommended route No 52, partially marked by light-buoys and shown on the chart, for the first two reaches.

Pavlovskoye Koleno

8.51

1 **Pavlovskyy Leading Lights** (8.37). The alignment (356½°) of these lights leads N for 4½ miles from No 1 Light-buoy (W cardinal) to No 9 Light-buoy (W cardinal), passing (with positions from Mys Belyy (8.47)):

E of Mys Kamysh-Burnu (5½ miles SSW), a bluff similar in appearance to Mys Malyy (8.36) which lies at the NE end of some hills that extend inland NNW. A sandy plain lies at the N of this headland.

2 Thence the track alters NE onto the Burunskyy Leading Lights.

Caution. Close S of No 6 Light-buoy (port hand), the channel passes 1½ cables E of an obstruction with a depth of 3·6 m over it. See also 8.37 concerning the sensitivity of the transit.

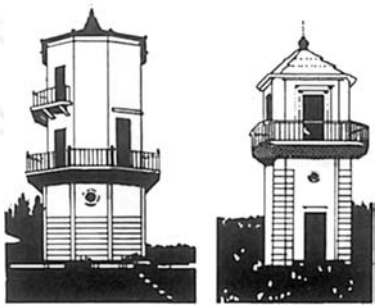
Burunskoye Koleno

8.52

1 **Burunskyy Leading Lights:**

Front light (white 8-sided stone tower, 16 m in height) (45°14′N, 36°25′E).

Rear light (8.37) (7 cables from front light).



Front *Rear*

Burunskyy Leading Lights (8.52)

The alignment (217½°), astern, of these lights, visible on the leading line only, leads NE for 2 miles from No 11

Light-buoy (starboard hand) to No 19 Light-buoy (N cardinal), passing (with positions from Mys Belyy (45°19′N, 36°30′E)):

2 SE of the entrance to Bukhta Kamysh-Burunskaya (3 miles SW) (8.56), thence:

NW of Kosa Tuzla (3 miles SE). A low sandy island which, due to refraction, can often be seen from the S entrance of Kerch Strait. A number of conspicuous buildings stand on the island.

3 Thence the track alters ENE onto the alignment of Kamysh-Burunskyy and Churubashskyy Lights, and the Tamanskiy Leading Lights.

Cautions. The outline of Kosa Tuzla, especially the position of its NW and SE ends, is subject to considerable change and should not be used for taking bearings.

Close S of No 17 Buoy, the channel passes 1 cable NW of a wreck with a depth of 4·6 m over it.

Yenikal'skoye Koleno

8.53

1 The start of Yenikal'skoye Koleno is marked by the alignment (355½°) of Pavlovskiye Sekushchiye Leading Lights:

Front light (black triangle on white square, black stripe, 6 m in height) (45°18′·5N, 36°29′·1E).

Rear light (white rectangle, black stripe, 7 m in height) (590 m from front light).

2 **Leading lights:**

Kamysh-Burunskyy Light (white round concrete tower, 32 m in height) (45°17′N, 36°25′E).

Churubashskyy Light (black rectangle, red stripe on framework tower, 31 m in height) (5 miles WSW of front light.

3 **Tamanskiy Leading Lights:**

Front light (white rectangle, red stripe on metal framework tower, 21 m in height) (45°23′N, 36°44′E).

Rear light (black rectangle, red stripe on metal framework tower, 43 m in height) (3¾ miles ENE of front light) (Chart 2216).

4 The alignment (246¾°), astern, of the Kamysh-Burunskyy and Churubashskyy Lights and the alignment (066¾°) of the Tamanskiy Leading Lights, visible on the leading line only, leads ENE for 8 miles from No 19 Light-buoy (N cardinal) to No 41 Light-buoy (N cardinal), passing (with positions from Mys Yenykale (45°21′N, 36°36′E)):

5 NW of No 19 Light-buoy (N cardinal) (5¾ miles SW). This light-buoy marks the NW extremity of a flat that extends NW from Kosa Tuzla. Thence:

NW of Anchorage area No 452 (5 miles SW), thence:

SE of Mys Zmeynyy (2½ miles W), which may be identified by a high rock situated near it. Thence:

6 NW of No 35 Buoy (starboard hand) which marks the end of a row of submerged piles (the underwater remains of a ruined railway bridge and aerial ropeway) which extends NW from the SW extremity of Kosa Chushka. Thence:

NW of the SW part of Kosa Chushka, a sandy spit which runs for 10 miles SW from Mys Akhilleon (45°26′N, 36°47′E) (8.47).

7 Thence the track alters NNE onto the Chushkinskiy Leading Lights.

Cautions. Yenikal'skoye Koleno passes through shallow water, particularly in the vicinity of Tserkovnyye Bankı (45°21′N, 36°36′E) and through waters dangerous to navigation at its NE end. Vessels must therefore adhere closely to the leading line when navigating this reach of the canal. The fairway is obstructed in places by the anchors of some of the channel buoys.

8 When between Nos 20 and 22 Buoys, the tower of Kamysh-Burunskyy Light obscures the tower of Churubashskyy Light.

Railway ferry crossing zone. See 8.44.

Chushkinskoye Koleno

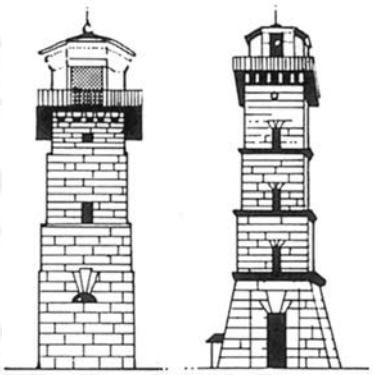
8.54

1 **Initial position.** 45°21′N, 36°40′E.

Chushkinskiy Leading Lights:

Front light (white stone tower, 18 m in height) (45°19′N, 36°39′E).

Rear light (similar structure, 24 m in height) (6 cables from front light).



Chushkinskiy Leading Lights (8.54)

2 The alignment (194¼°), astern, of these lights leads NNE for 6 miles from close S of No 43 Light-buoy (W cardinal) to the pilot boarding position situated in the N entrance of Kerch Strait, passing (with positions from Yenykal'skyy Light (45°23′N, 36°38′E) (8.48)):

ESE of Mys Fanar (4 cables SE) (8.47), thence:

ESE of Mys Varzovka (2½ miles NNW), white precipitous cliffs. Thence:

3 Between Nos 51 Light-buoy (W cardinal) and 52 Light-buoy (port hand) (3 miles NE). This pair of buoys marks the N entrance of the canal. Thence:

ESE of Mys Khrony (4 miles NW), a high rounded sloping headland. Thence:

W of Mys Akhilleon (7 miles NE) (8.47).

(Directions for the passage across Sea of Azov continue at 8.74. Directions for Arabats'ka Zatoka are given at 8.136 and for the passage to Port Temryuk at 8.163)

Anchorages and harbours

Anchorages

8.55

1 Area No 452. Kerchens'kyy cargo handling roadstead lies 1 mile SE of Mys Belyy (45°19′N, 36°30′E).

Areas Nos 453 and 454 are situated in the N entrance to the strait in positions 45°29′N, 36°38′E and 45°29′N, 36°45′E, respectively.

Area No 455 lies 1¾ miles E of Mys Fanar (8.47).

These areas are shown on the chart.

Bukhta Kamysh-Burunskaya and Arshyntsevo

8.56

1 **General information.** Bukhta Kamysh-Burunskaya is entered between Mys Pavlovskyy (45°18′N, 36°29′E) (8.47) and the head of a sandy spit, 2½ miles SW.

Directions. A buoyed channel, 150 m wide, leads W for about 1 mile from the junction of Pavlovskoye Koleno and Burunskoye Koleno to the entrance to the port of Arshyntsevo (45°16′N, 36°25′E). The track then continues WSW to the iron ore complex and S to other berths and fishing complexes.

Caution. The channel leading to Arshyntsevo is subject to considerable shoaling and the port authority must be consulted for the latest depth information.

2 **Berths.** The port consists of 2 berths handling coal and ore cargoes with depths alongside of 6·1 to 6·9 m, 10 other berths with depths alongside of up to 7·5 m and 3 fishing complexes with depths alongside of 1·1 to 3·1 m. A dry dock is situated in the SW corner of the port.

Port Kavkaz

8.57

1 **General information.** Port Kavkaz is primarily a rail ferry port and is situated on the NW coast of Kosa Chushka (45°20′N, 36°40′E). It is a port of entry.

Directions. All ship movements within the port are regulated by the ship traffic control centre (TsUDS). Entrance is by means of the ferry leading lights (143½°–323½°).

2 **Berths.** The port consists of an oil pier, ferry jetty and general cargo berth. The maximum depth in the harbour is 4·7 m. A maximum under-keel clearance of 0·5 m is required giving a maximum permitted draught of 4·2 m. Ships of up to 130 m length and 14·5 m beam can be accepted subject to the above draught constraints.

Pilotage and tugs. Pilotage is compulsory. The pilot boards in position 45°21′N, 36°39′·5E. Towage is compulsory for vessels of 100 m and over. There are two tugs stationed in the port.

Kerchenskaya Bukhta

8.58

1 **General information.** Kerchenskaya Bukhta is entered between Mys Belyy (45°19′N, 36°30′E) and Mys Zmeynyy, 2¾ miles NE. The bay is shallow and the nature of the bottom is soft mud.

The town and port of Kerch' are situated in the NW part of the bay. Kerchens'kyy Fishing Port is situated in the W part of the bay.

2 **Topography.** The SW side of the bay, NW of Mys Belyy, is steep and in some places precipitous. Thence as far as the town of Kerch' the W side of the bay is low and fronted by a flat, with depths of less than 2 m, that extend up to 2 cables offshore.

Kerch'

8.59

1 **General information.** Kerch' (45°22′N, 36°29′E), which in 2002 had a population of 157 000, is an important industrial centre with local natural resources of minerals and natural gas. Local industries include metallurgical plant, engineering, steelworks, ship building and fisheries.

The town is the seat of local government.

2 **Approaches.** Navigation through Kerch Strait is controlled by a Vessel Traffic Service (VTS Kerch Radio).

Traffic. In 2002 the port was used by 303 vessels with a total deadweight of 4 122 131 tonnes.

Port Authority.

Kerch' Port Authority, Port Office, 28 Kirova Street, Kerch', Black Sea, Ukraine.

3 **Limiting conditions.** Least depth in the dredged approach channel is 7·8 m (2000). Vessels over 160 m in length are only handled in daylight hours.

Pilotage is compulsory. The pilot boards at the S end of the channel, off light-buoys Nos 1 and 2, in position 45°12′N, 36°28′E or at the N end of the channel 5 miles NNE of Mys Fanar (45°23′N, 36°39′E).

4 **Tugs** are available and their use is compulsory. The number is dependent on a vessel's length, displacement and draught.

Local weather. The prevailing winds are from the NE throughout most of the year but SW winds are possible during the day in summer. Fog is frequently experienced in spring, especially during May.

Climatic table. See 1.195 and 1.204.

5 **Directions.** The alignment (331¼°) of leading lights leads NNW through a dredged channel which branches from Yenikal'skoye Koleno about 1 mile ESE of Mys Belyy. Other dredged channels lead to the fishing port (8.60) on the W side of the bay and the repair berth NE of the main berths.

6 **Berths.** There are several wharves and piers with depths from 6·7 m alongside.

Repairs. There are two floating dry-docks available with a lifting capacity of 8500 and 5000 tonnes respectively.

Facilities. Deratting.

Kerchens'kyy Fishing Port

8.60

1 **General information.** Kerchens'kyy Fishing Port (45°20′N, 36°28′E), a major fishing port, lies in the W part of Kerchenskaya Bukhta.

Limiting conditions. Least depth in the approach channel is 6·9 m (1994). Vessels in excess of 110 m in length are only handled in daylight hours.

2 **Pilotage** is compulsory and available 24 hours.

Tugs are available and their use is compulsory. The number being dependent on a vessels length, displacement and draught.

3 **Directions.** From a position about 9 cables SSE of Kerch', in the Kerchenskiy Approach Channel, the alignment (255½°) of leading lights leads WSW through a dredged channel to a basin dredged to 7·4 m (1991).

Berths. There are 10 berths.

Repairs to fishing vessels are available.

TAMANSKIY ZALIV

General information

Charts 2216, 2242 (see 1.16)

Topography

8.61

1 Tamanskiy Zaliv is entered between the NW extremity of Kosa Tuzla (45°17′N, 36°32′E) and the SW extremity of Kosa Chushka, 4 miles ENE. The entrance is obstructed by wrecks and obstructions, and by shallow flats that extend from each point.

The bay is divided into two parts by spits which extend from two low points, Kosa Markitanskaya (45°14′N, 36°46′E) and Kosa Rubanova, 4 miles NNE. A narrow channel, marked by buoys and light-buoys (cardinal) separates the extremities of these spits.

On the N side of the bay a shallow inlet leads into Zaliv Dinskoy.

8.62

1 The S shore of the bay is high and steep between the root of Kosa Tuzla and the blunt rocky point at the foot of Gora Lysaya (45°13′N, 36°42′E) (8.36), thence it becomes low and sloping as far as Kosa Markitanskaya.

From Kosa Rubanova, the N shore of the bay, which trends ENE, is low but rises a short distance inland to moderately high hills.

The SE shore of Kosa Chushka consists of a series of spits, between the ends of which lie sandy islands. The shape and dimensions of these islands are very changeable.

Principal marks

8.63

1 **Landmarks:**

Gora Lysaya (45°13′N, 36°42′E) (8.36).

Gora Karabetova (45°12′N, 36°47′E). A range known as Tamanskiye Gory extends E from this mountain, parallel and about 2 miles within the S shore of the bay.

Gora Gorelaya (45°20′N, 36°49′E) (8.47).

Harbours

Taman'

8.64

1 **General information.** The port of Taman' (45°13′N, 36°43′E) lies on the S side of the bay 2 miles SW of Kosa Markitanskaya.

