NP283(2)

ADMIRALTY LIST OF RADIO SIGNALS

VOLUME 3, PART 2

2018/19

MARITIME SAFETY INFORMATION SERVICES

The Americas, Far East and Oceania

IMPORTANT - SEE RELATED ADMIRALTY PUBLICATIONS

Notices to Mariners (Annual, Permanent, Preliminary and Temporary); **ADMIRALTY Information Overlay** (AIO); **Symbols and Abbreviations used on ADMIRALTY Paper Charts** (NP5011); **ADMIRALTY Guide to ENC Symbols used in ECDIS** (NP5012); **The Mariner's Handbook** (NP100, especially Chapters 1 and 2 on the use, accuracy and limitations of charts); **Sailing Directions** (Pilots); **List of Lights** and **Fog Signals; List of Radio Signals** and **Tide Tables** (or their digital equivalents).

KEEP CHARTS AND PUBLICATIONS UP TO DATE AND USE THE LARGEST SCALE CHART APPROPRIATE

PUBLISHED BY THE UNITED KINGDOM HYDROGRAPHIC OFFICE

DIRECTIONS FOR UPDATING THIS VOLUME

Subsequent updates to this book will be included in Section VI of the Weekly Edition of ADMIRALTY Notices to Mariners, copies of which can be obtained from authorised ADMIRALTY chart agents, or from the UKHO Website www.admiralty.co.uk/msi

A cumulative list of updates is published quarterly in Section VI and provides a summary list of the entries in the current editions which have been updated. New or extensively altered material is intended to be pasted over the existing material. Shorter updates should be made in manuscript. The Weekly Edition number is shown on all updates. The appropriate indexes and diagrams should also be updated if necessary.

RECORD OF UPDATES

This Volume should only be used once fully updated by Section VI Notices to Mariners. The inclusion of updates in this Volume should be recorded in the following table:

NEW EDITION First Updates	

Weekly Notices to Mariners (Section VI)

_____	_____	_____	_____
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ANNUAL NOTICES TO MARINERS

Attention is called to the following ADMIRALTY Notices to Mariners which are published annually and contain information of particular interest to the users of ADMIRALTY List of Radio Signals:

03 Safety of British Merchant Ships in periods of peace, tension, crisis or conflict.
05 Firing Practice and Exercise Areas.
20 Mandatory Expanded Inspections - EU Directive 2009/16/EC.

The content of annual ADMIRALTY Notices to Mariners 04 is included in NP285, ADMIRALTY List of Radio Signals, Global Maritime Distress and Safety System (GMDSS).

CONTENTS

PREFACE

The 2018/19 edition of this ALRS Volume contains the latest information received by the UKHO.

All reasonable effort has been made to ensure that this Volume contains all of the information obtained and assessed by the UKHO by the date of publication. Information received after that date will be included in Section VI of the Weekly Edition of ADMIRALTY Notices to Mariners.

This edition supersedes the 2017/18 edition which is cancelled.

Mr John Humphrey
Chief Executive
United Kingdom Hydrographic Office

PURPOSE OF ADMIRALTY RADIO SIGNALS

ADMIRALTY List of Radio Signals (ALRS) provides a comprehensive source of information on all aspects of Maritime Radio Communications. The purpose of this Volume is to provide information on the following topics:

Maritime Weather Services

Maritime Safety Information Broadcasts

Worldwide NAVTEX and SafetyNET Information

Submarine and Gunnery Warning Details

Radio-Facsimile Stations, Frequencies and Index of Map Areas

HOW TO REPORT NEW OR SUSPECTED DANGERS TO NAVIGATION OR CHANGES OBSERVED IN AIDS TO NAVIGATION

A Hydrographic Note, Form H102, with instructions, is contained in the back of the Weekly Edition of ADMIRALTY Notices to Mariners. This form can also be downloaded from the UKHO Website. The form should be used to report all observations, including new or suspected dangers to navigation or changes to aids to navigation.

FEEDBACK

Feedback on this publication is most welcome and should be addressed to Customer Services and marked for the attention of ADMIRALTY List of Radio Signals and Marketing.

UKHO CONTACT DETAILS

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Enquiries regarding the content of ADMIRALTY List of Radio Signals should be made to the contact listed above clearly stating "For the attention of ALRS".

HOW TO OBTAIN ADMIRALTY CHARTS AND PUBLICATIONS

A complete list of ADMIRALTY Charts and Publications (both paper & digital), together with a list of authorised ADMIRALTY chart agents for their purchase, is contained in the *"Catalogue of ADMIRALTY Charts and Publications"* (NP131), published annually. The ADMIRALTY Digital Catalogue is available to download free of charge from the UKHO Website.

Details of authorised ADMIRALTY chart agents can also be obtained free of charge from Customer Services.

RELATED ADMIRALTY PUBLICATIONS AND THEIR CONTENTS

ADMIRALTY Notices to Mariners (NMs):

- Weekly Notices to Mariners
  - Navigationally significant changes to nautical charts, lights and fog signals, Radio Signals and Sailing Directions
  - Reprint of all Radio Navigational Warnings in force and a summary of charts and publications being published.
- Cumulative List of Notices to Mariners
  - Published in January and July of each year
  - A list of all nautical charts available and a complete list of all NMs affecting them during the previous two years.
- Annual Summary of Notices to Mariners
  - Published at the beginning of the year in two parts
  - Annual Notices to Mariners, Temporary and Preliminary NMs
  - Cumulative summary of updates to Sailing Directions.

For more information, please visit www.admiralty.co.uk/msi

The Mariner's Handbook:

- Information on nautical charts and their use
- Operational information and regulation
- Tides and currents
- Characteristics of the sea
- Basic meteorology
- Navigation in ice
- Hazards and restrictions to navigation

ADMIRALTY Sailing Directions (Pilots):

- Waterway directions
- Port facilities
- Directions for port entry
- Navigational hazards
- Buoyage
- Climate information.

ADMIRALTY List of Radio Signals:

- Maritime Radio Stations
- Radio Aids to Navigation
- Time
- Maritime Safety Information
- Radio Weather Services
- Global Maritime Distress and Safety System (GMDSS)
- Pilot Services
- Vessel Traffic Services
- Port Operations
- Ship Reporting Systems.

ADMIRALTY List of Lights:

- Lighthouses, lightships, fog signals and other lights of navigational significance.
- Equivalent foreign language light descriptions
- International number
- Characteristics
- Light elevation and structure height in metres
- Range of light
- Description of structure.

ADMIRALTY Tidal Publications:

- Tide Tables
  - Daily predictions of time and height of high and low waters at Standard Ports
  - Time and height differences for Secondary Ports
  - Harmonic constants where known
  - Supplementary Tables including Land Levelling to Chart Datum connections where known.
- Tidal Stream Atlases
  - Major tidal streams for selected waters of north west Europe
  - Direction and rate of tidal streams at hourly intervals.

For more information, please visit www.admiralty.co.uk

GENERAL INFORMATION

Times
Times quoted are in Universal Time (UT) unless otherwise stated, and are reckoned from 0000 (midnight) to 2400. The term UT is gradually replacing Greenwich Mean Time (GMT); the abbreviation UT(GMT) will be used to indicate the general equivalence of the two terms. GMT will be retained as the term for the time within Standard Time Zone 0 (Zero).

Geographical Positions
Geographical positions of radio aids to navigation are normally given by the controlling authority. In some cases they are in accordance with the ADMIRALTY Chart. If bearings are taken to radio aids, it should be remembered that, in some cases, the positions quoted are only approximate.

Radio aids to navigation are ascribed to a coastal state purely to indicate to the mariner where to look for the feature. This publication is not an authority on either the ownership of such or sovereignty of features on which they are constructed.

Bearings
Bearings are given from seaward and refer to the true compass.

Names
Names in ADMIRALTY List of Radio Signals are spelt in accordance with the principles and systems approved by the Permanent Committee on Geographical Names for British Official Use.
A second name may be given in parantheses in the following circumstances:

1. if the retention of a superseded rendering will facilitate cross-reference to related publications;
2. if, in the case of a name that has changed radically, the retention of the former one will aid recognition;
3. if it is decided to retain an English conventional name in addition to the present official rendering.

Diagrams
Diagrams will be updated by weekly Notices to Mariners when significant changes are required. Otherwise diagrams will be corrected for the next new edition.

Telephone Numbers
National Direct Dialling (NDD) prefixes are shown in brackets (0). This digit should only be dialled when calling from within that country.

Reporting Changes
In the interests of safe navigation, mariners and others are invited to notify the United Kingdom Hydrographic Office (UKHO) of any information which would be useful towards the updating of ADMIRALTY Charts and Publications. Early advice, with supporting particulars of newly discovered dangers, the establishment of, or changes to any aids to navigation is specially requested. Copies of forms H102, H102a and H102b, designed for such notification are contained in the weekly editions of ADMIRALTY Notices to Mariners. Additional copies can be obtained free of charge from the UKHO. In addition, user feedback on our products in terms of format, content, availability and any other aspects is always welcome.

General Disclaimer
The UKHO makes no representation as to the fitness, quality or suitability of the products or services supplied by any person other than the Office and advertised herein and no endorsement of, or connection of the Office with, such products or services is to be inferred from such advertisement. The product names mentioned are the trademarks, registered trademarks or service marks owned or used by the relevant companies or bodies. The names are used within this publication solely for descriptive purposes and no connection of such products or services within the UKHO is to be inferred nor is any representation or endorsement, expressed or implied, made by the UKHO as to fitness, quality or suitability of the products or services bearing those names. The delimitation of areas and boundaries shown in Nautical Publications, graphics or textual format, is not related to and shall not prejudice the delimitation of any boundary between States.

Laws and Regulations Appertaining to Navigation
While, in the interests of the safety of shipping, the UKHO makes every endeavor 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 can be accepted for failure to publish details of any particular law or regulation.
(b) that publication of the details of a law or regulation is solely for the safety and convenience of shipping and implies no recognition of the domestic or international validity of the law or regulation.

ABBREVIATIONS AND GLOSSARY

The following list gives the meaning of abbreviations and a glossary of terms and definitions used in ALRS products.

A	Aerodrome, airfield, etc.
A1A	Continuous wave telegraphy, Morse code.
A1B	Amplitude modulation telegraphy with automatic reception, without using a modulating subcarrier.
A2A	Telegraphy by the on-off keying of a tone modulated carrier, Morse code: double sideband.
A3E	Telephony using amplitude modulation: double sideband.
A9W	Composite emission: double sideband e.g. a combination of telegraphy and telephony.
AAIC	Accounting Authority Identification Code.
Absorption	The loss of energy from a radio wave. Mostly occurs in the D region.
ACO	Aircraft Co-Ordinator.
ADRS	ADMIRALTY Digital List of Radio Signals.
AFTN	Aeronautical Fixed Telecommunications Network.
AIS	Automatic Identification System.
AIS SART	AIS Search And Rescue Transmitter.
Alert data	Generic term for COSPAS-SARSAT 406 MHz alert data derived from 406 MHz distress beacon information. Alert data may contain beacon position and other beacon information such as beacon identification data and coded information.
Almanac	A set of parameters included in the GPS satellite navigation message that is used by a receiver to predict the appropriate location of a satellite.
ALRS	ADMIRALTY List of Radio Signals.
AM	Amplitude Modulation.
AMVER	Automated Mutual-Assistance VEssel Rescue system.
AOH	After Office Hours.
AOR-E	Atlantic Ocean Region (East), coverage area of Inmarsat satellite.
AOR-W	Atlantic Ocean Region (West), coverage area of Inmarsat satellite.
approx	Approximate.
Apr	April.
APR	Automated Position Report
ARCC	Aeronautical Rescue Coordination Centre. A centre nominated by the national SAR agency to which an Inmarsat Land Earth Station (LES) normally routes distress calls.
ARQ	Automatic Repetition reQuest (mode of telex operation for point to point working between two stations).
ASCII	American Standard Code for Information Interchange, see Kilobit(s).
ASIC	Application Specific Integrated Circuit.
ASM	Application Specific Messages. An extension of AIS whereby the VDL is used for additional purposes such as weather, tides, planned routes, pilotage etc.
ATBA	Area To Be Avoided.
AtoN	Aid to Navigation.
ATS	Air Traffic Services
Aug	August.
AUT	Automatic Station or observation made by automatic equipment
Autolink RT	Any vessel fitted with Autolink RT equipment is able to make a radiotelephone call, using direct dialling on VHF, MF or HF frequencies, through any coast radio station operating an Autolink RT service.
AVISO	Notice.
AVURNAVE	AVisos URgentes a los NAVEgantes.
AVURNAVS	AVis URgents aux NAVigateurS.
AWOS	Automatic Weather Observing System.
AWS	Automatic Weather Station.
Baud	A measure of the rate of transfer of binary messages (1 bit/second = 1 baud for most purposes).
BBC	British Broadcasting Corporation.
BC Code	Code of safe practice for Solid Bulk Cargo.
BCD	Binary Code Decimal.
Bcst	Broadcast.
Bit	A single unit of binary data (see Kilobit).
BMS	Bulletins Météorologique Spéciaux.
Bn	Beacon.
BOA	Beam Over All.
bps	Bits per second (transmission rate).
BPSK	Bi Phase Shift Keying.

brg	bearing.
Broadcasting-satellite service	A radiocommunication service in which signals transmitted or retransmitted by space stations are intended for direct reception by the general public.
Broadcasting service	A radiocommunication service in which the transmissions are intended for direct reception by the general public.
BSH	Bundesamtes für Seeschifffahrt und Hydrographie.
Byte	The collection of bits that make up a binary word.
C	Coastal station
°C	Degrees Celsius.
CCR	Coast Radio Station — Spain.
CDMA	Code Division Multiple Access.
CES	Coast Earth Station. See LES.
CG	Coastguard.
CGAS	Coastguard Aviation Station.
CGOC	Coastguard Operations Centre
Ch, Ch/s	Channel (As in VHF Ch).
Cm	Centimetre.
CNIS	Channel Navigation Information Service. A 24 hour information service provided by MRCC Dover for vessels using the Dover Strait TSS.
CNW	Coastal Navigational Continued Warning.
COLREGS	Convention on the International Regulations for Preventing Collisions at Sea, 1972.
COMMCOM	Communications Command (formally CAMSLANT). This is the central controlling station for all US Coastguard HF broadcasts and communications.
Cont	Continuous.
(Cont)	Continued.
Contracting Government	A signatory to the 1974 Safety of Life at Sea Convention.
COSPAS-SARSAT system	A satellite - aided search and rescue system based on low-altitude near-polar-orbiting satellites and designed to locate distress beacons transmitting on the frequencies 406 MHz and 121·5 MHz. **COSPAS** is an acronym for the Russian words "**CO**asmicheskaya **S**istyema **P**oiska **A**variynikh **S**udov", which translates to "Space System for the Search of Vessels in Distress". **SARSAT** is an acronym for **S**earch **A**nd **R**escue **S**atellite-**A**ided **T**racking. The system uses 4 geosynchronous satellites. GEOSAR's and 5 low-earth polar orbit satellites LEOSAR'S.
CPRNW	The Commission on Promulgation of Radio Navigational Warnings.
CROSS	Centres Régionaux Opérationnels de Surveillance et de Sauvetage (Regional centre of operations for surveillance and maritime rescue MRCC) in France.
CRS	Coast Radio Station. A land station in the maritime mobile service.
CSS	Coordinator Surface Search.
D7W	Emission in which the main carrier is amplitude and angle, modulated either simultaneously or in a pre-established sequence combined with two or more channels containing quantized or digital information.
dB	decibels.
dBW	decibel watts.
Dec	December.
DF	Direction-finding.
DGNSS	Differential Global Navigation Satellite Systems.
DGPS	Differential Global Positioning System. For a full explanation see the SATELLITE NAVIGATION SYSTEMS section.
Distress Alerting	Rapid and successful reporting of a distress incident to a unit which can provide or coordinate assistance.
Distress Call	The spoken word “MAYDAY” made three times followed by the name of the vessel three times which prefaces the distress message.
Distress Message	Consists of the following; The distress signal MAYDAY, the name and or callsign of the vessel in distress, the vessel’s position, the nature of the distress, the type of assistance required, and any other information which may assist in facilitating the rescue.
Distress Phase	A situation wherein there is a reasonable certainty that a vessel or other craft, including an aircraft or a person, is threatened by grave or imminent danger and requires immediate assistance.
Distress-Priority Request Message	A ship-to-shore request message containing priority indication 3, the highest priority of ship-to-shore calls.
DOM-TOM	Départements d’outre-mer — Territoires d’outre-mer.
D Region	The lowest region of the ionosphere where most HF absorption occurs. Present during daylight hours only.

DSC	Digital Selective Calling system. A technique using digital codes which enables a radio station to establish contact with, and transfer information to, another station or group of stations utilising HF, MF and VHF bands.
DSHA	Dangerous Substances in Harbour Areas.
DST	Daylight Saving Time. For a full explanation see the LEGAL TIME section.
DUT1	Is the value of the predicted difference between UTC and UT1. For a full explanation see the UNIVERSAL TIME and RADIO TIME SIGNALS sections.
DWD	Deutscher Wetterdienst.
DWT	Dead Weight Tonnage.
E	East.
ECDIS	Electronic Chart Display and Information Service.
EEZ	Exclusive Economic Zone.
EGC	Enhanced Group Calling. This system enables information providers to send messages for selective reception by multiple Inmarsat C terminals, located anywhere in one of the four Ocean Regions.
EMSA	European Maritime Safety Agency.
ENID	EGC Network Identification Code used in the EGC FleetNET Service.
Ephemeris data	Tabulated information fromwhich the location of a satellite (e.g.: COSPAS–SARSAT) relative to the Earthmay be determined for any time within a specified time interval.
EPIRB	Emergency Position-Indicating Radio Beacon. A station in the mobile service, the emissions of which are intended to facilitate search and rescue operations.
EPIRB registration database	A register established and maintained for the purpose of: (a) establishing a readily accessible and up-to-date satellite EPIRB data register containing essential SAR information particular to individual EPIRBs for the use by SAR authorities; and (b) providing readily accessible access to essential SAR data by recognized SAR authorities in the processing of distress situations.
ESV	Eath Station on board a vessel.
ETA	Estimated Time of Arrival.
ETD	Estimated Time of Departure.
EU	European Union.
ext	Extension.
°F	Degrees Fahrenheit.
F1B	Single channel using frequency modulation containing quantised or digital information without the use of a modulating sub carrier. Frequency shift keying, used in DSC systems.
F3E	Telephony using frequency modulation.
Fax	Facsimile.
FDPSO	Floating, Drilling, Production, Storage and Offloading.
Feb	February.
FEC	Forward Error Correction.
FIR	Flight Information Region.
FleetNET	An Inmarsat EGC broadcast facility.
FM	Frequency Modulation.
FPSO	Floating, Production, Storage and Offloading.
Fri	Friday.
FSO	Floating, Storage and Offloading.
FSK	Frequency Shift Keying.
FTP	Anonymous File Transfer Protocol (INTERNET).
Fx	Frequency.
G2B	Phase modulation (automatic reception). A single channel containing quantized or digital information with the use of modulating sub-carrier.
G3E	Phase modulation telephony.
GBAS	Ground Based Augmentation System.
General communications	Those communications between ship stations and shore-based stations which concern the management and operation of the ship, normally taken to mean public correspondence to the exclusion of safety, distress and urgency messages. These communications may be conducted on the appropriate frequencies.
GEOSAR	COSPAS-SARSAT GEostationary Orbiting Search And Rescue satellite system.
Geostationary-Satellite Orbit	The orbit of a geosynchronous satellite whose circular and direct orbit lies in the plane of the Earth's equator.

GHz	Gigahertz.
GLA	General Lighthouse Authority.
GLONASS	**GLO**bal'naya **NA**vigatsionnaya **S**putnikovaya **S**istema.
GMDSS	**G**lobal **M**aritime **D**istress and **S**afety **S**ystem; a global communications service based upon automated systems, both satellite based and terrestrial, to provide distress alerting and promulgation of maritime safety information for mariners.
GMPRS	Geo-mobile Packet Radio Service.
GMT	Greenwich Mean Time.
GNSS	Global Navigation Satellite System.
GPS	Global Positioning System.
GroundWave	The radio wave which propagates close to the Earth's surface. Severe signal losses due to ground resistance limit the range of ground waves to about 100 km over land and 300 km over sea for the lowest HF frequencies. The ground waves for the higher HF frequencies cover much shorter distances.
GSM	Global System for Mobile Communications.
gt	Gross Tonnage.
h	Hours.
H	Heliport.
H+...	Commencing at...minutes past the hour (UTC).
H24	Continuous.
H3E	Telephony: single sideband, full carrier.
H9W	Composite emission: single sideband, full carrier; composite systemwith one or more channels containing quantized or digital information together with one or more channels containing analogue information (e.g. combination of telegraphy and telephony).
HAZREP	HAZardous incident REPort. Near miss incident or breach of the COLREGS.
HAZMAT	HAZardous MATerial. Reporting requirements for vessels carrying dangerous or polluting cargoes.
Hd	Head.
HF	High Frequency (3 - 30 MHz).
Hi+	At...minutes past odd hours (UTC).
HJ	Day service only.
HM	Her Majesty's.
HMCG	Her Majesty's Coastguard.
HN	Night service only.
Hp+	At...minutes past even hours (UTC).
hPa	Hectopascal; unit of pressure used in meteorological work, supersedes the millibar (1 mb = 100 pascals = 1 hPa).
Hr	Harbour.
Hr Mr	Harbour Master.
HSD	High Speed Data.
HW	High Water.
HX	No specific hours or fixed intermittent hours.
HY/A	Seaplane base
HYDROLANT	US Navigational Warnings for the Atlantic and contiguous areas outside NAVAREA IV.
HYDROPAC	US Navigational Warnings for areas outside Navarea XII.
Hz	Hertz.
I	Island.
IAC	International Analysis Code.
IALA	International Association of Lighthouse Authorities.
IAMSAR	International Aeronautical and Maritime Search And Rescue Manual. This manual is published every three years and is a mandatory publication for all SOLAS vessels.
IBC Code	International Bulk Carriers Code, means the International Code for construction and equipment of Ships carrying dangerous chemicals in bulk.
ICAO	International Civil Aviation Organization.
Ident	Identification Signal.
IERS	International Earth Rotation Service.
IHO	International Hydrographic Organization.
IMDG Code	International Maritime Dangerous Goods Code.
IMN	Inmarsat Mobile Number.
IMO	International Maritime Organization.
IMSO	International Mobile Satellite Organization.

INF Code	International code for the safe carriage of Irradiated Nuclear Fuel.
Inmarsat	The organisation established by the Convention on the International Mobile Satellite Organization (Inmarsat) adopted on 3 September 1976.
Inmarsat C	Operating since 1991 to compliment Inmarsat A, provides a global low cost two-way data communications network using a small terminal and omni-directional antenna - suitable for vessels of any size, low power-consumption. This system provides the services of global two-way store-and-forward messaging, distress alerting, reception of MSI, EGCSafetyNET and FleetNET. Inmarsat C is capable of data reporting and polling and is used extensively for SSAS and LRIT reporting.
Inmarsat Fleet	F33/F55/F77 based on approximate antenna size. F77 has GMDSS approval and an advanced voice distress safety system. F77 and F55 offer communication including High speed Mobile ISDN (Integrated Services Derived Network) and MPDS (Mobile Packet Data Service) an “always connected” service. F77 runs ISDN packet data - 64/128kbps. F33 has an integrated global voice service, a spot beam integrated data service running at a speed of 9V6kbps and an MPDS service.
Inmarsat FleetBroadband	Provides broadband and voice services simultaneously on a global basis. A compact antenna used in conjunction with three different terminal types can offer standard IP of up to 432bps, and streaming IP of up to 256 kbps. A distress facility is standard for all terminals.
Inmarsat GAN	(Global Area Network) supporting high speed data, ISDN compatible service @ 64 kbit/s.
Inmarsat mini-C	mini-C offers the same primary functions as Inmarsat C through a lower-power terminal. It is also GMDSS compatible and meets the requirements for Ship Security Alert Systems (SSAS).
Inop	Inoperative.
Int	International.
International Alphabet Number 5 (IA5)	(Also known as ASCII, IRA5 & ISO646) — a standard alpha-numeric character set based on 7-bit binary codes.
International Atomic Time	see TAI.
International DSC frequencies	Frequencies designated in the Radio Regulations for exclusive use for DSC on an international basis.
International NAVTEX Service	The coordinated broadcast and automatic reception of Maritime Safety Information by means of narrow-band direct-printing. See also: NAVTEX.
IOPP	International Oil Pollution Prevention.
IOR	Indian Ocean Region, coverage area of Inmarsat satellite.
IPS	Ionospheric Prediction Service.
IR	Infra-red.
ISDN	Integrated Service Digital Network.
ISL	Interstation Signalling Links, used to pass information between LESs and the NCSs in an Ocean Region.
ISPS	International Ship and Port facility Security. The IMO adopted changes to SOLAS in December 2002, as part of agreeing the new ISPS code, within the changes, a Ship Security Alert System (SSAS) was specified. The ISPS Code came into effect on 1 July 2004.
ISSC	International Ship Security Certificate.
ITOFAR	Interrogated Time Offset Frequency Agile Racon.
ITU	International Telecommunication Union.
ITZ	Inshore Traffic Zone.
J2B	Single sideband suppressed carrier containing quantised or digital information with the use of a modulating sub carrier used in DSC systems.
J3E	Telephony using amplitude modulation: single sideband, suppressed carrier.
Jan	January.
JCG	Japan Coast Guard.
JCOMM	The Joint WMO-IOC Technical Commission on Oceanography and Marine Meteorology.
JRCC	Joint Rescue Coordination Centre. A Rescue Coordination Centre responsible for both aeronautical and maritime search and rescue.
Jul	July.
Jun	June.
kbps	kilobit per second.
kHz	Kilohertz.
Kilobit (Kbits)	1 Kbit = 1024 bits = 128 characters (a character in ASCII is a letter, digit or a special character, represented by a byte or a group of 8 bits). This code is used in computer-to-computer communication.
km	Kilometre(s).
kW	Kilowatt(s).
L	Lightship
L1	GPS primary frequency, 1575·42 MHz.

L2	GPS secondary frequency, 1227·60 MHz.
LANBY	Large Navigational Buoy.
Lat	Latitude.
LBP	Length Between Perpendiculars.
Ldg	Leading.
LEO	Low Earth Orbit.
LEOSAR	COSPAS-SARSAT Low Earth Orbit Search and Rescue polar orbiting satellite system.
LES	Land Earth Station. An earth station in the fixed-satellite service or, in the maritime mobile-satellite service, located at the specified fixed point on land to provide a feeder link for the maritime mobile-satellite service.
LF	Low Frequency (30 - 300 kHz).
LH	Lighthouse
LOA	Length Over All.
Locating	The finding of ships, aircraft, units or persons in distress.
Locating signals	Transmissions intended to facilitate the finding of a mobile unit in distress or the location of survivors using DF or 9 GHz radar.
Londonlength	Approximate length between the stem and the stern x 96%.
Long	Longitude.
LORAN	LOng RAnge Navigation.
LORAN-C	LOng RAnge Navigation-C. This is a low frequency electronic position fixing system.
LPG	Liquefied Petroleum Gas.
LPS	Local Port Service.
LRIT	Long Range Identification and Tracking. The new regulation on LRIT is included in SOLAS Chapter V on Safety of Navigation. The Maritime Safety Committee (MSC 81), adopted a new SOLAS Amendment on LRIT (MSC.202 (81)). This amends SOLAS Chapter V, Regulation 19-1 and requires that ships shall be fitted with equipment to transmit automatically the LRIT information (ship's ID, position, date/time of position). LRIT data can be provided, using Inmarsat C, mini-C or D+
LT	Local Time.
Lt	Light.
Lt F	Light Float.
Lt Ho	Light House.
Lt V	Light Vessel.
LUT	Local User Terminal. A ground receiving station which receives alert data from COSPAS and SARSAT satellites.
LW	Low Water.
m	Metre(s).
M	Mountain Station
MAFOR	Maritime Forecast Code.
Mar	March.
MAREP	Mariner Reporting Program.
Maritime Distress Channel	An Inmarsat satellite channel between a ship in distress and a Land Earth Station.
Maritime mobile service	A mobile service between coast stations and ship stations, or between ship stations, or between associated on board communication stations; survival craft stations and Emergency Position-Indicating Radiobeacon (EPIRB) stations may also participate in this service.
Maritime mobile-satellite service	A mobile-satellite service in which Mobile Earth Stations are located onboard ships; survival craft stations and emergency position-indicating radiobeacon stations may also participate in this service.
Maritime SAR plan	A Search and Rescue plan developed by coastal States.
MARPOL	International Convention for the Prevention of Pollution from Ships, 1973.
MAS	Maritime Assistance Service.
Mar	March.
MBM	Multi Buoy Mooring.
MCA	Maritime and Coastguard Agency.
MCC	Mission Control Centre**.** A COSPAS-SARSAT ground system element which receives alert data from its local user terminal(s) and distributes that information to affiliated SAR points of contact or forwards it to other MCCs. The MCC may also receive alert data from another MCC and receive and distribute COSPAS-SARSAT system information.
MCC service area	The area for which an MCC accepts responsibility for the distribution of COSPAS-SARSAT alert data. The service area includes sub-areas serviced by SAR points of contact (SPOCs).
MCS	Master Control Station.
MCTS	Marine Communications and Traffic Services.

MDR	Marine Domain Awareness
MEDILINK	MEDIcal LINK call.
MENAS	Middle East Navigation Aids Service.
MES	Mobile Earth Station — Inmarsat device installed on a ship (or on fixed installation in a marine environment) to enable the user to communicate to and from shore-based subscribers, via a selected satellite and LES.
Met	Meteorological
METAREA	METeorological AREA: Short title of a meteorological service area, limits similar to NAVAREAs within the World-Wide Navigational Warning Service.
MF	Medium frequency (300 - 3000 kHz).
MGN	Marine Guidance Note. Issued by the MCA.
MHz	Megahertz.
MID	Maritime Identification Digits.
MIN	Marine Information Note. Issued by the MCA.
min(s)	Minute(s).
MKD	Minimum Keyboard Display.
MMSI	Maritime Mobile Service Identity.
MOB	Man overboard.
Mon	Monday.
MOU	Memorandum of Understanding.
MPDS	Mobile Packet Data Service.
MRCC	Maritime Rescue Coordination Centre.
MRSC	Maritime Rescue coordination Sub-Centre.
ms	Millisecond(s).
m/s	Metres per Second.
MSI	Maritime Safety Information. Navigational and meteorological warnings, meteorological forecasts, distress alerts and other urgent safety related information broadcast to ships.
MSK	Minimum Shift Keying.
MSL	Mean Sea Level.
MSLP	Mean Sea Level Pressure.
MSN	Merchant Shipping Notice. Issued by the MCA.
mt	Metric Tonnes.
Multipath	Signal arrival at a receiver's antenna by way of two or more different paths such as direct, line-of-sight path and one that includes reflections from nearby objects.
N	North.
n mile	International nautical mile.
n/a, N/A	Not Applicable.
National Hydrographic Office	A National organisation responsible for collecting and distributing navigational warnings.
National Meteorological Office	A National organisation responsible for collecting and distributing meteorological warnings and forecasts.
NAVAREA	NAVigational AREA: One of the sea areas into which the world's oceans are divided for the dissemination of navigational and meteorological warnings.
NAVAREA warning	Long- range warning broadcasts issued by an area coordinator of the world-wide navigational warning service for his area and broadcast by CRS(s) or LES(s) to cover the whole of the area, for which the area coordinator is responsible, and parts of an adjacent area.
NAVDAT	A digital system for the broadcasting of Navigational Data on the 500 kHz frequency. ITU-R M.2010 refers.
NAVIP	Navigational Warning (Russia). NAVIPs contain information about dangers to navigation in the coastal waters of countries other than Russia and the high seas areas. NAVIPs are broadcast in Russian.
NAV-msg	Navigation Message. A 37,500-bit data message included in the GPS signal. The message, sent at a rate of 50 bits per second, includes the satellite ephemeris, clock data, almanac and other information about the satellites and their signals.
NAVTEX	Narrow-Band Direct-Printing telegraphy system for transmission of navigational and meteorological warnings and urgent information to ships. See also: International NAVTEX Service.
NAV warning	NAVAREA warning.
NBDP	Narrow-Band Direct-Printing; automated telegraphy as used by the NAVTEX system and telex-over-radio.
NCC	Network Control Centre.
NCS	Network Coordination Station (for Inmarsat).
NCSR	IMO Sub-committee for Navigation, Communications and Search & Rescue.
NE	North East.
NM	Notice to Mariners.

NMOC	National Maritime Operations Centre
Nov	November.
NP	Nautical Publication.
NS or **ns**	Nanosecond.
NSR	Northern Sea Route.
nt	Net Tonnage.
NW	North West.
OBS	The station accepts messages concerning weather observations by ships.
OCC	Operations Control Centre (for Inmarsat).
Occas	Occasional.
Oct	October.
OFCOM	Office of Communication.
On-scene communications	Communications between the ship in distress and assisting units.
OSC	On-Scene Coordinator. The commander of a rescue unit designated to coordinate surface search and rescue operations within a specified search area.
OTF	Optimum Transmitting Frequency.
P	Pilot-balloon; upper wind observations by optical tracking of a free balloon
PA	Position Approximate.
Paired frequencies	Frequencies which are associated in pairs; each pair consisting of one transmitting and one receiving frequency.
PEC	Pilotage Exemption Certificate.
PFSO	Port Facility Security Officer.
PLB	Personal Locator Beacon.
PMO	Port Meteorological Office(r).
PNT	Position, Navigation and Timing.
POB	Persons On Board — total number of.
Polar Orbiting Satellite Service	A service which is based on polar orbiting satellites which receive and relay distress alerts from satellite EPIRBs and which provides their position.
POR	Pacific Ocean Region, coverage area of Inmarsat satellite.
Port Operations Service	A maritime mobile service in or near a port between coast stations and ship stations or between ship stations, in which messages are restricted to those relating to the operational handling, the movement and safety of ships and, in emergency, to the safety of persons. It does not include public correspondence.
Positioning	Establishing the geographical place of the unit in distress (normally expressed in degrees and minutes of latitude and longitude).
PRIP	Coastal Warning (Russia). PRIPs contain information for the safety of navigation in the coastal waters of Russia and the Arctic Ocean. PRIPs are broadcast by maritime radio stations in Russian. NAVTEX coastal warnings are transmitted in English.
PSK	Phase Shift Keying.
PSTN	Public switched Telephone Network.
Pt	Point.
PTTI	Precise Time and Time Interval.
Public Correspondence	Any telecommunication which the offices and stations must, by reason of their being at the disposal of the public, accept for transmission.
PV	Pilot Vessel.
QHM	Queen's Harbour Master.
R	Radiosonde; atmospheric pressure, temperature and humidity observations in the upper air obtained by electronic means.
Racon	RAdar BeaCON.
Radiolocation-Satellite Service	A radiodetermination satellite service used for the purpose of radiolocation.
Radio Regulations	Means the Radio Regulations annexed to, or regarded as being annexed to, the most recent International Telecommunication Convention which is in force at any time.
RANP	Regional Air Navigation Plan
RCC	Rescue Coordination Centre. A unit responsible for promoting efficient organisation of search and rescue (SAR) services and for coordinating the conduct of SAR operations within a SAR region.

RCF	Remote Communications Facility. This is a term used by the US Coastguard to describe HF radio stations that are remotely controlled by Communications Command (COMMCOM) – (NMN).
Rep	Reported.
Rescue unit	A unit composed of trained personnel provided with equipment suitable for the expeditious conduct of SAR operations.
RF or **RFx**	Radio Frequency.
RG	Radio Direction-finding Station.
RR	ITU Radio Regulations (as amended).
RSC	Rescue Sub-Centre. A subordinate to the Rescue Coordination Centre, established to complement the latter according to particular provisions of the responsible authorities.
RT	Radio telephony.
RTCM	Radio Technical Commission for Maritime services.
RTCM SC-104	The special committee of the Radio Technical Commission for Marine Services that developed recommended standards for DGPS.
RT (HF)	Radio Telephony (High Frequency).
RT (MF)	Radio Telephony (Medium Frequency).
RTTY	Radio Teletype.
Rx	Receiver.
RX	Retransmission.
S.	Saint.
s	Second(s).
S	South.
SafetyNET	The International SafetyNET Service.
SAR	Search And Rescue.
SAR Convention	International Convention on Search and Rescue 1979.
SARSAT	Search And Rescue Satellite Aided Tracking.
SART	Search And Rescue Transponder.
SAS	Satellite Access Station.
Sat	Saturday.
SATNAV	SATellite NAVigation.
SBAS	Satellite Based Augmentation Systems.
SBM	Single Buoy Mooring.
SBP	Shore Based Pilotage.
SBT	Segregated Ballast Tanks.
SC	SAR Coordinator.
SCADA	Supervisory Control and Data Acquisition.
sdwt	Summer Dead Weight Tonnes.
SE	South East
Sea Area A1, A2, A3 and A4	Under the GMDSS the (radio) equipment required to be carried by ships is determined in principle by the ship's area of operation; these areas are designated as 'Sea Area A1', 'Sea Area A2', 'Sea Area A3' or 'Sea Area A4'.
Search And Rescue (SAR) region	An area of defined dimensions within which search and rescue services are provided.
Sec	Seconds.
Sep	September.
Seq	Sequence.
SES	Ship Earth Station, see **MES**.
SHIPPOS	SHIP POSition Reporting Service.
Ship station	A mobile station in the maritime mobile service located on board a vessel which is not permanently moored, other than a survival craft station.
Sig	Signal.
Single frequency	The same frequency used for transmission and reception.
SITOR	Simplex Telex Over Radio.
SITREP	SITuation REPort.
SMC	SAR Mission Controller.
SMS	Short Messaging Service.
SNAC	Single Network Access Code.
Solar Cycle	Solar activity changes over a period of, on average, 11 years. At solar maximum, the solar activity is high and so too the EUV (Extreme Ultra-Violet) radiation output which affects the ionosphere. At solar minimum, the opposite is true.

SOLAS The International Convention on the Safety Of Life at Sea 1974 (SOLAS), as amended.

Sous-CROSS Sous-Centres Régionaux Opérationels de Surveillance et de Sauvetage (Regional sub-centre of operations for surveillance and maritime rescue, MRSC).

SPM Single Point Mooring.

SPOC SAR Point Of Contact. In the COSPAS-SARSAT system mission control centres (MCCs), rescue coordination centres (RCCs) and other established and recognized national points of contact which can accept responsibility for the coordination of the rapid and effective transfer of alert data to enable the rescue of people in distress.

SPS Standard Position Service. The GPS single receiver (stand-alone) positioning service available to any user on a continuous world wide basis.

SRR Search and Rescue Region. An area of defined dimensions within which search and rescue services are provided.

SRS SAR Sub-region.

SRU Search and Rescue Unit.

SSAS Ship Security Alert System. Resolution XI-2/6 states that the Ship Security Alert System shall provide ships with two alarm buttons, which can be activated in case of a piracy or terrorist attack. The alarm is a covert signal, no sound and no flashing lights.

SSB Single SideBand.

SST Sea Surface Temperature.

Stn, STN Station.

Sun Sunday.

Survival craft A craft capable of sustaining the lives of persons in distress from the time of abandoning ship.

SW South West.

SWL Safe Working Load.

System information In the COSPAS-SARSAT system tabulated data (ephemeris and time calibration) that affect the determination of distress beacon locations using the satellite sub-track; current status of all system elements; information related to interference.

TAI International Atomic Time is determined by the comparison of the reading of very accurate (better than 1 microsecond a day) atomic clocks located at national observatories throughout the world. Unlike UT1, TAI does not change with variations in the rate of the Earth's rotation. TAI provides the most accurate and uniform unit of time interval for scientific purposes. The fundamental unit of TAI is the SI second, defined as "the duration of 9 192 631 770 periods of the radiation corresponding to the transition between two hyperfine levels of the ground state of the cesium 133 atom".