Directions. The alignment (138½°) of Komsomol'skiy Leading Lights (45°13′N, 36°39′E), shown on request, leads SE from Yenikal'skoye Koleno (8.53) for 6 miles along Recommended route No 45. The route, which is marked by buoys and light-buoys laid on request, passes between the flats extending from Kosa Tuzla and Kosa Chushka and has a least depth of about 4 m at its NW end.

2 The track then alters E for 4½ miles to Taman'.

Anchorage may be obtained 3 cables N of the berth in depths of about 4·4 m, mud and sand.

Berth. Concrete pier with a depth of 3·5 m at its head.

Sennoy

8.65

Directions. From a position about 9 cables N of Taman' Recommended route No 45 leads NE then E for about 12 miles to Sennoy.

Berth. Passenger pier with a depth alongside of 3·4 m.

BERDYANS'K AND PORT MARIUPOL'

PASSAGE ACROSS SEA OF AZOV

General information

Charts 2234, 2242

Route

8.66

1 Recommended routes Nos 87 and 88, which are shown on the chart, lead N and S, respectively, between the N entrance of Kerch Strait and the traffic roundabout (46°30′N, 36°48′E) situated 8 miles SSE of the S extremity of Berdyans'ka Kosa.

Topography

8.67

1 Berdyans'ka Kosa is a sandy spit which extends about 6 miles SSW from the general run of the shore. The spit is low-lying and its narrow central portion has an elevation of only about 0·3 m. There are a number of high buildings on the spit which are visible from about 10 miles.

Traffic regulations

8.68

1 Traffic separation schemes, which are shown on the chart, are situated at the N and S ends of Recommended routes Nos 87 and 88. These schemes are not IMO-adopted but the Ukrainian Authorities advise that the principles for the use of the routeing system defined in Rule 10 of *The International Regulations for Preventing Collisions at Sea (1972),* apply.

Pilotage

8.69

1 See 8.5.

Natural conditions

8.70

1 See 8.8.

Principal marks

8.71

1 **Landmarks:**

Hora Khrony (45°23′N, 36°36′E) (8.47).

Hora Temyroba (45°24′N, 36°33′E), rounded with regular shape.

Major lights:

Akhilleonskiy Light (45°26′N, 36°47′E) (8.48).

2 Yenykal'skyy Light (45°23′N, 36°38′E) (8.48).

Mys Zyuk Light (black rectangle, 13 m in height) (45°29′N, 36°21′E).

Berdyanskiy Nizhniy Light (white 8-sided tower, red band, on white 2-storey building; 19 m in height) (46°38′N, 36°46′E).

Berdyanskiy Nizhniy Light (8.71)

Other navigational aids

8.72

1 **Racons:**

Berdyanskiy Nizhniy Light — as above.

Bilosarays'ka Light (46°53′N, 37°19′E) (8.104).

DGPS:

Yenykal'skyy Light — as above.

See *Admiralty List of Radio Signals Volume 2* for details.

8.73

1 **Radar reflectors,** which are charted, have been erected on 3 beacons near the SW extremity of Berdyans'ka Kosa, within 6 cables of the lighthouse.

Directions

(continued from 8.54)

8.74

1 **Initial position.** 45°27′N, 36°44′E, in the N entrance of Kerch Strait.

Recommended route No 87, shown on the chart, leads N for about 65 miles to the traffic roundabout centred on 46°30′N, 36°48′E, passing (with positions from Berdyanskiy Nizhniy Light):

W of a wreck with a depth of 7·5 m over it, (38 miles SSE), thence:

2 Into the N-bound TSS in vicinity of 46°20′N, 36°50′E, thence:

E of a wreck with a depth of 9·0 m over it, (14 miles S). Thence:

Clear of a wreck with a depth of 9·2 m over it, (8 miles SSE), thence:

Into the NE-bound TSS.

Northern approach to Kerch Strait

8.75

1 **Initial position.** 46°30′N, 36°46′E in the vicinity of the traffic roundabout.

Recommended route No 88, shown on the chart, leads S for about 65 miles to the Kerch Strait approach TSS, passing (with positions from Berdyanskiy Nizhniy Light):

W of a wreck with a depth of 9·0 m over it (14 miles S), thence:

2 Into the S-bound TSS in the vicinity of 45°40′N, 36°40′E.

Vessels approaching Kerch Strait from the N should first sight land when about 23 miles from it. The first marks to appear will be Hora Khrony (45°23′N, 36°36′E) (8.47) and an oblong ridge above Mys Zyuk (45°29′N, 36°21′E) (8.136).

(Directions continue for the approaches to Berdyans'k at 8.92, and for the route between Berdyans'ka Kosa and Bilosarays'ka Kosa at 8.104)

BERDYANS'K AND APPROACHES

General information

Charts 2234, 3302 with plan of Berdyans'k

Position

8.76

1 Berdyans'k (46°45′N, 36°47′E) is situated in the NE part of Berdyans'ka Zatoka, a bay on the N coast of Sea of Azov.

Function

8.77

1 Berdyans'k, which in 2002 had a population of 122 000, is a seaport, agricultural centre and health resort.

Approaches

8.78

1 Reyd Berdyans'k is approached from the traffic roundabout (8.74) by Recommended routes Nos 55 and 56, and then by a buoyed entrance channel as shown on the chart. These routes pass through a former mined area.

Traffic

8.79

1 In 2002 the port was used by 200 vessels with a total deadweight of 2 715 086 tonnes.

Port Authority

8.80

1 The Port of Berdyans'k Authority, Maksima Gorkogo ul. 13–7, Berdyans'k, 332440, Ukraine.

Limiting conditions

8.81

1 **Least depths.** Entrance channel 8·1 m (1992).

Caution. Due to silting in the port and its entrance channel, depths may be less than charted.

Maximum size of vessel. Draught 7·9 m. Length 205 m (possibility of 220 m with Harbour Authority's permission).

Density of water. Reported 1·006 to 1·008 g/cm^3.

Ice. All year round navigation possible, but icebreaker assistance required for about 2 months (8.9).

Winds. Roadstead open to winds from S and SW (8.89).

Arrival information

Approach route

8.82

1 Recommended route No 55 is for the use of vessels with a draught of 6 m or more. Recommended route No 56 is for vessels with less than 6 m draught.

Port radio

8.83

1 See *Admiralty List of Radio Signals Volume 6(3)* for details.

Notice of ETA

8.84

1 See *Admiralty List of Radio Signals Volume 6(3)* for details.

Pilotage

8.85

1 Pilotage is compulsory. For vessels of 6 m draught or more pilots board in the vicinity of No 2 Light-buoy (46°37′N, 36°36′E), at the start of the entrance channel. Vessels with a draught of less than 6 m are boarded between Nos 8 and 10 Light-buoys.

Tugs

8.86

1 Tugs are available. Their use is compulsory when berthing. Vessels of 1500 grt or more must employ 2 tugs.

Regulations concerning entry

8.87

1 **Time of entry.** No restrictions.

Visibility and wind speeds. Vessels may not navigate in the entrance channel when visibility is less than 5 cables or wind speeds are 29 kn or more.

Draught permitted within the harbour area will be promulgated by the harbour authorities.

Speed limit in entrance channel is 6 kn.

Overtaking in the entrance channel is prohibited.

Harbour

General layout

8.88

1 **Berdyans'k** consists of an inner and outer roadstead. The inner roadstead, which is approached by the entrance

channel, is protected by a breakwater and a mole. The anchorage in the outer roadstead is situated on both sides of the entrance channel.

Natural conditions

8.89

1 **Currents** are usually weak and depend on the wind. They do not exceed 1 kn.

Winds. Strong winds from S and SW are rare, but when they occur, they make anchorage in the outer roads uncomfortable.

Water level. Prolonged NE and N winds lower the water level in the bay and S and SW winds raise it. The maximum fall in level is about 0·5 m and the maximum rise 1 m.

Principal marks

8.90

1 **Landmark:**

Television mast (46°46′N, 36°47′E).

Major lights:

Berdyanskiy Nizhniy Light (46°38′N, 36°46′E).

Berdyanskiy Verkhniy Light (white 8-sided tower, red bands, 33 m in height) (46°46′N, 36°46′E).

Other navigational aids

8.91

1 **Racon:**

Berdyanskiy Nizhniy Light — as above.

See *Admiralty List of Radio Signals Volume 2* for details.

Directions

(continued from 8.75)

Recommended routes Nos 55 and 56

8.92

1 **Initial position.** In the vicinity of 46°32′N, 36°46′E, NW of the traffic roundabout.

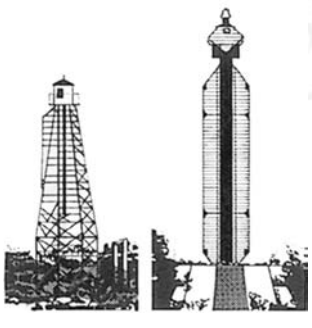
Recommended route No 55, is for vessels of draught 6 m or more; Recommended route No 56 is for vessels up to 6 m draught, these routes lead NW and NNW, respectively, for about 8 miles to the buoyed entrance channel. Recommended route No 55 joins the channel at Nos 1 and 2 Light-buoys (starboard and port hand) and Recommended route No 56 joins the channel at Nos 9 and 10 Buoys (starboard and port hand).

2 Recommended route No 56 passes SW of a buoy (W cardinal) that marks the edge of the bank that fringes Berdyans'ka Kosa.

Buoyed entrance channel

8.93

1 **Podkhodnogo Kanal Leading Lights:**



Podkhodnogo Kanal Leading Lights (8.93)

Front light (white rectangle, black stripe, on metal framework structure, 29 m in height) (46°45′N, 36°47′E).

Rear light (white diamond over square, black stripe, 20 m in height) (7 cables from front beacon).

2 The alignment (040¾°) of these lights leads NE for about 11 miles from Nos 1 and 2 Light-buoys to Berdyans'k inner roads through a dredged channel, 80 m wide, which is marked by pairs of light-buoys (port and starboard hand).

Recommended route No 54**,** for vessels of less than 3 m draught, leads NE from a position between Nos 8 and 10 light-buoys. It runs 1½ cables SE of and parallel to the dredged channel.

3 **Cautions.** Dredging is carried out periodically in the entrance channel and vessels must navigate with caution when in the vicinity of these operations.

The leading lights are difficult to distinguish on account of intervening buildings.

Berths

Anchorage in outer roadstead

8.94

1 Good anchorage, well protected from N, may be obtained either side of the entrance channel in depths of up to 7 m. Holding ground shell and mud.

Caution. At times of strong SW winds, vessels at anchor in the outer roads will be affected by swell and plenty of cable should be paid out.

Alongside berths

8.95

1 There are 10 alongside berths. Berths 1 and 2 are the general cargo berths and have depths of between 6·5 and 7·7 m. Berth No 6 is 132 m in length with depths alongside of 7·4 to 8·1 m and handles tankers.

Port services

Repairs

8.96

1 Only minor hull and engine repairs.

Other facilities

8.97

1 Deratting; hospital; Ro-Ro berth.

Supplies

8.98

1 Fuel is available in limited quantities and should be ordered in advance; fresh water at quays; provisions.

BERDYANS'KA KOSA TO BILOSARAYS'KA KOSA

General information

Chart 2234

Topography

8.99

1 Between the root of Berdyans'ka Kosa (46°42′N, 36°50′E) and Bilosarays'ka Kosa (20 miles NE), the coast is backed by rising ground with bare reddish coloured landslips, intersected by a number of valleys. Villages lie in these valleys and some are prominent from offshore.

Bilosarays'ka Kosa is similar in formation to Berdyans'ka Kosa (8.67) and extends about 5 miles S from the high land within it.

Traffic regulations

8.100

1 **A traffic separation scheme,** which is shown on the chart, leads NE for about 20 miles from the traffic roundabout (8.74) S of Berdyans'ka Kosa.

This traffic separation scheme is not IMO-adopted but the Ukrainian authorities advise that the principles for the use of the routeing system defined in Rule 10 of the *International Regulations for Preventing Collisions at Sea (1972),* apply.

2 **A Recommended route,** which is shown on the chart, leads NE from the traffic separation scheme towards the approach channel to Port Mariupol'.

3 **Area periodically dangerous for navigation:**

Area No 761 extends about 10 miles offshore between Berdyans'ka Kosa and Bilosarays'ka Kosa and occupies the greater part of Bilosarays'ka Zatoka. See Appendix II.

Current

8.101

1 See 8.8.

Principal marks

8.102

1 **Major lights:**

Berdyanskiy Nizhniy Light (46°38′N, 36°46′E).
Novopetrovskiy Light (46°49′N, 36°55′E).

Other navigational aids

8.103

1 **Racon:**

Bilosarays'ka Light (46°53′N, 37°19′E).

See *Admiralty List of Radio Signals Volume 2* for details.

Radar reflectors have been erected on 3 metal structures near the end of Bilosarays'ka Kosa.

Directions

(continued from 8.75)

8.104

1 **Initial position.** In the vicinity of 46°31′N, 36°51′E, within the traffic roundabout.

Route. A traffic separation scheme (8.100) and thence Recommended route No 30 lead NE for 33 miles to the S entrance of the approach channel to Port Mariupol', which lies about 5 miles E of Bilosarays'ka Light (46°53′N, 37°19′E). This route passes (with positions from Bilosarays'ka Light):

2 Clear of an obstruction with a depth of 9 m over it, (17 miles SW), which lies in the middle of the traffic lane, thence:

NW of a wreck (16 miles SW) with a depth of 7·2 m over it, thence:

3 SE of a buoy (S cardinal) (2½ miles S) which marks an obstruction with a depth of 5·6 m over it. This obstruction lies off a bank, with depths of less than 5 m over it, that extends nearly 2 miles S from Bilosarays'ka Kosa. Thence:

(Directions for W part of Gulf of Taganrog continue at 8.191)

SE of Bilosarays'ka Light (white 8-sided tower on one storey building, 21 m in height), thence:

4 NW of the N extremity of a shoal, with depths of less than 5 m over it, that extends from the outer extremity of Dolgaya Kosa (8.168). See caution.

Cautions. Less water than that shown on the chart is reported in the NE part of the traffic separation scheme.

The extremity of Dolgaya Kosa is subject to considerable annual change due to the action of currents and ice.