TBD To Be Determined.

Tel Telephone.

Thurs Thursday.

Time Calibration Data used to relate the SARSAT satellite time code in an alert message to the actual elapsed time from a known satellite time epoch.

TLX Telex.

TMAS The maritime TeleMedical Assistance Service.

TOR Telex Over Radio.

Tr Tower.

TSS Traffic Separation Scheme.

TTAC Telemetry, Tracking and Control.

Tues Tuesday.

Tx Transmitter; Transmission.

UHF Ultra High Frequency (300 - 3000 MHz).

UIR Upper flight Information Region.

UK United Kingdom.

UKHO United Kingdom Hydrographic Office.

UT Universal Time.

UT0 Uncorrected Universal Time.

UT1 UT0 corrected for polar variation.

UT2 UT0 corrected for polar and seasonal variations.

UTC Coordinated Universal Time is a composite time scale, broadcast in many radio time signals. UTC corresponds exactly in rate with TAI but differs from it by an integral number of seconds. UTC is adjusted by the insertion or deletion of seconds (positive or negative leap seconds) to ensure that the departure of UTC from UT1 does not exceed +/- 0·9 seconds. Stations listed in the Radio Time Signals section of this volume broadcast time signals in the UTC time scale unless otherwise indicated in the station entry. Leap seconds are notified in advance as corrections to TABLE 1 within the RADIO TIME SIGNALS section.

VDES	A VHF Data Exchange System which together with a satellite component (VDE-SAT) is designed to augment AIS and provide intership and ship-shore data exchange and other related applications.
VDL	VHF Data Link. A set of frequencies, messages and protocols forming a maritime information exchange; used for AIS and associated applications.
VHF	Very High Frequency (30 - 300 MHz).
VLCC	Very Large Crude Carrier.
VLF	Very Low Frequency (3 - 30 kHz).
VOS	Voluntary Observing Ship Programme.
VSAT	Very Small Aperture Terminal.
VTM	Vessel Traffic Management.
VTMIS	Vessel Traffic Management and Information System.
VTMS	Vessel Traffic Management System.
VTS	Vessel Traffic Service.
W	West; Watt; Radiowind; upper wind observations by tracking of a free balloon by electronic means
Wed	Wednesday.
wef	With effect from.
WMO	World Meteorological Organization.
WP	Wind Profiler
WT	Radio (Wireless) Telegraphy.
WT (HF)	Radio (Wireless) Telegraphy (High Frequency).
WT (MF)	Radio (Wireless) Telegraphy (Medium Frequency).
WWNWS	World-Wide Navigational Warning Service. A service established by the International Maritime Organization and International Hydrographic Organization for the purpose of coordinating the transmissions of radio navigational warnings in geographical areas.
www	World-Wide Web (INTERNET).
µs	Microsecond(s).

Note: In the WMO Station tables P, R and W are combined as necessary to indicate simultaneous upper-air observations of the different types.

LIST OF SERVICES IN COUNTRY ORDER

A

ANTARCTICA

ARGENTINA

AUSTRALIA

AUSTRALIA (Continued)

B

BAHAMAS, THE

BARBADOS

BELIZE

BERMUDA (UK)

BRAZIL

BRUNEI

C

CAMBODIA

CANADA

CANADA (ARCTIC COAST, ATLANTIC COAST AND SAINT LAWRENCE RIVER)

E

ECUADOR

EL SALVADOR

F

FALKLAND ISLANDS (UK)

FIJI

FRENCH ANTILLES

FRENCH GUIANA

FRENCH POLYNESIA

G

GALAPAGOS ISLANDS (ECUADOR)

GREENLAND

GRENADA

GUAM (USA)

GUATEMALA

H

HONDURAS

I

INDONESIA

INDONESIA (JAWA)

J

JAMAICA

JAPAN

K

KIRIBATI

R

RUSSIA (PACIFIC COAST)

S

SAINT LUCIA

SAINT-PIERRE AND MIQUELON (FRANCE)

SAMOA

SINGAPORE

SOLOMON ISLANDS

SURINAME

T

TAIWAN

THAILAND

THAILAND (EAST COAST)

TONGA ISLANDS

TRINIDAD AND TOBAGO

U

UNITED STATES

UNITED STATES (ALASKA)

UNITED STATES (ATLANTIC COAST)

UNITED STATES (GREAT LAKES)

UNITED STATES (GULF COAST)

UNITED STATES (GULF COAST) (Continued)

UNITED STATES (HAWAII)

UNITED STATES (PACIFIC COAST)

URUGUAY

V

VANUATU

VIETNAM

VIETNAM (Continued)

VIRGIN ISLANDS (UK)

VIRGIN ISLANDS (USA)

DRAFT

MARITIME SAFETY INFORMATION

EXTRACTS FROM THE REVISED JOINT IMO / IHO / WMO MANUAL ON MARITIME SAFETY INFORMATION (MSI) JANUARY 2016:

2 - PROMULGATION OF MARITIME SAFETY INFORMATION

(Reference NAVAREA and METAREA diagrams within the SafetyNET section)

2.1 Introduction

2.1.1 The Maritime Safety Information service of the GMDSS is the internationally and nationally coordinated network of broadcasts containing information which is necessary for safe navigation, received by vessels equipment which automatically monitors the appropriate transmissions, displays information which is relevant to the ship and provides a print capability.

2.1.2 Maritime Safety Information is of vital concern to all ships. It is therefore essential that common standards are applied to the collection, editing and dissemination of this information. Only by doing so will the mariner be assured of receiving the information he needs, in a form which he understands, at the earliest possible time.

2.3 Broadcast methods

2.3.1 Two principal methods are used for broadcasting Maritime Safety Information in accordance with the provisions of the International Convention for the Safety of Life at Sea, 1974, as amended, in the areas covered by these methods, as follows:
.1 NAVTEX: broadcasts to coastal waters;
.2 SafetyNET: broadcasts which cover all the waters of the globe except for Sea Area A4, as defined by IMO Resolution A.801(19), Annex 3, as amended.

2.3.2 Information should be provided for unique and precisely defined Sea Areas, each being served only by the most appropriate of the above methods. Although there will be some duplication to allow a vessel to change from one method to another, the majority of messages will be broadcast either on NAVTEX or SafetyNET.

2.3.3 NAVTEX broadcasts should be made in accordance with the standards and procedures set out in the NAVTEX Manual.

2.3.4 SafetyNET broadcasts should be made in accordance with the standards and procedures set out in the International SafetyNET Manual.

2.3.5 HF NBDP may be used to promulgate maritime safety information in areas outside Inmarsat or NAVTEX coverage (SOLAS Regulation IV/7.1.5).

2.3.6 In addition, Administrations may also provide maritime safety information by other means.

2.3.7 In the event of a failure of normal transmission facilities, an alternative means of transmission should be utilised. A NAVAREA Warning and a Coastal Warning, if possible, should be issued detailing the failure, its duration and, if known, the alternative route for the dissemination of MSI.

2.4 Scheduling

2.4.1 Automated methods (NAVTEX / SafetyNET)

2.4.1.1 Navigational Warnings should be broadcast as soon as possible or as dictated by the nature and timing of the event. Normally, the initial broadcast should be made as follows:
.1 for **NAVTEX**, at the next scheduled broadcast, unless circumstances indicate the use of procedures for VITAL or IMPORTANT warnings;
.2 for **SafetyNET**, within 30 minutes of receipt of original information, or at the next scheduled broadcast.

2.4.1.2 Navigational Warnings should be repeated in scheduled broadcasts in accordance with the guidelines promulgated in the NAVTEX Manual and International SafetyNET Manual as appropriate.

2.4.1.3 At least two scheduled daily broadcast times are necessary to provide adequate promulgation of NAVAREA warnings. When NAVAREAs extend across more than six time zones, more than two broadcasts should be considered to ensure that warnings can be received. When using SafetyNET in lieu of NAVTEX for coastal warnings, administrations may need to consider an increase in the number of scheduled daily broadcasts compared with the requirement for NAVAREA warnings.

2.4.1.4 It is important that where the degree of hazard is known, this information is included in the relevant warning e.g. naval exercises, missile firings, space missions, nuclear tests, ordnance dumping zones, etc. Whenever possible such warnings should be originated not less than five days in advance of the scheduled event and reference may be made to relevant national publications in the warning.

4 - NAVIGATIONAL WARNINGS FOR THE WORLD-WIDE NAVIGATIONAL WARNING SERVICE

4.1 General

4.1.1 Navigational Warnings are issued in response to SOLAS regulation V/4 and carry information which may have a direct bearing on the safety of life at sea. It is the fundamental nature of Navigational Warnings that they will often be based on incomplete or unconfirmed information and mariners will need to take this into account when deciding what reliance to place on the information contained therein.

4.1.2 In order to achieve the necessary impact on the mariner it is essential to present timely and relevant information in a consistent format that is CLEAR, UNAMBIGUOUS and BRIEF. This is ensured by using structured messages in standard formats.

4.1.3 The resources employed by administrations and the mariner are extremely limited. Thus only information which is vital to the safe conduct of vessels should be transmitted. Notices to Mariners and other means exist for passing less urgent information to ships after they have reached port. Information of a purely administrative nature should never be broadcast on the regular international Navigational Warning schedules.

4.1.4 There are four types of Navigational Warnings: NAVAREA warnings, Sub-Area warnings, coastal warnings and local warnings. The WWNWS guidance and coordination are involved with only three of them:
.1 NAVAREA warnings;
.2 Sub-Area warnings;
.3 Coastal warnings.

4.1.5 Navigational Warnings should remain in force until cancelled by the originating coordinator. Navigational Warnings should be broadcast for as long as the information is valid; however, if they are readily available to mariners by other official means, for example in Notices to Mariners, then after a period of six weeks they may no longer be broadcast.

4.1.6 The minimum information in a Navigational Warning which a mariner requires is “hazard” and “position”. It is usual, however, to include sufficient extra detail to allow some freedom of action in the vicinity of the hazard. This means that the message should give enough extra data for the mariner to be able to recognize the hazard and assess its effect upon his navigation.

4.1.7 If known, the duration of the event causing a Navigational Warning should be given in the text.

4.1.8 Some of the subjects for navigational warnings listed in paragraph 4.2.3 (e.g. drifting ice and tsunami warnings) may also be suitable for inclusion in METAREA forecasts or warnings. In this event, appropriate coordination between the relevant NAVAREA and METAREA Coordinators must occur.

4.2 NAVAREA warnings

4.2.1 NAVAREA warnings are concerned with the information detailed below which ocean-going mariners require for their safe navigation. This includes, in particular, new navigational hazards and failures of important aids to navigation as well as information which may require changes to planned navigational routes.

4.2.2 Coastal warnings are broadcast by the International NAVTEX service, or by the International SafetyNET service when implemented in lieu of NAVTEX. They are not normally re-broadcast as NAVAREA warnings unless deemed of such significance that the mariner should be aware of them before entering a NAVTEX service area. The National Coordinator will evaluate the significance of the information for consideration as a NAVAREA warning while the NAVAREA Coordinator will make the final determination.

4.2.3 The following subjects are considered suitable for broadcast as NAVAREA warnings. This list is not exhaustive and should be regarded only as a guideline. Furthermore, it pre-supposes that sufficiently precise information about the item has not previously been disseminated in a Notice to Mariners. Whenever possible, warnings concerning scheduled
events, in particular those covered in 4.2.3.13, should be originated not less than five days in advance, and reference may be made to relevant national publications:
.1 casualties to lights, fog signals, buoys and other aids to navigation affecting main shipping lanes;
.2 the presence of dangerous wrecks in or near main shipping lanes and, if relevant, their marking;
.3 establishment of major new aids to navigation or significant changes to existing ones when such establishment or change might be misleading to shipping;
.4 the presence of large unwieldy tows in congested waters;
.5 drifting hazards (including derelict vessels, ice, mines, containers, other large items over 6 metres in length etc.);
.6 areas where search and rescue (SAR) and anti-pollution operations are being carried out (for avoidance of such areas);
.7 the presence of newly-discovered rocks, shoals, reefs and wrecks likely to constitute a danger to shipping and if relevant, their marking;
.8 unexpected alteration or suspension of established routes;
.9 cable or pipe-laying activities, seismic surveys, the towing of large submerged objects for research or exploration purposes, the employment of manned or unmanned submersibles, or other underwater operations constituting potential dangers in or near shipping lanes;
.10 the establishment of research or scientific instruments in or near shipping lanes;
.11 the establishment of offshore structures in or near shipping lanes;
.12 significant malfunctioning of radio-navigation services and shore-based maritime safety information radio or satellite services;
.13 information concerning special operations which might affect the safety of shipping, sometimes over wide areas, e.g. naval exercises, missile firings, space missions, nuclear tests, ordnance dumping zones etc.
.14 operating anomalies identified within ECDIS including ENC issues;
.15 acts of piracy and armed robbery against ships;
.16 tsunamis and other natural phenomena, such as abnormal changes to sea level;
.17 World Health Organization (WHO) health advisory information;
.18 security related requirements.

4.3 Sub-Area warnings

4.3.1 Sub-Area warnings broadcast information which is necessary for safe navigation within a Sub-Area. They will normally include all subjects listed in **4.2.3** above, but will usually affect only the Sub-Area.

4.4 Coastal warnings

4.4.1 Coastal warnings broadcast information which is necessary for safe navigation within areas seaward of the fairway buoy or pilot station and should not be restricted to main shipping lanes. Where the area is served by NAVTEX, it should provide Navigational Warnings for the entire NAVTEX service area. Where the area is not served by NAVTEX, it is necessary to include all warnings relevant to the coastal waters up to 250 n miles from the coast in the International SafetyNET service broadcast.

4.4.2 Coastal warnings should include at least the subjects in **4.2.3.**

4.5 Local warnings

4.5.1 Local warnings broadcast information which cover inshore waters often within the limits of jurisdiction of a harbour or port authority. They are broadcast by means other than NAVTEX or SafetyNET and supplement coastal warnings by giving detailed information within inshore waters.

5 - THE STRUCTURE OF NAVIGATIONAL WARNINGS

5.1 Numbering

5.1.1 Navigational Warnings in each series should be consecutively numbered throughout the calender year, commencing with 1/YY at 0000 UTC on 01 January.

5.1.2 Navigational Warnings should be transmitted in reverse numerical order on scheduled broadcasts.

5.2 Language

5.2.1 All NAVAREA, Sub-Area and coastal warnings should be broadcast only in English in the International NAVTEX and SafetyNET services in accordance with IMO resolution A.706(17), as amended.

5.2.2 In addition to the required broadcasts in English, NAVAREA, Sub-Area and coastal warnings may be broadcast in a national language using national NAVTEX and SafetyNET services and/or other means.

5.2.3 Local warnings may be issued in the national language and/or in English.

5.3 "No warnings" message

5.3.1 When there are no Navigational Warnings to be disseminated at a scheduled broadcast time, a brief unnumbered message should be transmitted to identify the broadcast and advise the mariner that there is no Navigational Warning message traffic on hand.

5.4 Standard elements of messages

5.4.1 The minimum information which a mariner requires to avoid danger is:
HAZARD + POSITION
It is usual, however, to include amplifying remarks in order to provide sufficient extra details to clearly identify the significance of the hazard and to assist mariners in recognizing and assessing its effect upon their navigation. The time, date and duration of the event should be included if known.

5.4.2 A message can have up to three parts: Preamble, Warning, Postscript. Sections 6 and 7 of the Manual give guidance on the correct way of phrasing each part of the warning to achieve maximum impact with minimum broadcast time.

5.4.3 The text of a Navigational Warning should contain specific message elements, identified and ordered by the reference numbers shown in the message elements table. The format and structure of a message should ensure that each message element begins on a new line.

5.4.4 The first words of the text of every warning message should always be the message series identifier, followed by the consecutive number; this may be preceded on a separate line by the time of origin of the message.

5.5 Message Elements Table

MESSAGE ELEMENTS TABLE		
Part	**Reference No.**	**Message Elements**
Preamble	1	Message series identifier
	2	General area
	3	Locality
	4	Chart number
Warning	5	Key subject
	6	Geographical Position
	7	Amplifying remarks
Postscript	8	Cancellation details

6 - MESSAGE FORMAT OF RADIO NAVIGATIONAL WARNINGS

Part 1 - PREAMBLE

Standard Message Element Reference 1 - MESSAGE SERIES IDENTIFIER

The first words of the text of every warning message should always be message series identifier followed by the consecutive number (N/YY).

Standard Message Element Reference 2 - GENERAL AREA

The general area should be sufficient to identify which broad geographic region the message affects. The geographical name which is selected for the general area should be one that can be found on charts and in nautical publications.

Standard Message Element Reference 3 - LOCALITY

The locality should be stated in terms which allow the mariner to identify warnings which affect their passage without having to plot them. Locality will only need to be stated when it is considered necessary to refine the general area. The geographical name which is selected as locality should be one that can be found on charts and in nautical publications.

Standard Message Element Reference 4 - CHART NUMBER

For charted features, reference should be made to a national chart (not necessarily the largest scale) identified by the State abbreviation and chart number. Reference should also be made to an international chart number if one exists.

Part 2 - WARNING

Standard Message Element Reference 5 - KEY SUBJECT

Key subjects referenced in paragraph **4.2.3** are considered suitable for broadcast as NAVAREA, SUB-AREA or COASTAL WARNINGS.

Standard Message Element Reference 6 - GEOGRAPHICAL POSITION

Geographical positions should always be given in Degrees and Minutes or in Degrees, Minutes and Decimal Minutes.

Standard Message Element Reference 7 - AMPLIFYING REMARKS

Amplifying remarks may be used to provide sufficient extra details to clearly identify the significance of the hazard and to assist mariners in RECOGNIZING and ASSESSING its effect upon their navigation.

Part 3 - POSTSCRIPT

Standard Message Element Reference 8 - CANCELLATION DETAILS

Cancellation details should be provided in a message that includes a definitive timeframe; the cancellation time should be one hour after the event completes or one day if the time is not accurately known.

9 - METEOROLOGICAL WARNINGS AND FORECASTS

9.2 Procedures

Preparation and issue of weather and sea bulletins

9.2.1 Weather and sea bulletins should include, in the order given hereafter:
.1 Part I: Storm warnings;
.2 Part II: Synopsis of major features of the surface weather chart and, to the possible extent, significant characteristics of corresponding sea-surface conditions; and
.3 Part III: Forecasts.

9.2.2 Weather and sea bulletins may, in addition, include the following parts:
.1 Part IV: Analysis and/or prognosis in IAC FLEET code form;
.2 Part V: Selection of reports from sea stations; and
.3 Part VI: Selection of reports from land stations.
Notes: (1) The reports included in part VI should be for a fixed selection of stations in a fixed order.
(2) Parts IV, V and VI may be issued at a separate scheduled time.

9.2.4 Weather and sea bulletins should be prepared and issued at least twice daily.

9.2.7 Warnings should be given in plain language. Synopses and forecasts should be given in plain language, however some abbreviations may be used, especially when the size of the bulletin needs to be reduced for dissemination by a low bandwidth system, such as the NAVTEX Service.

9.2.8 Warnings, synopses and forecasts intended for the International SafetyNET and the International NAVTEX services should be broadcast in English.
Note: Additionally, if a national Meteorological Service wishes to issue warnings and forecasts to meet national obligations under SOLAS, broadcasts may be made in other languages. These broadcasts will be part of national SafetyNET or NAVTEX Services.

9.3 Warnings

9.3.1 Warnings should be given for gales (Beaufort Force 8 or 9) and storms (Beaufort Force 10 or over) and for tropical cyclones (hurricanes in the North Atlantic and eastern North Pacific, typhoons in the Western Pacific, cyclones in the Indian Ocean and cyclones of similar nature in other regions).

9.3.2 The issue of warnings for near gales (Beaufort Force 7) is optional.

9.3.3 Warnings for gales, storms and tropical cyclones should have the following content and order of items:
.1 type of warning;
.2 date and time of reference in UTC;
.3 type of disturbance (e.g., low, hurricane, etc) with a statement of central pressure in hectopascals;
.4 location of disturbance in terms of latitude and longitude or with reference to well-known landmarks;
.5 direction and speed of movement of disturbance;
.6 extent of affected area;
.7 wind speed or force and direction in the affected areas;
.8 sea and swell conditions in the affected area;
.9 other appropriate information such as future positions of disturbance.

Sub-items .1, .2, .4, .6 and .7 listed above should always be included in the warnings.

9.3.4 When warnings are included for more than one pressure disturbance or system, the systems should be described in descending order of threat.

9.3.5 Warnings should be as brief as possible and, at the same time, clear and complete.

9.3.6 The time of the last location of each tropical cyclone or extra-tropical storm should be indicated in the warning.

9.3.7 A warning should be issued immediately the need becomes apparent and broadcasted immediately on receipt, followed by a repeat after 6 minutes, when issued as an unscheduled broadcast.

9.3.8 When no warnings for gales, storms or tropical cyclones are to be issued, that fact should be positively stated in part I of each weather and sea bulletin.

9.3.9 Warnings should be updated whenever necessary and then issued immediately.

9.3.10 Warnings should remain in force until amended or cancelled.

9.3.11 Warnings issued as part I of a scheduled bulletin do not need to be repeated after 6 minutes.

9.3.12 Warnings for other severe conditions such as poor visibility, severe sea states (such as high swell, risk of abnormal waves, etc.), ice accretion, etc., should also be issued as necessary.

9.4 Synopses

9.4.1 The synopses given in part II of weather and sea bulletins should have the following content and order of items:
.1 date and time of reference in UTC;
.2 synopsis of major features of the surface weather chart;
.3 direction and speed of movement of significant pressure systems and tropical disturbances.

9.4.2 If possible, significant characteristics of corresponding wave conditions (sea and swell) should be included in the synopsis as well as characteristics of other sea-surface conditions (drifting ice, currents, etc.) if feasible and significant.

9.4.3 Significant low-pressure systems and tropical disturbances which affect or are expected to affect the area within or near to the valid period of the forecast should be described; the central pressure and/or intensity, location movement and changes of intensity should be given for each system; significant fronts, high-pressure centres, troughs and ridges should be included whenever this helps to clarify the weather situation.

9.4.4 Direction and speed of movement of significant pressure systems and tropical disturbances should be indicated in compass points and metres per second or knots respectively.

9.4.5 Units used for speed of movement of systems should be indicated.

9.5 Forecasts

9.5.1 The forecasts given in part III of weather and sea bulletins should have the following content and order of items:
.1 the valid period of forecast;
.2 name or designation of forecast area(s) within the main MSI area;
.3 a description of:
(i) wind speed or force and direction;
(ii) sea state (significant wave height/total sea);
(iii) visibility when forecast is less than five n miles;
(iv) ice accretion, where applicable.

9.5.2 The forecasts should include expected significant changes during the forecast period, significant meteors such as freezing precipitation, snowfall or rainfall and an outlook for a period beyond 24 hours. In addition, phenomena such as breaking seas, cross seas and abnormal waves should also be included, where possible.

9.5.3 The valid period should be indicated either in terms of numbers of hours from the time of issue of the forecast or in terms of dates and time in UTC of the beginning and the end of the period.

9.5.4 The following descriptive terms should be used for visibility:
(i) very poor (less than 0·5 n miles),
(ii) poor (0·5 to 2 n miles),
(iii) moderate (2 to 5 n miles),
(iv) good (greater than 5 n miles).

NATIONAL PRACTICES

This section contains details of the procedures adopted by various countries for the dissemination of Navigational Warnings. This information is, in general, of too lengthy a nature to be included with individual station entries.

ARGENTINA

Warnings issued by the Servicio de Hidrografia Naval are classified as NAVAREA, Coastal and Local Warnings.

NAVAREA WARNINGS
Warnings are broadcast by Buenos Aires for NAVAREA VI.

COASTAL WARNINGS
Warnings cover the area within 200 n miles of the Argentine Coast. They are classified as Vital, Important or for scheduled broadcast. Vital and Important warnings are broadcast on receipt. Details of scheduled broadcasts are given in the appropriate station entries in this volume. Vital and Important warnings in force are included in the scheduled broadcast.
Warnings are broadcast as long as the information remains valid or until 10 days after the contents have appeared in printed Argentine Notices to Mariners.

LOCAL WARNINGS
Warnings are broadcast for the following areas:

(a) Río de la Plata from Prácticos Lt V to a line joining Puerto San Isidro (Argentina) to Punta Gorda (Uruguay).
(b) Río Paraná, Río Paraguay and Río Uruguay.

Warnings are broadcast as long as the information remains valid or until 10 days after the contents have appeared in printed Argentine Notices to Mariners.

AUSTRALIA

Maritime Safety Information such as Navigational Warnings are issued by the Rescue Coordination Centre (RCC Australia), part of the Australian Maritime Safety Authority (AMSA). Warnings are broadcast through the SafetyNET service. Maritime Radio Stations may broadcast Navigational Warnings for their areas on 8176 kHz. Current MSI can also be obtained from the AMSA Internet website located at www.amsa.gov.au. Warnings are designed to give the mariner information relating to dangers and aids to navigation. Many warnings are of a temporary nature but others may remain in force for several weeks and may be superseded by Notices to Mariners.
Information contained in radio warnings is primarily to assist mariners up to the entrance of ports. Information of a less urgent nature, and matters within harbour limits will be promulgated initially as VHF broadcasts from port authorities and/or Notices to Mariners.
Local warnings of a more important nature which are considered by a port authority as requiring wider promulgation than the port broadcast, may be issued by RCC Australia as an AUSCOAST warning through SafetyNET service.
Vessels reporting malfunctions of navigational aids to RCC Australia are requested to provide the following information, where applicable:

(a) Distance from aid and time
(b) Visibility at time and general weather
(c) Radar band in use (for reports concerning RACONS)

RCC Australia issues two main types of warnings, coastal warnings and long range warnings within a system intended to align as closely as possible with WWNWS and Inmarsat recommendations.

COASTAL WARNINGS
Two types of coastal warnings are issued by RCC Australia:

(a) Coastal Navigational Warnings (AUSCOAST series)
(b) Sea Safety Messages (SSM series)

Warnings on the SafetyNET service are broadcast to defined geographical areas as indicated on Figure SN-10M

AUSCOAST WARNINGS
These are important navigational warnings, prefixed AUSCOAST, and numbered consecutively, on an annual basis. They are broadcast for as long as the information is valid or until it is made available by other means, such as a Notice to Mariners. Warnings concerning aids to navigation will be issued as AUSCOAST warnings. AUSCOAST warnings transmitted via SafetyNET service are available via the POR and IOR satellites.
Cancellations of AUSCOAST warnings will be broadcast once only on voice frequencies at the first scheduled broadcast time. Cancellation under the SafetyNET service will be once only on receipt.

SEA SAFETY MESSAGES
These are issued to cover dangers such as floating objects etc, and are normally broadcast for a defined period (unless updated positions are received). Messages are prefixed SSM with an annual sequential number. Sea Safety Messages transmitted via SafetyNET service are available via the POR satellite for AUSCOAST Areas A-D and via POR and IOR for AUSCOAST Areas E-H.

WEAPONS PRACTICE WARNINGS
As clear range procedures are followed no broadcast warnings will be issued in respect of weapons firing practices. Major exercises will be the subject of special warnings. Vessels approaching weapons practice areas are requested to maintain a radio listening watch.

LONG RANGE NAVIGATIONAL WARNINGS (NAVAREA X)
Under the WWNWS, Australia is the area Coordinator for NAVAREA X. NAVAREA X warnings are promulgated on SafetyNET service on both the POR and IOR satellites.

BRAZIL

Warnings are issued by the Centro de Hidrografia de Marinha (CHM) and are classified as NAVAREA, Coastal and Local Warnings. NAVAREA and Coastal Warnings are transmitted daily by radio and/or satellite (Inmarsat C) until they are published in Notices to Mariners or cancelled. If they are still in force after 6 weeks they will be published only in Notices to Mariners and not broadcast by radio/satellite.
Local Radio Navigational Warnings are usually issued in only two consecutive radio broadcasts even if they are in force after this. Some Local Warnings that deal with events that represent great risk to navigation, as new dangers and critical alterations in buoyage, are broadcast daily until they are cancelled. If they are still in force after 6 weeks they will be published only in Notices to Mariners and not issued via radio.
The complete list of all Radio Navigational Warnings in force can be accessed on the Internet at: www.mar.mil.br/dhn/dhn/index.html this list is updated about twice a day.
To receive Radio Navigational Warnings through the Inmarsat-C system, mariners should program their equipment for NAVAREA V and select the letter(s) that designate the required coastal region(s).
The following indicative letters for the areas affected are:

Coastal Areas:	S—South Coast, E—East Coast, N—North Coast
Inland Waters:	I—Amazon Basin, HI—Paraguai River and tributaries, HT—Tietê and Paraná Rivers and tributaries, HG—Inland Waters in general

A Navarea Warning listing all Warnings in force is issued weekly every Wednesday.
Mariners that need any Radio Navigational Warnings in force at a time different to the usual scheduled transmissions may request them from Rede Nacional de Estações Costeiras (RENEC) of Embratel on VHF Ch 16.
Mariners are requested to notify a RENEC coast radio station immediately of any facts which come to their notice affecting the safety of navigation.

CANADA

NOTICES TO SHIPPING
Notices to Shipping (NOTSHIPs) issued for the Atlantic, Pacific, Great Lakes and Arctic areas of Canada are assigned an alphanumeric designator. The alphanumeric designator consists of an alpha character which identifies the Canadian Coast Guard (CCG) NOTSHIP issuing authority. The alpha character is followed by a number commencing with the number 001 on January 1st each year and subsequently increasing with each new notice throughout the year. Alpha designators utilized in Canadian NOTSHIPs are as follows:
A—Arctic, C—Central, M—Maritimes, N—Newfoundland, Q—Quebec, P—Pacific, H—Athabasca-Mackenzie Watershed

Masters are reminded of the regulatory requirement to report any danger, potential danger or hazard to navigation which they may encounter. Reports should be forwarded to the appropriate MCTS Centre as soon as possible to ensure the widest distribution to mariners through broadcast NOTSHIPs.

Information Updates
Notices to Mariners contain information which serves to correct charts and related publications. Up to date information is available to vessels inward- bound for Canadian waters on any changes which have occurred since the date of issue of the most recent monthly edition of Canadian Notices to Mariners held on board. Vessels wishing to avail themselves of this service should send their request directly to VTS OFFSHORE, ECAREG or NORDREG Canada. Requests may also be routed via any MCTS Centre.
When making this request the following information shall be included:

(a) Vessels name and call sign.
(b) present position, destination and intended route.
(c) most recent monthly edition of Canadian Notices to Mariners held on board.
(d) list of recent Notices to Shipping held on board.

Ice information, ice routeing and icebreaker assistance may be obtained through the Eastern Canada Traffic System (ECAREG CANADA) or the Arctic Canada Traffic System (NORDREG CANADA). For full details of ECAREG and NORDREG see ALRS Volume 6, Part 5 (NP286(5)).

FIJI

The Fiji Coastal Navigational Warnings are promulgated by the Fiji Islands Maritime Safety Administration. They are numbered consecutively on an annual basis and cover a distance of 200 n miles from the coast. The warnings are broadcast by Suva Coast Radio Station as long as they remain in force; no cancelled messages are broadcast The more important warnings, such as failure of landfall lights may be repeated, and broadcast as long range Navigational Warnings (NAVAREA XIV warnings).

GREENLAND

Notices of importance to safety at sea which cannot be published in Notices to Mariners (EfS) with sufficient notice are transmitted by Aasiaat Radio, Aasiaat Radio transmits the Navigational Warnings in Danish and English. The warnings are issued by Arktisk Kommando (AKO), and begin with the wording Navigational Warning AKO and a number. The three figure numbering system commences 1 January each year. Times, when quoted, consist of six figures, the first two giving the date and the last four the time in UTC. Aasiaat Radio transmits Navigational Warnings after the first silence period after reception after prior announcement on MF

DSC 2187·5 kHz, MF 2182 kHz and VHF Ch 16. They are then broadcast after the Traffic Lists on all working frequencies and channels.
Navigational Warnings are transmitted by Aasiaat Radio until they are published by Notices to Mariners (EfS) or are cancelled.

JAPAN

Radio Navigational Warnings are issued by the Headquarters of the Japan Coast Guard (JCG). Warnings are transmitted as follows:

NAVAREA WARNINGS
Warnings are broadcast for NAVAREA XI through the SafetyNET service. A weekly summary of NAVAREA XI warnings is published in Japanese weekly Notices to Mariners and includes the text of each warning issued during the week and still in force; a list of all other warnings in force is also included. The summary is available for inspection at (JCG) offices and bases.

COASTAL WARNINGS
Japan Navigational Warnings cover the coastal waters and principal harbours in Japan. Weekly summaries containing warnings issued during the week and still in force are published in Japanese weekly Notices to Mariners. A number of Japan Coast Guard (JCG) coast stations broadcast coastal warnings.

NEW ZEALAND

TYPES OF WARNINGS
There are three types of Navigational Warnings: Long Range Navigational Warnings - These warnings are part of the NAVAREA system of long range navigational warnings concerned with information which ocean-going mariners require for safe navigation. This includes in particular, new navigational hazards and failures to important aids to navigation as well as information which may require changes to planned navigational routes.
Coastal Navigational Warnings - These warnings provide information which is necessary for safe navigation within areas seaward of the fairway buoy or pilot station and should not be restricted to main shipping routes.
Local Navigational Warnings - These warnings are broadcast to supplement Coastal Navigational Warnings by giving detailed information within inshore waters and often within the limits of a harbour or port authority. These warnings are broadcast via the local harbour VHF radio and are often made available by the ports and harbours on their websites.

LONG RANGE NAVIGATIONAL WARNINGS (NAVAREA XIV - SOUTHWEST PACIFIC)
Under the WWNWS, New Zealand is the area coordinator for NAVAREA XIV. Warnings are prefixed NAVAREA XIV and numbered consecutively on an annual basis. Land Information New Zealand (LINZ) is the NAVAREA XIV Coordinator, the authority charged with collecting and issuing long range navigational warnings.
NAVAREA XIV warnings in-force are available from the LINZ website www.linz.govt.nz/hydro/nautical-info/navigation-area-14/ and are reprinted in “Section V” of the LINZ fortnightly editions of New Zealand Notices to Mariners (NTM’s).
NAVAREA XIV warnings are broadcast by Taupo Maritime Radio (ZLM) RT and on the Inmarsat C SafetyNET system via the POR satellite through Burum LES. Warnings are broadcast on receipt and repeated at scheduled broadcasts until cancelled.
An ‘in-force’ bulletin of current NAVAREA XIV Warnings will be broadcast each Monday at 0900 UTC via Inmarsat SafetyNET. When there are no NAVAREA XIV Warnings to be disseminated at the scheduled broadcast time, a message will be issued advising of this.

COASTAL NAVIGATIONAL WARNINGS
Rescue Coordination Centre New Zealand (RCCNZ) is the national authority charged with collating and issuing coastal warnings for New Zealand. They broadcast to New Zealand Coastal Warning Area Z. Warnings are prefixed Coastal Navigation Warning and numbered consecutively on an annual basis.
Coastal Navigational Warnings are broadcast via VHF radio and Taupo Maritime Radio (ZLM) RT as per the schedule and on the Inmarsat C SafetyNET system via the POR satellite through Burum LES. Warnings are broadcast on receipt and repeated at scheduled broadcasts until cancelled.
An ‘in-force’ bulletin of current Coastal Navigational Warnings will be broadcast each Monday at 0900 UTC via Inmarsat SafetyNET. When there are no Coastal Navigational Warnings to be disseminated at the scheduled broadcast time, a message will be issued advising of this.
Many warnings are of a temporary nature, but others may remain in force for several weeks and may be superseded by NTM’s. The more important coastal navigational warnings, such as the failure of landfall lights, may be repeated and continued to be broadcast as NAVAREA XIV Warnings.
Coastal Navigational Warnings will not contain meteorological information such as forecasts of gales, storms, cyclones or tropical revolving storms. Meteorological information is broadcast at scheduled times.

COASTAL RT BROADCASTS BY TAUPO MARITIME RADIO
MSI is transmitted by Taupo Maritime Radio (ZLM). An initial call will be made on the calling frequencies 2182, 4125 and 6215 kHz. Warnings will then be broadcast on the working frequencies 2207, 4146 and 6224 kHz.
Masters are recommended to arrange, whenever possible, for a radio operator or officer to listen at the scheduled time before sailing at which this information is broadcast, in case any dangers affecting their routes are notified.
A warning will be repeated on request by a ship to (ZLM). Operators should, however, make every effort to get these warnings at the scheduled hours of transmission. Normally warnings will be broadcast at routine times for as long as may be deemed necessary.
Vessels fitted with RT are requested not to make routine transmissions on 2182, 4125 or 6215 kHz during the periods referred to in the schedule of RT broadcasts.

COASTAL VHF BROADCASTS BY TAUPO MARITIME RADIO
MSI is transmitted by Maritime Radio VHF stations located around the New Zealand coast. Broadcasts will include Navigational and Meteorological Warnings, the situation and forecast for all New Zealand sea areas and Coastal Reports for Shipping.
Transmissions will be made simultaneously but separately for the North and South Islands on the working channels following a broadcast announcement on VHF Channel 16.

Vessels must then ensure they select the appropriate working channel based on their location at the time. Coastal Navigational Warnings will be broadcast on all stations with the area of interest indicated by the sea area as a prefix.

RUSSIAN FEDERATION

The system of Navigational Warnings is operating in the Russian Federation as a part of the World-Wide Navigational Warning Service (WWNWS) and is providing the following:

(a) broadcast of NAVAREA XIII Warnings for the Russian Federation area of responsibility,
(b) broadcast of PRIP Coastal Warnings for Russian Federation coastal waters,
(c) broadcast of NAVIP Warnings for NAVAREAS I–XII and XIV–XVI of WWNWS.

NAVAREA Navigational Warnings
NAVAREA warnings are broadcast for NAVAREA XIII in Russian and English by Vladivostok (UFL) by radiotelex and in English on SafetyNET through Nudol LES.
Coastal Warnings for Arctic waters are broadcast in English on SafetyNET through Nudol LES.

PRIP COASTAL WARNINGS PRIPs contain information which is essential for ensuring the safety of navigation in the coastal waters of the Russian Federation and the seas of the Arctic Ocean. PRIPs are consecutively numbered for each year and also seperately for each area, commencing on 1 Jan each year. PRIPs concerning dangerous operations, are announced three days in advance of the begining of operations and repeated at scheduled times until cancelled. PRIPs which are no longer valid are cancelled by radio if the period of their validity is not stated in the text of the warning. PRIPs containing information about drifting objects are valid for three days. Warnings concerning information which is intended to be valid for more than six weeks will be re-issued in printed Russian Notices to Mariners. Warnings are broadcast by maritime radio stations in Russian. NAVTEX coastal warnings are transmitted only in English. PRIPs on NAVTEX are broadcast by Murmansk **[K]**, Arkhangel'sk **[L]**, Novorossiysk **[A]**, Astrakhan **[W]** and Kholmsk **[B]** maritime radio stations.
Coastal warnings for NAVAREA XIII are broadcast in English on SafetyNET through Nudol LES.

NAVIP NAVIGATIONAL WARNINGS
NAVIPs contain information about dangers to navigation in the coastal waters of countries other than the Russian Federation and the high seas.
NAVIP Warnings are numbered separately for each NAVAREA in a sequence which commences on 1 January each year.
NAVIPs are broadcast by Kaliningrad and Vladivostok (UFL) in Russian.
The text of each Navigational Warning contains the following:

(a) geographical identifier of a three digit number, the first two digits of which are the NAVAREA number and the third - the appropriate sub-area, followed by the consecutive number of the warning;
(b) chart number(s);
(c) general area;
(d) text of warning;
(e) time and date of cancelling if known.

Warnings remain in force until cancelled by radio and those with the stated time of cancelling become ineffective at the stated time without a special announcement.
NAVIP warnings containing information about drifting objects remain valid for three days.
When information, promulgated earlier in NAVIPs or PRIPs is announced in Russian Notice to Mariners, these NAVIPs or PRIPs will be cancelled on receipt of the appropriate Notices to Mariners.

UNITED STATES

Navigational Warnings are of two kinds:
Local Warnings issued by the US Coast Guard for coastal and harbour areas.
Long Range Warnings issued by the National Geospatial- Intelligence Agency (NGA).

1. LOCAL WARNINGS
   (a) These warnings are broadcast via US Coast Guard NAVTEX and subordinate maritime radio stations.
   (b) The United States Coast Guard has made Local Notices to Mariners available on INTERNET. Other information is also available eg: GPS, DGPS, information on marine safety and marine communications. Access to the service can be made, at no charge, through World Wide Web (WWW), Gopher and anonymous File Transfer Protocol (FTP), using the following addresses:
   WWW: http://www.navcen.uscg.gov
2. LONG RANGE WARNINGS
   Worldwide coverage is provided by:
   (a) Warnings for NAVAREAS IV and XII. NAVAREA IV warnings are broadcast by Boston, and NAVAREA XII warnings by Guam and Honolulu.
   (b) The HYDROLANT/HYDROPAC Navigational Warning Systems are shown on the relevent diagram in the Guam (USA) section. HYDROLANTs are broadcast by Boston, and HYDROPACs by Guam and Honolulu.

Warnings in each series in (a) and (b) above are numbered sequentially and are broadcast at two successive scheduled times.
Warnings remain in force until cancelled; those of a permanent nature are not cancelled until 6 weeks after publication of a printed Notice to Mariners.
Printed copies of all warnings are available for inspection at custom houses and shipping offices. A list of all warnings broadcast during the previous 6 weeks, and still in force, is broadcast each Wednesday.
Section III of the US Weekly Notices to Mariners includes the text of each warning issued during the week and still in force; a list of all other warnings in force is also included.

RADIO NAVIGATIONAL WARNINGS ON THE INTERNET

NB: The availability of Navigational Warnings on the web does not relieve Masters / Captains of the requirement to receive Navigational Warnings via IMO/IHO approved broadcast systems, as websites are not continuously updated and not necessarily monitored for correctness.

NAVAREA Coordinators

NAVAREA	INTERNET LINK
NAVAREA I (United Kingdom) Baltic Sea sub-area (Sweden)	http://www.ukho.gov.uk/ProductsandServices/MartimeSafety/RNW/Pages/Home.aspx http://www.sjofartsverket.se/baltico
NAVAREA II (France)	http://www.shom.fr/navarea/NavareaIIenVigueur.txt
NAVAREA III (Spain)	http://www.armada.mde.es/ihm/Aplicaciones/Navareas/Index_radioavisos.htm
NAVAREA IV (United States)	http://msi.nga.mil/NGAPortal/MSI.portal (Select Broadcast Warnings)
NAVAREA V (Brazil)	http://www.mar.mil.br/dhn/chm/box-aviso-radio/avradioing.htm
NAVAREA VI (Argentina)	http://www.hidro.gob.ar/nautica/inv.asp
NAVAREA VII (South Africa)	http://www.sanho.co.za/_nav_area7_bulletins/bulletin.htm
NAVAREA VIII (India)	http://www.hydrobharat.nic.in/views/index.php
NAVAREA IX (Pakistan)	http://www.paknavy.gov.pk/hydro/n_navwarn.asp
NAVAREA X (Australia)	https://www.amsa.gov.au/safety-navigation/navigation-systems/ maritime-safety-information-database
NAVAREA XI (Japan)	http://www1.kaiho.mlit.go.jp/TUHO/keiho/navarea11_en.html
NAVAREA XII (United States)	http://msi.nga.mil/NGAPortal/MSI.portal (Select Broadcast Warnings)
NAVAREA XIII (Russia)	http://mil.ru/navigation.htm
NAVAREA XIV (New Zealand)	http://www.maritimenz.govt.nz/navarea
NAVAREA XV (Chile)	http://www.shoa.mil.cl/en/our-services/radio-warnings
NAVAREA XVI (Peru)	https://www.dhn.mil.pe/radioavisos_warnings
NAVAREA XVII (Canada)	http://www.ccg-gcc.gc.ca/e0004476?todo=warning
NAVAREA XVIII (Canada)	http://www.ccg-gcc.gc.ca/e0004476?todo=warning
NAVAREA XIX (Norway)	http://kyvreports.kystverket.no/NavcoReport/navareaxixvarsler.aspx
NAVAREA XX (Russia)	http://structure.mil.ru/structure/forces/hydrographic/info/notices.htm
NAVAREA XXI (Russia)	http://structure.mil.ru/structure/forces/hydrographic/info/notices.htm

METAREA WARNINGS ON THE INTERNET

The WMO/JCOMM website (maintained by Meteo-France), provides the marine weather information broadcast via Inmarsat C SafetyNET by all National Meteorological Services (NMS) appointed as Issuing Services within the framework of the WMO Marine Broadcast System for the GMDSS. Some information broadcast by NAVTEX is also included.

Caution: The Internet is not part of the operational data stream for Maritime Safety Information and should never be relied upon as a means to obtain the latest forecast and warning information. Access to a website may be interrupted or delayed from time to time, updates may also experience occasional gaps. Refer to OFFICIAL sources, Inmarsat SafetyNET or international NAVTEX services, for more complete information.

METAREA	INTERNET LINK
All METAREAS	http://weather.gmdss.org/

AIS MSI BROADCASTS

Introduction

The use of AIS (Automatic Identification System) is an internationally adopted and mature technology with which most mariners will be very familiar. It broadcasts continuously in the VHF maritime mobile band and operates on two dedicated VHF FM radio frequencies AIS1 (Ch 87B – 161·975 MHz) and AIS2 (Ch 88B – 162·025 MHz), allowing the continuous exchange of navigation safety related messages between vessels, shore and Aids to Navigation. AIS information comprises small bursts of data encoded into a bit pattern (bit vector), to enable it to be made as small as possible and is encoded using GMSK modulation – therefore one will be unable to hear anything if a VHF radio were simply tuned to the relevant channel. For further detailed information on AIS please see The Mariner's Handbook NP100.

AIS Message Types

The AIS system has the ability to transmit a range of encoded protocols such as Message 08 (Binary Broadcast Message), 10 (UTC and Date Enquiry) and 14 (Safety Related Broadcast Message) amongst many others.

Emerging Uses of AIS

At the time of going to press, countries such as the USA, are undertaking trials in which the AIS system is being used to broadcast Maritime Safety Information (MSI), meteorological and hydrographic data, (for testing and evaluation purposes). However, it is entirely likely that this broadcast method will be adopted and become much more widely utilised in the future, both in the USA and potentially worldwide. It should be noted that the Message Type being used for testing purposes is likely to change once such systems ‘go live’ and it is foreseen that such changes will invariably be promulgated by local Notice to Mariners.

AIS/MSI Broadcasts and the UKHO

The UKHO is always striving to be at the forefront of any technological developments affecting the mariner and it is our intention to continually adapt and improve our products to reflect such changes. The ADMIRALTY Digital Publication suite is just one product that we are developing to enable the mariner to access the very latest information about such emerging technologies. For more information about ADP and how it can help you, please see our website:

https://www.admiralty.co.uk/digital-services/admiralty-digital-publications

SAFETYNET

EXTRACTS FROM THE SAFETYNET USERS HANDBOOK

Introduction

SafetyNET is an international automatic direct-printing satellite based service for the promulgation of navigational and meteorological warnings, meteorological forecasts and other safety related messages – Maritime Safety Information (MSI) – to ships. The information transmitted is relevant to all seagoing vessels and the message selection features ensure that mariners can receive safety information broadcasts which are tailored to their particular needs. For full details of SafetyNET see ALRS Volume 5 (NP285).

Language used for MSI broadcasts

All MSI broadcasts are printed in English (sometimes a local language is added after the English wording).

What types of MSI can be received?

The following is a list of the different types of MSI you can receive on your EGC receiver:

All ships (general call);
NAVAREA/METAREA Warnings, MET forecast or Piracy warnings to NAVAREA or METAREA;
Navigational, Meteorological or Piracy Warnings to a circular or rectangular area;
Search and Rescue coordination to ships to a circular or rectangular area;
Shore-to-ship distress alerts to a circular area;

Coastal Warnings include the following types of messages (see Note):

- Navigational Warnings
- Meteorological Warnings
- Ice reports
- Search and Rescue information, acts of piracy warnings, tsunami and other natural phenomena
- Meteorological forecasts
- Pilot and VTS service messages
- AIS service messages
- LORAN system messages
- GNSS messages
- Other electronic navigational aid messages
- Other Navigational Warnings
- No messages on hand

Note: The SafetyNET coastal warning service is made available for the transmission of MSI in areas where NAVTEX service is not provided.

Availability of MSI in different areas

To avoid excessive duplication of broadcasts, the IMO has authorised the following arrangements:
For a given NAVAREA/METAREA or other area, which is covered by more than one Ocean Region satellite, scheduled broadcasts of MSI, such as Navigational Warnings and meteorological information, are made only via a single nominated satellite/Ocean Region.
For a NAVAREA/METAREA or other area which is covered by more than one Ocean Region satellite, unscheduled broadcasts of MSI, such as gale warnings and distress alert relays, are made via all satellites/Ocean Regions which cover the area concerned.

Repeat broadcasts of MSI

Some classes of Inmarsat C receivers MESs may not provide uninterrupted monitoring of the channel used for MSI broadcasts and may switch to a different channel for normal commercial traffic.
To improve the probability of these mobile terminals receiving MSI broadcasts, Information Providers re-broadcast some messages:

- Unscheduled messages, such as distress alerts and gale warnings are re-broadcast 6 minutes after the initial broadcast;
- Scheduled broadcasts, such as Navigational Warnings and other longer-term information are repeated at every scheduled time, for as long as they remain in force.

Typical MSI broadcasts:

MSI messages may be broadcast with a key-word in their header indicating the priority of the message – DISTRESS or MAYDAY for priority 3, URGENT or PAN PAN for priority 2 and SAFETY or SÉCURITÉ for priority 1.
The date and time of the message is in UTC.
The priority of the message – Safety, Urgency or Distress is given in the message header. The terminal responds automatically to Urgency and Distress priority messages by giving an audible/visual alarm and automatic printing of the message.
The term PosOK that some Inmarsat C and mini-C models include in the message header tells the operator that the EGC receiver has been updated with the ships position within the last 4 hours and position is valid. Otherwise the indicator will change to NoPOS.

Reduce the number of alarms

Your receiver is built to give an audible/visual alarm on receiving MSI with Distress or Urgency messages to which you should respond immediately. To make sure that you do not get any unnecessary alarms, however, you should do the following:
Keep the ship's position updated, to ensure that the receiver rejects messages for any geographic areas which do not include the ship's position.

Good operating practice

The following advice is given to help obtain the best possible use of the SafetyNET service:

- Ensure any equipment associated with the EGC receiver is working properly, as indicated in the manufacturer's instructions, and that the printer is loaded with paper and print cartridge.

- Make sure the Inmarsat C MES monitors the appropriate satellite/Ocean Region at the time of a scheduled broadcast if you are in overlap area of two or three satellites.
- Make sure that the terminal is not storing unwanted messages, and has storage space for new messages.
- If the printer has an option for printing in a small font, consider selecting this option to reduce the amount of paper used for messages.
- Keep watching your current position.
- On the terminal, enter all NAVAREAs/METAREAs and coastal areas for which you want to receive MSI, considering your intended voyage. Also enter the Coastal warning message types you want to receive, rejecting any unwanted types.
- While in port, keep the EGC receiver in operation, to ensure that you have received all necessary MSI before sailing.
- At the scheduled time make sure that the receiver is tuned to the appropriate channel/Ocean Region.
- When sailing from one Ocean Region to another region ensure that the terminal is manually "Logged in" to the new region when it is required. An alarm will sound when synchronisation has been lost due to vessel sailing out of coverage of an Ocean Region. Manual "Logging in" to the new Ocean Region will automatically cause the system to "Log the MES out" of the previous Ocean Region.

Throughout the voyage, ensure that a written log is kept of the identities of all received messages, and a printed copy is kept of all distress traffic. Other messages should be kept on the bridge for as long as they remain in force.

What to do about missed messages

If you think you have missed any messages, for example at a scheduled broadcast time, you can:

- Switch the terminal off and on again – this will clear the internal memory of all stored message IDs, so that if the message is re-broadcast, your receiver will not reject it as a repeated message, and will store/print it.

Regular position updates

Your EGC receiver **MUST** be updated regularly with the ship's position. The reasons for updating your EGC receiver regularly with the ship's position include:

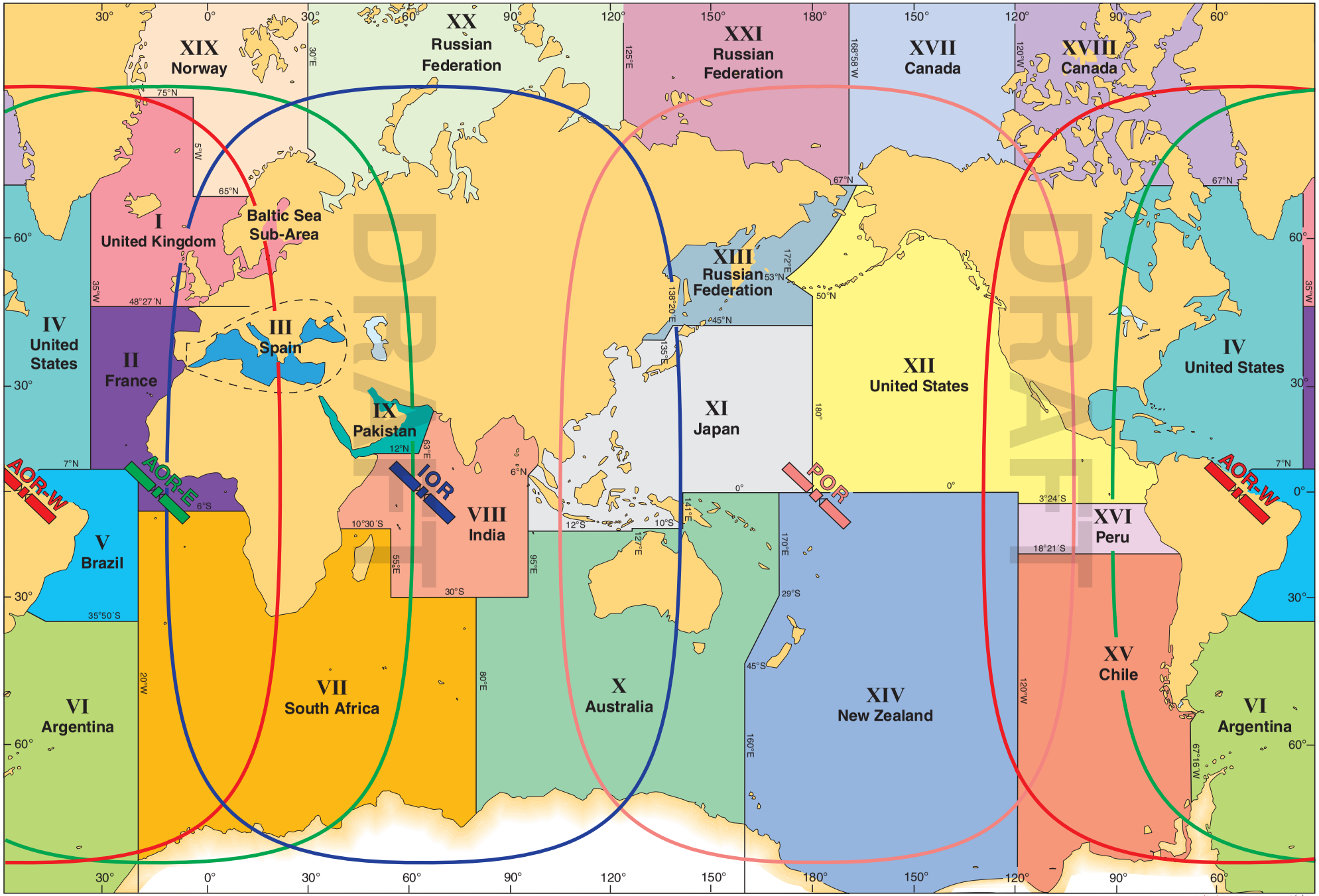
- To receive and print only messages for the area where the ship is navigating; if the ship's position has not been updated for 4 hours (depending on the model), the receiver will automatically print or store all geographically addressed messages within the entire Ocean Region.
- To decide if the receiver should receive and print a message addressed to additional geographic areas.

Another important reason for updating the terminal regularly with the ship's position, while not directly related to the SafetyNET service is to ensure that the correct position is given if a distress alert has to be sent.

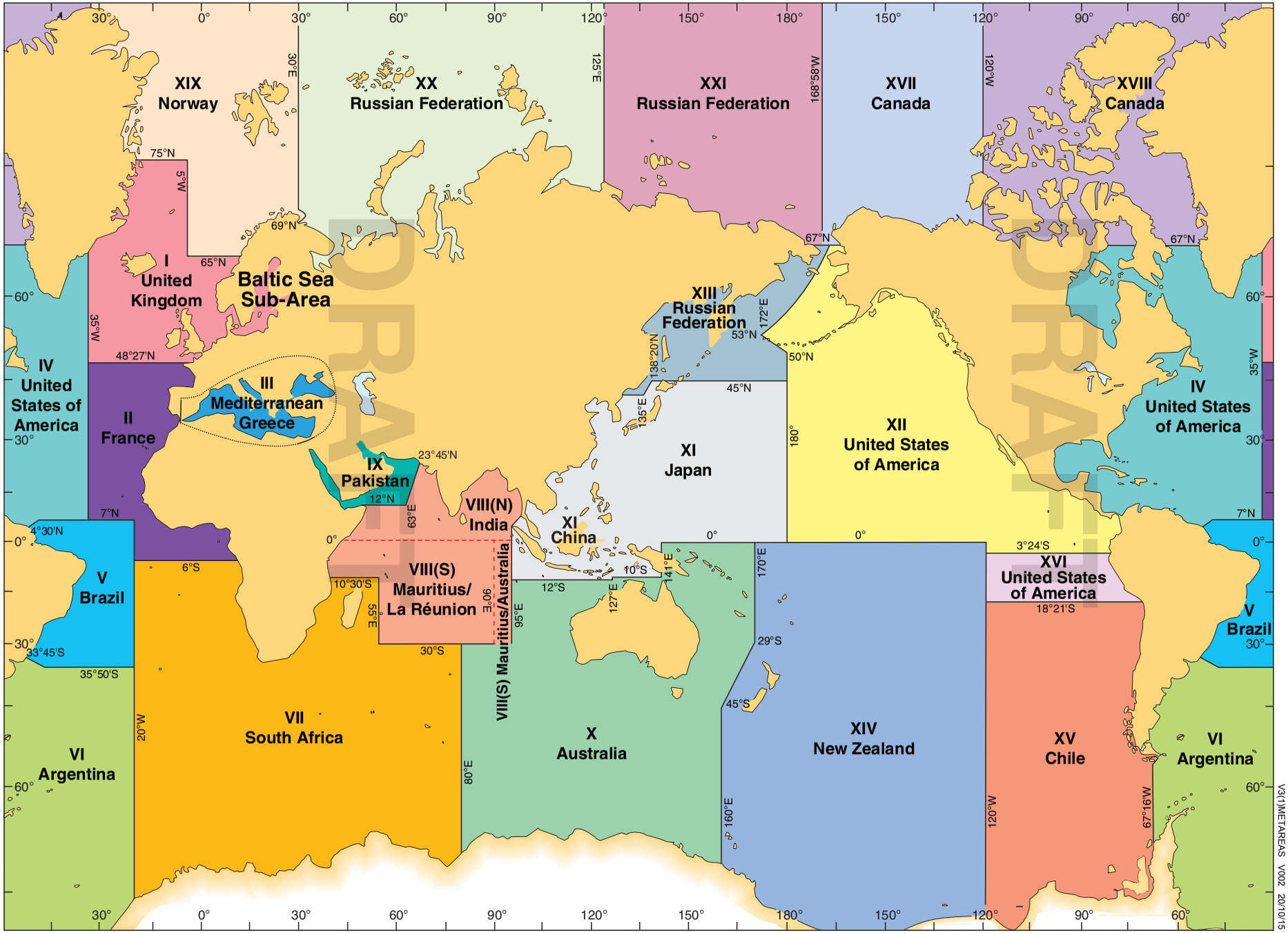
Two ways are available to update a terminal with the ship's position:

- **Automatically**, using a built-in GNSS receiver; most modern MES models now contain an integrated GPS receiver, whilst older models may be interconnected to a separate on-board GPS receiver.
- **Manually**, by keying position coordinates directly into the terminal; IMO requires this be done every 4 hours.

NAVAREAS WITH INMARSAT FOOTPRINTS



LIMITS OF METAREAS



EGC SAFETYNET SYSTEM

Transmission schedule for full GMDSS service

NAVAREA	NAV information		METAREA	MET information	
	Coordinator	Times (UTC)		Issuing country	Times (UTC)
I	United Kingdom	0530, 1730 (AOR-E)	I	United Kingdom	0930, 2130 (AOR-E) Warnings only on receipt (AOR-W)
II	France	0430 1630 (AOR-E)	II	France	1015 2215 (AOR-E / AOR-W)
III	Spain	1200, 2400 & on receipt (AOR-E)	III	Greece[1]	1000, 2200 (AOR-E)
IV	United States	1000, 2200 (AOR-E / AOR-W) (2200 Ice reports N Atlantic) 0900 2100 (AOR-W) French West Indies 0900 2100 (AOR-W) French Guyana	IV	Canada (Hudson Bay & Approaches)	0300 1500 (AOR-W)[6]
				United States	0430, 1030, 1630, 2230 (AOR-E / AOR-W)
V	Brazil	0030, 1230 (AOR-E)	V	Brazil	0730, 1930 (AOR-E)
					Coastal Warnings for Amazon Basin and additional coastal areas (AOR-E)
VI	Argentina	0200, 1400 (AOR-W)	VI	Argentina	0230 1730 (AOR-W)
VII	South Africa	0940 1940 (AOR-E / IOR) 0040, 1240 (IOR) Réunion 0140, 1340 (IOR) Kerguelen Islands 0330, 1530 (IOR) Mayotte	VII	South Africa	0940, 1940 (AOR-E / IOR)[2,5]
VIII	India	1000 2200 (IOR) 0040, 1240 (IOR) Réunion 0330, 1530 (IOR) Mayotte	VIII(N)	India	0900, 1800 for N of 0° (IOR)
			VIII(S)	Mauritius / Réunion	0130, 1330 for S of 0° (IOR) 0000[3], 0600[3], 1200[3], 1800[3] for S of 0° (IOR)
				Australia	Warnings only for S of 0° and E of 90°E (IOR)
IX	Pakistan	0300, 1500 (IOR)	IX	Pakistan	0700 1900[7] (IOR)
X	Australia	0700, 1900 & on receipt (IOR / POR) 0140 1340 (POR) New Caledonia	X	Australia	1030, 2330 (IOR)
					1100, 2300 (POR)
					Coastal Warnings – see Figure SN-10M
XI	Japan	0005, 1205 (POR / IOR)	XI	China	0330, 1015, 1530, 2215 (IOR)
				Japan	0230, 0830, 1430, 2030 for N of 0° (POR) 0815, 2015[4] for S of 0° (POR)
XII	United States	1030, 2230 (POR / AOR-W)	XII	United States	0545, 1145, 1745, 2345 (POR / AOR-W)
XIII	Russian Federation	0930, 2130 (POR)	XIII	Russian Federation	0930, 2130 (POR)
XIV	New Zealand	0900, 2100 (POR) New Zealand 0140, 1340 (POR) New Caledonia 0030, 1230 (POR) Wallis & Futuna 0250, 1450 (POR) French Polynesia	XIV	New Zealand	0330, 0930, 1530, 2130 (POR) Warnings 0330, 1530 (POR) for Area Southern 0930, 2130 (POR) for Areas Subtropic, Forties, Pacific and Islands 0130, 1330 (POR) for NZ coast only
XV	Chile	0210, 1410 (AOR-W)	XV	Chile	0100, 1330 (AOR-W) for Sea Areas 1–8 1440 (AOR-W) for Sea Area 9 0345, 1845 (AOR-W) for Sea Area 10
XVI	Peru	0500, 1700 (AOR-W)	XVI	Peru	0515, 1115, 1715, 2315 (AOR-W)
XVII	Canada	1130, 2330 (POR)[6]	XVII	Canada	0300, 1500 (POR)[6]
XVIII	Canada	1100, 2300 (AOR-W)[6]	XVIII	Canada	0300, 1500 (AOR-W)[6]
XIX	Norway	0630, 1830 (AOR-E)	XIX	Norway	1100, 2300 (AOR-E)
XX	Russian Federation	0530, 1730 (IOR)	XX	Russian Federation	0600, 1800 (IOR)
XXI	Russian Federation	0630, 1830 (POR)	XXI	Russian Federation	0600, 1800 (POR)

[1] Scheduled bulletins and warnings for Western Mediterranean Sea are prepared by France.

[2] Forecasts for areas 30°S - 50°E / 50°S - 80°E and tropical cyclone warnings are prepared by Réunion.

[3] Tropical cyclone warnings (if any) issued by Réunion as an unscheduled broadcast.

[4] Scheduled bulletins and warnings for south of the equator prepared by Australia.

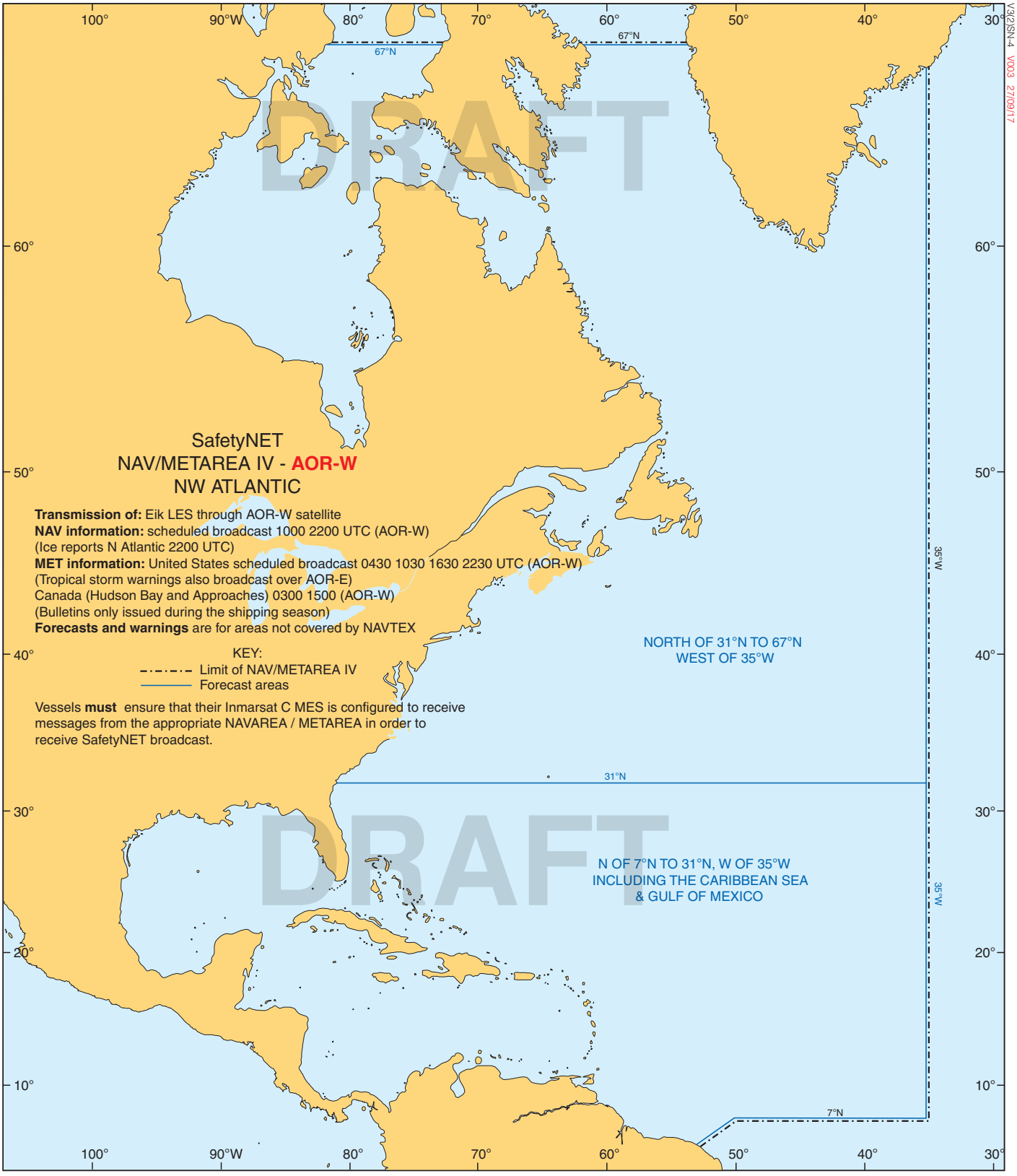
[5] Transmission via AOR-E for areas West of 20°E, transmission via IOR for areas East of 20°E.

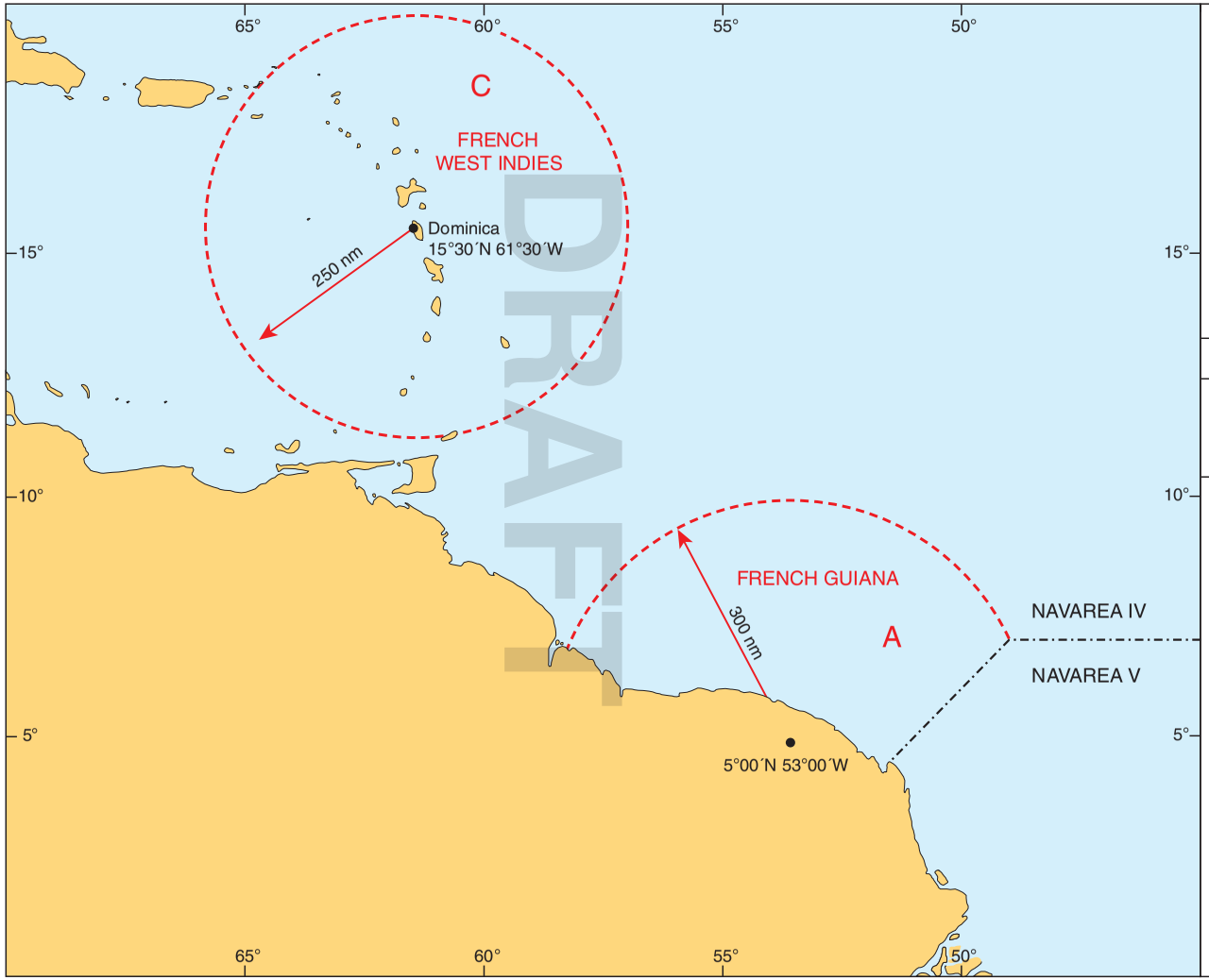
[6] For areas South of 75°N and only during the shipping season.

[7] Only if cyclone/depression development.

Broadcast times for MET information published in the table above are for routine Weather Messages. Storm Warnings are also broadcast on receipt. Routine broadcasts of Navigational Warnings and meteorological forecasts are made at scheduled times over a single nominated satellite for each NAVAREA/METAREA. Unscheduled broadcasts of SAR alert relays and severe weather warnings will be made over all satellites which serve the area concerned.

Figure SN-4


V3(2)SN-4 VC03 27/09/17
DRAFT
DRAFT
SafetyNET
NAV/METAREA IV - AOR-W
NW ATLANTIC
Transmission of: Eik LES through AOR-W satellite
NAV information: scheduled broadcast 1000 2200 UTC (AOR-W)
(Ice reports N Atlantic 2200 UTC)
MET information: United States scheduled broadcast 0430 1030 1630 2230 UTC (AOR-W)
(Tropical storm warnings also broadcast over AOR-E)
Canada (Hudson Bay and Approaches) 0300 1500 (AOR-W)
(Bulletins only issued during the shipping season)
Forecasts and warnings are for areas not covered by NAVTEX
KEY:
Limit of NAV/METAREA IV
Forecast areas
Vessels must ensure that their Inmarsat C MES is configured to receive messages from the appropriate NAVAREA / METAREA in order to receive SafetyNET broadcast.
NORTH OF 31°N TO 67°N
WEST OF 35°W
N OF 7°N TO 31°N, W OF 35°W
INCLUDING THE CARIBBEAN SEA
& GULF OF MEXICO
67°N
31°N
7°N
35°W
100°
90°W
80°
70°
60°
50°
40°
30°
60°
50°
40°
30°
20°
10°



SafetyNET
NAVAREA IV & **AOR-W**

FRENCH WEST INDIES and FRENCH GUIANA

COASTAL NAVIGATIONAL WARNINGS AREAS

Transmission of Eik LES through AOR-W satellite

Broadcast schedule

Navigational Warning Areas - Coastal	Broadcast time
NAVAREA IV AOR-W: Area C: FRENCH WEST INDIES (Antilles Françaises) Area A: FRENCH GUIANA (Guyana) Transmission by Aussaguel LES through AOR-W	 0900 2100 UTC 0900 2100 UTC

Forecasts and warnings are for areas not covered by NAVTEX

KEY:

Limit of NAVAREAs IV and V

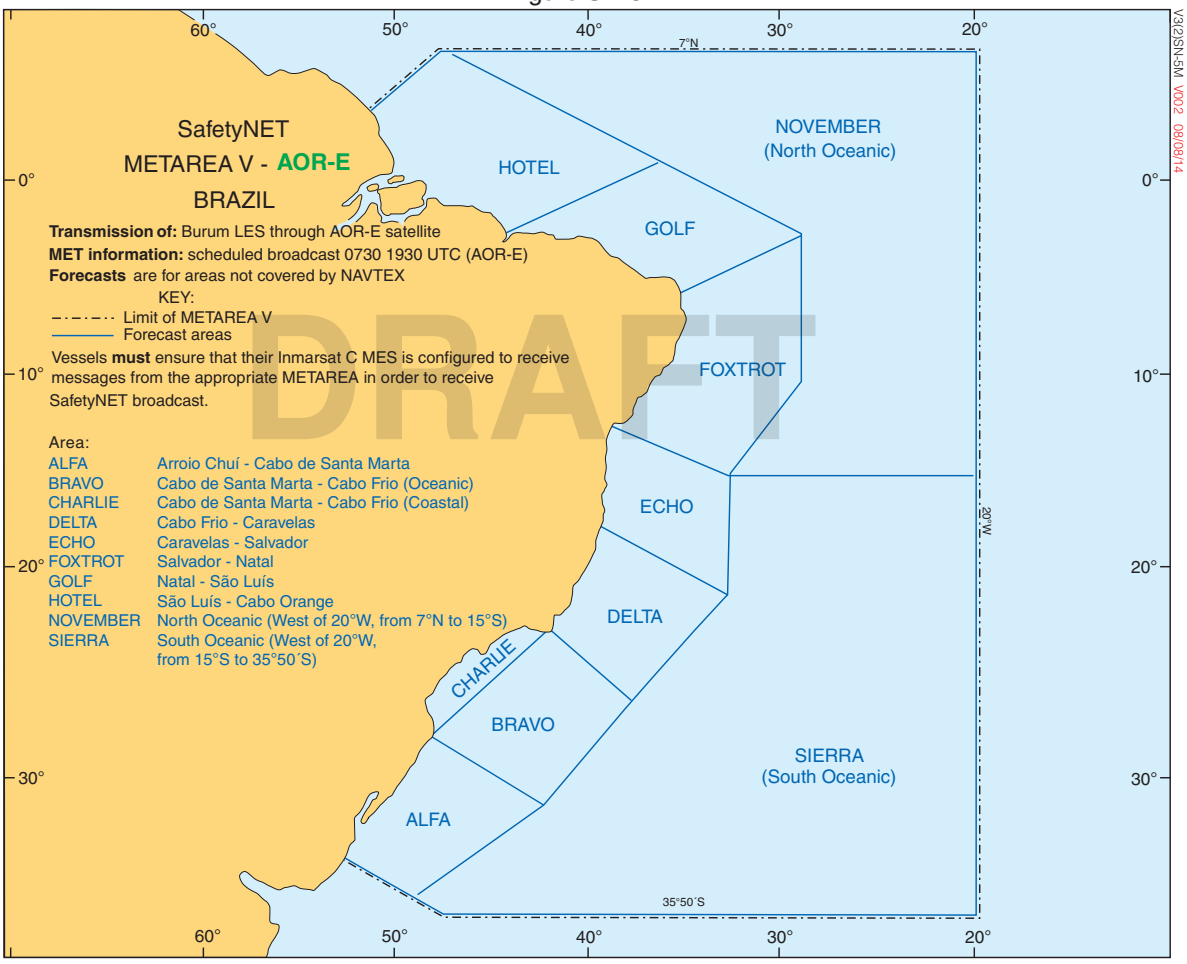
Coverage Area for Coastal Navigational Warnings

Vessels **must** ensure that their Inmarsat C MES is configured to receive messages from the coastal warning area appropriate to their intended voyage. The letters A or C, as depicted on this diagram, must be pre-selected by the operator. Full instructions on this procedure can be found in the manuals supplied by the MES manufacturers.