(Directions for Port Mariupol' continue at 8.123)

Anchorage

Bukhta Taran'ya

8.105

1 Bukhta Taran'ya is entered between the SW extremity of Bilosarays'ka Kosa and the NW shore of Bilosarays'ka Zatoka. the whole of the bay is filled with a bank which has a depth of less than 5 m.

Good anchorage, with shelter from winds between N and E may be found in a depth of 5 m, mud, 1½ miles W of Bilosarays'ka Light.

PORT MARIUPOL' AND APPROACHES

General information

Chart 3303 with plan of Port Mariupol'

Position

8.106

1 Mariupol' (47°05′N, 37°34′E) is situated on the N shore of Gulf of Taganrog about 18 miles within the entrance of the gulf. The town stands partly on a hill on the W bank of Richka Kal'mius and partly on the low coast W of the river mouth.

Function

8.107

1 Mariupol' is a major port and large industrial town, which in 2002 had a population of 492 000. Its chief industries are metallurgy, chemicals, fishing and fish processing.

Approach

8.108

1 Port Mariupol' is approached by a buoyed channel, 9 miles in length, that has been dredged through the coastal bank. This coastal bank is backed by a shoreline consisting of steep level topped cliffs.

Harbour limit

8.109

1 The harbour limit, shown on the chart, consists of the arc of a circle, radius 6½ miles, centred on Middle leading light, Ugol'naya Havan' approach channel (47°04′·2N, 37°30′·7E) (8.123).

Traffic

8.110

1 In 2002 the port was used by 665 vessels with a total deadweight of 20 121 682 tonnes.

Port Authority

8.111

1 The Port of Mariupol' Authority, Admirala Lunina Pr.99, Port of Mariupol' 341010, Donetsk Region, Ukraine.

Limiting conditions

Controlling depths

8.112

1 **Least depths** of dredged approach channels:

Ugol'naya Havan' approach channel. 8·6 m (2001).
Port Azovstal' approach channel. 4·6 m (2002).
Havan Shmidta approach channel. 3·4 m (1986).

Under-keel clearance should be at least 15 cm.

For the latest controlling depths, mariners should consult the local harbour and pilotage authorities.

2 **Maximum size of vessel.** Under-keel clearance must be at least 15 cm. Maximum draught about 8·0 m, no length or beam restrictions.

Density of water 1·005 g/cm^3.

Ice. All year round navigation is possible, but for 2 to 3 months is only possible for ice strengthened vessels with ice breaker assistance.

Arrival information

Port radio
8.113

1 See *Admiralty List of Radio Signals Volume 6(3)* for details.

Notice of ETA
8.114

1 See *Admiralty List of Radio Signals Volume 6(3)* for details.

Anchorages
8.115

1 Area No 457, with depths of 6 to 9 m, lies E of the Ugol'naya Havan' approach channel, as shown on the chart.

Area No 458, with depths of 5 to 6 m, mud, lies close N of Area No 457 as shown on the chart.

Pilots
8.116

1 Pilotage is compulsory for all foreign vessels (8.5).

Port pilots are embarked in vicinity of No 1 buoy and should be ordered 4 hours in advance.

If the wind speed exceeds 27 kn, ships should anchor and await better weather.

It has been reported that the sea pilot embarked at Kerch Strait may also carry out the duties of Port Pilot.

Tugs
8.117

1 Tugs are available. Their use is compulsory when berthing.

Vessels of 1500 grt or more must employ 2 tugs.

Tugs should be ordered 40 minutes before entering port.

Regulations concerning entry
8.118

1 **Entry** and movement along the channel is prohibited without the permission of the Port Director.

Time of entry. No restrictions.

Overtaking in Ugol'naya Havan' approach channel is not permitted between buoys Nos 9 and 10 and the harbour entrance.

Two-way traffic in the approach channel is permitted, except in poor visibility.

2 **Berthing** within the port is not permitted when wind speeds exceed 27 kn.

Speed limit. 8 kn except in vicinity of the training wall, Ograditel'naya Damba, (47°02′N, 37°30′E), where it is 3 kn. Speed may be increased if necessary to keep within the channel.

8.119

1 **Signals.** Vessels with a draught of 6·8 m or more, proceeding in the approach channels, must show the signals required by Rule 28 of the *International Regulations for Preventing Collisions at Sea (1972).*

Quarantine regulations
8.120

1 See 1.50.

Harbour

General layout
8.121

1 Port Mariupol' consists of two harbour areas:

Port Azovstal' and Havan' Shmidta, at the mouth of Richka Kal'mius, close E of the city.

Port Mariupol', 3 miles SW of the mouth of Richka Kal'mius. Port Mariupol' is the main port.

2 For the detailed layout of the two harbour areas, the chart is the best guide. Works in Port Mariupol' continue on Razdelitel'nyy Pirs (berths 8 and 9).

Principal marks
8.122

1 **Landmarks:**

Obelisk (47°02′·7N, 37°29′·3E), a white square stone with spire, 20 m in height.

Chimney (47°03′·5N, 37°29′·9E).

Elevator (47°03′·6N, 37°30′·5E).

Television mast (47°05′·1N, 37°31′·7E).

2 **Major lights:**

Ugol'naya Havan' Approach Channel middle and rear leading lights (8.123).

Directions
(continued from 8.104)

Ugol'naya Havan' approach channel
8.123

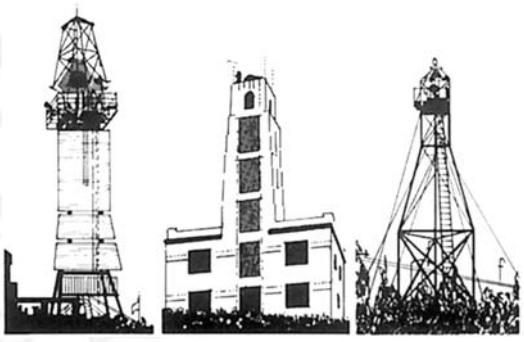
1 **Initial position.** 46°53′·7N, 37°27′·4E in the vicinity of Nos 1 and 2 Light-buoys.

Ugol'naya Havan' Approach Channel Leading Lights:

Front light (white square on black framework structure, 28 m in height) (47°03′·3N, 37°30′·4E).

Middle light (white square tower on white fronted 2-storey building, 22 m in height) (0·92 miles from front light).

Rear light (black metal framework tower, 21 m in height) (1·55 miles from front light).



Ugol'naya Havan' Approach Channel Leading Lights (8.123)

2 The alignment (012¼°) of these lights leads NNE for about 9 miles from Nos 1 and 2 Buoys to Ugol'naya Havan' through a dredged channel, 100 m wide, dredged to 8·6 m (2001), which is marked by pairs of light-buoys and buoys (port and starboard hand).

Caution. If a ship deviates slightly to the W of the leading line, the elevator (8.122) will obscure either the middle or rear light, depending on the ship's position. The light-structures of this leading line are not easy to identify by day.

Port Azovstal' approach channel
8.124

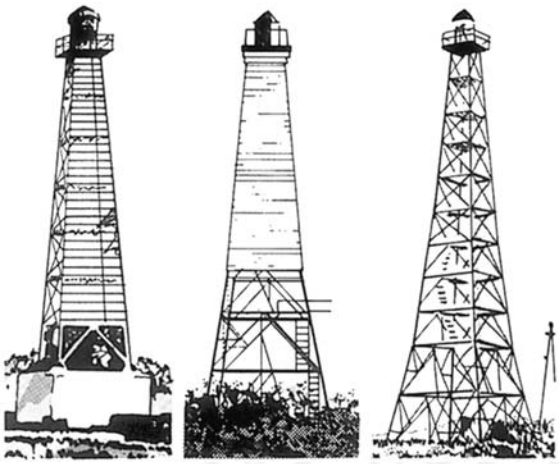
1 **Initial position.** 47°01′·4N, 37°29′·8E in the vicinity of light-buoys Nos 15 and 17 (starboard hand).

Port Azovstal' Approach Channel Leading Lights:

Front light (white rectangle on framework tower, 22 m in height) (47°05′·1N, 37°35′·2E).

Middle light (white rectangle on metal framework tower, 37 m in height) (0·84 miles from front light).

Rear light (similar structure to middle light, 34 m in height) (1·7 miles from front light).



Port Azovstal' Approach Channel Leading Lights (8.124)

2 The alignment (044°) of these lights, visible on the leading line only, leads NE for about 5 miles through a channel dredged to 4·6 m (2002), marked by pairs of light-buoys and buoys (port and starboard hand), where it divides for the final approaches to Port Azovstal' and Havan' Shmidta. It was reported (1994) that navigation in the approach channel during the hours of darkness is not recommended.

Final approaches to Port Azovstal' and Havan' Shmidta
8.125

1 **Port Azovstal'**. A fairway, 100 m in width and marked by buoys and light-buoys (port and starboard hand) leads to the main basin of this port.

Havan' Shmidta. From a position 4 cables SW of Port Azovstal' Front Leading Light (8.124) the track leads NNW, through a channel 70 m wide, to the entrance to Richka Kal'mius and Havan' Shmidta.

Approach to Avanport, Port Mariupol'
8.126

1 **Avanport Leading Lights:**

Front light (white circle on metal framework tower, 19 m in height) (47°03′·8N, 37°30′·8E).

Rear light (square tower on white brick building, 13 m in height) (700 m from front light).

2 From the vicinity of a buoy (safe water) (46°59′N, 37°35′E) the alignment (331½°) of these lights, visible on the leading line only, leads NNW for about 5 miles, along Recommended route No 32, across the coastal bank and Port Azovstal' approach channel (close NE of Nos 5 and 6 Light-buoys) to the entrance of Avanport.

(Directions for Yeysk are given at 8.192)

Berths

Anchorages
8.127

1 Anchorage areas Nos 457 and 458 (8.115).

Alongside berths
8.128

1 **Port Mariupol'.** The position of berths Nos 1 to 17 are shown on the plan of Port Mariupol'. There are depths alongside of up to 8·8 m.

Port Azovstal'. Berths Nos 1 to 5, with depths alongside of between 3·5 m and 5·5 m, are situated on the NE side of the basin. A stranded wreck lies off No 5 berth.

Havan' Shmidta. Berths Nos 1 to 9 lie on the W bank of Richka Kal'mius.

Port services

Repairs
8.129

1 Repairs of all kinds can be carried out for vessels of up to 9000 dwt. Docking facilities are reported to be available.

Other facilities
8.130

1 Deratting; hospital; Ro-Ro berths.

Supplies
8.131

1 Fuel alongside or by barge; fresh water alongside or by barge; provisions.

Caution. During the winter season due to the risk of becoming ice-bound, the harbour authorities request departing vessels have at least ten days supplies of bunkers, fresh water and provisions.

WESTERN PART OF SEA OF AZOV

MYS TARKHAN TO ARABATS'KA ZATOKA

General information

Chart 2234

Route

8.132

1 From the N entrance to the Kerch-Yenikal'skiy Kanal, Recommended route No 58 leads W towards Arabats'ka Zatoka.

Topography

8.133

1 The N coast of Kerchens'kyy Pivostriv between Mys Tarkhan (45°28′N, 36°27′E) and the SE end of Kosa Arabats'ka Strilka, about 40 miles WSW, is high and backed by hills which rise to heights of more than 100 m.

Traffic regulations

8.134

1 **Areas into which entry is prohibited:**

A circular area, radius 1 mile, centred 5 miles N of Mys Zyuk (45°29′N, 36°21′E). In 2003 works were in progress within this area.

A small area 3 miles S of Mys Kazantip (45°28′N, 35°52′E).

Area No 862, with a radius of 500 m, surrounding No 1 drilling platform (45°37′N, 36°03′E).

Principal marks

8.135

1 **Major lights:**

Mys Zyuk Light (45°29′N, 36°21′E) (8.71).

Kazantips'kyy Light (black rectangle on triangular tower, 4 m in height) (45°28′N, 35°52′E).

Directions

(continued from 8.54)

8.136

1 From a position W of Mys Akhilleon (45°27′N, 36°47′E) (8.47) Recommended route No 58 leads NW for 12½ miles, passing (with positions from Mys Zyuk (45°29′N, 36°21′E)):

NE of Anchorage area No 453 (12 miles E), thence:

NE of Mys Khrony (10 miles ESE) (8.54), thence:

2 NE of Mys Tarkhan (4½ miles ESE), a broad whitish bluff with two groups of mud volcanoes adjacent. A rocky reef with a depth of 2·4 to 4·6 m, extends about 1½ miles WNW from this point.

Thence the track leads W then SW for about 43 miles, passing (with positions from Mys Kazantip (45°28′N, 35°52′E)):

3 N of Mys Zyuk (20 miles E), a sandy point with a hillock at its extremity which when seen from E or W looks like an island with a rock off its N shore. A narrow shoal of gravel, with depths of 5 m over it, extends about 3 miles NW from this point. To the N of the hillock is a slab of rock which terminates in a steep cliff. Mys Zyuk Light (8.71) stands on this hillock. Thence:

4 N of Mys Chagany (9 miles E), a blunt and rocky headland on which stand a number of tumuli. Thence:

S of Area No 862 (12 miles NE) (8.134). Thence:

5 N of Mys Kazantip, the termination of a peninsula of which the N part consists of a sloping hill separated from the mainland by a low sandy isthmus. A second hill stands S of the isthmus and from offshore, these hills appear as two islands and are good marks. Kazantips'kyy Light (8.135) stands on this point. A rock with a depth of 3·2 m over it, marked by a buoy (isolated danger), lies about 1¼ miles SE of Kazantips'kyy Light and several other shoals, with depths of 7 to 7·6 m over them, lie a further 2½ cables SE. Thence:

(Directions continue for Heniches'k at 8.144)

6 NW of Mys Kiten' (7 miles SW), a high bluff. Thence:

NW of Mys Krasnyy Kut (9 miles SW), a bold point with reddish coloured cliffs.

Thence to the anchorage at the head of Arabats'ka Zatoka.

Anchorages and small harbours

Charts 2234, 2242 (see 1.16)

Bukhta Bulganak

8.137

1 Bukhta Bulganak (45°26′N, 36°33′E), entered W of Mys Khrony, has general depths of 8 to 10 m. The bay is surrounded by a coastal shelf with depths of less than 5 m, with above and below-water rocks on it, extending up to 4 cables from the shore in places. The village of Yurkino stands in the SE corner of the bay.

2 Anchorage for small vessels may be obtained, abreast Yurkino, about 2 cables offshore in depths of 5 m.

Bukhta Morskoy Pekhoty

8.138

1 Bukhta Morskoy Pekhoty (45°29′N, 36°19′E), entered between Mys Zyuk and Mys Bogatube (2 miles W) has general depths of 4 to 6 m. The bay is surrounded by a coastal shelf with depths of less than 2 m over it, with below-water rocks on it, extending up to 2 cables from the shore in places.

2 Anchorage for small vessels may be obtained, clear of a wreck with a depth of 1·2 m over it, 2 cables offshore in the SW corner of the bay in depths of 5 m, sand and shells.

Kazantips'ka Zatoka

8.139

1 Kazantips'ka Zatoka is entered between Mys Chagany (8.136) and Mys Kazantip (8.136). The village of Adzhubay lies on the SE shore of the bay.

2 **Anchorage,** sheltered from ENE, through S to WNW, may be obtained in a depth of 9 m, mud, abreast the village, about 2 miles offshore. Small vessels can find shelter from NE winds off the E side of the bay and from NW winds on the W side, in Bukhta Tatarskaya, close under Mys Kazantip.

3 Entry is prohibited into a small area on the W side (8.134) and the bay is usually frequented by fishing craft.

Arabats'ka Zatoka

8.140

1 Arabats'ka Zatoka is entered between Mys Kazantip and the S part of Kosa Arabats'ka Strilka (8.141). A number of villages, which have landing facilities, stand on the shore of the bay.

Anchorage, sheltered from E, through S to WNW, may be obtained in a depth of 5 m, mud and shells, about 1 mile offshore in the SE corner of the bay. N and NE winds send in heavy seas.

ARABATS'KA ZATOKA TO KOSA FEDOTOVA

General information

Chart 2234 (see 1.16)

Topography

8.141

1 The W shore of Sea of Azov is formed by Kosa Arabats'ka Strilka, Kosa Biryuchyy Ostriv and Kosa Fedotova.

Kosa Arabats'ka Strilka is a long low sandy spit that is between 2½ cables and 4½ miles wide. This spit extends NNW for about 60 miles from the village of Arabat (45°18′N, 35°29′E) to the town of Heniches'k, and separates Zatoka Syvash (Hnyle More) from Sea of Azov.

2 The S part of the spit appears to be formed by sand washed up from the sea and is barren. The N part consists of a number of islands joined by sand. Several villages, with clumps of tall trees, stand on the N part of the spit. Masses of dead organic matter are cast up on both sides of the spit, causing a putrid odour over a large area.

There are three radar beacons situated on this spit.

3 Kosa Fedotova and Kosa Biryuchyy Ostriv, two connected spits that extend 23 miles SW from the mainland (46°22′N, 35°22′E), are also low lying and barren, being covered with coarse grass and scrub. The village of Sadki lies 3½ miles from the SW extremity of these spits.

Traffic regulations

8.142

1 **Areas in which anchoring, fishing, submarine and seabed operations are prohibited:**

Area No 693, in which drilling platforms are situated, lies 15 miles S of Biryuchyy Light (46°06′N, 35°00′E) (8.143).

2 Area No 694 extends SW for 15 miles, and up to 3 miles offshore, from the S end of Kosa Fedotova to Biryuchyy Light.

See Appendix II.

Areas which should be avoided:

Area No 854, a circular area of radius 5 miles, is situated 30 miles SSE of Biryuchyy Light.

3 Area No 855, a small circular area, is situated within the limits of Area No 693.

See Appendix II.

Principal marks

8.143

1 **Major light:**

Biryuchyy Light (white 8-sided stone tower, 25 m in height) (46°06′N, 35°00′E).

Directions

(continued from 8.136)

8.144

1 From a position N of Mys Kazantip (45°28′N, 35°52′E) (8.136) at the end of Recommended route No 58, the track leads NW for about 45 miles to the approaches to Heniches'k, passing (with positions from Biryuchyy Light (46°06′N, 35°00′E)):

NE of Area No 854 (30 miles SSE) (8.142). Banka Arabatskaya, a shoal with a least depth of 3 m, and several dangerous and stranded wrecks lie within this area. Thence:

2 Either side of Banka Morskiye (12 miles ESE to 21 miles SE), a group of shoals with depths of between 5·2 and 6·8 m over them. A further shallow patch, with a depth of 5·4 m over it, lies 16 miles ENE of Biryuchyy Light.

Thence to a position 4 miles SSE of Biryuchyy Light at the start of Recommended route No 51 into Heniches'k.

8.145

1 **Useful mark:**

Schastlivtevso Light (46°02′·8N, 34°50′·5E).

(Directions for Obytichna Zatoka continue at 8.154)

Anchorage and minor port

Utlyuts'kyy Lyman

8.146

1 Utlyuts'kyy Lyman (46°15′N, 35°10′E), is bounded by Kosa Biryuchyy Ostriv and Kosa Fedotova to the SE and is entered between the SW extremity of Kosa Biryuchyy Ostriv and the N part of Kosa Arabats'ka Strilka, 6 miles W.

2 This entrance is restricted to a width of about 1½ miles by a shoal with a least depth of 1·6 m, which extends 3 miles W from Kosa Biryuchyy Ostriv and a dangerous wreck lying 5 miles WSW from the SW extremity of that spit. A buoy (W cardinal) marks the extremity of the bank and a buoy (E cardinal) marks the wreck.

The S part of Utlyuts'kyy Lyman forms Henicheskiy Reyd.

3 **Anchorage** may be obtained, sheltered from all winds, in any part of Henicheskiy Reyd in depths of not less than 6 m. The best berth is in a depth of 6·2 m, mud and shells, about 3½ miles E of the town of Heniches'k, but during SE winds there is better shelter nearer Kosa Biryuchyy Ostriv.

Current. The current setting in or out of Proliv Henicheskiy (8.147) is felt in the roadstead, but does not exceed a rate of ½ kn.

Heniches'k

8.147

1 **Position.** The port of Heniches'k (46°10′N, 34°48′E) is situated on the N side of Proliv Henicheskiy, a narrow passage about 2 miles long and between ½ and 1 cable wide, that joins Zaliv Syvash to Sea of Azov.

Approaches. Heniches'k is approached along Recommended route No 51. The alignment (262°) of leading lights leads through Henicheskiy Kanal, a 1·3 mile long and 50 m wide channel scoured by the current and extended by dredging, that passes through the coastal bank at the end of Proliv Henicheskiy.

2 Henicheskiy Kanal is subject to heavy silting and depths are promulgated periodically by Notices to Mariners but the port authorities must be consulted for the latest depths prior to entry. There are numerous dangers either side of the approach route to the channel. Navigation aids mark the approaches to the port.

3 **Anchorage.** The recommended anchorage position is 3¼ miles SE of Henichesk Light (square stone tower, white dwelling, 12 m in height) (46°11′N, 34°49′E).

Pilotage. Compulsory for vessels of more than 500 grt, the pilot boards in the vicinity of No 2 Buoy.

Speed. Maximum speed is 3 kn within the harbour. If a vessel cannot maintain steerage way at this speed, a tug is to be used.

4 **Berths.** There is quayage of 600 m within the commercial port. Depths vary considerably due to silting and port authorities should be consulted for the latest figures.

8.148

1 **Port facilities and supplies:** minor repairs; fuel oil; fresh water at wharves.

KOSA FEDOTOVA TO OBYTICHNA KOSA

General information

Chart 2234

Topography

8.149

1 Between the NE end of Kosa Fedotova (46°22′N, 35°22′E) and Obytichna Kosa (35 miles ENE), the coast of Obytichna Zatoka consists mainly of cliffs of even elevation, with tumuli in places. Within the cliffs lies steppe country.

2 Obytichna Kosa is low lying. A row of six tumuli, visible from about 13 miles, stand on the high ground at its root and are useful for identifying it. As with other similar spits on the N coast of Sea of Azov, the action of the sea changes the configuration of its seaward end, sometimes to a considerable extent.

Depths

8.150

1 **Depths.** The whole of Obytichna Kosa is fringed by a flat on which there are numerous patches with depths of less than 5 m. This flat extends as much as 2½ miles from either side and about 7 miles from the extremity of the spit. A bank, on which there are shoals with depths of less than 10 m, extends about 20 miles ESE from the spit.

Traffic regulations

8.151

1 **Area in which anchoring, fishing, submarine and seabed operations are prohibited:**

Area No 695 is situated 2½ miles NE of Mys Dzenznk (46°30′N, 36°06′E).

2 **Area which should be avoided:**

Area No 856 is situated at the NE end of Kosa Fedotova and extends 2¼ miles offshore and 3 miles SW.

See Appendix II.

Principal marks

8.152

1 **Landmark:**

Building (46°39′N, 35°52′E).

Major light:

Novokonstantinovskiy Light (metal framework tower, 10 m in height) (46°35′N, 35°43′E).

Local magnetic anomaly

8.153

1 Local magnetic anomalies exist on Obytichna Kosa, but their influence is only felt a short distance to seaward.

Directions

(continued from 8.144)

8.154

1 From a position 4 miles SSE of Biryuchyy Light the track leads NE for about 60 miles to the head of Obytichna Zatoka, passing (positions from Novokonstantinovskiy Light (46°35′N, 35°43′E)):

SSE of Area No 694 (35 miles SW) (8.142). thence:
SSE of Area No 856 (18 miles SW) (8.151). Shoals with depths of 4 and 4·6 m lie 19 miles SW and 15 miles SSW, respectively, of the light. Thence:

2 NNW of an area in which explosives operations are carried out (22 miles SSE), thence:
SSE of Novokonstantinovskiy Light, thence:
NNW of Obitochnyy Light (red square on daymark, 12 m in height) (17 miles ESE), thence:
NNW of Area No 695 (18 miles E).

Anchorages

Botevo

8.155

1 Good anchorage with shelter from NE winds, is available in the roadstead 8 miles ENE from Novokonstantinovskiy Light.

Obytichna Kosa

8.156

1 Anchorage with good shelter from E or NE winds may be obtained in depths of 6 m N of Obitochnyy Light. Shelter from S winds can be obtained near this light or off the W side of the root of Obytichna Kosa, where there is excellent anchorage in depths of about 5 m.

Caution. Vessels approaching these anchorages should pass at least 2 miles W of Obitochnyy Light.

EASTERN PART OF SEA OF AZOV

GENERAL INFORMATION

Chart 2234 (see 1.16)

Restrictions

8.157

1 Port Temryuk (8.164) is the only port in this part of Sea of Azov that is open to visits by foreign vessels.

MYS KAMENNYY TO MYS ACHUYEVSKIY

General information

Chart 2234 (see 1.16)

Routes

8.158

1 Recommended route No 66 leads ESE for about 25 miles from Mys Akhilleon to the entrance to Port Temryuk. Recommended route No 65 leads NE from the entrance to Port Temryuk towards Mys Achuyevskiy.

Topography

8.159

1 The coast between Mys Kamennyy (45°27′N, 36°51′E) and Mys Achuyevskiy (35 miles ENE) forms the shores of Temryukskiy Zaliv. The SW and S shores of this bay are generally bluff with steep reddish cliffs in places. The E shore is low and mostly covered in reeds, but there are a number of shell beaches.

Hazards

8.160

1 **Fishing Nets.** Between Kerch Strait and Temryukskiy Zaliv there are numerous fishing nets lying within 5 miles of the coast. As these nets are unmarked and their positions frequently change, mariners should exercise particular caution when navigating along this stretch of the coast.

2 **Volcanic action.** In 1929 a volcanic eruption resulted in an islet being formed about 8 cables E of Temryukskiy Light (45°20′N, 37°14′E) and 1 cable offshore. This islet

was subsequently washed away leaving an area with depths of about 1 m in its place.

3 In 1988 a further eruption took place 1½ miles E of the light, about 1½ cables offshore, resulting in an island being formed. This island was 60 m long, 30 m wide and 3 m high but has since been gradually eroded.

Mariners should exercise caution when navigating in these areas.

Natural conditions

8.161

1 **Currents** are almost entirely dependant on the direction of the wind and have an average rate of ¼ kn. Strong winds may increase the rate to 1 kn. In calm weather the effect of the outflow from the mouth of the Reka Kuban' (45°20′N, 37°25′E) is appreciable.

Winds. The prevailing winds are E in autumn and SW and NE in spring and summer.

2 **Fog** is common in autumn and winter being particularly frequent in January. In summer, fog is rare.

Ice. Temryukskiy Zaliv is normally frozen over between January and March.

Principal mark

8.162

1 **Major light:**

Temryukskiy Light (white 8-sided tower, 14 m in height) (45°20′N, 37°14′E).

Directions

(continued from 8.54)

8.163

1 From a position N of Mys Akhilleon (8.47) Recommended route No 66 leads ESE, passing (with positions from Temryukskiy Light (45°20′N, 37°14′E)):

NNE of Mys Kamennyy (17 miles WNW), thence:

SSW of a dangerous wreck (13½ miles NW), and:

NNE of Mys Pekly (14 miles WNW), a low point that projects a short distance NNE. Thence:

2 SSW of Banka Temryukskaya (3 miles NW), which has a least depth of 1·1 m over it and is composed of hard sand. The N extremity of this bank is marked by a light-buoy (N cardinal) and the red sector (134°–170°) of Temryukskiy Light covers the bank. Thence:

3 NNE of an obstruction (4¼ miles E), with a depth of 2·3 m over it, thence:

To the vicinity of Temryukskiy Light-buoy (safe water) (5 miles ENE) moored at the entrance to the Glukhoy Kanal (8.164).

Thence the track leads SE into the Glukhoy Kanal or NE along Recommended route No 65 towards Mys Achuyevskiy, passing NW of Kulikovskiy Light (45°23′N, 37°32′E).