V5SN-4/5 V003 06/03/12

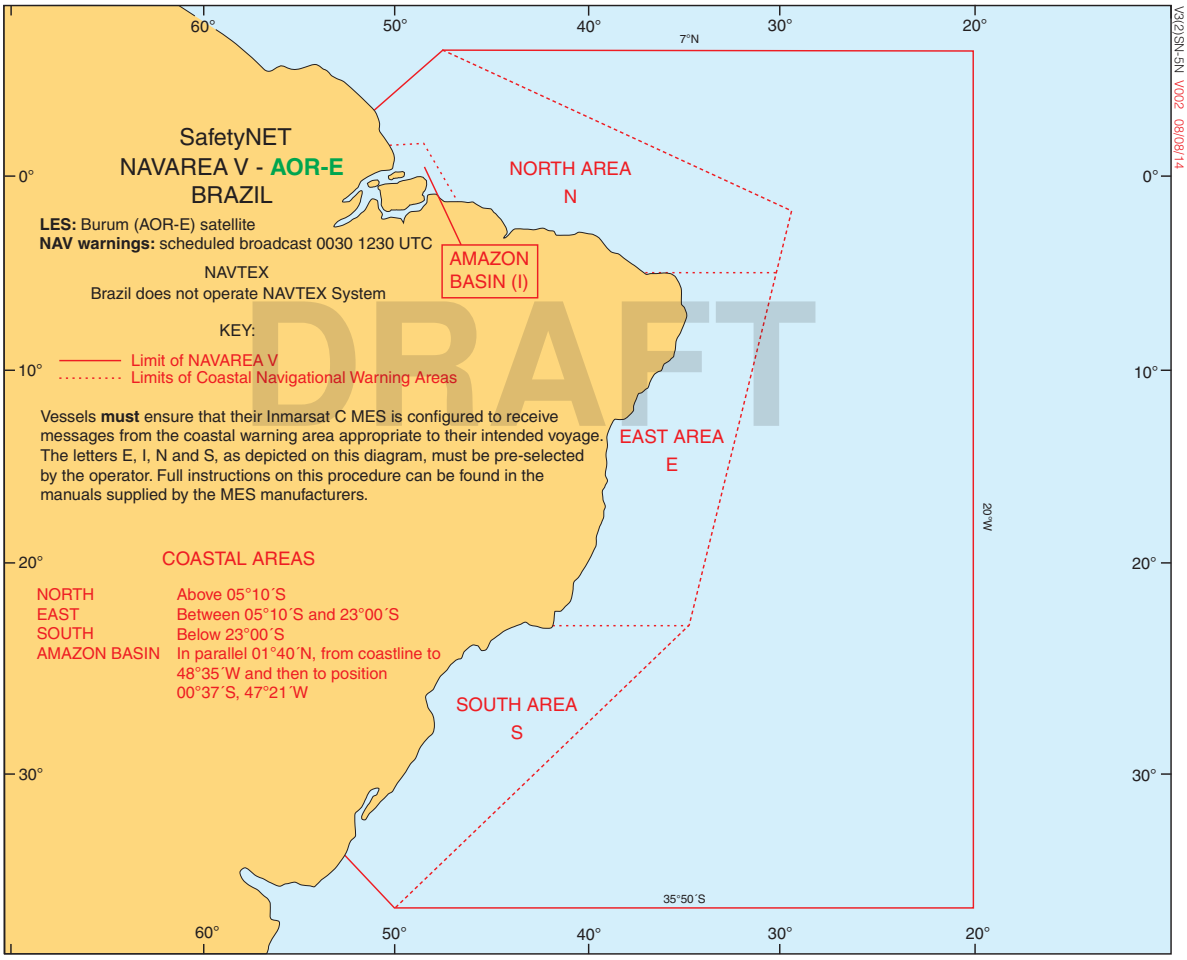
Figure SN-4/5

Figure SN-5M



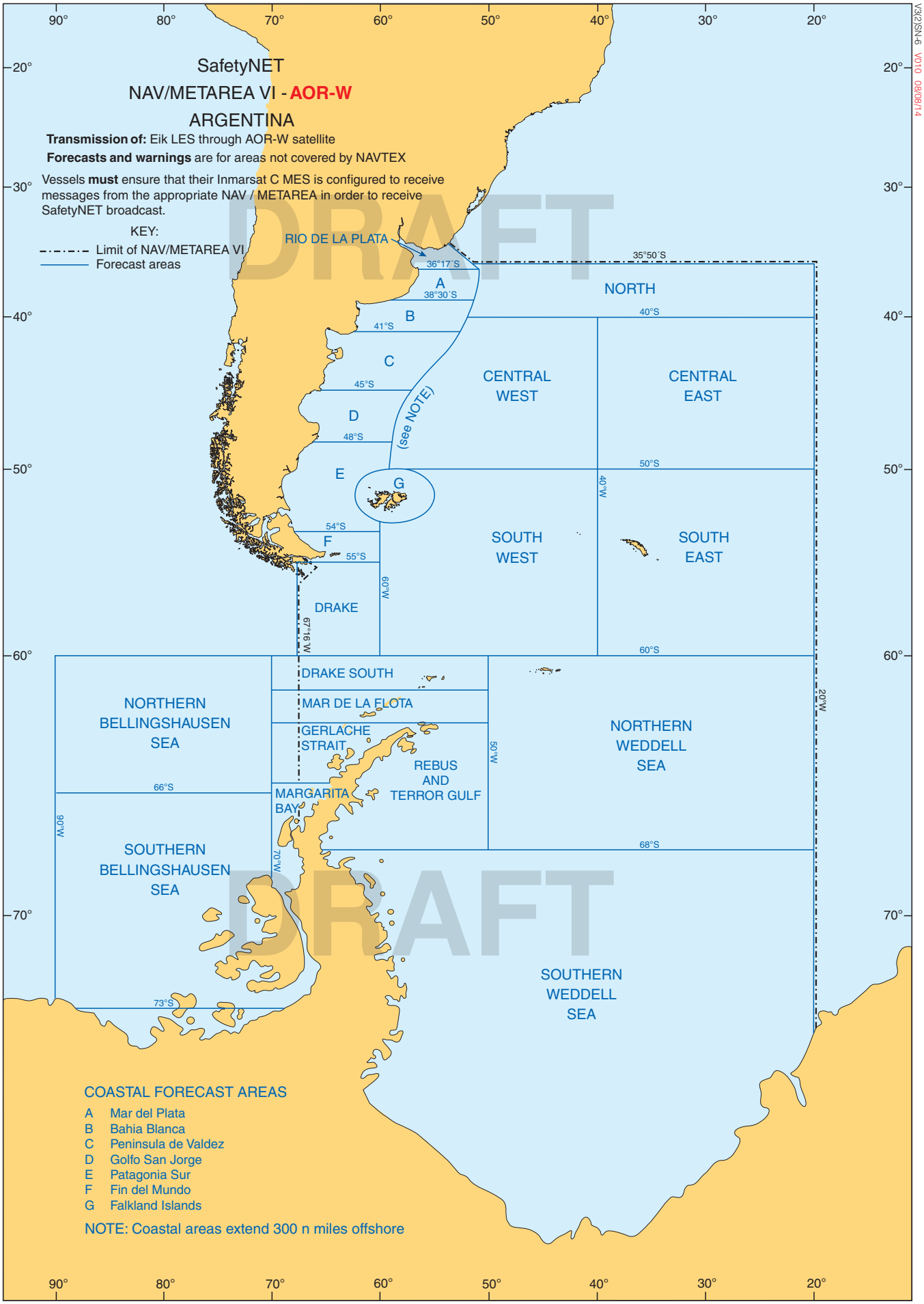
V3(2)SN-5M V002 08/08/14

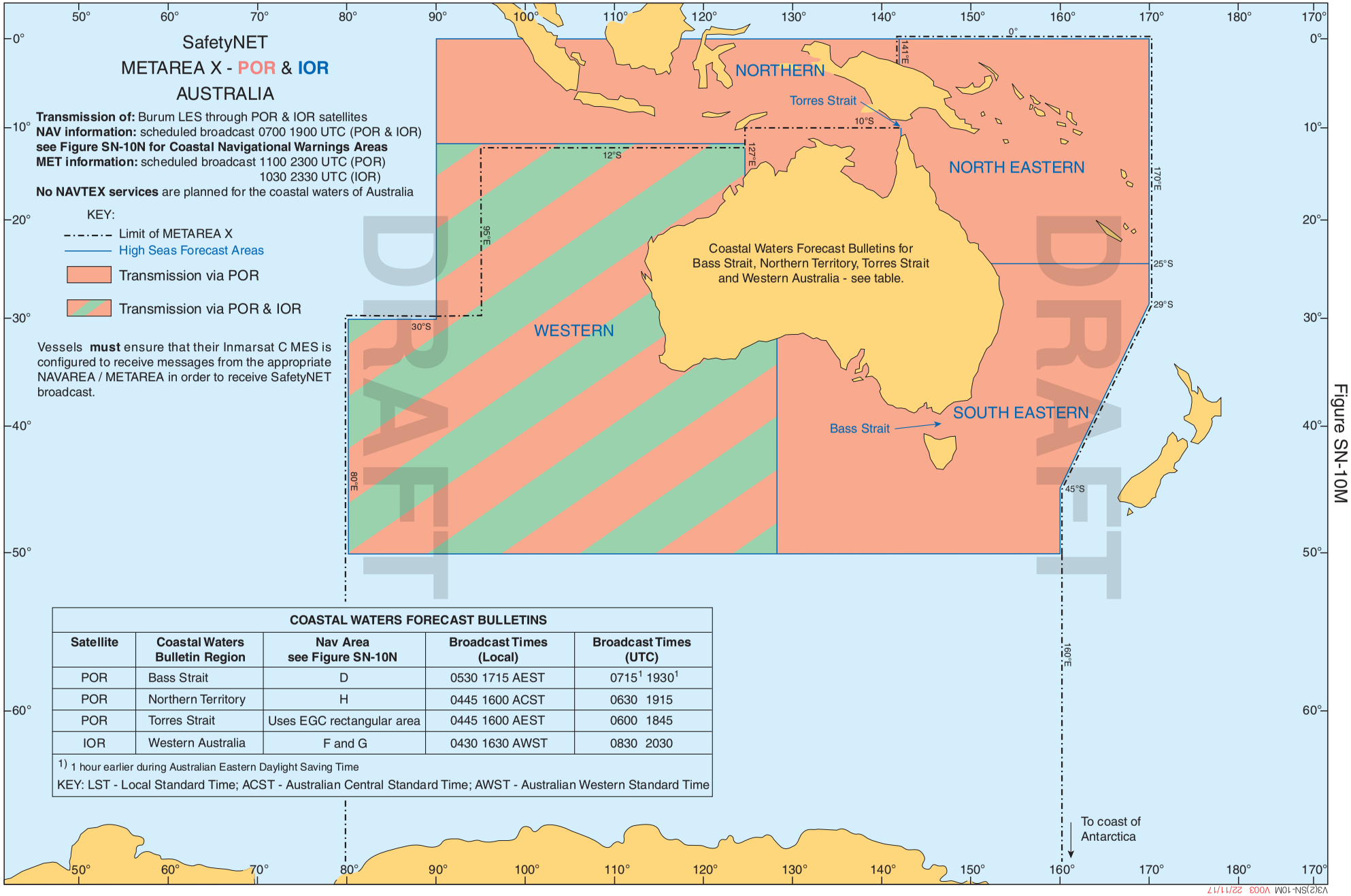
Figure SN-5N



V3(2)SN-5N V002 08/08/14

Figure SN-6


V3(2)SN-6 V010 08/08/14
SafetyNET
NAV/METAREA VI - AOR-W
ARGENTINA
Transmission of: Eik LES through AOR-W satellite
Forecasts and warnings are for areas not covered by NAVTEX
Vessels must ensure that their Inmarsat C MES is configured to receive messages from the appropriate NAV / METAREA in order to receive SafetyNET broadcast.
KEY:
Limit of NAV/METAREA VI
Forecast areas
DRAFT
RIO DE LA PLATA
35°50´S
36°17´S
38°30´S
41°S
45°S
48°S
54°S
55°S
66°S
73°S
40°S
50°S
60°S
68°S
A
B
C
D
E
F
G
NORTH
CENTRAL WEST
CENTRAL EAST
SOUTH WEST
SOUTH EAST
DRAKE
DRAKE SOUTH
MAR DE LA FLOTA
GERLACHE STRAIT
MARGARITA BAY
REBUS AND TERROR GULF
NORTHERN BELLINGSHAUSEN SEA
SOUTHERN BELLINGSHAUSEN SEA
NORTHERN WEDDELL SEA
SOUTHERN WEDDELL SEA
(see NOTE)
90°W
70°W
67°16´W
60°W
50°W
40°W
20°W
90°
80°
70°
60°
50°
40°
30°
20°
20°
30°
40°
50°
60°
70°
COASTAL FORECAST AREAS
A Mar del Plata
B Bahia Blanca
C Peninsula de Valdez
D Golfo San Jorge
E Patagonia Sur
F Fin del Mundo
G Falkland Islands
NOTE: Coastal areas extend 300 n miles offshore



COASTAL WATERS FORECAST BULLETINS				
Satellite	**Coastal Waters Bulletin Region**	**Nav Area see Figure SN-10N**	**Broadcast Times (Local)**	**Broadcast Times (UTC)**
POR	Bass Strait	D	0530 1715 AEST	0715[1] 1930[1]
POR	Northern Territory	H	0445 1600 ACST	0630 1915
POR	Torres Strait	Uses EGC rectangular area	0445 1600 AEST	0600 1845
IOR	Western Australia	F and G	0430 1630 AWST	0830 2030

[1] 1 hour earlier during Australian Eastern Daylight Saving Time

KEY: LST - Local Standard Time; ACST - Australian Central Standard Time; AWST - Australian Western Standard Time

Figure SN-10M

V3(2)SN-10M V003 22/11/17

Figure SN-10N

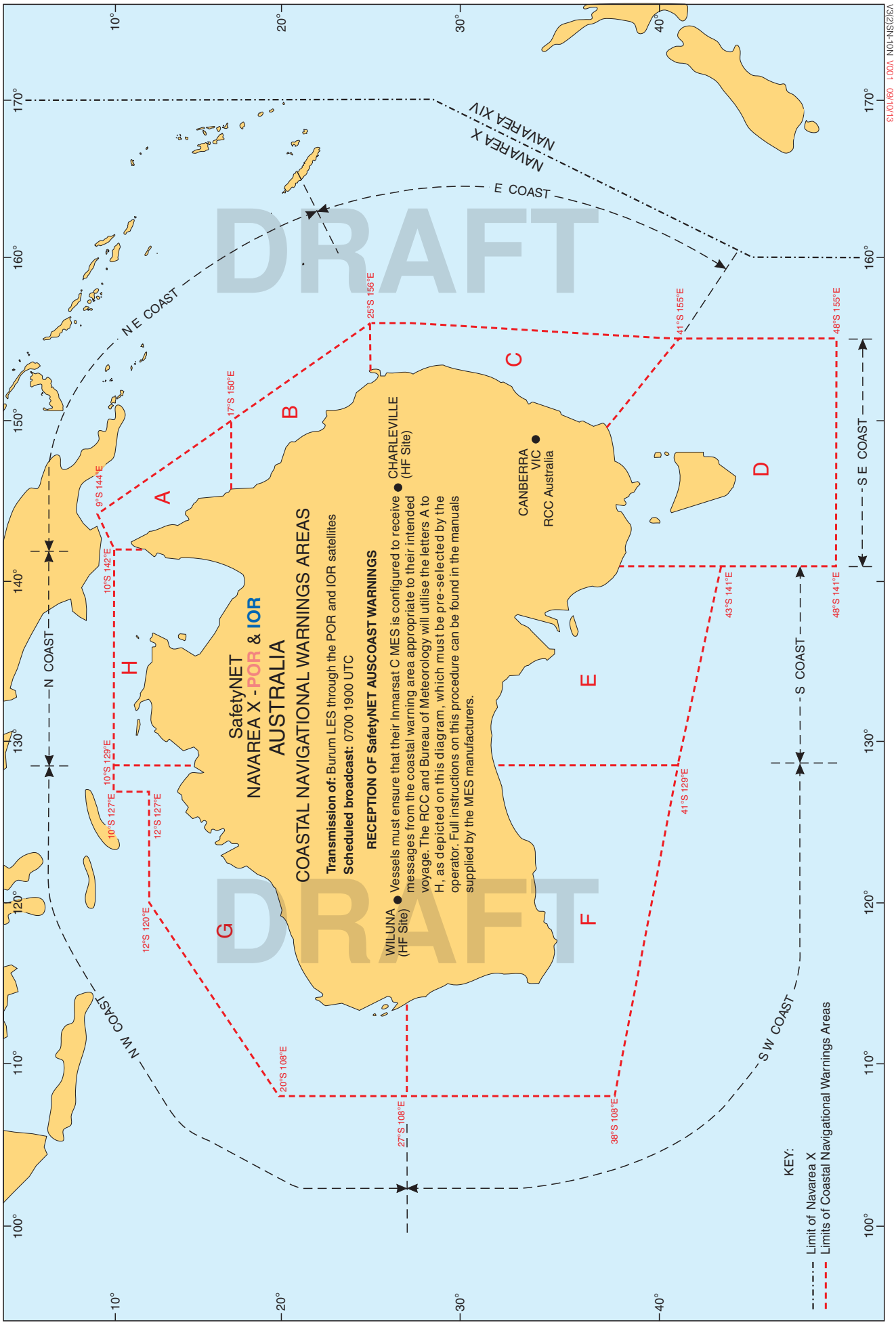


Figure SN-10/14

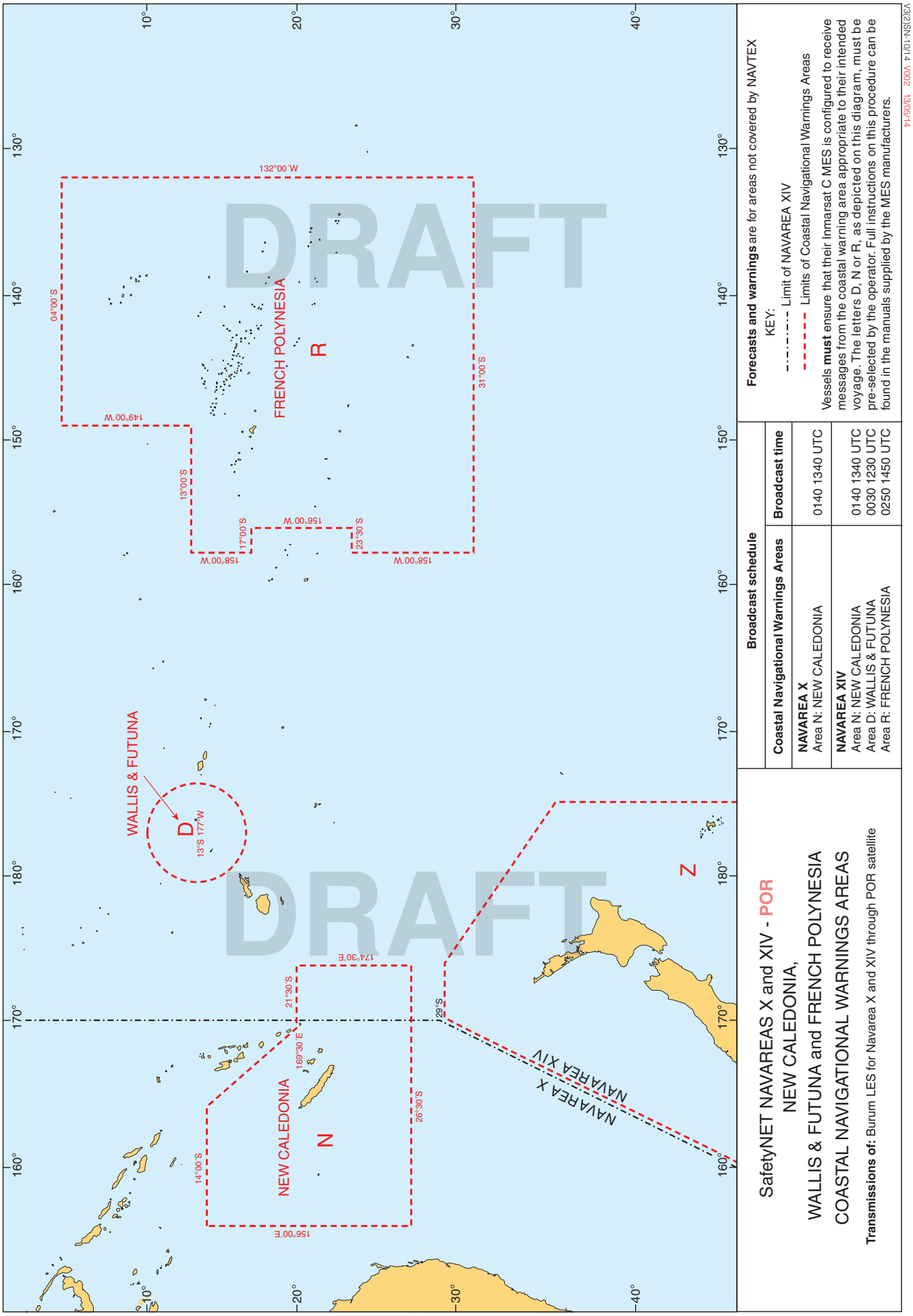
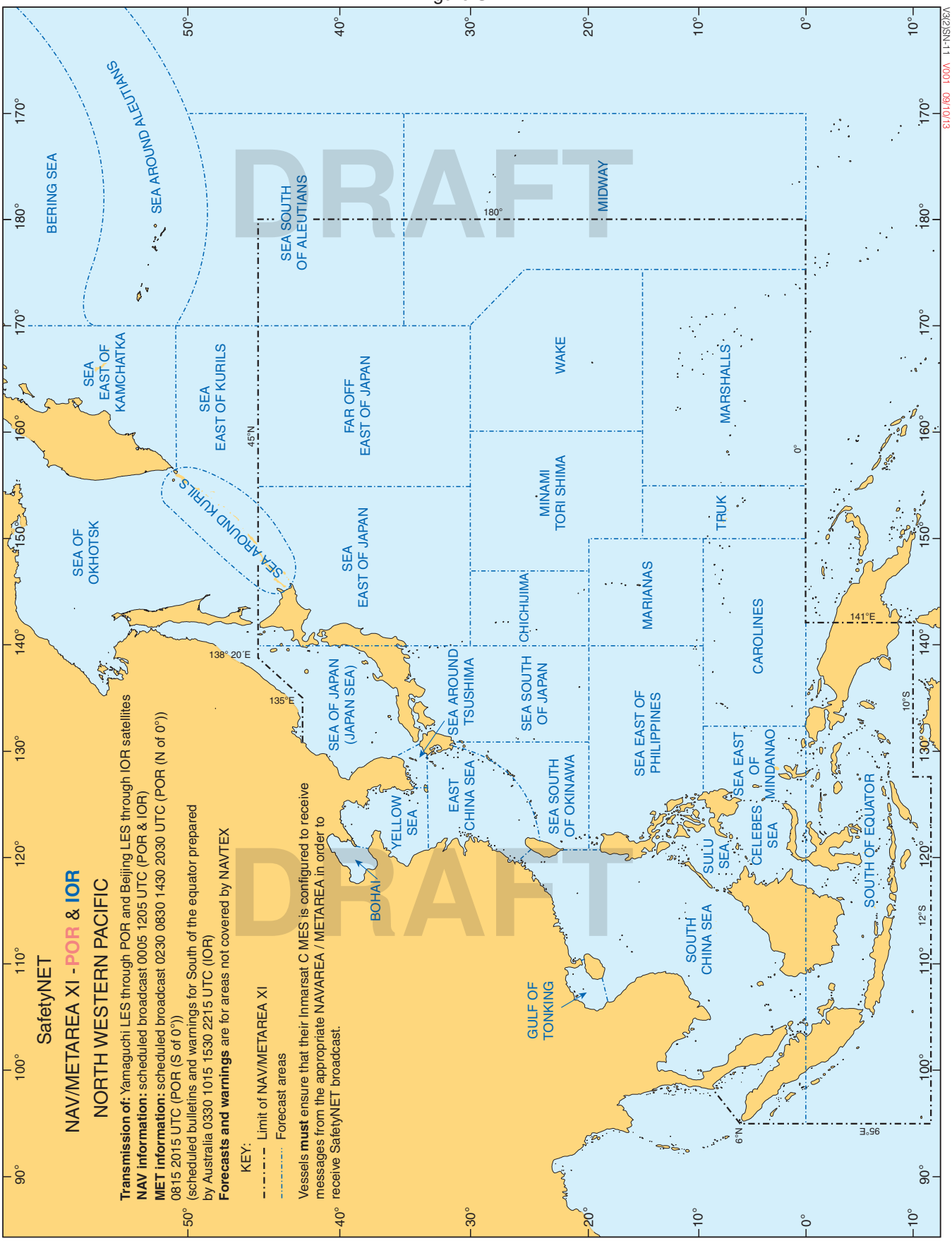


Figure SN-11



V3/2/SN-11 V001 09/10/13

Figure SN-12

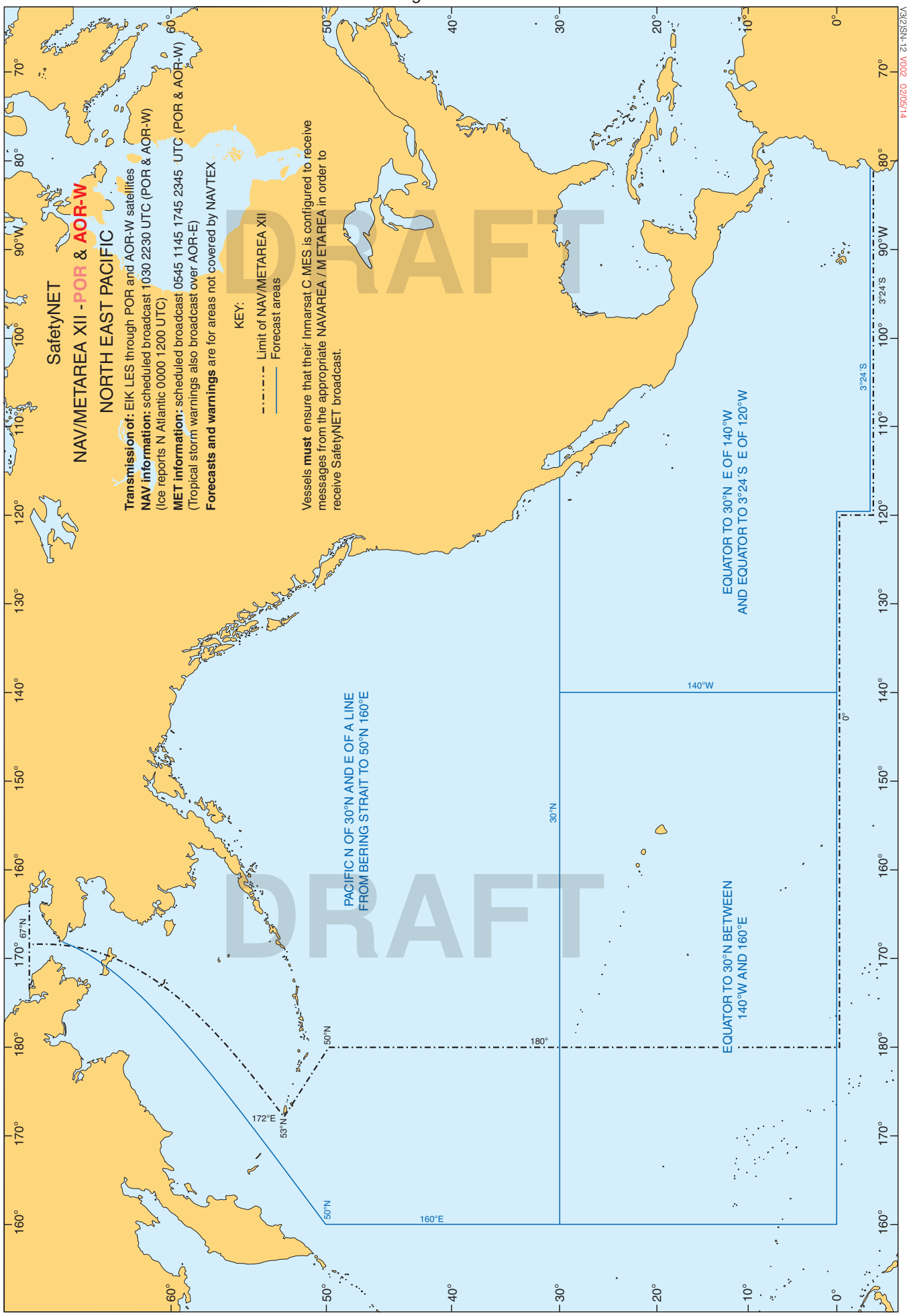

SafetyNET
NAV/METAREA XII - POR & AOR-W
NORTH EAST PACIFIC
Transmission of: EIK LES through POR and AOR-W satellites
NAV information: scheduled broadcast 1030 2230 UTC (POR & AOR-W)
(Ice reports N Atlantic 0000 1200 UTC)
MET information: scheduled broadcast 0545 1145 1745 2345 UTC (POR & AOR-W)
(Tropical storm warnings also broadcast over AOR-E)
Forecasts and warnings are for areas not covered by NAVTEX
KEY:
Limit of NAV/METAREA XII
Forecast areas
Vessels must ensure that their Inmarsat C MES is configured to receive messages from the appropriate NAVAREA / METAREA in order to receive SafetyNET broadcast.
PACIFIC N OF 30°N AND E OF A LINE FROM BERING STRAIT TO 50°N 160°E
EQUATOR TO 30°N BETWEEN 140°W AND 160°E
EQUATOR TO 30°N E OF 140°W AND EQUATOR TO 3°24´S E OF 120°W
DRAFT
DRAFT
V3(2)SN-12 02/05/14

Figure SN-13

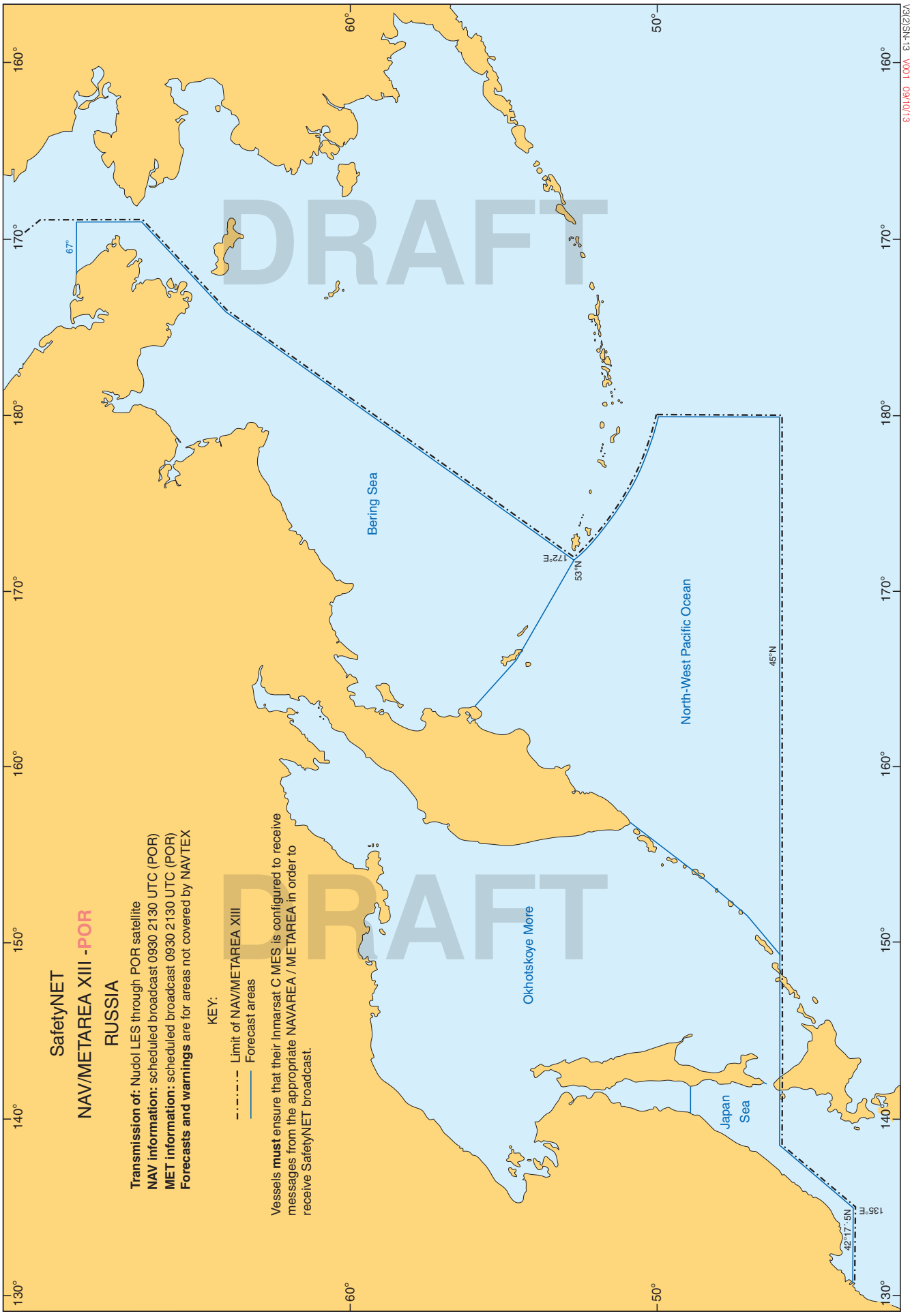

SafetyNET
NAV/METAREA XIII -POR
RUSSIA
Transmission of: Nudol LES through POR satellite
NAV information: scheduled broadcast 0930 2130 UTC (POR)
MET information: scheduled broadcast 0930 2130 UTC (POR)
Forecasts and warnings are for areas not covered by NAVTEX
KEY:
Limit of NAV/METAREA XIII
Forecast areas
Vessels must ensure that their Inmarsat C MES is configured to receive messages from the appropriate NAVAREA / METAREA in order to receive SafetyNET broadcast.
Bering Sea
Okhotskoye More
North-West Pacific Ocean
Japan Sea
67°
172°E
53°N
45°N
135°E
42°17'.5N
130°
140°
150°
160°
170°
180°
60°
50°
DRAFT
V3(2)SN-13 V001 09/10/13

Figure SN-14

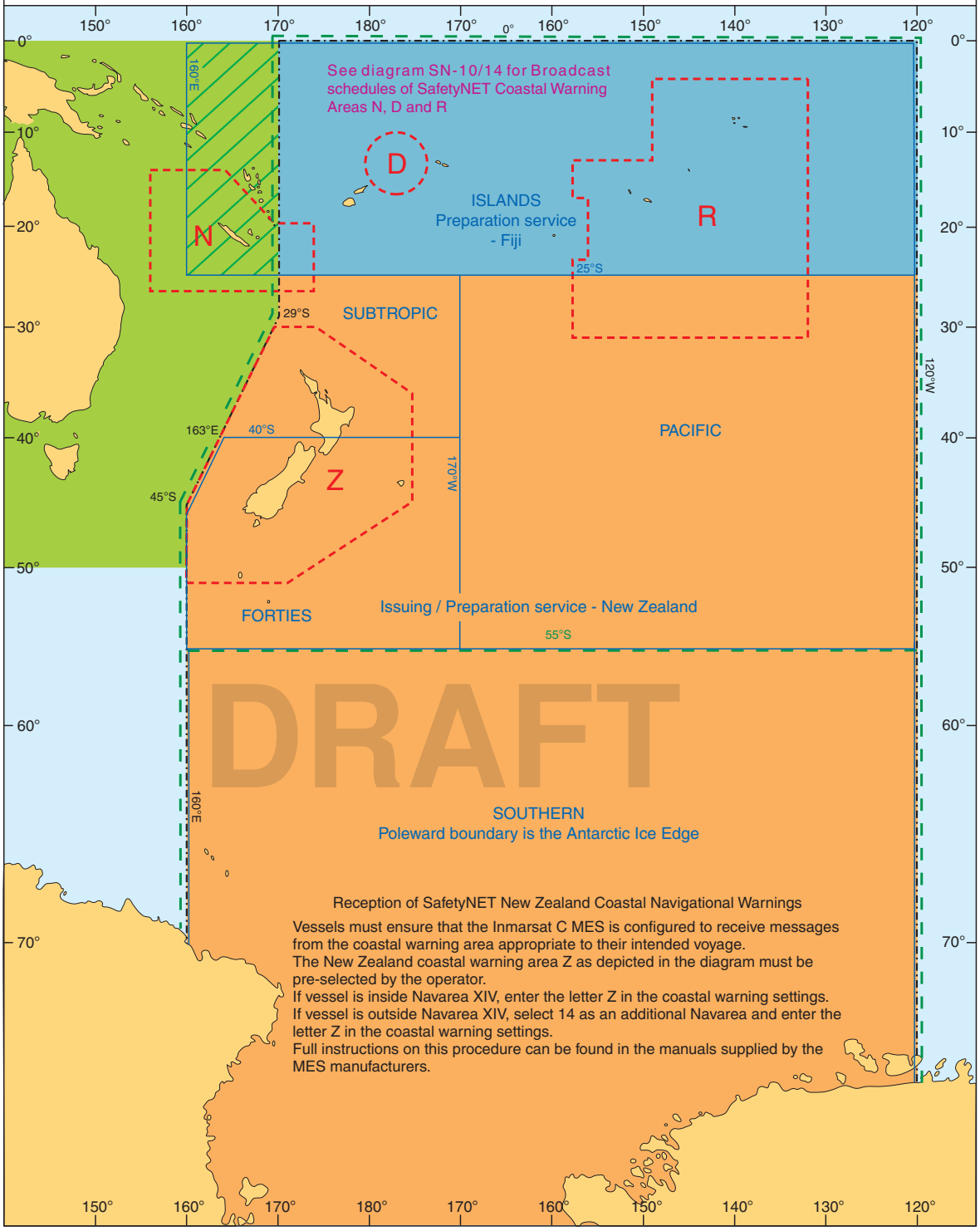
SafetyNET
NAV/METAREA XIV - POR
NEW ZEALAND

Transmission of: Burum LES through POR satellite
NAV information: on receipt and repeated at scheduled broadcast times 0900 and 2100 UTC until cancelled for coastal and high seas warnings (POR)
MET information: scheduled broadcast 0330 0930 1530 2130 (POR) Warnings
scheduled broadcast 0330 1530 (POR) Southern
scheduled broadcast 0930 2130 (POR) Subtropic, Forties, Pacific & Islands
scheduled broadcast 0130 1330 (POR) NZ coast only
Forecasts and warnings are for areas not covered by NAVTEX

KEY:
- Limit of NAV/METAREA XIV
- Forecast areas
- Coverage Area for Oceanic Weather Bulletins and Gale Warnings
- Coverage Area for Coastal Navigational Warnings and Weather Bulletins

Australia's forecast and warning area
New Zealand's forecast and warning area
Fiji's 'Islands' forecast area and their warning extended 10° further west into METAREA X

Vessels **must** ensure that their Inmarsat C MES is configured to receive messages from the appropriate NAVAREA / METAREA in order to receive SafetyNET broadcast.



Reception of SafetyNET New Zealand Coastal Navigational Warnings

Vessels must ensure that the Inmarsat C MES is configured to receive messages from the coastal warning area appropriate to their intended voyage.
The New Zealand coastal warning area Z as depicted in the diagram must be pre-selected by the operator.
If vessel is inside Navarea XIV, enter the letter Z in the coastal warning settings.
If vessel is outside Navarea XIV, select 14 as an additional Navarea and enter the letter Z in the coastal warning settings.
Full instructions on this procedure can be found in the manuals supplied by the MES manufacturers.