Minor port and anchorage

Chart 2234 (see 1.16)

Port Temryuk

8.164

1 **Position.** Port Temryuk (45°19′N, 37°23′E) is situated about 2 miles inland on the W side of Temryukskiy Rukav and 2 miles N of the town of Temryuk. The port is a port of entry and in 2003 the town had a population of about 38 000.

Traffic. In 2002 the port was used by 177 vessels with a total deadweight of 852 898 tonnes.

2 **Directions.** From the vicinity of Temryukskiy Light-buoy the alignment (139¾°) of leading lights leads SE through the Glukhoy Kanal which connects the Temryuk branch of Reka Kuban' to the sea.

3 **Caution.** Strong winds may cause heavy silting and depth changes in the Glukhoy Kanal. Vessels should keep to the centre of the channel.

Limiting conditions. Vessels up to 140 m in length, 17·5 m beam and 4·2 m draught may use the port.

Pilots are compulsory and board in the vicinity of Temryukskiy Light-buoy.

4 **Tugs** are available.

Berths in 3 basins. Chaykin and Gazonikov on the N side of the canal, Cherchik on the S side.

Repairs. Minor repairs available; floating dock with a lifting capacity of 5000 tonnes.

Supplies. Diesel and fuel oil; fresh water; provisions.

8.165

1 **Anchorage** may be obtained in convenient depths off the entrance of Glukhoy Kanal, with a prominent church in Temryuk bearing 180°. This anchorage is open from W, through N to NE and is affected by a constant current from Reka Kuban'.

Small craft

8.166

1 Akhtanizovskiy Liman, 11 miles SE of Mys Pekly, is a lake that discharges into the sea through a break in the shoreline. Local knowledge is required.

Boats may enter Temryukskiy Rukav, the main branch of the Reka Kuban', which enters the sea about 1¾ miles E of the entrance to the Glukhoy Kanal.

MYS ACHUYEVSKIY TO DOLGAYA KOSA

General information

Chart 2234

Route

8.167

1 From a position W of Mys Achuyevskiy (45°40′N, 37°37′E) the route leads generally NE to Yasenskiy Zaliv thence WNW to Dolgaya Kosa.

Topography

8.168

1 Between Mys Achuyevskiy (45°40′N, 37°37′E) and Dolgaya Kosa, 60 miles N, the E shore of Sea of Azov is indented by the extensive Yasenskiy Zaliv.

From Mys Achuyevskiy to Achuyevskaya Kosa (26 miles NE), the shore is low, marshy and covered with reeds. This area is intersected by numerous rivers and lakes which form part of the delta of Reka Kuban'.

2 From Kamyshevatskaya Kosa (46°22′N, 38°00′E) to Dolgaya Kosa 22 miles NNW, the shore N of Yasenskiy Zaliv consists of clay cliffs of even elevation.

Dolgaya Kosa is a long, low and narrow spit which extends about 9 miles NW from the coast. See 8.104.

Principal marks

8.169

1 **Major lights:**

Akhtarskiy Light (white 8-sided stone tower, 21 m in height) (46°06′N, 38°11′E).

Kamyshevatskiy Light (white daymark, red band, on white concrete tower, 15 m in height) (46°24′N, 37°55′E).

Directions

(continued from 8.163)

8.170

1 From a position W of Mys Achuyevskiy (45°40′N, 37°37′E) the track leads N then ENE, passing (with positions from Akhartskiy Light (46°06′N, 38°11′E)):

WNW of Achuyevskiy Light (34 miles SW) (black metal framework tower and hut, 12 m in height) The light stands on the S side of the mouth of a small river, 2 miles NE of Mys Achuyevskiy. Thence:

2 WNW of a buoy (W cardinal) (18½ miles W) marking a dangerous wreck, thence:

NNW of Achuyevskaya Kosa (7½ miles WSW) (8.173), thence:

To the charted anchorage 6 miles S of Kamyshevatskaya Kosa.

(Directions continue for Primorsko-Akhtarsk at 8.177)

3 Thence the track leads WNW to Dolgaya Kosa, passing (with positions from Morevskiy Light (46°30′N, 37°50′E)):

SSW of Kamyshevatskiy Light (7 miles SSE) (8.169), thence:

SSW of dangerous wrecks (4 miles S and 4½ miles SSW), thence:

4 SSW of Morevskiy Light, thence:

NNE of Banka Zhelezinskaya (23 miles SW), a shoal with a depth of 4·8 m over it, thence:

SSW of Dolgaya Kosa (15 miles NNW) (8.168), thence:

Clear of a mooring buoy (18 miles W), thence:

5 SSW of a light-buoy (W cardinal) (19 miles WNW), marking the W extremity of Kosa Yelenina, a narrow shallow spit of coarse sand, with depths of less than 5 m over it. The bank extends 16 miles offshore from the village of Dolzhanskaya (46°38′N, 37°48′E) and its N edge is steep-to and there are patches, with depths of 1·8 m, up to 7 miles offshore.

6 Thence the track alters N, passing W of Dolgaya Kosa, to the approaches to Port Mariupol'.

8.171

1 **Useful mark:**

Dolgaya Kosa Beacon (black round metal column) (46°41′N, 37°45′E), close to the the SE end of Dolgaya Kosa (8.168).

(Directions for Port Mariupol' are given at 8.123)

Anchorage

Achuyev

8.172

1 Anchorage may be obtained off Achuyev (45°43′N, 37°46′E) in depths of about 6 m, mud, about 2 miles offshore abreast the mouth of Reka Protoka. The effect of the outflow of this river is appreciable several miles offshore.

Yasenskiy Zaliv

General information

8.173

1 Yasenskiy Zaliv is entered between the N extremity of Achuyevskaya Kosa (46°04′N, 38°06′E) and the S extremity of Kamyshevatskaya Kosa (19 miles N). The shores of the bay are indented on both sides of the entrance, on the S by Akhtarskiy Liman and on the N by Bukhta Kamyshevatskaya. At the head of the bay is a channel leading to Beysugskiy Liman, a shallow lagoon, which is separated from the bay by Yasenskaya Kosa.

Natural conditions

8.174

1 **Ice.** The bay is frozen over during the winter months.

Range of water level. WNW winds raise the water level and ESE winds lower it. The maximum rise observed is about 2·3 m and the maximum fall 1·5 m.

Currents in the bay are not appreciable and mainly dependent on the direction of the wind.

Dangers

8.175

1 Two obstructions with depths of 1 m over them, and 2 others with depths of 2·8 and 4 m over them, lie 11 and 13 miles N, and 3½ and 6 miles W, respectively, of Akhtarskiy Light (8.169).

Anchorages

8.176

1 **Perepravskiy Reyd** (46°20′N, 38°00′E) lies about 1 mile S of Kamyshevatskaya Kosa. This roadstead has depths of 4 m but is open to W winds.

Bukhta Kamyshevatskaya (46°24′N, 38°00′E) is entered between the extremity of Kamyshevatskaya Kosa and the N coast of Yasenskiy Zaliv. Small craft, not exceeding 2 m in draught, may obtain safe anchorage in the bay, with shelter from W or NW winds. Local knowledge is essential.

Minor port

Chart 2234 (see 1.16)

Primorsko-Akhtarsk

8.177

1 **General information.** Primorsko-Akhtarsk (46°02′N, 38°09′E), with a population (2003) of about 35 000 and the administrative centre of the district, is situated on the E side of the N entrance to Akhtarskiy Liman, a shallow lagoon.

Directions.

Front light (beacon) (46°02·3′N, 38°09′·0E).

Rear light (similar structure) (5 cables from front).

2 The alignment (170¾°) of these lights leads along Recommended route No 63 through a dredged channel marked by buoys (port and starboard) to the entrance to the port.

Caution. Wrecks with depths over them of 2, 1·5 and 0·3 m lie, respectively 1·5, 1·4 and 0·8 miles NE of Mys Golen'kiy (46°03′N, 38°07′E). A partly submerged wreck of a dredger, marked by a buoy (isolated danger) lies 0·9 miles NE of Mys Golen'kiy.

3 In the entrance to Akhtarskiy Liman a large number of fishing nets have been laid and caution is advised when navigating at night or in bad visibility.

Anchorage may be obtained about 10 miles NNW of Akhtarskiy Light in depths of 4 to 5 m.

Berths. Four berths in 2 basins with depths alongside of 1·7 to 3·8 m.

Other facilities: hospital.

GULF OF TAGANROG

GENERAL INFORMATION

Chart 2234

Restrictions

8.178

1 Port Mariupol', Yeysk, Taganrog, Azov and Rostov-Na-Donu are the only ports in Gulf of Taganrog open to international trade.

Topography

8.179

1 Gulf of Taganrog forms the NE part of Sea of Azov and is entered between the SE extremity of Bilosarays'ka Kosa (46°52′N, 37°17′E) and the NW extremity of Dolgaya Kosa (8.168), 15 miles SE. Thence it extends in an E direction for about 75 miles to the Donskaya Del'ta (8.204).

2 Within the N side of the gulf there is a level, uniform, and in places, salty steppe, which terminates at the coast in steep clay cliffs. These cliffs are nowhere more than 55 m in elevation; they are precipitous in some places, but are generally broken up into terraces by landslips. There are isolated hillocks and tumuli and the cliffs are intersected by deep gullies or ravines.

3 The shoreline on this side of the gulf consists of a narrow beach. A number of sandy spits extend S from the general line of the shore. These spits are fringed by extensive flats.

8.180

1 The S shore of the gulf consists of rising ground of even elevation with clay landslips, intersected by gullies. A number of spits extend from this side of the gulf that are fringed by flats more extensive than those on the N side.

8.181

1 A winding fairway channel, marked by light-buoys and buoys, leads between the flats extending from the N and S shores of Gulf of Taganrog. Depths in this channel vary between 7 m at its W end in Adhanovskiy Reyd and 5 m at its E end in the approaches to the port of Taganrog (8.200) and the Azovo Donskoy Morskoy Kanal (8.212).

Natural conditions

8.182

1 **Range of water level.** Prevailing winds cause large fluctuations in the water level of the gulf. W and SW winds raise the level, N and NE winds lower it.

W of Beglitskaya Kosa (47°07′N, 38°34′E) it is exceptional for the water level to fall by more than 0·6 m, however, E of this spit, winds of moderate strength cause a range in level of 0·6 to 1·2 m.

2 An area within 5 miles of the head of the gulf may completely dry and at such a time the level of the approach channel to Taganrog may fall by as much as 2 m.

A further variation in the water level of the gulf is caused by the changing volume of the discharge of the rivers flowing into the gulf. The level from this cause is highest in June and lowest in December.

3 **Currents.** During summer the currents in the gulf are variable and do not exceed the rate of ½ kn.

Ice usually appears at Taganrog in early December and in the entrance to the gulf at the end of the month. The ice in the gulf remains solid until the end of February, and in some years until the middle of March. The gulf is usually quite clear of ice by the end of March, or in severe winters, the middle of April. See 1.158 and 8.9.

4 **Fog** occurs from 7 to 10 days a month in the winter, but is rare in summer. It is more common at night or in the early morning, and in the very cold, calm weather during the winter, and may persist for several days.

Winds. In autumn and late winter, the prevailing winds are NE and E; in other seasons SW and W winds are almost as frequent. Gales, which generally blow from the E, are most frequent in autumn and winter.

Wrecks

8.183

1 Owing to the shallowness of the gulf, wrecks form a serious obstruction to navigation.

Fishing vessels

8.184

1 When E of a line joining Ostriv Lyapina (47°05′N, 37°41′E) (8.187) and Kosa Yeyskaya (32 miles SE), vessels must keep to the regular channel to avoid fishing vessels and their gear.

A fish haven lies 13 miles SW of Kryva Kosa Light (8.191).

WESTERN PART OF GULF OF TAGANROG

General information

Chart 2234

Area

8.185

1 The part of Gulf of Taganrog which lies to the W of a line joining Beglitskaya Kosa (47°07′N, 38°34′E) and Mys Sazal'nik (16 miles SSW), but excluding Port Mariupol' and its approaches (8.106).

Routes

8.186

1 Recommended route No 31 leads E for about 70 miles to the start of the buoyed channel leading to Girlo Peschanoye (8.202).

Recommended route No 32 leads ESE for about 30 miles to Yeysk (8.192).

Recommended route No 33 leads SSW for about 16 miles to Yeysk (8.192).

Topography

8.187

1 **North shore.** Between Ostriv Lyapina (47°05′N, 37°41′E) and the root of Kryva Kosa (18½ miles E), there are stretches of cliff, one of which is 5 miles long, intersected by a number of valleys.

Reka Mius enters the sea through a wide valley. Its mouth (47°09′N, 38°29′E) is constricted by two sandspits.

South shore. Between the root of Dolgaya Kosa (46°41′N, 37°44′E) and Yeysk (22 miles E), the coast consists of a low but steep cliff of even elevation.

Coastal banks with depths of less than 5 m, extend up to 5 miles into the gulf from either shore.

Traffic regulations

8.188

Areas periodically dangerous for navigation:

Area No 763, the limits of which are shown on the chart, lies between Dolgaya Kosa and Yeysk and extends up to 14 miles offshore.

See Appendix II.

Principal marks

8.189

1 **Landmarks:**

Tower (46°42′N, 38°15′E).

Tower (46°51′N, 38°28′E).

Major lights:

Shirokino Light (47°06′N, 37°49′E).

Shabel'skoye Light (46°52′N, 38°28′E), which stands on Mys Sazal'nik.

Other navigational aids

8.190

1 **Racon:**

Beglitskaya Kosa Light (47°07′N, 38°34′E) (8.199).

See *Admiralty List of Radio Signals Volume 2* for details.

Directions

(continued from 8.104)

8.191

1 From a position about 4 miles S of Bilosarays'ka Kosa Light (46°53′N, 37°19′E) (8.104), Recommended route No 31 leads generally E, passing (with positions from Shirokino Light (47°06′N, 37°49′E)):

S of Port Mariupol (13 miles W), thence:

N of the root of Dolgaya Kosa (24 miles S), thence:

S of Shirokino Light, thence:

2 S of Kryva Kosa Light (red circle on red metal framework tower, 16 m in height) (13½ miles E). Isolated danger buoys and a buoy (S cardinal) mark obstructions and wrecks lying between 3 miles S and 5 miles SW of the light. Thence:

S of an area in which fishing nets are laid (25 miles E), thence:

3 N of Anchorage area No 462 (8.193) (27½ miles ESE), and:

Mys Sazal'nik (30 miles ESE), a rounded headland that rises above the general level of the cliffs. Kosa Sazal'nikskaya extends 2 miles N from the headland and the village of Sazal'nik is situated partly on the headland and partly on the spit.

(Directions continue at 8.199)

Minor port and anchorages

Chart 2234 (see 1.16)

Yeysk

8.192

1 **General information.** Yeysk (46°43′N, 38°16′E) stands on rising ground at the root of Kosa Yeyskaya, a low sandy spit which forms the NW side of Yeyskiy Zaliv. It is the administrative centre for the region and in 2003 had a population of about 88 000. It is a port of entry.

Traffic. In 2002 the port was used by 336 vessels with a total deadweight of 2 997 045 tonnes.

2 **Directions from W.** From the vicinity of the buoy (safe water) (46°59′N, 37°35′E) (8.126) Recommended route No 32 leads ESE for 16½ miles, thence SE for 15 miles through the coastal bank from Yeyskiy Reyd to the final approach to Yeysk.

Directions from N. From the vicinity of a buoy (safe water) (47°00′N, 38°22′E) the alignment (185°) of leading lights standing on Ostrov Yeyskaya Kosa (46°46′N, 38°20′E), shown on request, leads 12½ miles S through a channel, marked by buoys and light-buoys laid on request, along Recommended route No 33.

3 Thence the track alters SW for about 5 miles to join Recommended route No 32 for the final approach to Yeysk.

Final approach. The alignment (133¾°) of leading lights leads SE through the channel to the harbour. The channel, which is 80 m in width, was dredged to 4·0 m (1998) with a least depth on the centreline of 4·7 m.

4 **Port.** A small artificial harbour consisting of an outer harbour enclosed by two moles and an inner basin.

Berths. There are 4 berths.

Facilities and supplies. Hospital; minor repairs and fresh provisions.

Anchorages

8.193

1 Area No 456, with depths of 3·8 to 4·4 m, is centred 2 miles WNW of Yeysk harbour entrance and is bounded by the following co-ordinates:

1. 46°44′·9N, 38°12′·5E.
2. 46°45′·6N, 38°13′·5E.
3. 46°44′·9N, 38°14′·5E.
4. 46°44′·2N, 38°13′·6E.

2 Area No 462 with depths of 6 m, mud and shells, is centred 7½ miles N of Mys Sazal'nik (8.191) and is bounded by the following co-ordinates:

1. 46°59′·8N, 38°26′·9E.
2. 46°59′·8N, 38°29′·4E.
3. 46°58′·6N, 38°29′·4E.
4. 46°58′·5N, 38°27′·0E.

3 Small vessels may obtain anchorage SE of Kryva Kosa Light (8.191), and in the bay on the NW side of the spit when winds are between NE and SE. Local knowledge is required.

EASTERN PART OF GULF OF TAGANROG

General information

Chart 2234

Area

8.194

1 The part of Gulf of Taganrog which lies to the E of a line joining Beglitskaya Kosa (47°07′N, 38°34′E) and Mys Sazal'nik (16 miles SSW), but excluding Donskaya Del'ta and its approaches (8.204).

Routes

8.195

1 From a position about 9½ miles SSW of Mys Taganrog (47°12′N, 38°57′E), Recommended route No 34 leads SSE for about 6 miles to Mys Chumburskiy (46°58′N, 38°54′E).

From a position about 6½ miles SSE of Beglitskaya Kosa Light (47°12′N, 38°57′E), Recommended route No 35 leads S for 6½ miles then E for 5 miles to Port Katon (46°53′N, 38°45′E).

Topography

8.196

1 **North shore.** Between the root of Beglitskaya Kosa (47°07′N, 38°34′E) (8.199) and Kosa Petrushina (12½ miles E), the coast consists of a steep cliff about 18 m high. Mys Taganrog, a bluff with reddish coloured landslips, on which stands the town of Taganrog, extends 4 miles ENE from the general line of the shore.

2 **South shore.** Between Mys Sazal'nik (46°52′N, 38°28′E) and Ochakovskaya Kosa (28 miles ENE), the coast in general consists of low cliffs of even elevation, which in places are intersected by gullies. E of this spit, clay slopes of an even elevation trend for about 8 miles to the S side of Donskaya Del'ta.

Principal marks

8.197

1 **Landmark:**
Windpump (47°09′N, 38°38′E).
Major light:
Taganrog Light (white round tower, red band, 20 m in height) (47°12′N, 38°57′E).

Other navigational aids

8.198

1 **Racons:**
Beglitskaya Kosa Light (47°07′N, 38°34′E) (8.199).
Taganrog Light — as above.
See *Admiralty List of Radio Signals Volume 2* for details.

Directions

(continued from 8.191)

8.199

1 From a position N of Mys Sazal'nik (46°52′N, 38°28′E) (8.191) Recommended route No 31 continues generally E, passing (with positions from Beglitskaya Kosa Light (47°07′N, 38°34′E)):
S of Beglitskaya Kosa Light (truncated pyramid, 18 m in height), which stands at the end of the spit that extends 1½ miles SE from the coastal cliff. Thence:
2 S of a wreck (5 miles S), with a depth of 0·9 m over it, thence:
S of Anchorage area No 463 (6 miles SSE) (8.201), thence:
SE of a buoy (isolated danger) (6½ miles ESE), marking a dangerous wreck, and:
NW of a light-buoy (N cardinal) (8 miles ESE), thence:
3 SSW of a dangerous wreck (10½ miles ESE), thence:
NNE of Anchorage area No 459 (11 miles ESE) (8.201), thence:
SSW of the approach channel to Taganrog (13 miles ESE), thence:
NNE of Anchorage area No 461 (14½ miles ESE) (8.214).
Thence to a position 10 miles S of Taganrog at the end of Recommended route No 31.

(Directions continue at 8.212)

Minor ports and anchorages

Taganrog

8.200

1 **General information.** The town of Taganrog (47°13′N, 38°54′E) stands on the level headland of Mys Taganrog and in 2003 had a population of about 282 000. It is an important industrial centre, with the main industry being engineering, and is a centre of administration.

2 The port consists of an artificial harbour on the SE side of the town. It is a port of entry.

Traffic. In 2002 the port was used by 311 vessels with a total deadweight of 2 292 651 tonnes.

Pilotage. Vessels with a draught of over 4·3 m are boarded 6 miles S of Beglitskaya Kosa Light (47°07′N, 38°34′E). Other vessels are boarded 10 miles SSW of Taganrog Light (47°12′N, 38°57′E).

3 **Directions.** From a position on Recommended route No 31, about 9½ miles SSW of Taganrog Light (8.197), a dredged channel leads NE then N for 10½ miles across the flat S of Mys Taganrogskiy. In 2002 the channel was dredged to 4·5 m.

4 **Berths.** The harbour consists of an outer basin, protected by three curved moles, which lead into two inner basins and a repair basin. There are 7 berths with depths alongside of 3·2 to 5 m.

Caution. Due to the cessation of navigational aids in the port of Taganrog, navigation is dangerous during the hours of darkness.

Anchorages

8.201

1 Area No 459 with depths of 4·6 to 4·8 m, mud and shells, is situated 10½ miles SSW of Taganrog and is bounded by the following co-ordinates:
1. 47°03′·0N, 38°50′·0E.
2. 47°02′·5N, 38°50′·0E.
3. 47°02′·5N, 38°49′·0E.
4. 47°03′·0N, 38°49′·0E.

2 Area No 460 with depths of 3·4 m, mud and shells, is situated 3 miles SSE of Taganrog and is bounded by the following co-ordinates:
1. 47°09′·5N, 38°59′·5E.
2. 47°09′·0N, 38°59′·5E.
3. 47°09′·0N, 38°58′·5E.
4. 47°09′·5N, 38°58′·5E.

3 Area No 463 with depths of 5·2 to 5·6 m, mud and shells, is situated 6 miles SSE of Beglitskaya Kosa Light and is bounded by the following co-ordinates:
1. 47°01′·8N, 38°39′·0E.
2. 47°00′·8N, 38°38′·2E.
3. 47°00′·8N, 38°36′·0E.
4. 47°01′·8N, 38°36′·8E.

DONSKAYA DEL'TA AND APPROACHES

General information

Chart 2234

Route

8.202

1 From the end of Recommended route No 31 (8.199) the Azovo Donskoy Morskoy Kanal leads E for about 13 miles to Girlo Peschanoye, the mouth of the Reka Don.

Topography

8.203

1 **Reka Don** rises about 200 km S of Moskva and after flowing S for some 1950 km, enters the sea through Donskaya Del'ta at the head of Gulf of Taganrog. Reka Don is connected to Reka Volga, near Volgograd, by the Volgo-Donskoy Kanal.

This canal, which is 101 km long, allows shipping to pass from the Black Sea to the White, Baltic and Caspian Seas.

Donskaya Del'ta

8.204

1 The delta, which starts about 17 miles from the sea is formed between Mertvyy Donets in the N and Reka Staryy Don in the S. The latter carries about half the outflow of the river.

On approaching the sea, the various branches divide into numerous channels which enter Gulf of Taganrog by as many as 24 mouths, extending from N to S over a distance of 13 miles.

2 The whole of the head of Gulf of Taganrog is fringed by a very shallow flat and the numerous islands at the mouth of the delta are almost awash. The banks rise gradually farther upstream and are completely covered in dense masses of reeds about 2 m in height.

All the mouths frequently change direction and vary in depth, and after gales from W, new mouths are sometimes formed.

Depths

8.205

1 The Azovo Donskoy Morskoy Kanal was dredged (2002) to 4·5 m.

Pilotage

8.206

1 Vessels with a draught of over 4·3 m are boarded 6 miles S of Beglitskaya Kosa Light (47°07′N, 38°34′E). Other vessels are boarded 10½ miles S of Taganrog Light (47°12′N, 38°57′E).

Natural conditions

8.207

1 **Range of water level** in the river is subject to considerable seasonal change due to the melting of snow in the river basin and also due to the wind.

8.208

1 **Current.** In Girlo Peschanoye the currents are mainly affected by the wind, while at Rostov-Na-Donu, the current is affected by the level of the river in the spring and by the wind at other seasons.

Rates of current:

Girlo Peschanoye	*Mean rate (kn)*	*Max rate (kn)*
E wind	2¾	4¼
W wind	¾	2
Rostov:		
Spring	3 to 4	4 to 5
Other seasons	½	2½ (with E gales)

2 Note: W gales may reduce the current to nothing or even cause a current upstream with a rate of ¼ kn.

8.209

1 **Winds.** Prevailing winds are SW in summer and NE during the remainder of the year. The NE winds, known locally as Verkhovoy, are remarkable for their strength and continuance, sometimes blowing for three or more weeks on end. The SW winds, known locally as Nizovka, are equally strong but of shorter duration.

8.210

1 **Ice.** The river freezes over from mid December to mid March and the ice attains a thickness of 0·3 to 0·5 m.

Principal marks

8.211

1 **Major light:**

Rostov Approach Channel 2nd Rear Leading Light (47°06′N, 39°19′E).

Directions

(continued from 8.199)

8.212

1 **Rostov Approach Channel First Leading Lights:**

Front light (triangle on wooden pyramid, 9 m in height) (47°04′·9N, 39°07′·7E).

Rear light (circle on wooden pyramid, 22 m in height) (1·4 miles from front light).

2 From a position 10 miles S of Taganrog the alignment (070°) of these lights leads ENE for 7 miles through the Azovo Donskoy Morskoy Kanal, marked by light-buoys, to a position 2 miles N of Ochakovskaya Kosa.

Thence the track alters E onto the Rostov Approach Channel Second Leading Lights.

8.213

1 **Rostov Approach Channel Second Leading Lights:**

Front light (47°05′·5N, 39°17′·1E).

Rear light (1·3 miles from front light).

The alignment (082½°) of these lights leads E for 6 miles through the channel, marked by light-buoys, to Girlo Peschanoye (47°05′N, 39°15′E), the mouth of Reka Staryy Don.

Anchorages and harbours

Chart 2234 (see 1.16)

Anchorage

8.214

1 Area No 461 with depths of 4 to 4·4 m, mud and shells, is situated 10 miles SSW of Taganrog at the entrance to the Azovo Donskoy Morskoy Kanal and is bounded by the following co-ordinates:

1. 47°02′·4N, 38°54′·9E.
2. 47°01′·9N, 38°54′·9E.
3. 47°01′·9N, 38°53′·9E.
4. 47°02′·4N, 38°53′·9E.

2 Area No 464 is situated close W of Area No 461 and is bounded by the following co-ordinates:

1. 47°01′·9N, 38°53′·0E.
2. 47°02′·4N, 38°53′·0E.
3. 47°02′·4N, 38°54′·0E.
4. 47°01′·9N, 38°54′·0E.

Azov

8.215

1 **General information.** Azov lies on the S bank of Reka Staryy Don, about 8 miles upstream from the mouth of the river. It is a port of entry and in 2003 had a population of about 81 000.

Traffic. In 2002 the port was used by 438 vessels with a total deadweight of 4 325 565 tonnes.

Depths in this stretch of river vary from 3 m to 18 m and the width from 1 to 6 cables.

2 **Berths.** There are 6 berths for cargo vessels and 2 for passenger vessels.

Repairs. Minor repairs available.

Supplies. Fuel; fresh water.

Rostov-Na-Donu

8.216

1 **General information.** Rostov-Na-Donu, a major industrial city, which in 2003 had a population of about 1 012 000, lies 27 miles upstream by river from Girlo Pesehanoye (8.202). It is a port of entry.

Traffic. In 2002 the port was used by 505 vessels with a total deadweight of 5 141 140 tonnes.

2 **Depths** in this stretch of river vary from 3 m to 18 m and the width from 1 to 6 cables.

Berths. There are 39 berths in the port.

Repairs. Repairs available.

Supplies. Fuel; fresh water; provisions.

Climatic table. See 1.195 and 1.208.