Figure SN-15

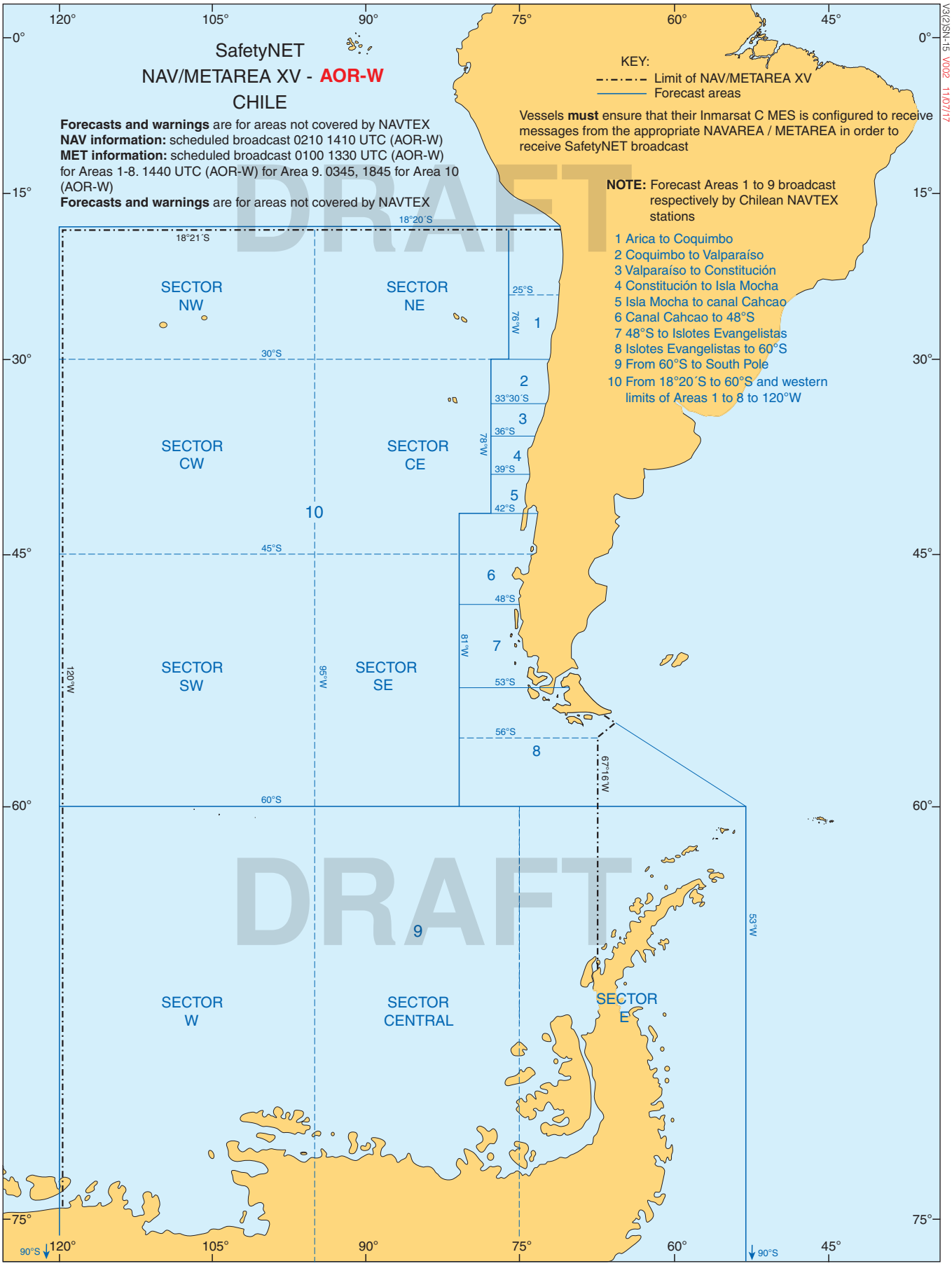

SafetyNET
NAV/METAREA XV - AOR-W
CHILE
Forecasts and warnings are for areas not covered by NAVTEX
NAV information: scheduled broadcast 0210 1410 UTC (AOR-W)
MET information: scheduled broadcast 0100 1330 UTC (AOR-W) for Areas 1-8. 1440 UTC (AOR-W) for Area 9. 0345, 1845 for Area 10 (AOR-W)
Forecasts and warnings are for areas not covered by NAVTEX
KEY:
Limit of NAV/METAREA XV
Forecast areas
Vessels must ensure that their Inmarsat C MES is configured to receive messages from the appropriate NAVAREA / METAREA in order to receive SafetyNET broadcast
NOTE: Forecast Areas 1 to 9 broadcast respectively by Chilean NAVTEX stations
1 Arica to Coquimbo
2 Coquimbo to Valparaíso
3 Valparaíso to Constitución
4 Constitución to Isla Mocha
5 Isla Mocha to canal Cahcao
6 Canal Cahcao to 48°S
7 48°S to Islotes Evangelistas
8 Islotes Evangelistas to 60°S
9 From 60°S to South Pole
10 From 18°20´S to 60°S and western limits of Areas 1 to 8 to 120°W
SECTOR NW
SECTOR NE
SECTOR CW
SECTOR CE
SECTOR SW
SECTOR SE
SECTOR W
SECTOR CENTRAL
SECTOR E
18°20´S
18°21´S
25°S
30°S
33°30´S
36°S
39°S
42°S
45°S
48°S
53°S
56°S
60°S
75°W
78°W
81°W
67°16´W
53°W
95°W
120°W
0°
15°
30°
45°
60°
75°
90°S
120°
105°
90°
75°
60°
45°
DRAFT
V3(2)SN-15 V002 11/07/17

Figure SN-16

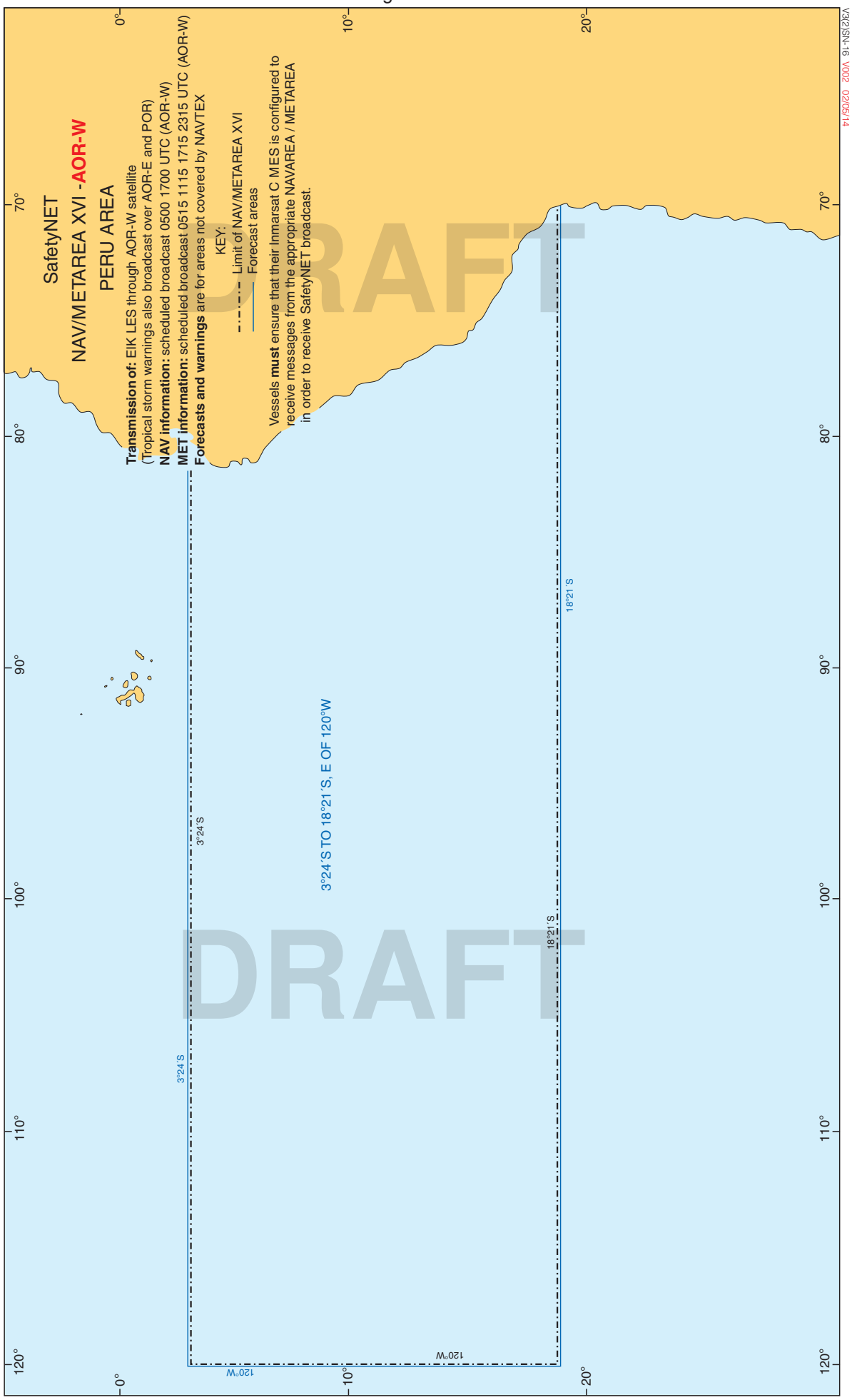

SafetyNET
NAV/METAREA XVI - AOR-W
PERU AREA
Transmission of: EIK LES through AOR-W satellite
(Tropical storm warnings also broadcast over AOR-E and POR)
NAV information: scheduled broadcast 0500 1700 UTC (AOR-W)
MET information: scheduled broadcast 0515 1115 1715 2315 UTC (AOR-W)
Forecasts and warnings are for areas not covered by NAVTEX
KEY:
Limit of NAV/METAREA XVI
Forecast areas
Vessels must ensure that their Inmarsat C MES is configured to receive messages from the appropriate NAVAREA / METAREA in order to receive SafetyNET broadcast.
3°24'S TO 18°21'S, E OF 120°W
3°24'S
18°21'S
120°W
0°
10°
20°
70°
80°
90°
100°
110°
120°
V3(2)SN-16 V002 02/05/14
DRAFT
DRAFT

Figure SN-17/18

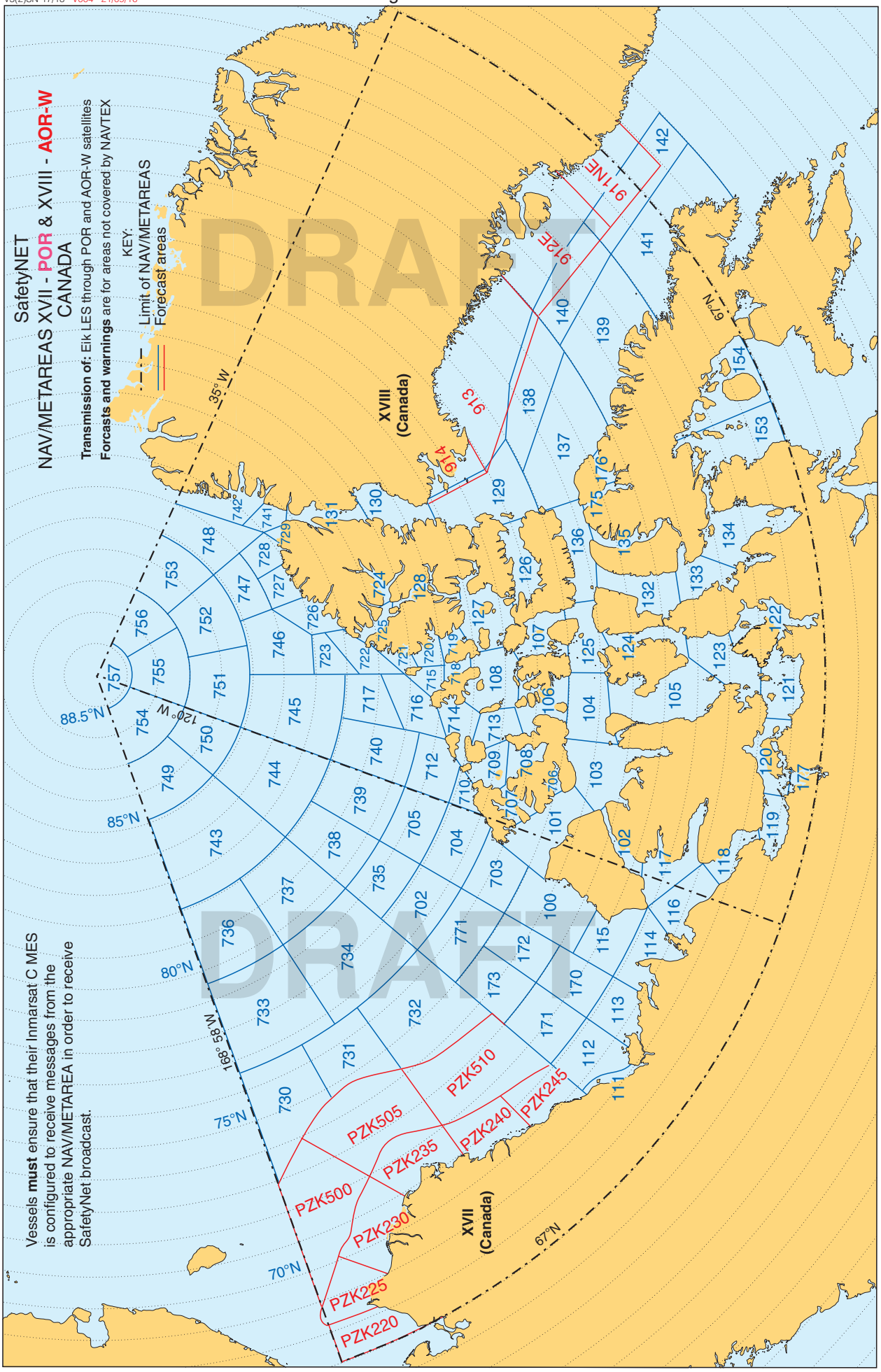
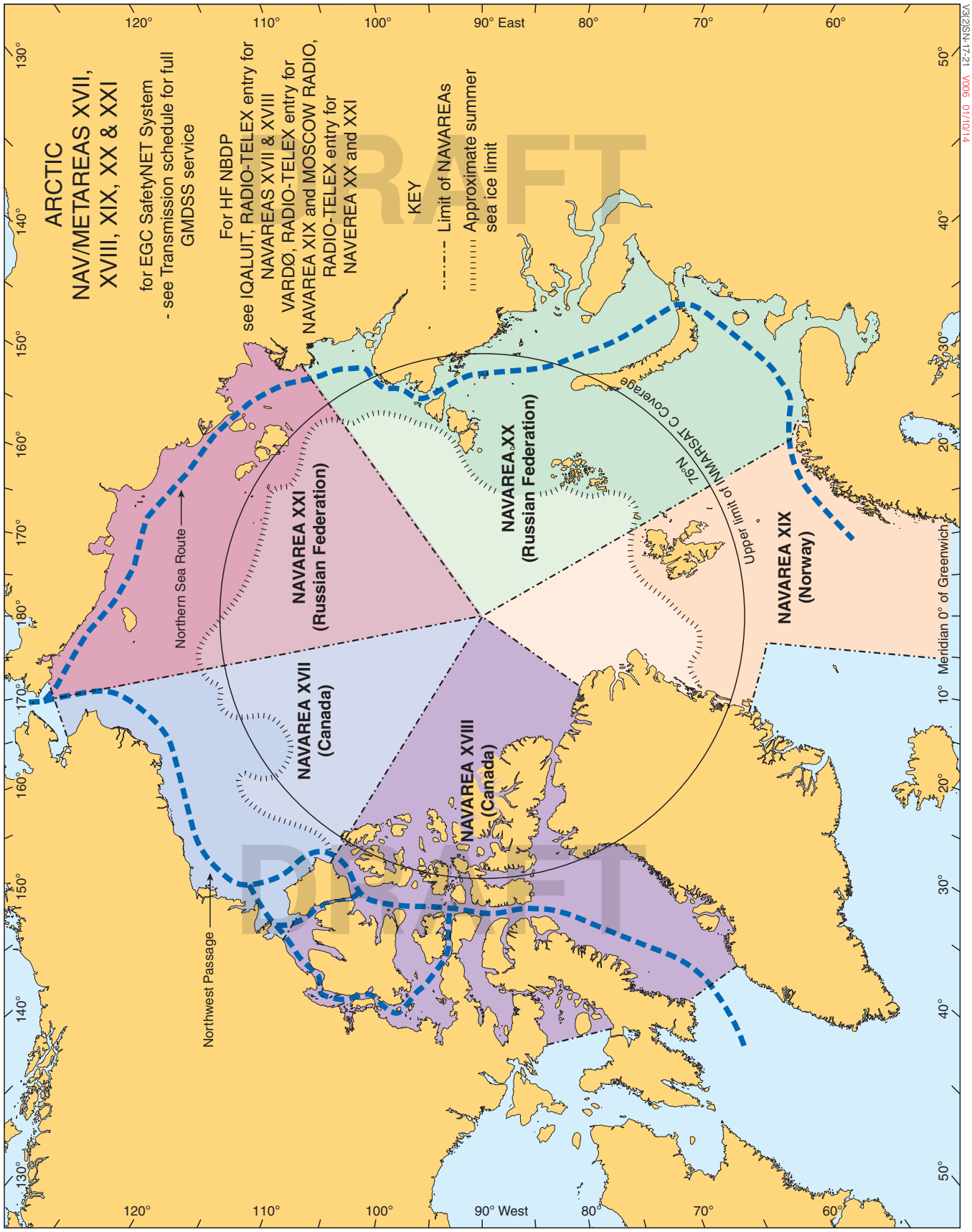


Figure SN-17-21



NAVTEX

NAVTEX is an international automated direct-printing service for promulgation of navigational and meteorological warnings and urgent information to vessels. The information transmitted may be relevant to all sizes and types of vessel and the selective message-rejection feature ensures that every mariner can receive a safety information broadcast which is tailored to his particular needs. For full details of NAVTEX see ALRS Volume 5 (NP285).

Navtex Reception
Users should be aware that where there is a significant overland path between the transmitter site and the user, the strength of the signal will be markedly reduced, as will the range at which that signal may be received. Furthermore the topography of ports and harbours and the presence of high rise buildings may distort or preclude reception of NAVTEX.

Definitions
NAVTEX means the system for the broadcast and automatic reception of MSI by means of narrow-band direct-printing telegraphy (NBDP).

International NAVTEX service means the coordinated broadcast and automatic reception on the frequency 518 kHz of MSI by means of NBDP using English.

National NAVTEX service means the broadcast and automatic reception of MSI by means of NBDP using frequencies other than 518 kHz and other national languages. These services may simply repeat the messages broadcast over the International NAVTEX service but in the national language, or they may be tailored to meet particular national requirements, for example by providing different or additional information to that broadcast on the International NAVTEX service targeted at recreational vessels or fishing fleets. These NAVTEX services may be broadcast on 490 kHz or 4209.5 kHz or on nationally assigned frequencies.

Principal features of NAVTEX
The International NAVTEX service uses a single frequency with transmissions from nominated stations within each NAVAREA / METAREA, arranged on a time-sharing basis to reduce the risk of mutual interference. All necessary information is contained in each transmission.

A dedicated NAVTEX receiver which has the ability to select messages to be printed, according to:
(a) a technical code ($B_1B_2B_3B_4$), which appears in the preamble of each message;
(b) whether or not the particular message has already been printed.

Certain essential classes of safety information such as navigational and meteorological warnings and SAR information are non-rejectable to ensure that vessels using NAVTEX always receive the most vital information.

NAVTEX coordinators exercise control of messages transmitted by each station according to the information contained in each message and the geographical coverage required. Thus a user may choose to accept messages either from the single transmitter which serves the sea area around his position, or from a number of transmitters as appropriate. Ideally, the user should select the station within whose coverage his vessel is currently operating and the station into whose coverage area his vessel will transit next.

Message Priorities
Three message priorities are used to dictate the timing of the first broadcast of a new warning in the NAVTEX service. In descending order of urgency they are:

VITAL	for immediate broadcast, subject to avoiding interference to ongoing transmissions;
IMPORTANT	for broadcast at the next available period when the frequency is unused;
ROUTINE	for broadcast at the next scheduled transmission period.

NOTE: Both VITAL and IMPORTANT warnings will normally be repeated, if still valid, at the next scheduled transmission period.

The standard format of NAVTEX messages

Phasing signals > 10 sec	
ZCZC	Start of message group
B_1 B_2 B_3 B_4	B_1: Transmitter identification B_2: Subject indicator B_3 B_4: message number
Time of origin	Optional
Series identity + Consecutive number	
Message text	
NNNN	End of message
Idle signals aa.....a > 2 sec	
End of emission	

Transmitter Identification Character (B_1)
The transmitter identification character is a single unique identifier which is allocated to each transmitter. It is used to identify the broadcasts which are to be accepted by the receiver and those which are to be rejected, and also the time slot for the transmission.

Subject Indicator Character (B_2)
Information is grouped by subject on the NAVTEX broadcast and each subject group is allocated a subject indicator character.
The subject indicator character is used by the receiver to identify different classes of messages. The indicator is also used to reject messages which are not required by the vessel. Receivers also use the B_2 character to identify messages which, because of their importance, may not be rejected. The following subject indicator characters are in use:

A = Navigational Warnings (cannot be rejected by the receiver)
B = Meteorological Warnings (cannot be rejected by the receiver)
C = Ice Reports
D = Search and Rescue information and pirate attack warnings (cannot be rejected by the receiver)
E = Meteorological Forecasts
F = Pilot Service Messages
G = AIS
H = LORAN Messages
I = Spare
J = SATNAV Messages
K = Other Electronic Navaid Messages (messages concerning radio navigation services)
L = Navigational Warnings- additional to letter A (should not be rejected at the receiver (continuation of B_2 subject group "A"))
V = Special services- allocation by the NAVTEX Panel
W= Special services- allocation by the NAVTEX Panel
X = Special services- allocation by the NAVTEX Panel
Y = Special services- allocation by the NAVTEX Panel
Z = No messages on hand

Message Number (B_3 B_4)
Each message within a subject group is allocated a serial number, B_3 B_4, between 01 and 99. This number will not necessarily relate to series numbering in other Radio Navigational Warning systems. On reaching 99, numbering will re-commence at 01 but avoiding the use of message numbers still in force.

A shortage of numbers will, where possible, be alleviated by the allocation of messages to other, relevant subject groups. It has been found that 99 messages are not always enough for some subject groups, and B_2 = L may be used for additional Navigational Warnings, to receive the overflow from B_2 = A when necessary.

COMMON ABBREVIATIONS FOR THE INTERNATIONAL NAVTEX SERVICE

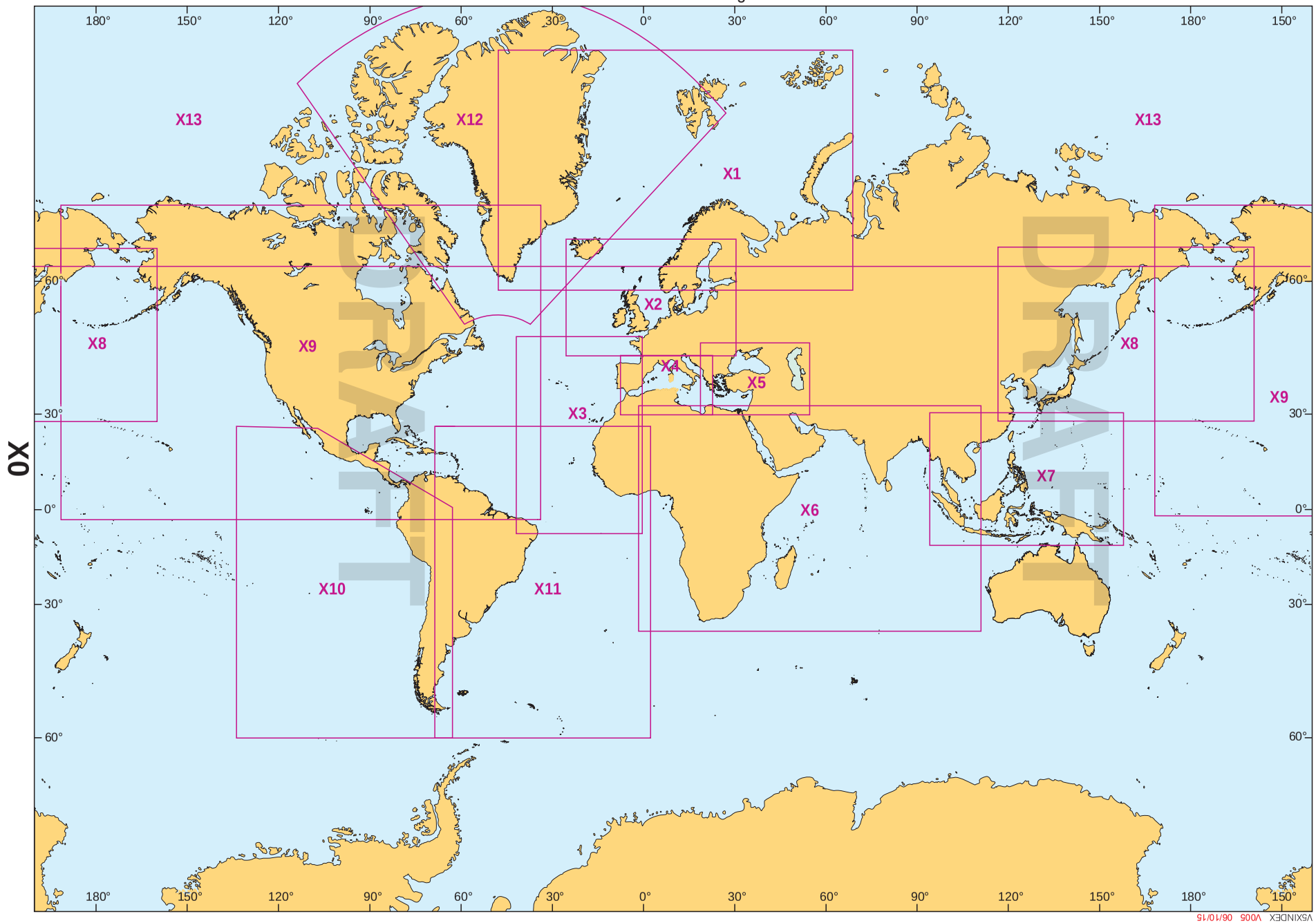
FOR WIND DIRECTION			
N	North / Northerly	S	South / Southerly
NE	Northeast / Northeasterly	SW	Southwest / Southwesterly
E	East / Easterly	W	West / Westerly
SE	Southeast / Southeasterly	NW	Northwest / Northwesterly

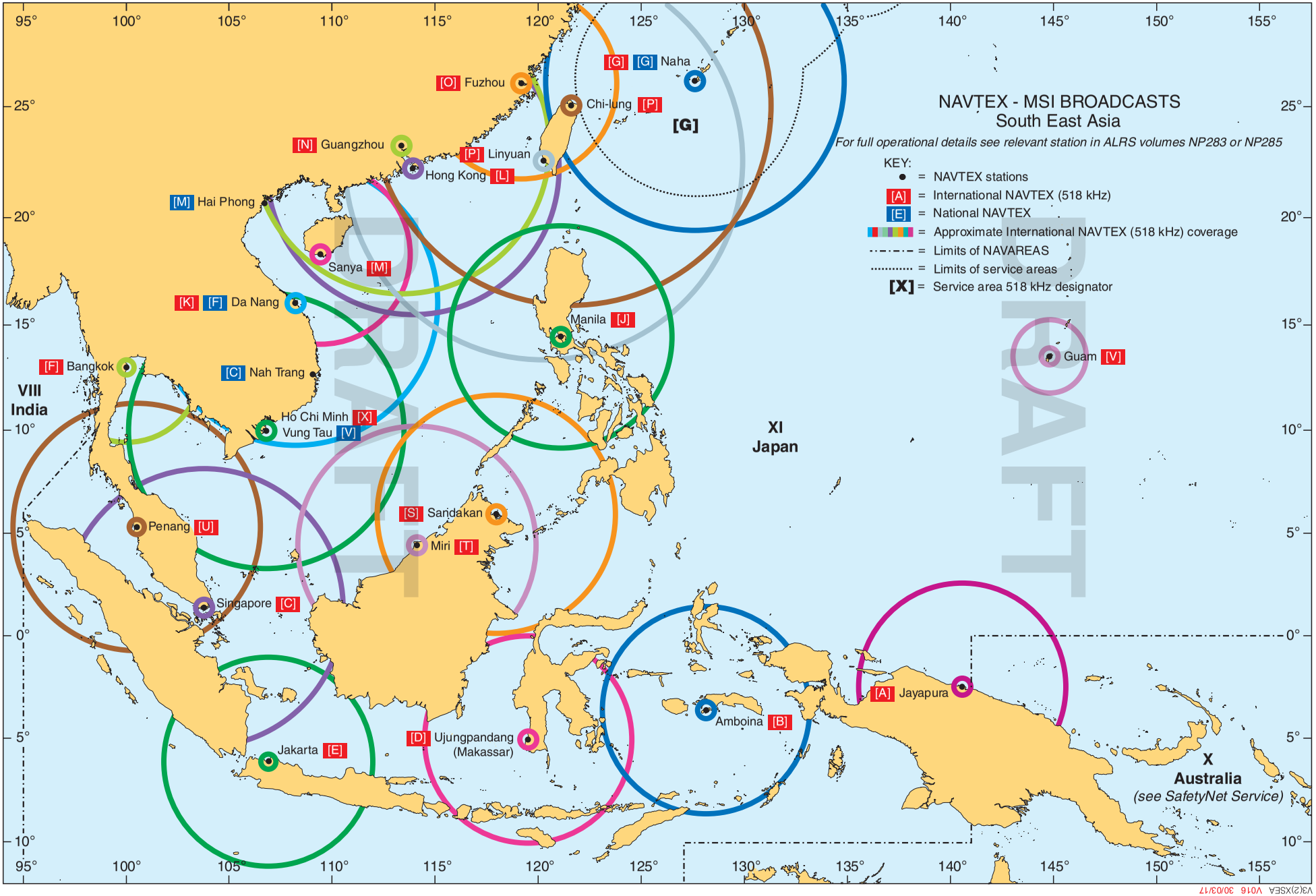
FOR OTHER TERMS			
BACK	Backing	NM	Nautical miles
BECMG	Becoming	NOSIG	No significant change
BLDN	Building	NXT	Next
C-FRONT	Cold Front	OCNL	Occasionally
DECR	Decreasing	O-FRONT	Occlusion Front
DPN	Deepening	POSS	Possible
EXP	Expected	PROB	Probability / Probable
FCST	Forecast	QCKY	Quickly
FLN	Filling	QSTNR	Quasi-Stationary
FLW	Following	QUAD	Quadrant
FM	From	RPDY	Rapidly
FRQ	Frequent	SCT	Scattered
HPA	HectoPascal	SEV	Severe
HVY	Heavy	SHWRS	Showers
IMPR	Improving / Improve	SIG	Significant
INCR	Increasing	SLGT	Slight
INTSF	Intensifying / Intensify	SLWY	Slowly
ISOL	Isolated	STNR	Stationary
KMH	Km/h	STRG	Strong
KT	Knots	TEMPO	Temporarily / Temporary
LAT/LONG	Latitude / Longitude	TEND	Further outlooks
LOC	Locally	VEER	Veering

Continued on next page

FOR OTHER TERMS			
M	Metres	VIS	Visibility
MET	Meteo.....	VRB	Variable
MOD	Moderate	W-FRONT	Warm Front
MOV	Moving / Move	WKN	Weakening
NC	No change		

NAVTEX - Index of Diagrams

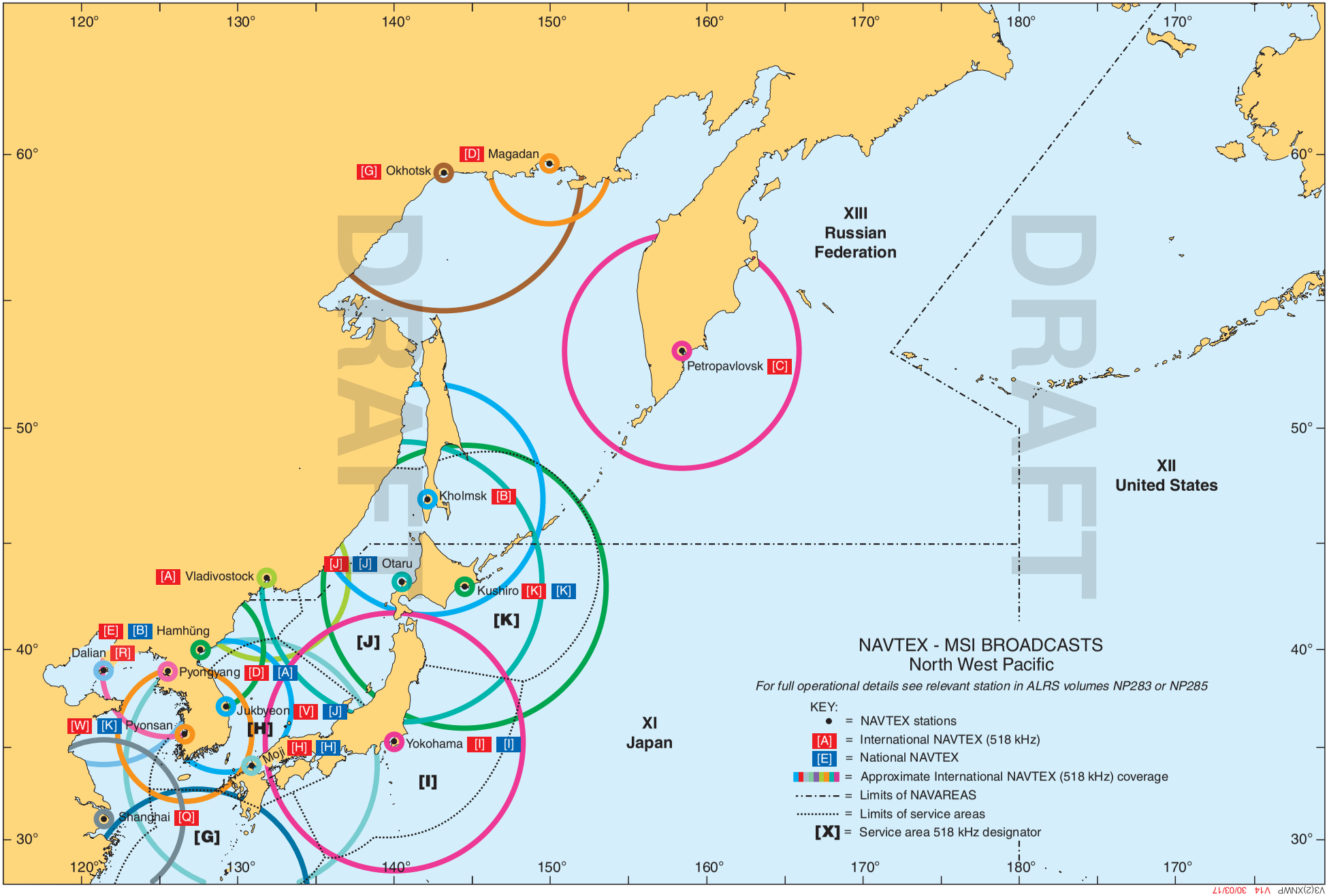




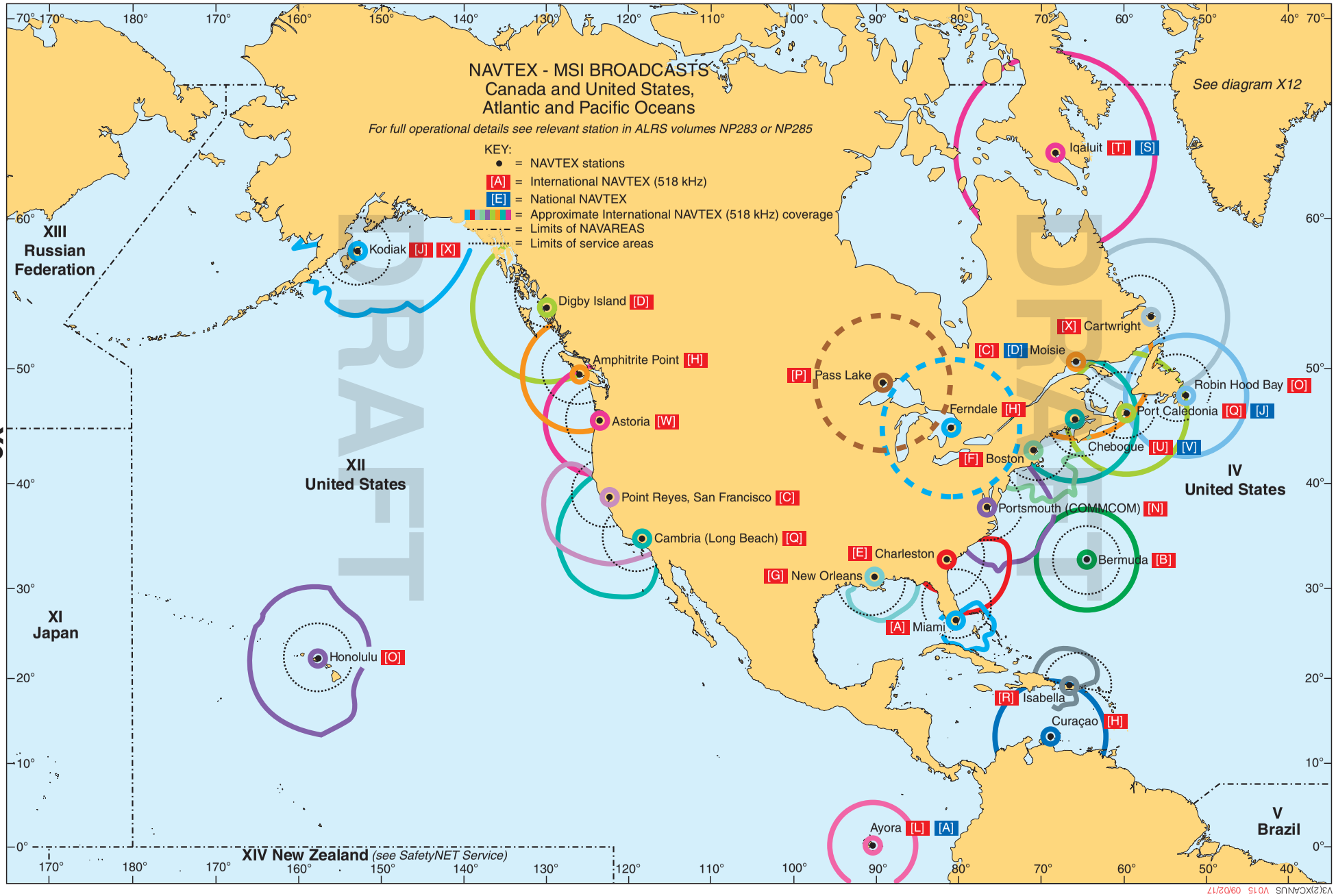
XZ

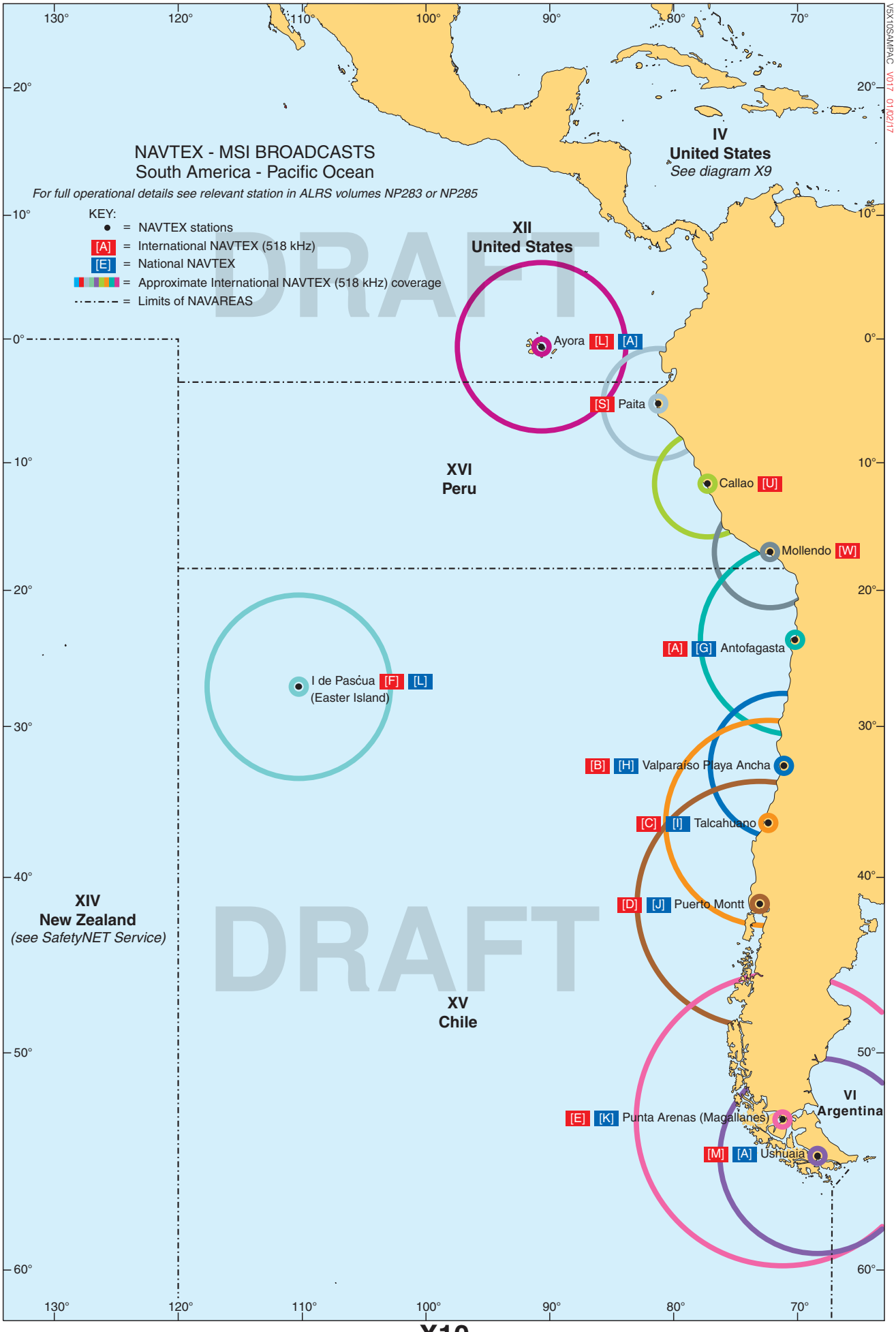
V3(2)XSEA V016 30/03/17

X8


120°
130°
140°
150°
160°
170°
180°
170°
60°
50°
40°
30°
[G] Okhotsk
[D] Magadan
XIII
Russian
Federation
Petropavlovsk [C]
XII
United States
Kholmsk [B]
[A] Vladivostock
[J] [J] Otaru
Kushiro [K] [K]
[K]
[J]
[E] [B] Hamhŭng
Dalian [R]
Pyongyang [D] [A]
Jukbyeon [V] [J]
[W] [K] Pyonsan
[H]
Moji [H] [H]
Yokohama [I] [I]
[I]
XI
Japan
Shanghai [Q]
[G]
DRAFT
NAVTEX - MSI BROADCASTS
North West Pacific
For full operational details see relevant station in ALRS volumes NP283 or NP285
KEY:
= NAVTEX stations
[A] = International NAVTEX (518 kHz)
[E] = National NAVTEX
= Approximate International NAVTEX (518 kHz) coverage
= Limits of NAVAREAS
= Limits of service areas
[X] = Service area 518 kHz designator
V3(2)XNWP V14 30/03/17