APPENDIX I

REGULATIONS FOR THE PASSAGE OF VESSELS THROUGH ÇANAKKALE BOĞAZI, MARMARA DENIZI AND İSTANBUL BOĞAZI

MONTREUX CONVENTION

1. The Montreux Convention, establishing the Regime of the Straits, was signed at Montreux on 20 July 1936. The following articles govern the passage of merchant vessels through Çanakkale Boğazı, Marmara Denizi and İstanbul Boğazı, known collectively under the term "Straits".

2. **Article 2.** In time of peace, merchant vessels shall enjoy complete freedom of transit and navigation in the Straits, by day and by night, under any flag and with any kind of cargo, without any formalities except as provided in Article 3 below. No taxes or charges other than those authorised for (a) sanitary control stations, (b) lighthouses, light and channel buoys, (c) life saving services, including lifeboats, rocket stations, fog sirens, direction finding stations, and any light-buoys not comprised in (b) above or other similar installations shall be levied by the Turkish authorities on those vessels when passing in transit without calling at a port in the Straits.

In order to facilitate the collection of these taxes or charges, merchant vessels passing through the Straits shall communicate to the officials at the stations referred to in Article 3, their name, nationality, tonnage, destination and last port of call (provenance).

Pilotage and towage remain optional.

3. **Article 3.** All ships entering the Straits by the Aegean Sea or by the Black Sea shall stop at a sanitary station near the entrance to the Straits for the purposes of the sanitary control prescribed by Turkish law within the framework of international sanitary regulations. This control, in the case of ships possessing a clean bill of health or presenting a declaration of health, testifying that they do not fall within the scope of the provisions of the second paragraph of the present article, shall be carried out by day or night with all possible speed, and the vessels in question shall not be required to make any other stop during their passage through the Straits.

Vessels which have on board cases of plague, cholera, yellow fever, exanthematic typhus or smallpox, or which have had such cases on board during the previous seven days, and vessels which have left an infected port within less than five days shall stop at the sanitary stations indicated in the proceeding paragraph in order to embark such sanitary guards as the Turkish authorities may direct. No tax or charge shall be levied in respect of these sanitary guards and they shall be disembarked at a sanitary station on departure from the Straits.

4. **Article 4.** In time of war, Turkey not being belligerent, merchant vessels under any flag or with any kind of cargo, shall enjoy freedom of transit and navigation in the Straits subject to the provisions of Articles 2 and 3.

Article 5. In time of war, Turkey being belligerent, merchant vessels not belonging to a country at war with Turkey shall enjoy freedom of transit and navigation in the Straits on condition that they do not in any way assist the enemy.

Such vessels shall enter the Straits by day and their transit shall be effected by the route which shall, in each case, be indicated by the Turkish authorities.

Article 6. Should Turkey consider herself to be threatened with imminent danger of war, the provisions of Article 2 shall nevertheless continue to be applied except that vessels must enter the Straits by day and that their transit must be effected by the route which shall, in each case, be indicated by the Turkish authorities.

Pilotage may, in this case, be made obligatory, but no charge shall be levied,

APPENDIX II

RUSSIAN REGULATED AREAS

Details of these areas are promulgated in Russian Notices to Mariners.

Areas periodically dangerous for navigation, including firing practice, bombing, mine practice and similar areas, are dangerous only for the period during which the dangerous operations are being carried out.

The times during which these areas are dangerous for navigation are broadcast as PRIPS and NAVIPS. These navigational warnings will be broadcast 3–5 days before the start of dangerous operations and repeated each day until their completion. See *Admiralty List of Radio Signals Volume 3(1)* for details.

AREAS PROHIBITED FOR NAVIGATION

E OF MYS FIOLENT

Area No 104 (44°30′N, 33°32′E) as shown on the relevant Russian chart.

OUTER ROADSTEAD OF SEVASTOPOL'

Area No 108 (44°41′N, 33°32′E) as shown on the relevant Russian chart.

NOVOROSSIYSKAYA BUKHTA

Area No 113 (44°42′N, 37°48′E) as shown on chart 3316.

MYS CHAUDA TO MYS KYZ-AUL

Area No 115 (44°56′N, 36°07′E) as shown on chart 2216.

OZERO SAKS'KE TO MYS KOSTYANTYNIVS'KYY

Area No 123 (44°52′N, 33°26′E) as shown on chart 2232.

S OF BUKHTA GOLLANDIYA

Area No 124 (44°37′N, 33°34′E) as shown on the relevant Russian chart.

E OF THE ENTRANCE TO KILEN BUKHTA

Area No 125 (44°37′N, 33°34′E) as shown on the relevant Russian chart.

BUKHTA MATUSHENKO AND KOSTYANTYNIVS'KA BUKHTA AND APPROACHES

Area No 129 (44°38′N, 33°31′E) as shown on the relevant Russian chart.

MYS NIKITIN

Area No 132 (44°30′N, 34°15′E) as shown on the relevant Russian chart.

GELENDZHIKSKAYA BUKHTA

Area No 133 (44°30′N, 37°59′E) as shown on chart 3311.

MYS SARYCH

Area No 135 (44°22′N, 33°45′E) as shown on the relevant Russian chart.

W OF MYS TROITSY

Area No 136 (44°23′N, 33°52′E) as shown on the relevant Russian chart.

W OF MYS AY-TODOR

Area No 137 (44°25′N, 34°06′E) as shown on the relevant Russian chart.

MYS PENAY

Area No 146 (44°41′N, 37°53′E) as shown on chart 3316.

ODESA

Area No 184 (46°30′N, 30°45′E) as shown on chart 2243.

MYS KIKINEYZ

Area No 197 (44°23′N, 33°59′E) as shown on the relevant Russian chart.

AREAS PROHIBITED FOR STOPPING, ANCHORING, FISHING, UNDERWATER AND DREDGING OPERATIONS, EXPLOSIVE OPERATIONS AND NAVIGATING WITH A DREDGED ANCHOR

RIVER DANUBE

Area No 600 bounded by a line joining the left and right river banks between mile points 50 and 53 in the vicinity of Ostrov Ivancha.

DNESTROVSKO-TSAREGRADSKOYE GIRLO

Area No 602 (46°05′N, 30°28′E) as shown on the relevant Russian chart.

DNISTROVSK'YY LYMAN

Area No 603 (46°12′N, 30°23′E) as shown on the relevant Russian chart.

ODESA

Area No 605 (46°30′N, 30°46′E) as shown on chart 2243.

MYKOLAYIV

Area No 609 (46°58′N, 31°57′E) as shown on chart 2203.

Area No 610 (46°59′N, 31°58′E) as shown on chart 2203.

Area No 611 (46°59′N, 32°00′E) as shown on chart 2203.

RUSSKAYA KOSA

Area No 612 (46°44′N, 31°56′E) as shown on chart 2203.

KHERSON

Area No 614 (46°37′N, 32°37′E) as shown on chart 2201.

Area No 615 (46°38′N, 32°38′E) as shown on chart 2201.

Area No 616 (46°38′N, 32°38′E) as shown on chart 2201.

TENDRIVS'KA KOSA

Area No 617 (46°22′N, 31°32′E) as shown on the relevant Russian chart.

SEVASTOPOL'SKAYA BUKHTA

Area No 625 (44°37′N, 33°32′E) as shown on the relevant Russian chart.

Area No 627 (44°37′N, 33°34′E) as shown on the relevant Russian chart.

FEODOSIYS'KA ZATOKA

Area No 630 (45°03′N, 35°29′E) as shown on chart 2233.

BALAKLAVASKAYA BUKHTA

Area No 633 (44°27′N, 33°35′E) as shown on the relevant Russian chart.

MYS KHERSONES'KYY TO MYS SARYCH
Area No 634 (44°27′N, 33°26′E) as shown on chart 2232.

FEODOSIYS'KA ZATOKA
Area No 635 (45°03′N, 35°32′E) as shown on chart 2233.

MYS BASHENNYY TO MYS PESHCHERNYY
Area No 636 (45°43′N, 34°49′E) as shown on chart 2233.

SUDAKSKAYA BUKHTA
Area No 637 (44°50′N, 34°58′E) as shown on the relevant Russian chart.

MYS BASHENNYY TO MYS PESHCHERNYY
Area No 640 (44°50′N, 35°25′E) as shown on chart 2233.

E OF MYS CHAUDA
Area No 644 (44°59′N, 35°54′E) as shown on chart 2216. This area lies within Area No 115 which is prohibited for navigation.

SKALY KORABL' KAMEN'
Area No 645 (44°59′N, 36°09′E) as shown on chart 2216. This area lies within Area No 115 which is prohibited for navigation.

MOUTH OF REKA OZYEREYKA
Area No 647 (44°40′N, 37°38′E) as shown on the relevant Russian chart.

MYS MYSKHAKO TO MYS DOOB
Area No 648 (44°38′N, 37°49′E) as shown on chart 3311.

NOVOROSSIYSKAYA BUKHTA
Area No 649 (44°42′N, 37°50′E) as shown on chart 3316.

BUKHTA IMERETINSKAYA
Area No 650 (43°23′N, 39°58′E) as shown on the relevant Russian chart.

GELENDZHIKSKAYA BUKHTA
Area No 651 (44°34′N, 38°04′E) as shown on the relevant Russian chart.

APPROACHES TO ARKHIPO-OSIPOVKA
Area No 652 (44°19′N, 38°30′E) as shown on chart 3311.

BUKHTA DZHUBGA
Area No 653 (44°18′N, 38°43′E) as shown on the relevant Russian chart.

TENDRIVS'KA KOSA
Area No 660 (46°20′N, 31°33′E) as shown on the relevant Russian chart.

GELENDZHIKSKAYA BUKHTA
Area No 661 (44°32′N, 38°01′E) as shown on the relevant Russian chart.

NW OF MYS TARKHANKUT
Area No 663 (45°28′N, 32°23′E) as shown on chart 2232.

S OF NOVOROSSIYSK BUKHTA
Area No 664 (44°27′N, 37°51′E) as shown on chart 3311.

SW OF MYS VELKYY FONTAN
Area No 665 (46°21′N, 30°43′E) as shown on chart 2243.

BUKHTA RYBATSKAYA
Area No 666 (44°34′N, 37°59′E) as shown on chart 3311.

FEODOSIYS'KA ZATOKA
Area No 667 (45°04′N, 35°24′E) as shown on the relevant Russian chart.

N AND NW OF MYS TARKHANKUT
Area No 668 (45°24′N, 32°20′E) as shown on chart 2232.

W OF MYS MYSKHAKO
Area No 670 (44°38′N, 37°38′E) as shown on chart 3311.

APPROACHES TO NOVOROSSIYSK
Area No 671 (44°36′N, 37°53′E) as shown on chart 3316.

KOSA ARABATS'KA STRILKA
Area No 693 (45°50′N, 34°57′E) as shown on chart 2234.

KOSA BIRYUCHYY OSTRIV
Area No 694 (46°07′N, 35°09′E) as shown on chart 2234.

OBYTICHNA KOSA
Area No 695 (46°32′N, 36°09′E) as shown on chart 2234.

AREAS BEYOND THE LIMITS OF INNER AND TERRITORIAL WATERS OF UKRAINE, RUSSIA AND GEORGIA TEMPORARILY DANGEROUS FOR NAVIGATION

SE OF OSTROV ZMIYINYY
Area No 703 (45°00′N, 31°15′E) as shown on chart 2232.

W OF TENDRIVS'KA KOSA
Area No 706 (46°13′N, 31°13′E) as shown on chart 2232.

NW OF MYS TARKHANKUT
Area No 707 (45°40′N, 32°00′E) as shown on chart 2232.

SW OF MYS TARKHANKUT
Area No 708 (44°44′N, 31°06′E) as shown on chart 2232.
Area No 709 (44°45′N, 31°22′E) as shown on chart 2232.

W OF MYS KHERSONES'KYY
Area No 710 (44°40′N, 32°53′E) as shown on chart 2232.

W OF MYS TARKHANKUT
Area No 723 (45°21′N, 31°57′E) as shown on chart 2232.

SW OF MYS KHERSONES'KYY
Area No 724 (44°03′N, 32°45′E) as shown on chart 2232 and the relevant Russian chart.
Area No 725 (44°18′N, 32°38′E) as shown on chart 2232.

S OF MYS SARYCH
Area No 727 (44°09′N, 33°35′E) as shown on chart 2232.
Area No 729 (43°50′N, 33°25′E) as shown on chart 2232 and the relevant Russian chart.

SE OF MYS AY-TODOR
Area No 730 (43°51′N, 34°40′E) as shown on chart 2233.

MYS AYUDAH TO MYS KYZ-AUL
Area No 731 (44°34′N, 35°39′E) as shown on chart 2233.

W OF MYS ANAPSKIY
Area No 744 (44°50′N, 37°05′E) as shown on the relevant Russian chart.

SW OF NOVOROSSIYSK
Area No 745 (44°28′N, 37°08′E) as shown on the relevant Russian chart.
Area No 746 (44°27′N, 37°01′E) as shown on the relevant Russian chart.
Area No 747 (44°30′N, 37°10′E) as shown on the relevant Russian chart.
Area No 748 (44°23′N, 37°00′E) as shown on the relevant Russian chart.
Area No 749 (44°30′N, 37°24′E) as shown on the relevant Russian chart.

S OF NOVOROSSIYSK
Area No 750 (44°11′N, 37°53′E) as shown on the relevant Russian chart.
Area No 751 (44°06′N, 37°48′E) as shown on the relevant Russian chart.
Area No 752 (44°21′N, 37°47′E) as shown on the relevant Russian chart.

GELENDZHIKSKAYA BUKHTA
Area No 753 (44°32′N, 37°56′E) as shown on the relevant Russian chart.

AREAS WHICH ARE USED PERIODICALLY FOR FLEET EXERCISES

KINBURNS'KA KOSA
Area No 704 (46°31′N, 31°34′E) as shown on chart 2200.

TENDRIVS'KA KOSA
Area No 705 (46°17′N, 31°33′E) as shown on chart 2232.

MYS BASHENNYY TO MYS CHAUDA
Area No 743 (44°50′N, 35°17′) as shown on chart 2233.