6X

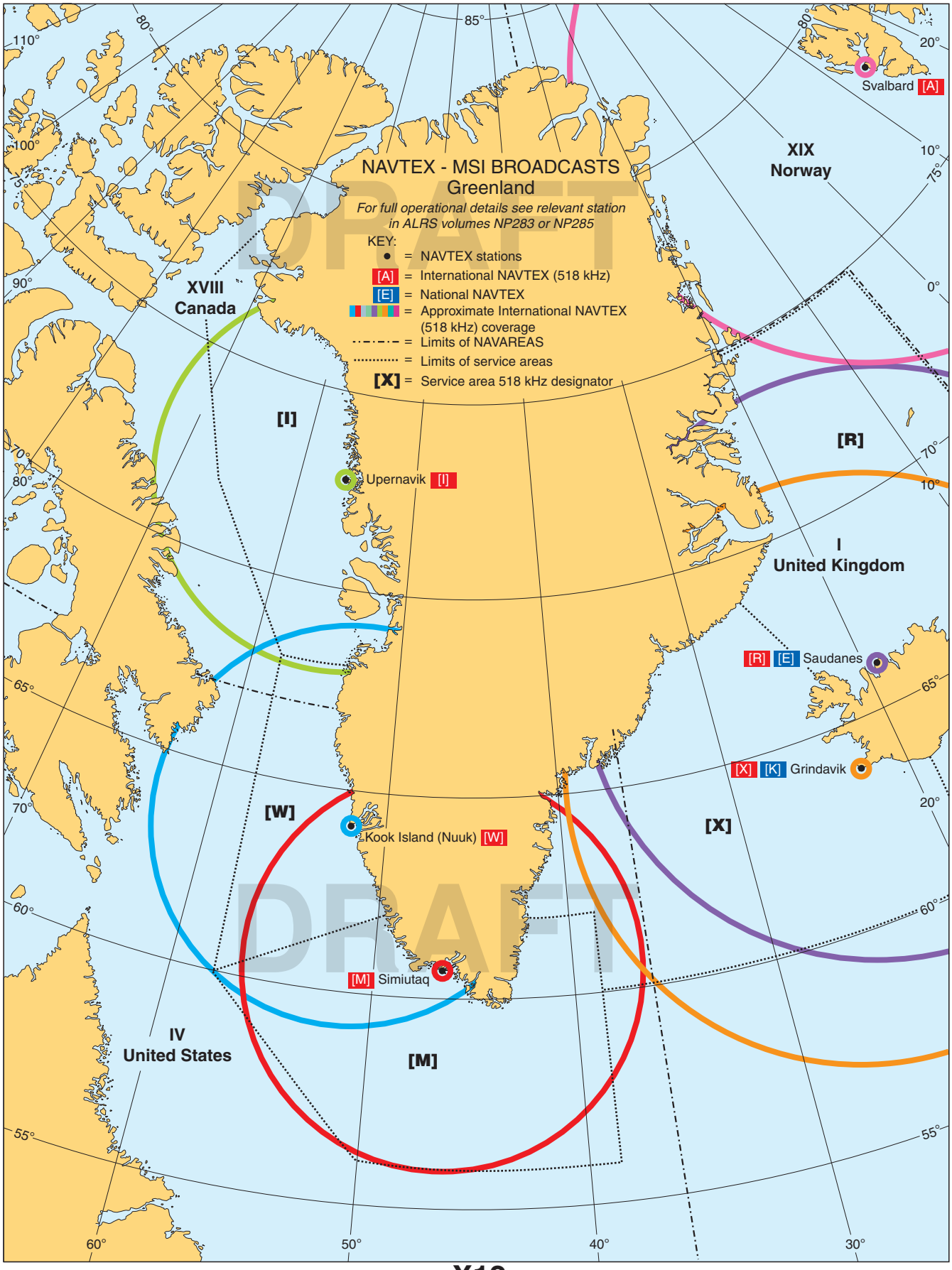

NAVTEX - MSI BROADCASTS
Canada and United States,
Atlantic and Pacific Oceans
For full operational details see relevant station in ALRS volumes NP283 or NP285
KEY:
= NAVTEX stations
[A] = International NAVTEX (518 kHz)
[E] = National NAVTEX
= Approximate International NAVTEX (518 kHz) coverage
= Limits of NAVAREAS
= Limits of service areas
See diagram X12
XIII Russian Federation
XII United States
IV United States
XI Japan
V Brazil
XIV New Zealand (see SafetyNET Service)
Kodiak [J] [X]
Digby Island [D]
Amphitrite Point [H]
Astoria [W]
Point Reyes, San Francisco [C]
Cambria (Long Beach) [Q]
Honolulu [O]
Iqaluit [T] [S]
[X] Cartwright
[C] [D] Moisie
[P] Pass Lake
Ferndale [H]
[F] Boston
Robin Hood Bay [O]
Port Caledonia [Q] [J]
Cheboque [U] [V]
Portsmouth (COMMCOM) [N]
[E] Charleston
Bermuda [B]
[G] New Orleans
[A] Miami
[R] Isabella
Curaçao [H]
Ayora [L] [A]
DRAFT
V3(2)XCANUS V015 09/02/17


NAVTEX - MSI BROADCASTS
South America - Pacific Ocean
For full operational details see relevant station in ALRS volumes NP283 or NP285
KEY:
= NAVTEX stations
[A] = International NAVTEX (518 kHz)
[E] = National NAVTEX
= Approximate International NAVTEX (518 kHz) coverage
= Limits of NAVAREAS
IV
United States
See diagram X9
XII
United States
XVI
Peru
XIV
New Zealand
(see SafetyNET Service)
XV
Chile
VI
Argentina
Ayora [L] [A]
[S] Paita
Callao [U]
Mollendo [W]
[A] [G] Antofagasta
I de Pascua [F] [L]
(Easter Island)
[B] [H] Valparaiso Playa Ancha
[C] [I] Talcahuano
[D] [J] Puerto Montt
[E] [K] Punta Arenas (Magallanes)
[M] [A] Ushuaia
DRAFT
DRAFT
V5X10SAMPAC V017 01/02/17

X10


V5XSAMLANT V019 27/01/17
[R]
Isabella [R]
Curaçao [H]
IV
United States
[U] [P] São Vicente
[U]
Dakar [C] [M]
[C]
II
France
V
Brazil
VII
South Africa
La Paloma [F] [A]
[R] [F] Buenos Aires
Mar del Plata [Q] [E]
Bahía Blanca [P] [D]
Comodoro Rivadavia [O] [C]
VI
Argentina
Rio Gallegos [N] [B]
Ushuaia [M] [A]
XV
Chile
DRAFT
DRAFT
NAVTEX - MSI BROADCASTS
South America - Atlantic Ocean
For full operational details see relevant station in ALRS volumes NP283 or NP285
KEY:
= NAVTEX Stations
[A] = International NAVTEX (518 kHz)
[E] = National NAVTEX
= Approximate International NAVTEX (518 kHz) coverage
= Limits of NAVAREAS
= Limits of service areas
[X] = Service area 518 kHz designator

X11


NAVTEX - MSI BROADCASTS
Greenland
For full operational details see relevant station in ALRS volumes NP283 or NP285
KEY:
= NAVTEX stations
[A] = International NAVTEX (518 kHz)
[E] = National NAVTEX
= Approximate International NAVTEX (518 kHz) coverage
= Limits of NAVAREAS
= Limits of service areas
[X] = Service area 518 kHz designator
DRAFT
DRAFT
XVIII
Canada
XIX
Norway
I
United Kingdom
IV
United States
[I]
[R]
[W]
[X]
[M]
Svalbard [A]
Upernavik [I]
[R] [E] Saudanes
[X] [K] Grindavik
Kook Island (Nuuk) [W]
[M] Simiutaq
V5XGREENLAND V06 26/01/17

X12

ARCTIC
NAVTEX - MSI BROADCAST
For full operational details see relevant station in ALRS volumes NP283 or NP285
KEY:
= NAVTEX stations
= International NAVTEX (518 kHz)
= National NAVTEX
= Approximate International NAVTEX (518 kHz) coverage
= Limits of NAVAREAS
= Limits of service areas
DRAFT
DRAFT
Northern Sea Route
Northwest Passage
XVII Canada
XVIII Canada
XIX Norway
XX Russian Federation
XXI Russian Federation
Tiksi [Q]
Svalbard [A]
Bodo [B]
Vardo [C]
Murmansk [K]
Arkhangelsk [L]
Upernavik [U]
Kook Island [W]
Simiutaq [M]
Meridian 0° of Greenwich
90° West
90° East
V3(1)XARC V011 26/01/17

X13

RADIO-FACSIMILE

INTRODUCTION

These entries relate to facsimile transmissions of weather maps, ice charts and other information of interest to mariners.

Details are given of the frequencies employed, the times of the transmissions, the scale and limits of the map and the type of information broadcast.

EXAMPLE:

①

MURMANSK 68°52′·50N 33°05′·88E

②

Ⓐ	Ⓑ	Ⓒ	Ⓓ
A	6446	Resolute	H24
B	7470	IMB 56	1900- 0600
	7907		Summer
	8444		
DIAGRAM: page 40			

③

Map Areas							
B	1:53,000,000 (a) 20°N.90°W 20°N.20°E 70°N.90°E 70°N.20°W	3	1:15,000,000 (c) 52°N.31°W 45°N.61°E 24°N.10°W 21°N.37°E	WORLD	(a) 70°N- 70°S covering all longitudes		

④

Ⓐ	Ⓑ	Ⓒ	Ⓓ
Schedule			
3	48 hour surface wind forecast	0020(12) 1220(00)	120/576
B	36 hour forecast of surface pressure	0700(00)	
	Schedule chart	1850	90/576
WORLD	Weekly sea surface temperatures	1900	120/576

EXPLANATION:

① **MURMANSK** 68°52′·50N 33°05′·88E — **Station name** and position

② Ⓐ **A**, **B** — **Letter designators** are used to identify frequencies within the frequency table.

Ⓑ 6446, 7470, 8444 — **Frequencies** are expressed in kHz. Frequencies refer to the centre value about which the frequency shift takes place. This shift is generally ± 400 Hz and is not stated. Other shifts are shown by means of a footnote.

Ⓒ Resolute, IMB 56 — **Name** / **callsign** of station.

Ⓓ H24, 1900- 0600, Summer — **Hours of operation** on the given frequency relate to UTC. The absence of an entry should not be taken to imply that the service is continuous. If a frequency is used for only a part of the year the period of operation may be given.

DIAGRAM: page 40 — **Diagrams:** An index diagram showing the coverage of **Map Areas** is included when possible.

③		1:53,000,000 (a) 1:15,000,000 (c)	**Map Areas:** Indicates the scale of the maps. The letter in parentheses following the scale identifies the projection: (a) = Mercator (b) = Lambert's Conical Orthomorphic (c) = Polar Stereographic In the case of (a) and (b) the scale is that at the standard parallel(s) of the map.
		67°N.32°W 72°N.74°E 51°N.4°W 53°N.47°E	Geographical coordinates of the map corners are usually stated.
④	Ⓐ	B 3 WORLD	The letters, numbers or words identify the map area.
	Ⓑ	48 hour surface wind forecast 36 hour forecast of surface pressure Schedule chart	**Content** of transmissions.
	Ⓒ	0700(00) 0800(06) 1400(12)	**Transmission times** may be followed by observation times in parentheses.
	Ⓓ	120/576 90/576	The numbers relate to the drum speed, in revolutions per minute, and the Index of Co-operation, which is generally 576, although 288 with alternate line scanning is sometimes used.

NOTE: **Millibars** / **Hectopascals**: In order to conform to the WMO's decision to adopt the hectopascal (hPa), as the International Unit for Atmospheric Pressure Measurement, the abbreviation hPa will now appear in schedules. It should be noted that: 1 hPa = 1 millibar.

SYMBOLS AND DEPICTIONS USED ON RADIO-FACSIMILE CHARTS FOR MARINE PURPOSES

TYPICAL SYMBOLS USED FOR MARINE METEOROLOGICAL PURPOSES

(a) Selections from the Manual on the Global Data-Processing System (WMO-No.485)

Cold front at the surface

Warm front at the surface

Occluded front at the surface

Quasi-stationary front at the surface

Convergence line

Inter-tropical convergence line (ITCZ)

Centre of tropical cyclonic circulation (maximum winds 34-63 knots)

Centre of tropical cyclonic circulation (maximum winds 64 knots)

Fog

(b) Additional symbols

Ice accretion:

Ice building slowly

Ice building rapidly

DEPICTION OF LINES AND SYSTEMS ON SPECIFIC CHARTS

(a) Model S - surface - chart

Continuous lines	Isobars labelled in hectopascals
Crossed line segments	Position of centre high or low pressure given on hectopascals
*{L	Low pressure
*{H	High pressure
⟹ f_s f_s	Direction of movement of centres and fronts with speed in knots

***NOTE:** The appropriate letter from the alphabet of the issuing country may be used, provided that the chart contains explicitly the correspondence to the appropriate English letters.

(b) Model W - wave - chart

Continuous lines	Significant wind height (sea), or composite wind wave and swell height, where so drawn, labelled in metres
Dashed lines	Significant swell height labelled in metres
MAX	Centre of maximum wave height
MIN	Centre of minimum wave height
	Direction of sea waves
	Direction of swell waves

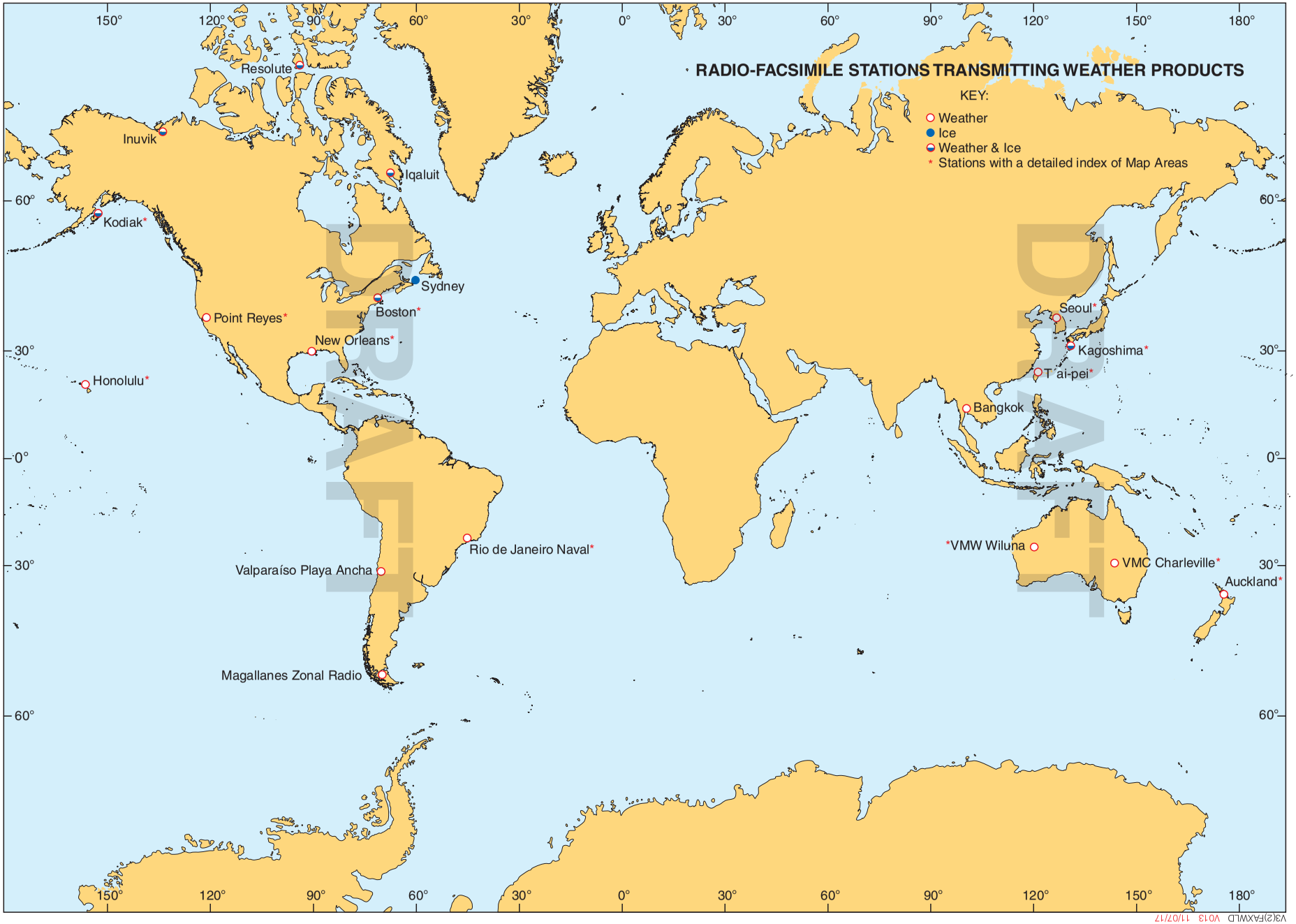
(c) Model SST - sea-surface temperature - chart

Continuous lines	Isotherms labelled in degrees Celsius

NOTE: Broken lines may be used to avoid confusion with other analysed parameters.

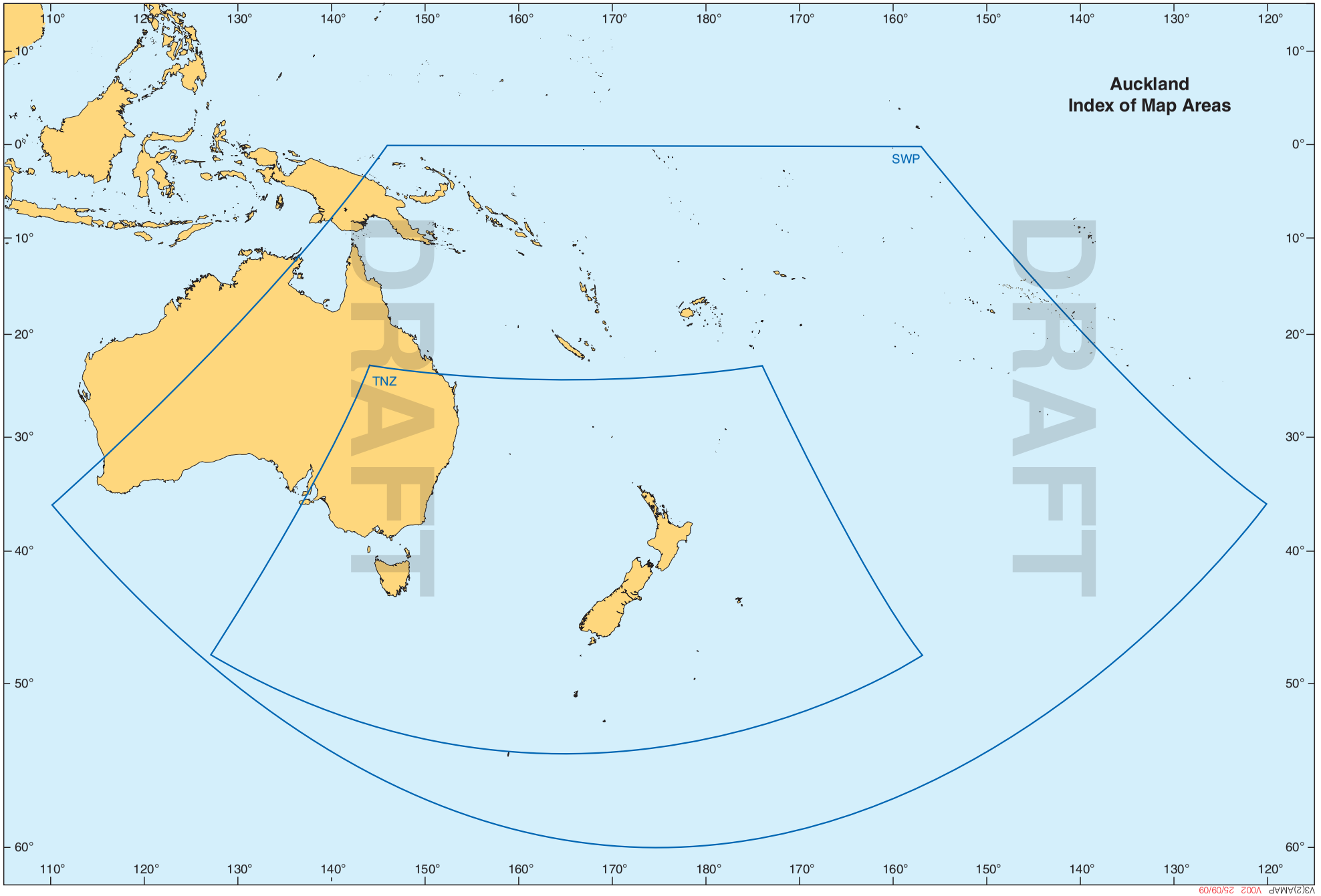
(d) Model SI - sea-ice information - chart

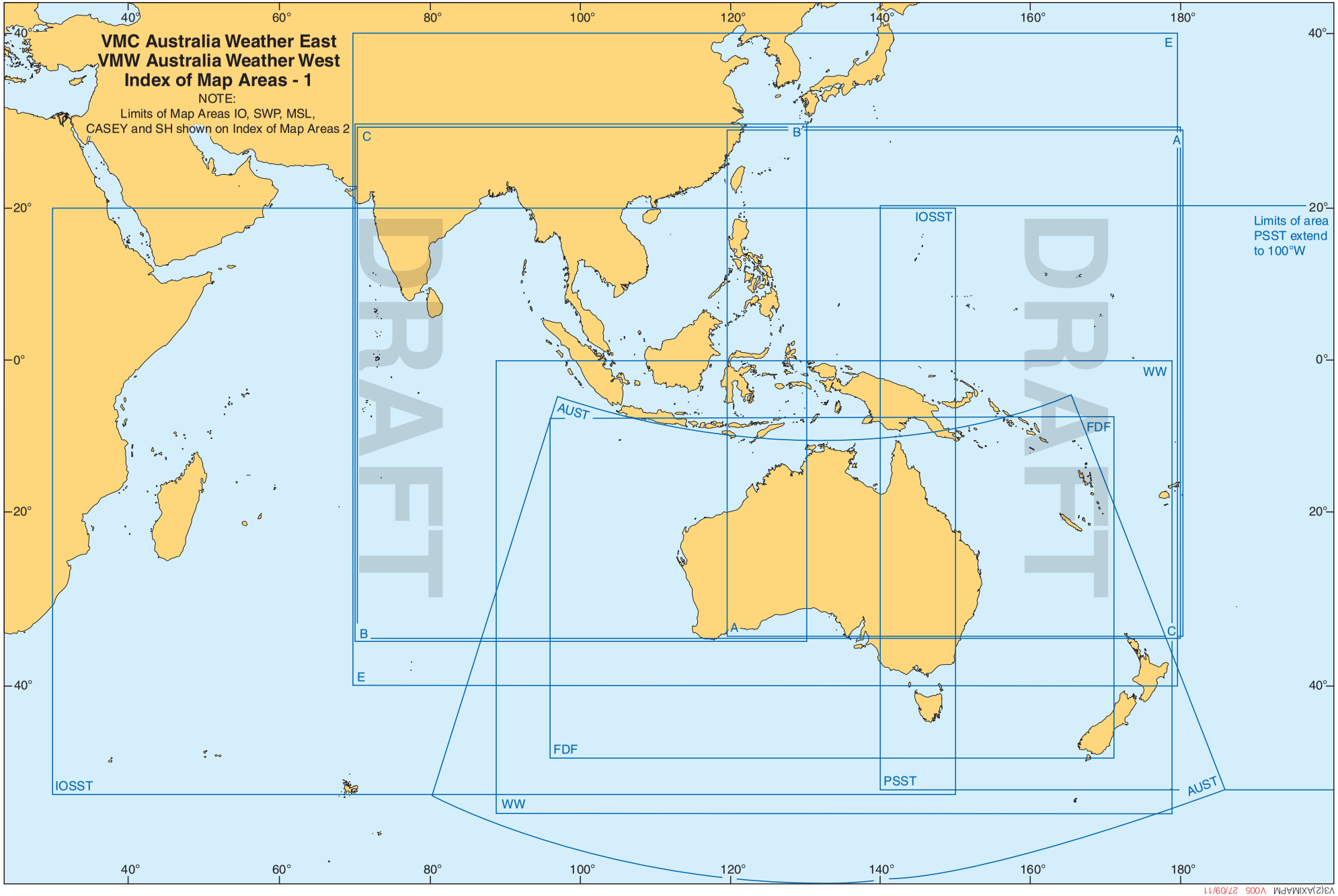
The international system of sea-ice symbols adopted by WMO should be used.

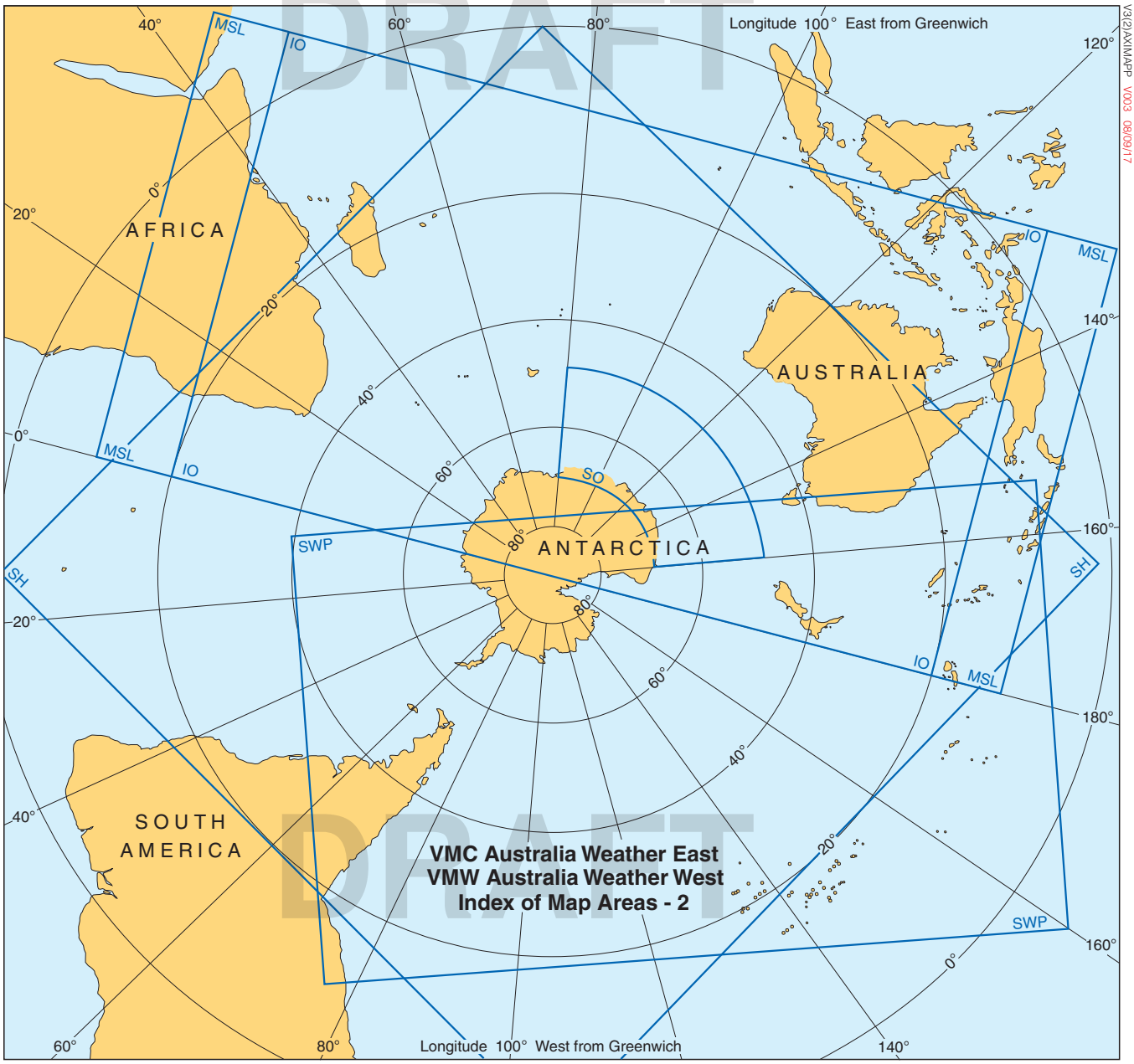

RADIO-FACSIMILE STATIONS TRANSMITTING WEATHER PRODUCTS
KEY:
Weather
Ice
Weather & Ice
* Stations with a detailed index of Map Areas
Resolute
Inuvik
Iqaluit
Kodiak*
Sydney
Boston*
Point Reyes*
New Orleans*
Honolulu*
Seoul*
Kagoshima*
T´ai-pei*
Bangkok
*VMW Wiluna
VMC Charleville*
Auckland*
Rio de Janeiro Naval*
Valparaíso Playa Ancha
Magallanes Zonal Radio
150° 120° 90° 60° 30° 0° 30° 60° 90° 120° 150° 180°
60°
30°
0°
30°
60°
DRAFT

SERVICE DETAILS

AUCKLAND (ZKLF)						36°56′·00S 174°35′·00E
A	3247·4					
B	5807					
C	9459					
D	13550·5					
E	16340·1					
Diagrams pages 47 and 49						
Map Areas						
SWP 1:20,000,000 (c) 0°.146°E 0°.157°W 36°S.110°E 36°S.120°W		TNZ 1:20,000,000 (c) 23°S.144°E 23°S.174°W 48°S.127°E 48°S.157°W				
Schedule						
SWP	SW Pacific MSL prognosis H+30	**B:** 0000(00)	**C:** 0015(00)	**D:** 0030(00)	**E:** 0045(00)	120/576
	SW Pacific MSL prognosis H+48	**B:** 0100(00)	**C:** 0115(00)	**D:** 0130(00)	**E:** 0145(00)	
	SW Pacific MSL prognosis H+72	**B:** 0200(00)	**C:** 0215(00)	**D:** 0230(00)	**E:** 0245(00)	
TNZ	Tasman - New Zealand MSL analysis	**B:** 0300(00)	**C:** 0315(00)	**D:** 0330(00)	**E:** 0345(00)	
SWP	SW Pacific MSL analysis	**B:** 0400(00)	**C:** 0415(00)	**D:** 0430(00)	**E:** 0445(00)	
TNZ	Tasman - New Zealand MSL analysis	**B:** 0900(06)	**C:** 0915(06)	**D:** 0930(06)	**A:** 0945(06)	
SWP	SW Pacific MSL analysis	**B:** 1000(06)	**C:** 1015(06)	**D:** 1030(06)	**A:** 1045(06)	
	Transmission schedule	**B:** 1100	**C:** 1115	**D:** 1130	**A:** 1145	
SWP	SW Pacific MSL prognosis H+30	**B:** 1200(12)	**C:** 1215(12)	**D:** 1230(12)	**A:** 1245(12)	
	SW Pacific MSL prognosis H+48	**B:** 1300(12)	**C:** 1315(12)	**D:** 1330(12)	**A:** 1345(12)	
	SW Pacific MSL prognosis H+72	**B:** 1400(12)	**C:** 1415(12)	**D:** 1430(12)	**A:** 1445(12)	
TNZ	Tasman - New Zealand MSL analysis	**B:** 1500(12)	**C:** 1515(12)	**D:** 1530(12)	**A:** 1545(12)	
SWP	SW Pacific MSL analysis	**B:** 1600(12)	**C:** 1615(12)	**D:** 1630(12)	**A:** 1645(12)	
TNZ	Tasman - New Zealand MSL analysis	**B:** 2100(18)	**C:** 2115(18)	**D:** 2130(18)	**E:** 2145(18)	
SWP	SW Pacific MSL analysis	**B:** 2200(18)	**C:** 2215(18)	**D:** 2230(18)	**E:** 2245(18)	
	Transmission schedule	**B:** 2300	**C:** 2315	**D:** 2330	**E:** 2345	


Auckland
Index of Map Areas
SWP
TNZ
DRAFT
DRAFT
110°
120°
130°
140°
150°
160°
170°
180°
170°
160°
150°
140°
130°
120°
10°
0°
10°
20°
30°
40°
50°
60°
V3(2)AMAP V002 25/09/09


VMC Australia Weather East
VMW Australia Weather West
Index of Map Areas - 1
NOTE:
Limits of Map Areas IO, SWP, MSL,
CASEY and SH shown on Index of Map Areas 2
Limits of area
PSST extend
to 100°W
DRAFT
DRAFT
E
C
B
A
IOSST
WW
AUST
FDF
PSST
40°
60°
80°
100°
120°
140°
160°
180°
20°
0°


DRAFT
Longitude 100° East from Greenwich
AFRICA
AUSTRALIA
ANTARCTICA
SOUTH AMERICA
MSL
IO
SO
SWP
SH
VMC Australia Weather East
VMW Australia Weather West
Index of Map Areas - 2
Longitude 100° West from Greenwich
V3i2/AXIMAPP V003 08/06/17

AUSTRALIA WEATHER EAST (CHARLEVILLE) (VMC)			26°19′·00S 146°16′·00E
	2628		0900-1900
	5100		H24
	11030		
	13920		
	20469		1900-0900

Diagrams pages 47, 50 and 51

Map Areas

AUST (b) 0°.88°E 0°.173°E 50°S.66°E 50°S.162°W	MSL (c) 10°S–90°S 0° east to 180°	SWP (c) 40°S.6°W 6°S.154°E 8°S.78°W 7°N.160°W	IO (c) 12°N.50°E 12°N.130°E 20°S.0° 20°S.180°
PSST (a) 20°N.140°E 20°N.100°W 50°S.140°E 50°S.100°W	IOSST (a) 20°N.30°E 20°N.150°E 50°S.30°E 50°S.150°E	SO (a) 50°S.80°E 50°S.160°E 70°S.80°E 70°S.160°E	FDF (a) 7°S.108°E 7°S.169°E 50°S.108°E 50°S.169°E
A (a) 30°N.120°E 30°N.180° 35°S.120°E 35°S.180°	B (a) 30°N.70°E 30°N.130°E 35°S.70°E 35°S.130°E	C (a) 30°N.70°E 30°N.180° 35°S.70°E 35°S.180°	WW (a) 0°.88°E 0°.173°E 53°S.88°E 53°S.173°E
E (a) 40°N.70°E 40°N.180° 40°S.70°E 40°S.180°	SH (c) 20°S–90°S All longitudes		

Schedule

IO	Indian Ocean MSLP Analysis[2]	0000(12)		120/576
AUST	Australian MSLP (H+36)		1200(12)	
	VMC / VMW Schedule, page 1 of 2	0015	1215	
	VMC / VMW Schedule, page 2 of 2	0030	1230	
	VMC / VMW Information Notice	0045		
	IPS Recommended frequencies for VMC (Charleville) 3 pages	0100		
	IPS Recommended frequencies for VMW (Wiluna) 3 pages	0131		
MSL	Indian Ocean MSLP (H+36)		1245(12)	
SWP	South Pacific Ocean Total Waves (H+48)		1315(00)	
IO	Indian Ocean Total Waves (H+48)		1330(00)	
PSST	Pacific Ocean Sea Surface Temps		1345	
AUST	Australian MSLP (H+36)	0203(00)		
IOSST	Indian Ocean Sea Surface Temps		1400	
SO	Southern Ocean Total Wave Height and Direction (H+48)		1415(00)	
AUST	Australian MSLP Analysis	0245(00)	1430(12)	
	Australian Primary Swell Waves Forecast (H+24)	0300(00)	1500(00)	
	Australian MSLP (H+36)		1515(12)	
	Voice broadcast information for VMC and VMW	0315		
AUST	Australian MSLP Analysis[2]	0345(00)		
SWP	South Pacific Ocean MSLP Analysis	0400(00)		
FDF	Australian MSLP 4 day forecast days 1 and 2	0430	1530	
	Australian MSLP 4 day forecast days 3 and 4	0445	1545	
	Australian MSLP 4 day forecast, days 1 and 2[2]	0500		
	Australian MSLP 4 day forecast, days 3 and 4[2]	0515		

Continued on next page

AUSTRALIA WEATHER EAST (CHARLEVILLE) (VMC) (Continued)

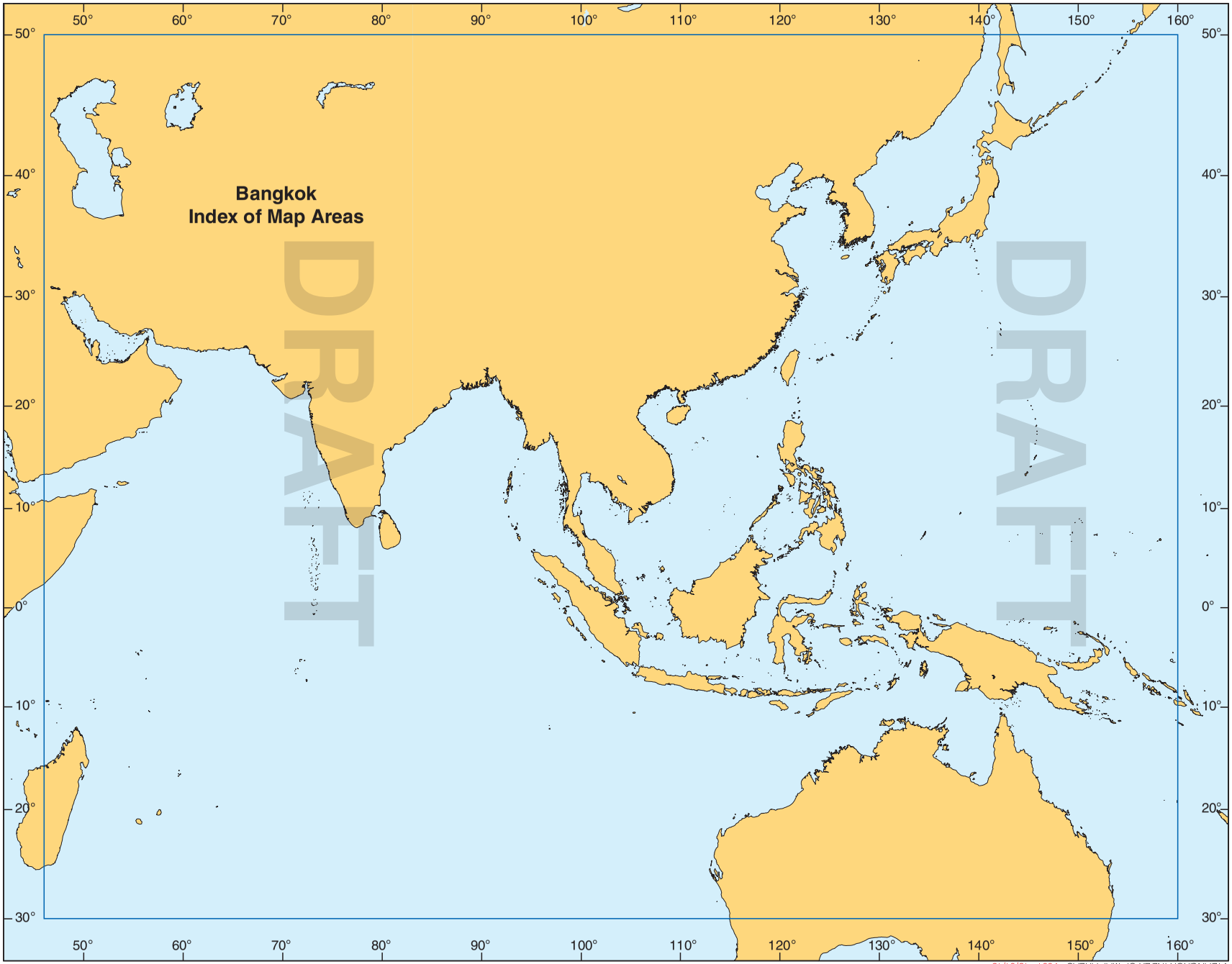
C	Asian MSLP Analysis	1600(00)		120/576
	IPS Recommended frequencies for VMC (Charleville) 3 pages	1630		
	IPS Recommended frequencies for VMW (Wiluna) 3 pages	1701		
A	Asian (part A) Gradient Level Wind Analysis	0600(00)	1800(12)	
B	Asian (part B) Gradient Level Wind Analysis	0623(00)	1823(12)	
C	Asian MSLP Analysis	0645(00)		
IO	Indian Ocean MSLP Analysis	0730(00)	1915(00)	
WW	Australian Total Wave Height and Direction Forecast (H+24)	0745(00)	1930(12)	
	Australian Primary Swell Waves Forecast (H+24)	0800(00)	1945(12)	
SWP	South Pacific Ocean MSLP Analysis		2000(00)	
SO	Southern Ocean Total Wave Height and Direction (H+24)		2015(00)	
SWP	South Pacific Ocean MSLP Analysis	0830(00)		
AUST	Australian MSLP Analysis (Manual)	0845(06)	2030(18)	
	Australian MSLP (H+36)	0900(00)		
FDF	Australian MSLP 4 day forecast days 1 and 2	0915		
	Australian MSLP 4 day forecast days 3 and 4	0930		
SO	Southern Ocean Total Wave Height and Direction (H+24)	1015(00)		
	Southern Ocean Total Wave Height and Direction (H+36)		2215(00)	
FDF	Australian MSLP 4 day forecast days 1 and 2		2230	
IO	Indian Ocean MSLP Analysis	1030(00)		
SH	SH MSLP (H+48)	1045(00)	2245(12)	
FDF	Australian MSLP 4 day forecast days 3 and 4		2300	
SO	Southern Ocean Total Wave Height and Direction (H+36)	1100(00)		
	Southern Ocean Total Wave Height and Direction (H+48)		2315(00)	
AUST	Australian MSLP Analysis	1115(06)		
	Australian MSLP (H+36)		2330(00)	
E	Asian Sea Surface Temp Analysis	1130		
MSL	Indian Ocean MSLP (H+48)		2345(12)	
	VMC / VMW Information Notice	1145		

NOTES: (1) Broadcasts are intended to be received southwards from 10°N between 70°E and 150°W.
(2) These charts are repeat broadcasts on 11030 kHz only via a directional aerial pointing from Charleville (VMC) towards Tasmania.

AUSTRALIA WEATHER WEST (WILUNA) (VMW) 26°21′·00S 120°34′·00E

	5755		1100–2100
	7535		H24
	10555		
	15615		
	18060		2100–1100

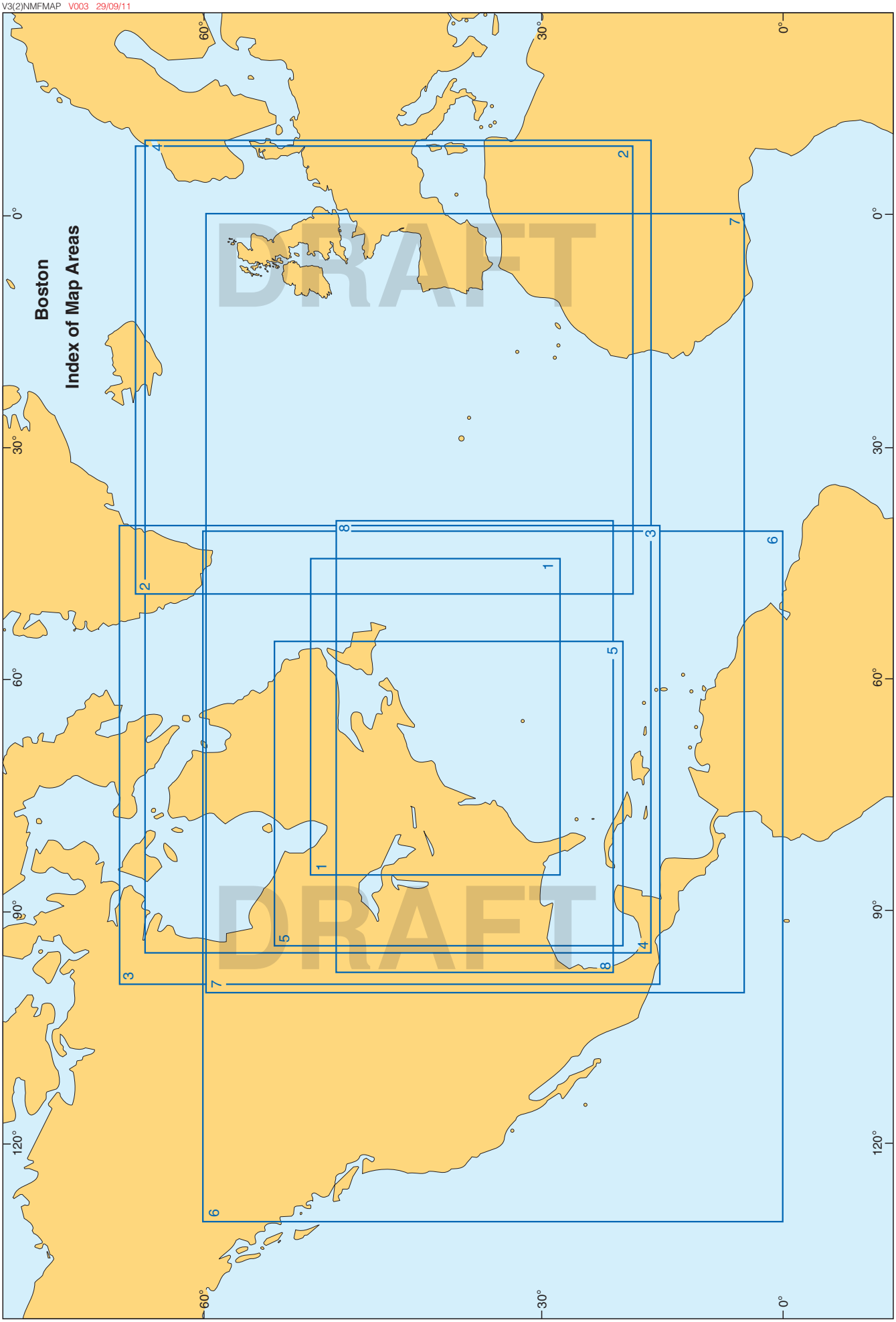
NOTES: (1) See VMC Australia Weather East Charleville for Diagrams, Map Areas and Schedule.
(2) Broadcasts are intended to be received between 25°N–25°S and 75°E–180°W.


Bangkok
Index of Map Areas
DRAFT
DRAFT
50°
60°
70°
80°
90°
100°
110°
120°
130°
140°
150°
160°
40°
30°
20°
10°
0°
10°
20°
30°
V:\BANGKOK INDEX OF MAP AREAS V001 15/01/18

BANGKOK (HSW64)				13°06′·00N 100°56′·00E
	7395			
Diagrams pages 47 and 54				
Map Areas				
A 1:20,000,000 (a) 50°N.45°E 50°N.160°E 30°S.45°E 30°S.160°E				
Schedule				
	Test chart	0050		
	Forecast for shipping in English	0100(00)	1300(12)	
	Surface pressure forecast	0120 (Actual)		
	Surface analysis	0140(18)		
	Broadcast schedule	0200		
	24 hour surface pressure forecast	0300(12)		
	48 hour surface pressure forecast	0320(12)		
	72 hour surface pressure forecast	0340(12)		
	Forecast for shipping in English	0400(03)	1700(17)	
	24 hour 850 hPa wind / temperature forecast	0420(12)		
A	Surface analysis	0500(00)	1720(12)	120/576
	850 hPa analysis	0520(00)		
	700 hPa analysis	0540(00)		
	500 hPa analysis	0600(00)		
	Forecast for shipping in English	0700(06)	2300(17)	
	24 hour surface pressure forecast	0720(12)		
	48 hour surface pressure forecast	0740(12)		
	72 hour surface pressure forecast	0800(12)		
	24 hour 850 hPa wind / temperature forecast	0820(12)		
	Forecast for shipping in English	1000(09)		
	Surface analysis	1020(06)	2320(18)	

BOSTON (NMF)				42°22′·11N 71°03′·14W
	4235			0230–1039
	6340·5			H24
	9110			
	12750			1400–2239
Diagrams pages 47 and 56				
Map Areas				
1 (b) 28°N–52°N 45°W–85°W	2 (a) 18°N–65°N 10°E–45°W	3 (a) 18°N–65°N 40°W–95°W	4 (a) 18°N–65°N 10°E–95°W	
5 (b) 20°N–55°N 55°W–95°W	6 (b) 0°–60°N 40°W–130°W	7 (a) 5°N–60°N 0°–100°W	8 (a) 22°N–51°N 40°W–98°W	

Continued on page 57


Boston
Index of Map Areas
DRAFT
DRAFT
60°
30°
0°
90°
120°

Boston (NMF) (Continued)

Schedule				
	Test pattern	0230	1400	120/576
1	Preliminary surface analysis	0233(00)		
	Broadcast schedule (part 1)	0243	1405	
	Broadcast schedule (part 2)	0254	1420	
	Request for comments	0305	1433	
	Product notice bulletin		1443	
1	Preliminary surface analysis		1453(12)	
5	Satellite image		1503(12)	
8	Wind / wave analysis	0315(00)	1515(12)	
2	Surface analysis (part 1 NE Atlantic)	0325(00)	1525(12)	
3	Surface analysis (part 2 NW Atlantic)	0338(00)	1538(12)	
5	Satellite image	0351(00)		
	Ice chart (rebroadcast)		1600 (Latest)	
	Test pattern		1720	
2	Rebroadcast of 0325 / 1525 (NE Atlantic)	0402(00)	1723(12)	
3	Rebroadcast of 0338 / 1538 (NW Atlantic)	0415(00)	1736(12)	
4	500 hPa analysis	0428(00)	1749(12)	
	Sea state analysis		1759(12)	
	Ice chart (rebroadcast)	0438(21)		
	Spare or experimental		1810	
7	Cyclone danger area or 48 hour high wind / waves[2]	0452(03)	1824(15)	
	Test pattern	0745	1900	
1	Preliminary surface analysis	0755(06)		
8	24 hour surface forecast	0805(00)	1905(12)	
	24 hour wind / wave forecast	0815(00)	1915(12)	
4	24 hour 500 hPa forecast	0825(00)	1925(12)	
	36 hour 500 hPa forecast	0835(12)	1935(00)	
	48 hour 500 hPa forecast	0845(00)	1945(12)	
	48 hour surface forecast	0855(00)	1955(12)	
	48 hour wind / wave forecast	0905(00)	2005(12)	
	48 hour wave period forecast	0915(00)	2015(12)	
1	Preliminary surface analysis		2025(18)	
4	96 hour 500 hPa forecast		2035(12)	
	96 hour surface forecast		2045(12)	
	96 hour wind / wave forecast		2055(12)	
	96 hour wave period forecast		2105(12)	
	Rebroadcast of 2045 (96 hour surface)		2115(12)	
2	Surface analysis (part 1 NE Atlantic)	0925(06)	2125(18)	

Continued overleaf

Boston (NMF) (Continued)

3	Surface analysis (part 2 NW Atlantic)	0938(06)	2138(18)	120/576
6	Satellite image	0951(06)	2151(18)	
2	Rebroadcast of 0925 / 2125 (NE Atlantic)	1002(06)	2202(18)	
3	Rebroadcast of 0938 / 2138 (NW Atlantic)	1015(06)	2215(18)	
7	Cyclone danger area or 48 hour high wind / waves[2]	1028(09)	2228(21)	
	Rebroadcast / N American Ice Service Chart	1039(21)	2239(21)	

NOTES: (1) Carrier frequency is 1·9 kHz below the assigned frequency.
(2) Tropical cyclone danger area chart replaced by 48 hour high wind / wave warning chart 1 Dec–14 May. Valid times 0000, 0600, 1200 and 1800 UTC. Map area 5°N–40°N, 35°W–100°W.

HONOLULU (KVM70) 21°18′·35N 157°52′·35W

	9982·5		0519–1556
	11090		H24
	16135		1719–0356

Diagrams pages 47 and 59

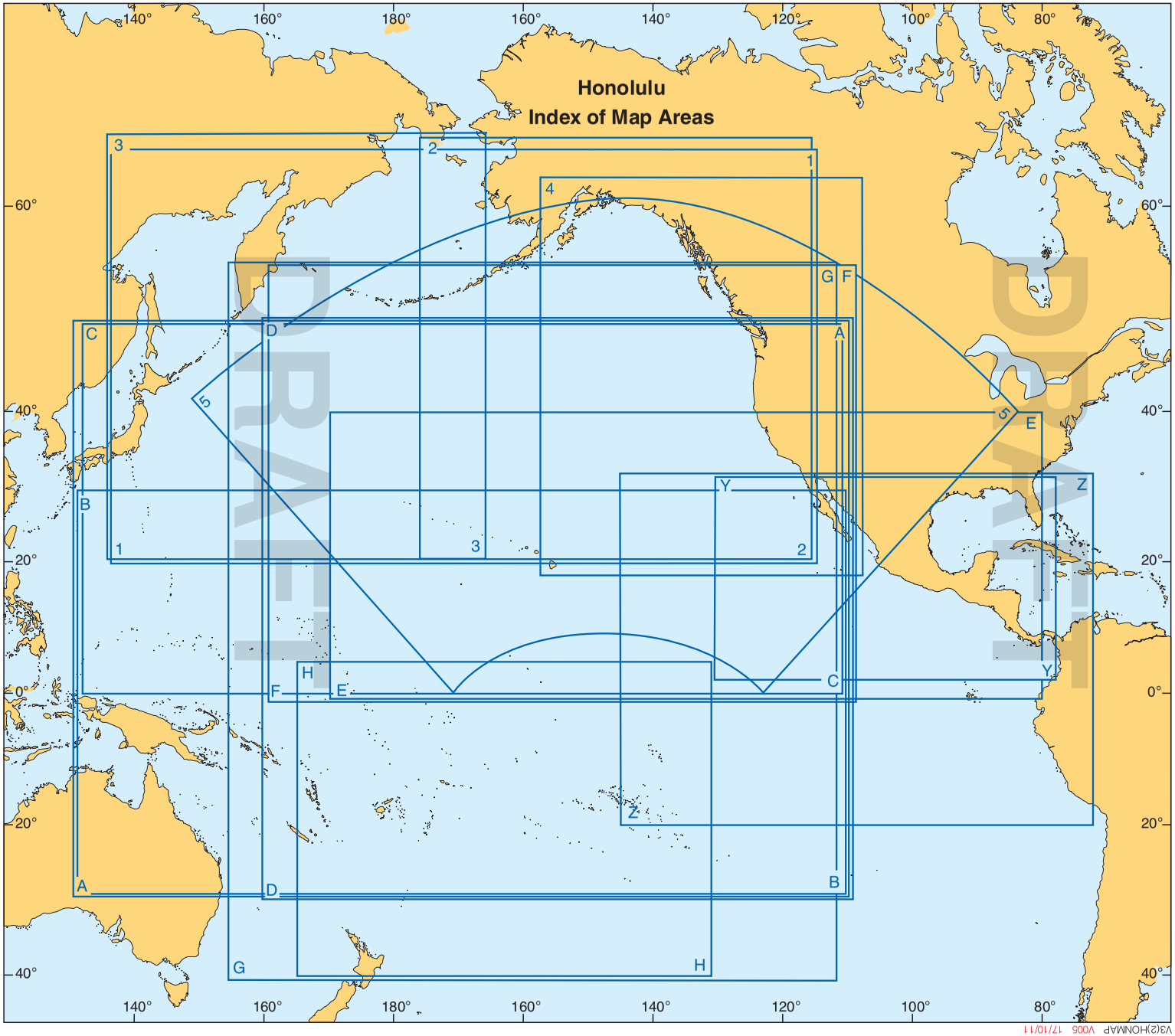
Map Areas

A (a) 50°N–30°S 110°W–130°E	B (a) 30°N–30°S 110°W–130°E	C (a) 50°N–0° 110°W–130°E	D (a) 50°N–30°S 110°W–160°E
E (a) 40°N–0° 80°W–170°E	F (a) 55°N–0° 110°W–160°E	G (a) 55°N–5°S 110°W–155°E	H (a) 5°N–40°S 130°W–165°E
1 (a) 70°N–20°N 115°W–135°E	2 (a) 70°N–20°N 175°W–115°W	3 (a) 70°N–20°N 175°W–135°E	4 (a) 62°N–18°N East of 157°W
5 (a) 55°N–5°N East of 180°W	Y (a) 32°N–5°N East of 130°W	Z (a) 30°N–20°S East of 145°W	

Schedule

C	Surface analysis	0014(18)	1214(06)	120/576
G	E Pacific GOES infra-red satellite image	0034(00)	1234(12)	
H	SW Pacific GOES infra-red satellite image	0048(00)	1248(12)	
	Schedule part 1	0100	1300	
	Schedule part 2	0120	1320	
	Symbols or product notice bulletin	0140	1340	
Z	24 hour tropical surface forecast	0200(12)	1400(00)	
	48 hour tropical surface forecast	0210(12)	1410(00)	
	72 hour tropical surface forecast	0220(12)	1420(00)	
	48/72 hour tropical wave period/swell direction	0230(00)	1430(00)	
	Tropical sea state analysis	0240(00)	1440(12)	
	Rebroadcast 24 hour tropical wind/wave forecast	0250(12)	1450(00)	
	48 hour tropical wind/wave forecast	0300(12)	1500(00)	
	72 hour tropical wind/wave forecast	0310(12)	1510(00)	
1	Rebroadcast / sea state analysis	0320(00)	1520(00)	
2	Surface analysis (part 1, NE Pacific)	0330(00)	1530(12)	

Continued on page 60


Honolulu
Index of Map Areas
140°
160°
180°
160°
140°
120°
100°
80°
60°
40°
20°
0°
20°
40°
1
2
3
4
5
A
B
C
D
E
F
G
H
Y
Z
DRAFT
V3(2)HONMAP V005 17/10/11

Honolulu (KVM70) (Continued)

3	Surface analysis (part 2, NW Pacific)	0343(00)	1543(12)	120/576
Z	Tropical surface analysis	0356(00)	1556(12)	
	Test pattern	0519	1719	
D	Significant cloud features	0524(03)	1724(15)	
E	Cyclone danger area	0535(03)	1735(15)	
B	Streamline analysis	0555(00)	1755(12)	
C	Surface analysis	0615(00)	1815(12)	
G	E Pacific GOES infra-red satellite image	0635(06)	1835(18)	
H	SW Pacific GOES infra-red satellite image	0649(06)	1849(18)	
A	24 hour surface forecast	0701(00)	1901(12)	
	48 hour surface forecast	0714(00)	1914(12)	
	72 hour surface forecast	0727(00)	1927(12)	
B	Wind/wave analysis	0740(00)	1940(12)	
	24 hour wind/wave forecast (map area B)	0753(00)	1953(12)	
4	24 hour wind/wave forecast (map area 4)	0806(00)	2006(12)	
1	48 hour surface forecast	0816(00)	2016(12)	
	48 hour wind/wave forecast	0826(00)	2026(12)	
	48/96 hour wave period/swell direction	0836(00)	2036(12)	
	Rebroadcast / 96 hour surface forecast	0846(12)	2046(12)	
	Rebroadcast / 96 hour wind/wave forecast	0856(12)	2056(12)	
5	Pacific GOES infra-red satellite image	0906(06)	2106(18)	
2	Surface analysis (part 1, NE Pacific)	0917(06)	2117(18)	
3	Surface analysis (part 2, NW Pacific)	0930(06)	2130(18)	
Y	Tropical GOES infra-red satellite image	0943(06)	2143(18)	
Z	Tropical surface analysis	0954(06)	2154(18)	
	24 hour tropical wind/wave forecast	1008(00)	2208(12)	
E	Cyclone danger area	1042(09)	2242(21)	
B	48 hour wind/wave forecast	1102(00)	2302(12)	
	72 hour wind/wave forecast	1115(00)	2315(12)	
F	Sea surface temperatures	1128 (Latest)	2328 (Latest)	
B	Rebroadcast 24 hour wind/wave forecasts	1141(00)	2341(12)	
	Streamline analysis	1154(06)	2354(18)	

NOTES: (1) Carrier frequency is 1·9 kHz below the assigned frequency.
(2) Streamlines are lines of constant wind direction.
(3) Wind speeds are given by wind barbs independent of streamlines.
(4) The significant cloud features charts depict cloud features based upon images from the various geostationary and polar orbiting satellites over the Pacific. Abbreviations on these charts include: AC - Altocumulus; AS - Altostratus; BKN - Broken; CB - Cumulonimbus; CC - Cirrocumulus; CI - Cirrus; CS - Cirrostratus; CU - Cumulus; FEW - Few; ISOL - Isolated; LYRS - Layers; NS - Nimbostratus; OVC - Overcast; SC - Stratocumulus; SCT - Scattered; TCU - Towering cumulus; TSTM - Thunderstorm.

INUVIK (CANADIAN COAST GUARD) 68°19′·50N 133°35′·78W

A	4290·1(USB)		
	4292(FSK)[1]		
B	8454·1(USB)		
	8456(FSK)[1]		

Diagram page 47

Map Areas

1 Amundsen Gulf	2 Queen Maud Gulf	3 McClure Strait	4 Beaufort Sea/Alaskan Coast

Schedule

	Marine surface analysis and wind prognosis for the arctic.	**B:** 0100	**A:** 2100	120/576
	Ice analysis for map areas 1–4.	**B:** 0200	**A:** 2200	
	Marine surface analysis and wind prognosis for the arctic.	**A:** 0600		
	Ice analysis for map areas 1–4.	**A:** 0700		
	Marine surface analysis and wind prognosis for the arctic.	**B:** 1000		
	Ice analysis for map areas 1–4.	**B:** 1100		

NOTES: (1) For correct reception of this broadcast on WMO standard facsimile recorders requiring 2300 Hz for white and 1500 Hz for black, 1900 Hz centre frequency, radio receivers should be tuned in the Upper Side Band mode (USB) to the above frequencies.
(2) Station only open from approximately mid May until late Oct.
(3) All broadcast information is available on request.
(4) Remotely controlled from Iqaluit.

IQALUIT (CANADIAN COAST GUARD) 63°44′·09N 68°32′·94W

A	3251·1(USB)		
	3253(FSK)[1]		
B	7708·1(USB)		
	7710(FSK)[1]		

Diagram page 47

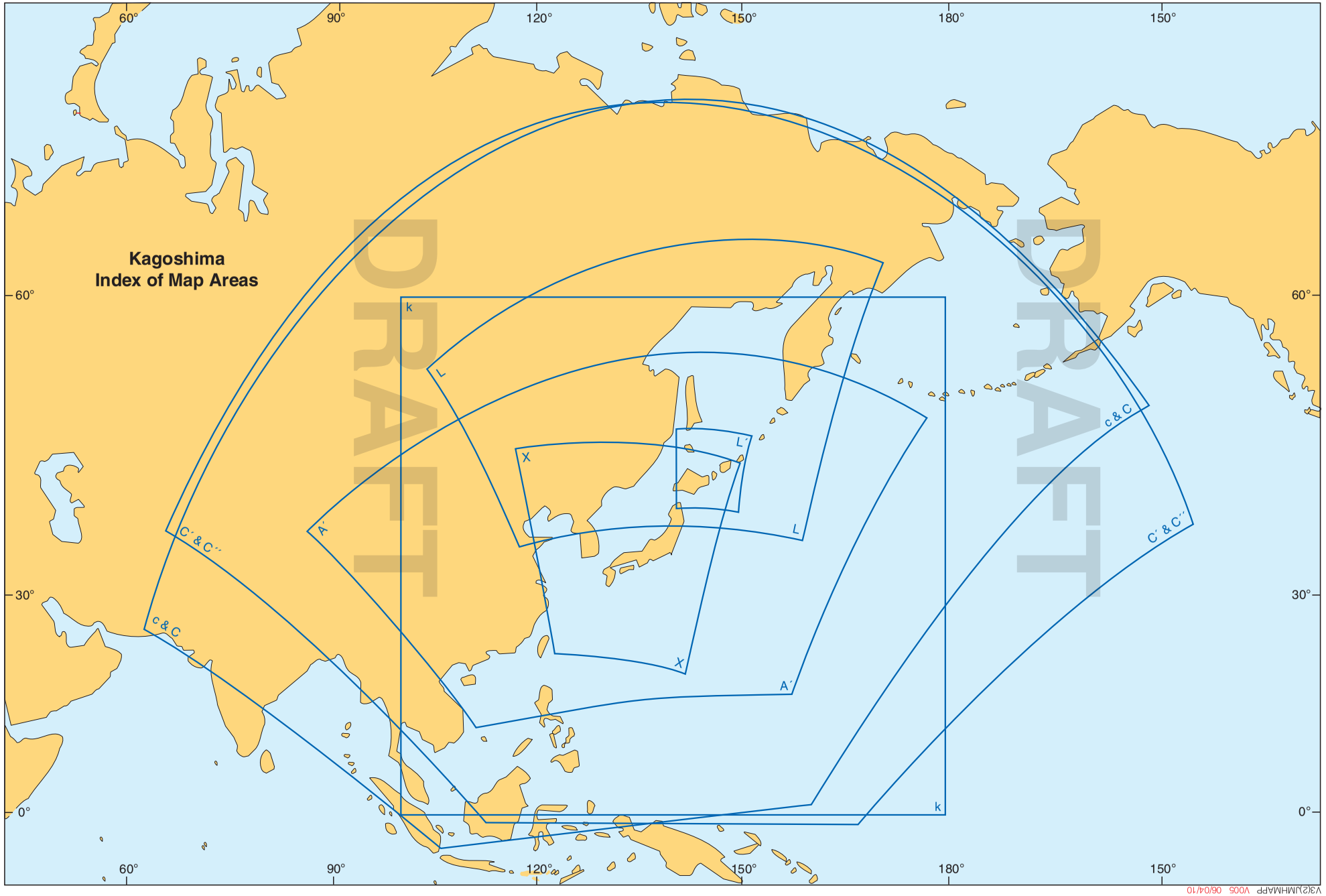
Map Areas

1 Hudson Bay South	2 Hudson Bay North	3 Hudson Strait	4 Foxe Basin
5 Labrador Coast	6 Davis Strait	7 Baffin Bay	

Schedule

	Marine surface analysis and wind prognosis for the arctic.	**B:** 0100	**A:** 2100	120/576
	Ice analysis for map areas 1–7.	**B:** 0200	**A:** 2200	
	Marine surface analysis and wind prognosis for the arctic.	**A:** 0600		
	Ice analysis for map areas 1–7.	**A:** 0700		
	Marine surface analysis and wind prognosis for the arctic.	**B:** 1000		
	Ice analysis for map areas 1–7.	**B:** 1100		

NOTES: (1) For correct reception of this broadcast on WMO standard facsimile recorders requiring 2300 Hz for white and 1500 Hz for black, 1900 Hz centre frequency, radio receivers should be tuned in the Upper SideBand mode (USB) to the above frequencies.
(2) Station only open from approximately mid June to late Dec


Kagoshima
Index of Map Areas
60°
90°
120°
150°
180°
150°
60°
30°
0°
k
L
L´
X
A´
C´&C´´
C&C
DRAFT
V3(2)JMHMAPP V005 06/04/10

KAGOSHIMA (JMH)			31°19′·00N 130°31′·00E
	3622·5 7795 13988·5		H24
Diagrams pages 47 and 62			

Map Areas

A' 1:25,000,000 (c) 38°12′N.85°54′E 50°36′N.177°12′E 12°24′N.110°42′E 17°24′N.157°12′E	c 1:42,000,000 (c) 26°30′N.62°00′E 51°00′N.152°00′W 5°00′S.106°00′E 2°00′N.160°00′E	C 1:20,000,000 (c) 26°30′N.62°00′E 51°00′N.152°00′W 5°00′S.106°00′E 2°00′N.160°00′E	C′ 1:20,000,000 (c) 38°30′N.65°30′E 38°30′N.145°30′W 1°00′S.112°30′E 1°00′S.167°00′E
C″ 1:20,000,000 (c) 37°30′N.67°00′E 39°00′N.147°36′W 1°00′S.112°24′E 0°30′S.166°42′E	k 1:34,770,000 (a) 60°00′N.100°00′E 60°00′N.180°00′ 0°00′.100°00′E 0°00′.180°00′	L 1:10,000,000 (c) Sea of Okhotsk N parts of Sea of Japan Bo Hai & adjacent waters of N Pacific	L′ 1:5,000,000 (c) 48°30′N.151°12′E 49°12′N.140°00′E 40°24′N.149°12′E 41°00′N.140°00′E
X 1:6,000,000 (c) 47°00′N.116°36′E 45°42′N.149°24′E 22°36′N.122°06′E 20°00′N.141°36′E			

Schedule

c	Retransmission of 2200	0000(12)		120/576
C′	Retransmission of 0750		1200(06)	
C	96 hour surface pressure, precipitation prognosis	0020(12)		
	120 hour surface pressure, precipitation prognosis	0040(12)		
C″	12, 24, 48, 72 hour ocean wave prognosis		1220(00)	
A′	24 hour 850 hPa temperature, wind & 700 hPa vertical P-velocity prognosis		1240(00)	
	24 hour 500 hPa temperature & 700 hPa dew point depression prognosis			
	36 hour 500 hPa temperature & 700 hPa dew point depression prognosis		1251(00)	
	36 hour 850 hPa temperature, wind & 700 hPa vertical P-velocity prognosis			
	Test chart	0103	1303	
C′	Meteorological satellite picture (MTSAT)	0110(00)	1310(12)	
L	Retransmission of 1019	0130		
L′	Retransmission of 1019	0130(00)		
X	Retransmission of 0730		1330(00)	
C′	Tropical cyclone forecast (in case of tropical cyclone)	0150(00)	1350(12)	
k	Sea surface current, water temperature at 100m depth	0210 (Tues & Fri)		
	Retransmission of 0210		1420 (Tues & Fri)	
	Radio prediction	0229 (20th & 21st of each month)		
C′	Surface analysis	0240(00)	1440(12)	
k	Sea surface water temperature	0300 (Tues & Fri)		
C′	The first retransmission of 0240	0320(00)		
	The first retransmission of 1440		1520(12)	
	Broadcast schedule & manual amendments	0340		
C′	Tropical cyclone forecast (if a tropical cyclone is expected to exist in 4 days)	0400(00)	1540(12)	
k	Sea surface water temperature		1600 (Tues & Fri)	
C″	Ocean wave analysis	0421(00)	1620(12)	

Continued overleaf

Kagoshima (JMH) (Continued)

X	Coastal wave analysis	0440(00)		120/576
C	500 hPa height, temperature	0459(00)	1640(12)	
	850 hPa height, temperature, dewpoint depression	0518(00)	1700(12)	
X	Coastal wave analysis		1719(12)	
A′	24 hour surface pressure, precipitation prognosis	0537(00)	1739(12)	
	24 hour 500 hPa height, vorticity prognosis			
C′	24 hour surface pressure, wind, fog, icing, sea ice prognosis	0548(00)		
	Retransmission of 0150	0610(00)		
	Retransmission of 1350		1750(12)	
A′	36 hour 500 hPa height, vorticity prognosis	1810(12)		
	36 hour surface pressure, precipitation prognosis			
	24 hour 500 hPa temperature, 700 hPa dew point depression prognosis	1821(12)		
	24 hour 850 hPa temperature, wind, 700 hPa vertical P-velocity prognosis			
c	72 hour surface pressure, precipitation prognosis	0630(00)		
	48 hour surface pressure, precipitation prognosis	0630(00)		
A′	36 hour 850 hPa temperature, wind, 700 hPa vertical P-velocity prognosis	1832(12)		
	36 hour 500 hPa temperature, 700 hPa dew point depression prognosis			
C′′	12, 24, 48, 72 hour ocean wave prognosis		1850(12)	
	24 hour ocean wave prognosis	0651(00)		
C′	Meteorological satellite picture (MTSAT)	0710(06)	1910(18)	
X	24 hour coastal wave prognosis	0730(00)		
C′	24 hour surface pressure, wind, fog, icing, sea ice prognosis		1930(12)	
	Tropical cyclone forecast (in case of tropical cyclone)	0750(06)	1950(18)	
A′	36 hour 500 hPa height, vorticity prognosis	0809(00)		
	36 hour surface pressure, precipitation prognosis	0809(00)		
X	24 hour coastal wave prognosis		2010(12)	
C′	48 hour surface pressure, wind, icing, sea ice prognosis	0820(00)		
	Surface analysis	0840(06)	2040(18)	
	Tropical cyclone forecast (if a tropical cyclone is expected to exist in 4 days)	0900(06)		
	48 hour surface pressure, wind, icing, sea ice prognosis		2100(12)	
	The first retransmission of 0840	0920(06)		
	The first retransmission of 2040		2120(18)	
	Tropical cyclone forecast (if a tropical cyclone is expected to exist in 4 days)		2140(18)	
c	Retransmission of 0630	0940(00)		
	48 hour surface pressure / precipitation prognosis	2200(12)		
	72 hour surface pressure / precipitation prognosis			
C′	Retransmission of 0820	1000(00)		

Continued on next page

Kagoshima (JMH) (Continued)

L	Sea ice condition (seasonal)	1019 (Tues & Fri, retransmission 0130 next day)	
L′	48 and 168 hour sea ice condition prognosis (seasonal)	1019(00) (Wed & Sat) retransmission 0130 next day)	
X	24 hour ocean wave prognosis	2220(12)	
C′	Retransmission of 0548	1040(00)	
	Retransmission of 1950	2240(18)	
	Retransmission of 1930	2300(12)	120/576
C″	Retransmission of 0421	1100(00)	
X	Retransmission of 0440	1119(00)	
	Retransmission of 1719	2320(12)	
C″	Retransmission of 0651	1140(00)	
C′	Retransmission of 2100	2340(12)	

NOTES: (1) Alternating black and white signals with frequency of 300 Hz will be transmitted for 10 seconds prior to the phasing signal.
(2) Phasing signals will be transmitted for 30 seconds before transmission of each chart.
(3) Stop signals will be transmitted for 20 seconds after transmission of each chart.