BILOSARAYS'KA ZATOKA
Area No 761 (46°46′N, 37°01′) as shown on chart 2234.

GULF OF TAGANROG
Area No 763 (46°46′N, 38°00′) as shown on chart 2234.

SE OF MYS KHERSONES'KYY
Area No 784 (44°33′N, 33°25′E) as shown on the relevant Russian chart.

APPROACHES TO FEODOSIYS'KA ZATOKA
Area No 787 (45°00′N, 35°41′) as shown on chart 2233.

AREAS WHICH SHOULD BE AVOIDED

ODESA
Area No 800 (46°31′N, 30°44′E) as shown on the relevant Russian chart.
Area No 801 (46°30′N, 30°45′E) as shown on the relevant Russian chart.
Area No 802 (46°30′N, 30°46′E) as shown on the relevant Russian chart.

MYS PIVNICHNYY ODES'KYY
Area No 803 (46°33′N, 30°49′E) as shown on chart 2205.
Area No 804 (46°34′N, 30°53′E) as shown on chart 2205.

MYS OCHAKIVSKIY
Area No 805 (46°36′N, 31°34′E) as shown on chart 2200.

TENDRIVS'KA KOSA
Area No 806 (46°21′N, 31°33′E) as shown on the relevant Russian chart.
Area No 807 (46°15′N, 31°39′E) as shown on the relevant Russian chart.

NW OF MYS TARKHANKUT
Area No 808 (45°41′N, 31°43′E) as shown on the relevant Russian chart.
Area No 809 (45°43′N, 31°53′E) as shown on the relevant Russian chart.
Area No 810 (45°43′N, 31°55′E) as shown on the relevant Russian chart.
Area No 811 (45°39′N, 32°13′E) as shown on the relevant Russian chart.
Area No 812 (45°40′N, 31°40′E) as shown on the relevant Russian chart.

KARKINITS'KA ZATOKA
Area No 813 (45°45′N, 32°42′E) as shown on the relevant Russian chart.

BUKHTA KARADZHYNS'KA
Area No 814 (45°21′N, 32°30′E) as shown on the relevant Russian chart.

OZERO DONUZLAV
Area No 815 (45°25′N, 33°09′E) as shown on the relevant Russian chart.

SEVASTOPOL'SKAYA BUKHTA
Area No 816 (44°38′N, 33°32′E) as shown on the relevant Russian chart.
Area No 817 (44°37′N, 33°36′E) as shown on the relevant Russian chart.

S OF MYS KYYIK-ATLAMA
Area No 818 (44°42′N, 35°24′E) as shown on chart 2233.

BAT'UMI
Area No 822 (41°39′N, 41°39′E) as shown on chart 3317.

NW OF MYS TARKHANKUT
Area No 823 (45°42′N, 31°52′E) as shown on the relevant Russian chart.

W OF MYS TARKHANKUT
Area No 824 (45°21′N, 31°52′E) as shown on the relevant Russian chart.
Area No 825 (45°16′N, 31°41′E) as shown on the relevant Russian chart.

SSE OF MYS OCHAKIVSKIY
Area No 826 (46°35′N, 31°36′E) as shown on chart 2200.

NW OF MYS TARKHANKUT
Area No 827 (45°40′N, 31°41′E) as shown on the relevant Russian chart.

W OF MYS TARKHANKUT
Area No 828 (45°15′N, 31°43′E) as shown on the relevant Russian chart.
Area No 829 (44°11′N, 30°11′E) as shown on the relevant Russian chart.

MYS CHAUDA
Area No 830 (45°00′N, 35°46′E) as shown on chart 2216.

BUKHTA KAMYSH-BURUNSKAYA

Area No 850 (45°17′N, 36°26′E) as shown on chart 2242.

Area No 851 (45°18′N, 36°27′E) as shown on chart 2242.

PORT KRYM TO KOSA CHUSHKA

Area No 852 (45°21′N, 36°39′E) as shown on chart 2242.

MYS YENYKALE TO KOSA CHUSHKA

Area No 853 (45°20′N, 36°38′E) as shown on chart 2242.

KOSA ARABATS'KA STRILKA

Area No 854 (45°38′N, 35°15′E) as shown on chart 2234.

Area No 855 (45°50′N, 34°57′E) as shown on the relevant Russian chart.

KOSA FEDOTOVA

Area No 856 (46°22′N, 35°24′E) as shown on chart 2234.

GULF OF TAGANROG

Area No 857 (47°08′N, 38°59′E) as shown on the relevant Russian chart.

Area No 858 (47°08′N, 39°00′E) as shown on the relevant Russian chart.

BEYSUGSKIY LIMAN

Area No 859 (46°11′N, 38°18′E) as shown on the relevant Russian chart.

KOSA ARABATS'KA STRILKA

Area No 860 (45°51′N, 34°58′E) as shown on the relevant Russian chart.

Area No 861 (45°51′N, 34°58′E) as shown on the relevant Russian chart.

NE OF MYS KAZANTIP

Area No 862 (45°37′N, 36°03′E) as shown on chart 2234.

EXPLOSIVES DUMPING GROUNDS

KAZACH'YA BUKHTA

Area No 81 (44°35′N, 33°25′E) as shown on the relevant Russian chart.

W OF MYS KHERSONES'KYY

Area No 82 (44°34′N, 32°25′E) as shown on chart 2232.

SSW OF MYS KHERSONES'KYY

Area No 83 (44°22′N, 33°12′E) as shown on chart 2232.

S OF MYS CHAUDA

Area No 84 (44°37′N, 35°56′E) as shown on chart 2216.

Area No 85 (44°42′N, 35°59′E) as shown on chart 2216.

S OF MYS OPUK

Area No 86 (44°38′N, 36°11′E) as shown on chart 2216.

W OF MYS UTRISH

Area No 87 (44°40′N, 36°45′E) as shown on chart 2216.

Area No 88 (44°32′N, 36°51′E) as shown on chart 2233.

SW OF MYS DOOB

Area No 89 (44°31′N, 37°43′E) as shown on chart 3311.

W OF PORT TUAPSE

Area No 90 (44°04′N, 38°48′E) as shown on chart 3311.

SSW OF PORT TUAPSE

Area No 91 (43°56′N, 38°57′E) as shown on chart 2233.

NW OF OSTROV ZMIYINYY

Area No 95 (45°20′N, 30°00′E) as shown on chart 2213.

N OF MYS KHERSONES'KYY

Area No 96 (44°37′N, 33°23′E) as shown on the relevant Russian chart.

APPENDIX III

BULGARIAN REGULATED AREAS

AREAS PROHIBITED FOR NAVIGATION

E OF NOS SHABLA
Area No 11 (43°34′N, 28°43′E) as shown on chart 2230.
Area No 12 (43°32′N, 28°41′E) as shown on chart 2230.

VARNENSKI ZALIV
Area No 13 (43°12′N, 27°57′E) as shown on chart 2285.

VARNA
Area No 14 (43°12′N, 27°55′E) as shown on chart 2285.

VARNENSKO EZERO
Area No 15 (43°12′N, 27°51′E) as shown on chart 2285.

S OF NOS GALATA
Area No 16 (43°05′N, 27°55′E) as shown on chart 2283.

E OF CHERNI NOS
Area No 17 (42°54′N, 28°03′E) as shown on chart 2283.

W OF NOS ATIYA
Area No 18 (42°28′N, 27°35′E) as shown on chart 2399.

AREAS DECLARED PERIODICALLY DANGEROUS FOR NAVIGATION

SE OF BALCHIK
Area No 111 (43°20′N, 28°15′E) as shown on chart 2283.

E OF MASLEN NOS
Area No 112 (42°21′N, 27°56′E) as shown on chart 2230.

AREAS DECLARED TEMPORARILY DANGEROUS FOR NAVIGATION

SE OF VARNA
Area No 211 (42°59′N, 28°33′E) as shown on chart 2230.

E OF BURGASKI ZALIV
Area No 212 (42°29′N, 28°55′E) as shown on chart 2230.

AREAS PROHIBITED FOR ANCHORING, FISHING, UNDERWATER AND DREDGING OPERATIONS, TRAWLING AND UNDERWATER EXPLOSIONS

VARNENSKI ZALIV
Area No 311 (43°12′N, 27°56′E) as shown on chart 2285.

BETWEEN NOS SHABLA AND NOS KALIAKRA
Area No 312 (43°28′N, 28°42′E) as shown on chart 2230.

W OF NOS KALIAKRA
Area No 313 (43°23′N, 28°26′E) as shown on chart 2283.

S OF BALCHIK
Area No 314 (43°21′N, 28°11′E) as shown on chart 2283.

KORA BURNU TO NOS SIVRIBURUN
Area No 315. An area 1½ miles either side of the cable (shown on chart 2230) running N from a position 9 miles E of Kora Burnu (41°53′N, 28°03′E) to Varna, and 1½ miles either side of the cable running NE from a position 15½ miles E of Nos Ilandzhik (43°07′N, 27°55′E) to a position 13 miles E of Nos Sivriburun (43°44′N, 28°35′E).

E OF CHERNI NOS
Area No 316 (42°54′N, 28°07′E) as shown on chart 2283.

SW OF OSTROV SVETA ANASTASIYA
Area No 317 (42°28′N, 27°33′E) as shown on chart 2399.

E OF NOS ATIYA
Area No 318 (42°28′N, 27°36′E) as shown on chart 2399.

S OF OSTROV SVETI IVAN
Area No 319 (42°26′N, 27°41′E) as shown on chart 2399.

ESE OF NOS GALATA
Area No 320 (43°07′N, 28°08′E) as shown on chart 2283.

VARNENSKO EZERO
Area No 321 (43°12′N, 27°47′E) as shown on the relevant Bulgarian chart.

APPENDIX IV

GEORGIAN REGULATED AREAS

PROHIBITED AREAS

(Nominated limited areas of internal waters and territorial sea used by the defence forces and other interests, where navigation, stopping, anchorage and fishing are prohibited).

WSW OF BAT'UMI

Area SARPI (41°37′N, 41°27′E) as shown on chart 2236.

W OF P'OT'I

Area P'OT'I (42°09′N, 41°39′E) as shown on chart 3317.

SW OF SOKHUMI

Area SOKHUMI (42°59′N, 40°59′E) as shown on chart 3313.

WNW OF MYS PITSUNDA

Area BZYB (43°10′N, 40°15′E) as shown on chart 2236.

W OF GRIGOLETI

Area SUPSA (42°02′N, 41°43′E) as shown on chart 3313.

AREAS TEMPORARILY PROHIBITED FOR NAVIGATION

(Nominated area of internal water, territorial sea, economic zone, in which navigation is limited for a definite period of time).

SW OF MYS BATUMSKIY

Area BURUN-TABIA (41°39′N, 41°37′E) as shown on chart 3313.

S OF POTIYSKIY

Area MALTAKVA (42°07′N, 41°40′E) as shown on chart 3317.

APPROACHES TO OCHAMCHIRA

Area OCHAMCHIRA (42°43′N, 41°24′E) as shown on chart 3313.

MYS KODORI TO MYS ISKURIYA

Area KODORI (42°48′N, 41°08′E) as shown on chart 3313.

S OF SOKHUMI

Area BIRTS (42°59′N, 41°00′E) as shown on chart 3313.

NAVAL PRACTICE AREAS

(A nominated area of internal waters, territorial sea or economic zone, in which navigation is temporarily limited for reasons of activities by the Georgian military forces. In such areas the following signals are shown: during the day-red flags and at night-bright red or orange lights).

WNW OF MYS ANAKLIA

Area GEORGIA (42°59′N, 41°00′E) as shown on chart 3313.

GAGIDA

Area GAGIDA (42°32′N, 41°25′E) as shown on chart 3313.

MYS ANAKLIA TO REYD REDUT-KALE

Area ANAKLIYA (42°20′N, 41°32′E) as shown on chart 3313.

DANGEROUS MARITIME AREA

(Nominated areas of internal waters, territorial seas or economic zones used for the dumping of weapons or ordnance. Navigation in this area is not prohibited, but all vessels should navigate with extreme caution).

Spoil Grounds

W OF BAT'UMI

Area No 10 (41°40′N, 41°39′E) as shown on chart 3317.

SW OF P'OT'I

Area No 20 (42°09′N, 41°39′E) as shown on chart 3317.

APPROACHES TO OCHAMCHIRA

Area No 30 (42°44′N, 41°26′E) as shown on chart 3313.

Explosives Dumping Grounds

NW OF P'OT'I

Area No 40 (42°13′N, 41°17′E) as shown on chart 3313.

Area No 50 (42°12′N, 41°28′E) as shown on chart 3313.

NNW OF BAT'UMI

Area No 60 (41°50′N, 41°38′E) as shown on chart 3313.

INDEX

PUBLICATIONS OF THE UNITED KINGDOM HYDROGRAPHIC OFFICE

A complete list of Sailing Directions, Charts and other works published by the United Kingdom Hydrographic Office, together with a list of Agents for their sale, is contained in the "Catalogue of Admiralty Charts and Publications", published annually. The list of Agents is also promulgated in Admiralty Notice to Mariners No 2 of each year, or it can be obtained from:

The United Kingdom Hydrographic Office,
Admiralty Way,
Taunton, Somerset
TA1 2DN

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CD–ROM Instructions

See Status, Disclaimer and Copyright at Explanatory Notes at Page vi.

The CD–ROM below contains the following:

- Text of this volume in Portable Document Format (PDF).
- Software to install Adobe Acrobat Reader.
- A link to the UHKO website: www.ukho.gov.uk.
- Photographs in PDF, if they are available for the area covered by this volume.

Avoid touching or scratching the silver side of the CD–ROM. To protect it from damage or loss, return it to the envelope after use.

Place the CD–ROM in a compact disc drive.

The opening screen should appear within a few seconds.

If the opening screen does not appear after 15 seconds, try the following:

- Double–left click: “My Computer”.
- Double–left click CD–ROM icon: NPxx (D:).
- Double–left click html file: “index”.

The CD–ROM is designed to work with the following software:

- Windows 98
- Windows 2000
- Windows ME
- Windows NT4.0 SP5