KODIAK (NOJ) 57°46′·63N 152°31′·72W

	2054		H24
	4298		
	8459		
	12410·6		

Diagrams pages 47 and 66

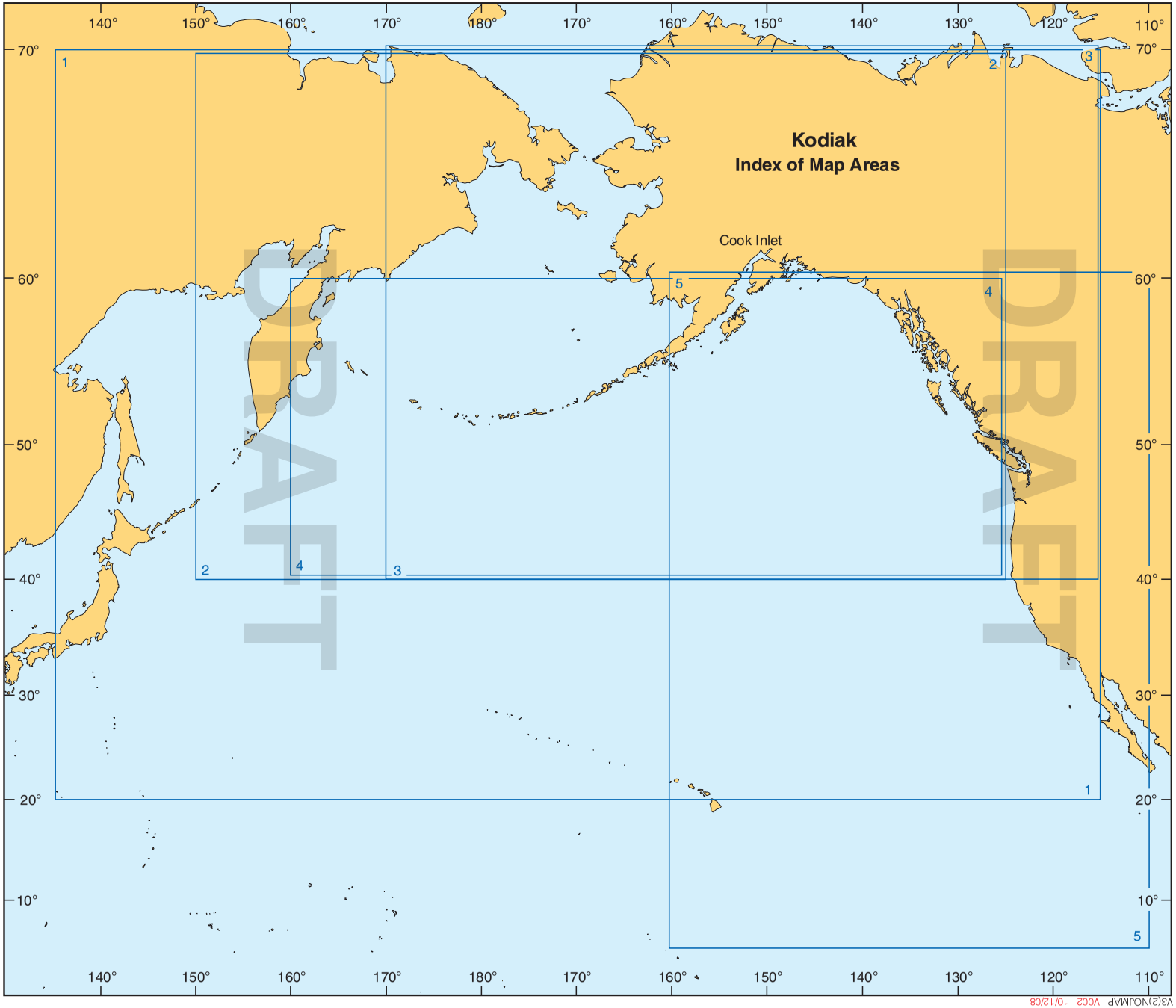
Map Areas

1 (a) 20°N–70°N 115°W–135°E	2 (a) 40°N–70°N 125°W–150°E	3 (a) 40°N–70°N 115°W–170°E	4 (a) 40°N–60°N 125°W–160°E
5 (a) 5°N–60°N 110°W–160°W	6 Ice Covered Alaskan Waters	7 Cook Inlet	

Schedule

1	96 hour wave period, swell direction	0008(12)		
	96 hour 500 hPa forecast	0018(12)		
	Test pattern	0340	1540	
6	Sea ice analysis / rebroadcast 5 day sea ice forecast 1057	0343 (Latest)	1543 (Latest)	
2	Surface analysis	0403(00)	1603(12)	
3	Rebroadcast 24 hour surface forecast 2227 / 1027	0427(12)	1627(00)	
1	Rebroadcast 48 hour surface forecast 2237 / 1037	0437(12)	1637(00)	
	Rebroadcast 96 hour surface forecast 2348	0447 (Latest)	1647 (Latest)	120/576
	Sea state analysis / rebroadcast	0456(00)	1656(00)	
5	GOES infra-red satellite image	0506(00)	1706(12)	
1	500 hPa analysis	0517(00)	1717(12)	
	Symbols and contractions / schedule	0527	1727	
	Request for comments / product notice	0548	1748	
1	24 hour 500 hPa forecast	0558(00)	1758(12)	

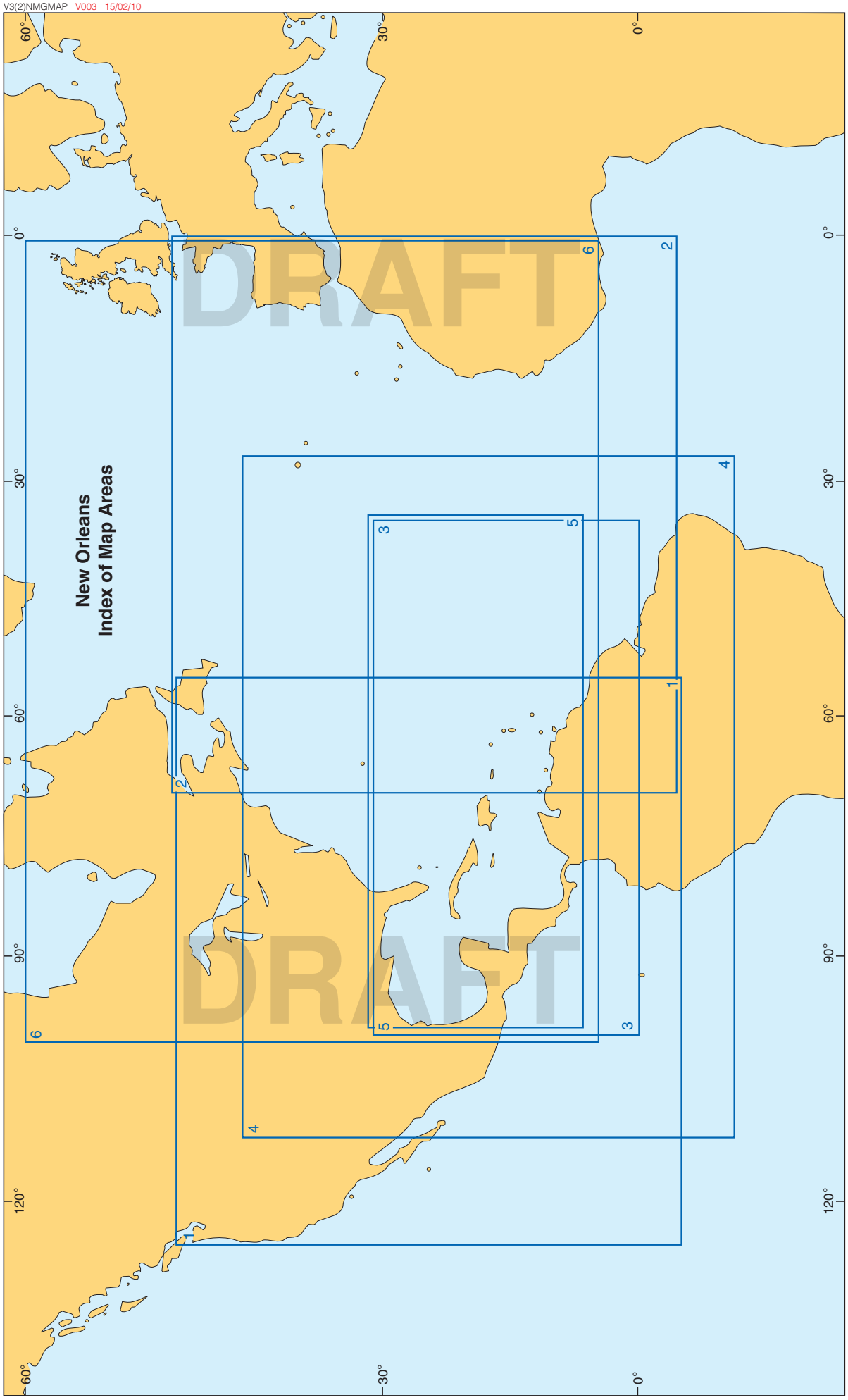
Continued on page 67


Kodiak
Index of Map Areas
Cook Inlet
1
2
3
4
5
DRAFT
140° 150° 160° 170° 180° 170° 160° 150° 140° 130° 120° 110°
70° 60° 50° 40° 30° 20° 10°
V3(2)NOLMAP V002 10/12/08

KODIAK (NOJ) (Continued)

	Test pattern	0950	2150	120/576
2	Surface analysis	0953(06)	2153(18)	
3	24 hour wind / wave forecast	1017(00)	2217(12)	
	24 hour surface forecast	1027(00)	2227(12)	
1	48 hour surface forecast	1037(00)	2237(12)	
	48 hour wind / wave forecast	1047(00)	2247(12)	
6	5 day sea ice forecast / rebroadcast sea ice analysis 0343	1057 (Latest)	2257 (Latest)	
5	GOES infra-red satellite image	1117(06)	2317(18)	
1	48 hour wave period, swell direction	1128(00)	2328(12)	
	48 hour 500 hPa forecast	1138(00)	2338(12)	
4	Sea surface temperature analysis	1148 (Latest)		
7	Cook Inlet sea ice forecast	1159 (Latest)		
1	96 hour surface forecast		2348(12)	
	96 hour wind / wave forecast		2358(12)	
NOTE: Carrier frequency is 1·9 kHz below the assigned frequency.				

MAGALLANES (CBM)			53°09′·93S 70°54′·26W
	4322		
	8696		
Diagram page 47			
Map Areas			
10°S.120°W 10°S.50°W 80°S.130°W 80°S.30°W			
Schedule			
	48 hour surface forecast	0350	120/576
	Satellite image	0405(24)	
	CBV / CBM schedule	1550	
	24 hour surface forecast	1605(00)	
	Satellite image	1620(12)	
	Surface forecast	1730(12)	
	Satellite image	1745(15)	
	24 hour wave forecast	2005	
	Satellite image	2020(18)	
	36 hour surface forecast	2240	
	Surface analysis	2255(18)	
	24 hour wind forecast	2310	


New Orleans
Index of Map Areas
DRAFT
DRAFT
60°
30°
0°
90°
120°
1
2
3
4
5
6

NEW ORLEANS (NMG)			29°57′·15N 90°02′·24W
	4317·9		H24
	8503·9		
	12789·9		
	17146·4		1200–2045

Diagrams pages 47 and 68

Map Areas

1 (a) 5°S–50°N 55°W–125°W	2 (a) 5°S–50°N 0°–70°W	3 (a) 0°–31°N 35°W–100°W	4 (a) 12°S–44°N 28°W–112°W
5 (a) 7°N–31°N 35°W–98°W (Area covered by text forecast)	6 (a) 5°N–60°N 0°–100°W		

Schedule

	Test pattern	0000	1200	120/576
1	US / tropical surface analysis (W half)	0005(18)	1205(06)	
2	Tropical surface analysis (E half)	0020(18)	1220(06)	
3	Rebroadcast of 1925 / 0725 (24 hour wind / wave)	0035(12)	1235(00)	
	Rebroadcast of 1950 / 0750 (48 hour wind / wave)	0045(12)	1245(00)	
	Rebroadcast of 2015 / 0815 (72 hour wind / wave)	0055(12)	1255(00)	
	Rebroadcast of 1855 / 0655 (24 hour surface)	0105(12)	1305(00)	
	Rebroadcast of 1905 / 0705 (48 hour surface)	0115(12)	1315(00)	
	Rebroadcast of 1915 / 0715 (72 hour surface)	0125(12)	1325(00)	
6	Cyclone danger area or 48 hour high wind / waves[2]	0135(21)	1335(09)	
3	Rebroadcast of 0825 (72 hour wave period / swell)	0150(00)		
	36 hour wind / wave forecast		1350(12)	
4	GOES infra-red tropical satellite image	0200(00)	1400(12)	
3	Sea state analysis	0215(00)	1415(12)	
	Request for comments / product notice	0225	1425	
5	High seas forecast (in English)	0245(22)	1445(10)	
	Test Pattern	0600	1800	
1	US / tropical surface analysis (W half)	0605(00)	1805(12)	
2	Tropical surface analysis (E half)	0620(00)	1820(12)	
3	48 hour wave period / swell direction	0635(00)	1835(12)	
	Rebroadcast of 0215 / 1415 (sea state analysis)	0645(00)	1845(12)	
	24 hour wind / wave forecast	0655(00)	1855(12)	
	48 hour surface forecast	0705(00)	1905(12)	
	72 hour surface forecast	0715(00)	1915(12)	
	24 hour wind / wave forecast	0725(00)	1925(12)	
6	Cyclone danger area or 48 hour high wind / waves[2]	0735(03)	1935(15)	
3	48 hour wind / wave forecast	0750(00)	1950(12)	
4	GOES infra-red tropical satellite image	0800(06)	2000(18)	

Continued overleaf

New Orleans (NMG) (Continued)

3	72 hour wind / wave forecast	0815(00) 2015(12)	120/576
	72 hour wave period / swell direction	0825(00)	
	Rebroadcast of 0215 (sea state analysis)	0835(12)	
	Broadcast schedule	2025	
5	High seas forecast (in English)	0845(04) 2045(16)	

NOTES: (1) Carrier frequency is 1.9 kHz below the assigned frequency.
(2) Tropical cyclone danger area chart replaced by 48 hour high wind / wave warning chart 1 Dec–14 May. Valid times 0000, 0600, 1200 and 1800 UTC. Map area 5°N–40°N, 35°W–100°W.

POINT REYES (NMC) 37°55′·53N 122°43′·87W

	4346		0140–1608
	8682		H24
	12786		
	17151·2		
	22527		1840–2356

Diagrams pages 47 and 71

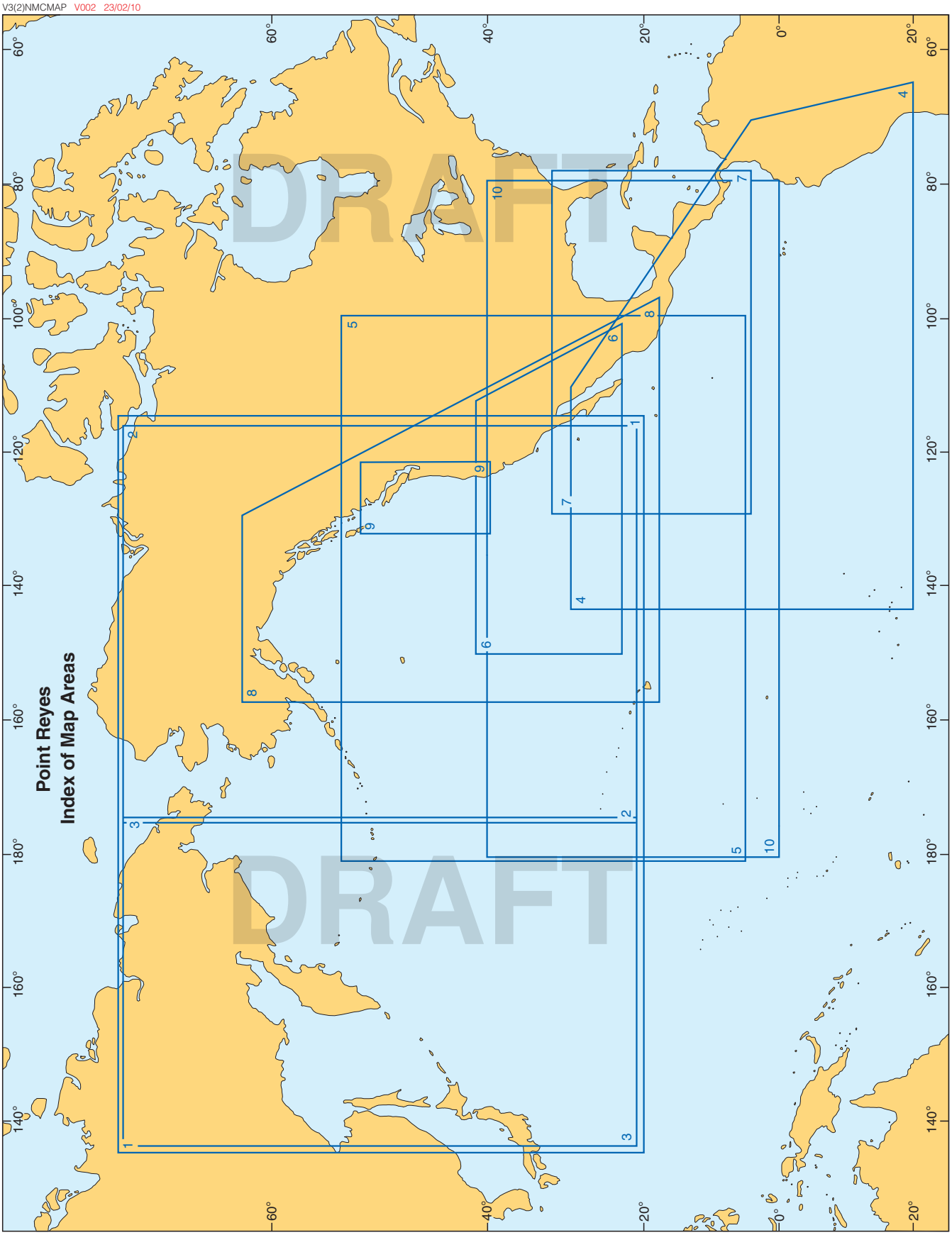
Map Areas

1 (a) 20°N–70°N 115°W–135°E	2 (a) 20°N–70°N 115°W–175°W	3 (a) 20°N–70°N 175°W–135°E	4 (a) 20°S–30°N E of 145°W
5 (a) 5°N–55°N E of 180°W	6 (a) 23°N–42°N E of 150°W	7 (a) 5°N–32°N E of 125°W	8 (a) 18°N–62°N E of 157°W
9 (a) 40°N–53°N E of 136°W	10 (a) 0°N–40°N 80°W–180°W		

Schedule

4	Tropical 48 hour wind/wave forecast	1208(00)	120/576
	Tropical 72 hour wind/wave forecast	1218(00)	
	Tropical 48 hour wave period/swell direction	1228(00)	
	Test pattern	0140 1400	
6	NE Pacific GOES infra-red satellite image	0143(00) 1403(12)	
5	Pacific GOES infra-red satellite image	0154(00) 1414(12)	
4	Tropical sea state analysis	0205(00) 1425(12)	
	Tropical 48 hour surface forecast	0215(12) 1435(00)	
	Tropical 48 hour wind/wave forecast	0225(12)	
	Tropical 72 hour wind/wave forecast	0235(12)	
1	500 hPa analysis	0245(00) 1445(12)	
1, 8	Sea state analysis, wind/wave analysis	0255(00) 1455(12)	
2	Prelim surface analysis (part 1, NE Pacific)	0305(00) 1505(12)	
3	Prelim surface analysis (part 2, NW Pacific)	0318(00) 1518(12)	
2	Final surface analysis (part 1, NE Pacific)	0331(00) 1531(12)	
3	Final surface analysis (part 2, NW Pacific)	0344(00) 1544(12)	

Continued on page 72


V3(2)NMCMAP V002 23/02/10
Point Reyes
Index of Map Areas
DRAFT
DRAFT
60°
40°
20°
0°
20°
60°
80°
100°
120°
140°
160°
180°
160°
140°
1
2
3
4
5
6
7
8
9
10

Point Reyes (NMC) (Continued)

10	Cyclone danger area or high wind/waves	0357(03)	1557(15)	
4	Tropical surface analysis	0408(00)	1608(12)	
	Test pattern	0655	1840	
1	Rebroadcast of 2033	0657(12)		
	Rebroadcast of 2043	0707(12)		
	Rebroadcast of 2053	0717(12)		
	Rebroadcast of 2103	0727(12)		
9	Sea state analysis (9)		1842 (Latest)	
6	Sea state analysis (6)		1852 (Latest)	
7	Tropical GOES infra-red satellite image	0737(06)	1902(18)	
8	Wind/wave analysis	0748(06)	1913(18)	
1	24 hour 500 hPa forecast	0758(00)	1923(12)	
8	24 hour surface forecast	0808(00)	1933(12)	
	24 hour wind/wave forecast	0818(00)	1943(12)	
1	48 hour 500 hPa forecast	0828(00)	1953(12)	
	48 hour surface forecast	0838(00)	2003(12)	
	48 hour wind/wave forecast	0848(00)	2013(12)	
	48 hour wave period/swell direction	0858(00)	2023(12)	120/576
	96 hour 500 hPa forecast		2033(12)	
	96 hour surface forecast		2043(12)	
	96 hour wind/wave forecast		2053(12)	
	96 hour wave period/swell direction		2103(12)	
5	Pacific GOES infra-red satellite image	0908(06)	2113(18)	
2	Surface analysis (part 1, NE Pacific)	0919(06)	2124(18)	
3	Surface analysis (part 2, NW Pacific)	0932(06)	2137(18)	
4	Tropical surface analysis	0945(06)	2150(18)	
	Tropical 24 hour wind/wave forecast	0959(00)	2204(12)	
10	Cyclone danger area or high wind/waves	1009(09)	2214(21)	
	Test pattern	1120	2320	
	Broadcast schedule part 1	1124	2324	
	Broadcast schedule part 2	1135	2335	
	Request for comments	1146		
	Product notice bulletin	1157		
4	Tropical 48 hour wave period/swell direction		2346(12)	
	Tropical 72 hour wave period/swell direction		2356(00)	

NOTES: (1) Carrier frequency is 1·9 kHz below the assigned frequency.
(2) Tropical cyclone danger area chart replaced by 48 hour high wind/ wave warning chart 1 Dec–14 May. Valid times 0000, 0600, 1200 and 1800 UTC.

RESOLUTE (CANADIAN COAST GUARD)			74°45′·23N 94°58′·15W
A	3251·1(USB)		
	3253(FSK)[1]		
B	7708·1(USB)		
	7710(FSK)[1]		

Diagram page 47

Map Areas

1 Baffin Bay	2 Approaches to Resolute	3 Resolute–Byam	4 Eureka Sound
5 McClure Strait	6 Parry Channel	7 Queen Maud Gulf	

Schedule

	Marine surface analysis and wind prognosis for the arctic.	**A:** 0100	**B:** 2100	120/576
	Ice analysis for map areas 1–7.	**A:** 0200	**B:** 2200	
	Marine surface analysis and wind prognosis for the arctic.	**B:** 0600		
	Ice analysis for map areas 1–7.	**B:** 0700		
	Marine surface analysis and wind prognosis for the arctic.	**A:** 1000		
	Ice analysis for map areas 1–7.	**A:** 1100		

NOTES: (1) For correct reception of this broadcast on WMO standard facsimile recorders requiring 2300 Hz for white and 1500 Hz for black, 1900 Hz centre frequency, radio receivers should be tuned in the Upper SideBand mode (USB) to the above frequencies.
(2) Stations only open from approximately mid July to late Oct.
(3) Remotely controlled from Iqaluit.

RIO DE JANEIRO NAVAL (PWZ33)			22°56′·00S 43°20′·00W
	12665		
	16978		

Diagrams pages 47 and 74

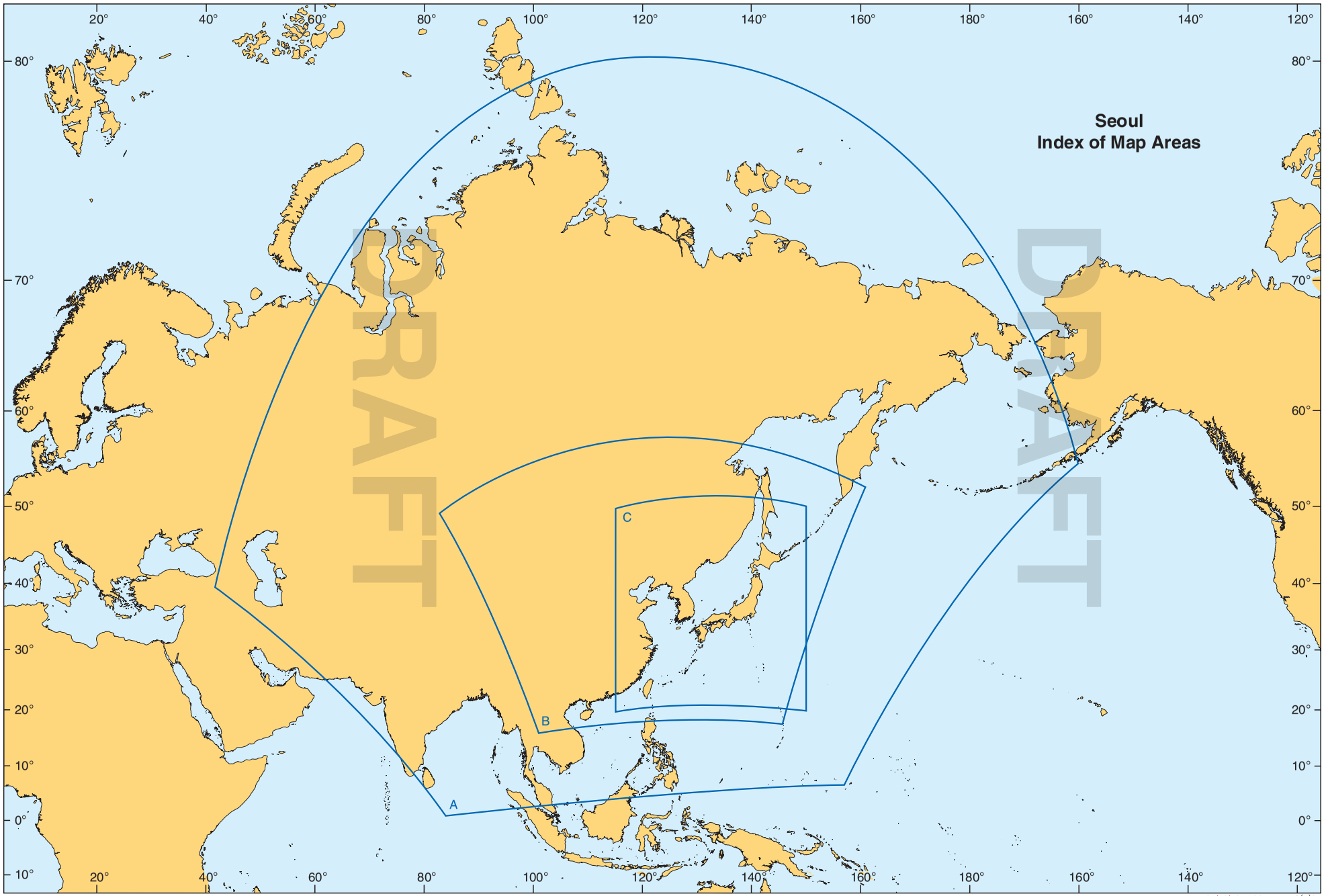
Map Areas

A 1:53,000,000 (a) 20°N.90°W 20°N.00°E 70°S.90°W 70°S.00°E	B 1:58,500,000 (a) 20°N.90°W 20°N.20°E 70°S.90°W 70°S.20°E	C 1:58,500,000 (a) 20°N.90°W 20°N.20°E 70°S.90°W 70°S.20°E	D 1:32,700,000 (a) 15°N.72°W 15°N.18°W 50°S.72°W 50°S.18°W

Schedule

	Test chart	0745	1630	120/576
A	Surface analysis (hPa)	0750(00)	1635(12)	
B	Waves significant height (m) and direction prognosis 1200 + 36 hour	0810(00)		
	Waves significant height (m) and direction prognosis 0000 + 36 hour	1655(12)		
C	Wind at 10m (kts) prognosis 1200 + 36 hour	0830(00)		
	Wind at 10m (kts) prognosis 0000 + 36 hour	1715(12)		
D	Sea surface temperature (°C)	0850(12)	1735(00)	


DRAFT
80°
60°
40°
20°
0°
20°
20°
0°
20°
40°
60°
A
B & C
D
D
A, B & C
Rio de Janeiro Naval
Index of Map Areas
V3(2)RIOMAP V004 04/10/10
DRAFT


Seoul
Index of Map Areas
A
B
C
DRAFT
DRAFT
V3(2)SMAP V002 07/07/10

SEOUL METEO			37°32′·00N 127°00′·00E
	3585		1200-0000
	5857·5		H24
	7433·5		
	9165		
	13570		0000-1200

Diagrams pages 47 and 75

Map Areas

A (b)	B (b)	C (b)
39°42′N.41°54′E 55°06′N.160°36′W 6°30′N.156°48′E 1°06′N. 84°00′E	49°30′N. 82°36′E 52°24′N.160°24′E 17°48′N.145°30′E 16°18′N.100°42′E	50°N.115°E 50°N.150°E 20°N.115°E 20°N.150°E

Schedule

	Special weather report	0000	1200	120/576
	Sea shore weather observation report	0033	1233	
	Fishery weather observation report	0047	1247	
	Manual amendments	0100		
	Lighthouse weather observation report	0133		
B	Surface analysis Far East	0147	1347	
	Typhoon warning report (if required)	0200	1400	
	General weather conditions report	0214		
	Special weather report		1500	
	SST observation chart of near Korean peninsula area (7 day average)		1530	
	Lighthouse sign weather observation report	0314	1547	
	Lighthouse weather observation report	0333		
A	Surface analysis Asia	0400	1600	
B	Surface analysis Far East	0447	1647	
A	500 hPa upper air weather chart	0500	1700	
	850 hPa upper air weather chart	0513	1713	
	700 hPa upper air weather chart	0526	1726	
	300 hPa upper air weather chart	0539	1739	
	Special weather report	0600	1800	
	Sea shore weather observation report		1833	
	Lighthouse weather observation report	0633		
	Fishery weather observation report	0647	1847	
C	12 hour wave height and sea surface wind forecast	0700	1900	
	24 hour wave height and sea surface wind forecast	0714	1914	
	36 hour wave height and sea surface wind forecast	0728	1928	
B	Surface analysis Far East	0747	1947	
	Typhoon warning report (if required)	0800	2000	
	General weather conditions report	0814	2014	
	SST observation chart of near Korean peninsula area (7 day average)	0828		
	Main seashore weather forecast for ship route	0846	2046	

Continued on next page

Seoul Meteo (Continued)

	Sea forecast	0900	2100	120/576
	Lighthouse sign weather observation report	0914	2114	
	Lighthouse weather observation report (May-Sep)	0933	2133	
	Weekly sea weather forecast	0947	2147	
	Lighthouse weather observation report (Nov-Apr)		2233	
B	Surface analysis Far East	1047	2247	

NOTES: (1) Alternating black and white signals with frequency of 400 Hz will be transmitted for 10 seconds prior to phasing signal.
(2) Phasing signals will be transmitted for 30 seconds prior to transmission of each chart.
(3) Stop signals will be transmitted for 15 seconds after each transmission.
(4) Tsunami warnings are broadcast on receipt.

SYDNEY (CANADIAN COAST GUARD) 46°11′·23N 59°53′·98W

A	4416			
B	6915·1			

Diagram page 47

Schedule

	Ice analysis Gulf of St Lawrence	**B:** 1121	**A:** 2200	120/576
	Ice analysis East or Southeast Newfoundland waters	**B:** 1142	**A:** 2331	
	Ice analysis iceberg limit		**B:** 1741	

NOTE: These charts are produced as support to Canadian Coast Guard operations and are available for transmission or re-transmission on request. This service is only available during the winter.

T'AI-PEI METEO (BMF) 25°04′·00N 121°33′·00E

	4616			H24
	8140			
	13900			
	18500			

Diagrams pages 47 and 78

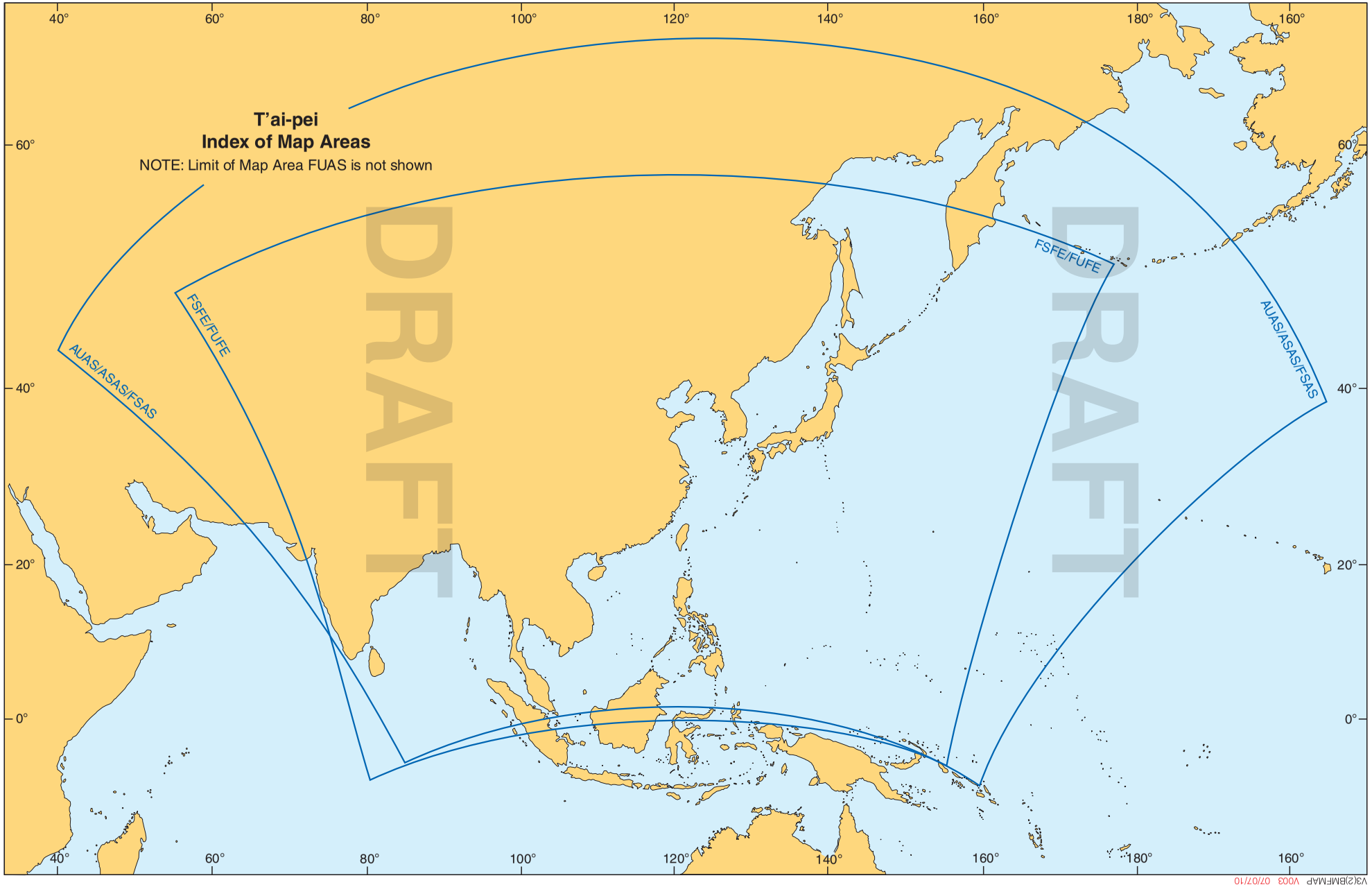
Map Areas

AUAS/ASAS/FSAS (c) 43°N.38°E 38°N.157°W 6°S.84°E 8°S.158°E	FSFE/FUFE	FUAS	

Schedule

	Broadcast schedule	0040(00)		120/576
	Typhoon warning in English and Chinese	0110(00)	1300(12)	
	Meteorological satellite image (GMS)	0120(00)	1320(12)	
	Fishery weather forecast in Chinese	0305(00)	1505(12)	
ASAS	Surface analysis with plotted data	0330(00)	1530(12)	
FSAS	24 hour surface prognosis	0350(00)		
	Typhoon warning in English and Chinese	0410(03)	1600(15)	
AUAS	500 hPa analysis with plotted data	0430(00)	1620(12)	
FSFE	RFS surface pressure analysis	0440(00)	1630(12)	
FUFE	RFS 500 hPa height analysis			
FSFE	RFS 12 hour surface pressure prognosis	0450(00)	1640(12)	

Continued on page 79


T’ai-pei
Index of Map Areas
NOTE: Limit of Map Area FUAS is not shown
FSFE/FUFE
AUAS/ASAS/FSAS
FSFE/FUFE
AUAS/ASAS/FSAS
DRAFT
DRAFT
40°
60°
80°
100°
120°
140°
160°
180°
160°
60°
40°
20°
0°
V3(2)BMFMAP V003 07/07/10

T'ai-pei Meteo (BMF) (Continued)

FUFE	RFS 12 hour 500 hPa height prognosis	0450(00)	1640(12)	
FSFE	RFS 24 hour surface pressure prognosis	0500(00)	1650(12)	
FUFE	RFS 24 hour 500 hPa height prognosis			
FSFE	RFS 36 hour surface pressure prognosis	0510(00)	1700(12)	
FUFE	RFS 36 hour 500 hPa height prognosis			
FSFE	RFS 48 hour surface pressure prognosis	0520(00)	1710(12)	
FUFE	RFS 48 hour 500 hPa height prognosis			
FSFE	RFS 72 hour surface pressure prognosis	0530(00)	1720(12)	120/576
FUFE	RFS 72 hour 500 hPa height prognosis			
	Typhoon warning in English and Chinese	0700(06)	1900(18)	
	Meteorological satellite image (GMS)	0720(06)	1920(18)	
FUAS	GFS 96 hour 500 hPa height prognosis		2050(12)	
	Fishery weather forecast in Chinese	0905(06)	2105(18)	
ASAS	Surface analysis with plotted data	0930(06)	2130(18)	
FUAS	GFS 120 hour 500 hPa height prognosis		2150(12)	
	Typhoon warning in English and Chinese	1000(09)	2200(21)	

VALPARAÍSO PLAYA ANCHA (CBV) 33°01′·24S 71°38′·55W

	4228		
	8677		
	17146·5		

Diagram page 47

Map Areas

10°S.120°W 10°S.50°W 80°S.130°W 80°S.30°W			

Schedule

	CBV / CBM schedule	1100	
	Surface analysis	1115(06)	
	Satellite image	1130(09)	
	24 hour surface forecast	1630	
	Satellite image	1645(15)	
	Surface analysis	1915(12)	
	Satellite image	1930(18)	120/576
	24 hour wave forecast	2200(00)	
	Surface analysis	2215(18)	
	24 hour wind forecast	2230(00)	
	48 hour surface forecast	2310	
	Satellite image	2325(21)	

RADIO WEATHER SERVICES AND NAVIGATIONAL WARNINGS

INTRODUCTION

Countries and radio stations are arranged in alphabetical order. Countries are subdivided into their respective regions, e.g. FRANCE (Atlantic Coast), FRANCE (Mediterranean Coast) etc. The details of services are arranged in the following manner:

①

CANARIAS, ISLAS (Spain)

FAROE ISLANDS (Denmark)

GERMANY

②

NAVTEX

TENERIFE MRCC

TÓRSHAVN (OXJ)

BBC RADIO 4

③

Ⓐ Ⓑ Ⓒ Ⓓ Ⓔ Ⓕ

A	1644	RT (MF)		
B	8755 *(Ch 813)*	RT (HF)		
C	Ch 25	VHF	Mykines	62°06´·28N 7°35´·18W
D	Ch 26		Tórshavn	62°01´·15N 6°49´·75W
E	Ch 23		Hesturin	61°25´·42N 6°45´·29W

DIAGRAM: page 86

④

Ⓐ Ⓑ

Weather Bulletins	
A: 0105 0640 1105 **B:** On request	Weather forecasts for Sea Areas 22–25.
A: 0105 0640 1105	Met codes: FM 61- IV MAFOR.
Navigational Warnings	
A–E: On receipt **A:** 0105 0640 1105	Navigational Warnings in English.
C–E: Every even H+35	Navigational Warnings in Færöese and English.
A–E: On receipt	Storm and gale warnings for Sea Areas 22–25 in English.
C–E: Every even H+35	Storm and gale warnings for Sea Areas 22–25 in Færöese and English.
A: 0105 0640 1105	Ice reports for the German Bight, Western Baltic and North Sea / Kiel Canal in German.

EXPLANATION:

① **CANARIAS, ISLAS (Spain)**
FAROE ISLANDS (Denmark)
GERMANY

The name of the country or geographical area in which a station is located appears in the centre of the page at the beginning of the section and at the head of subsequent pages.

② NAVTEX
TENERIFE MRCC
TÓRSHAVN (OXJ)
BBC RADIO 4

The station name may be followed by its call sign and its four digit station identity number (SELCAL). Alternative names by which a station is known may also be shown. Red indicates a Maritime Rescue Co-ordination Centre or an International NAVTEX station. Blue indicates any other Maritime Radio Station or National NAVTEX station. Green indicates a commercial broadcast station. The 'Control Centre' position, if shown below this strapline, is that of the manned operations station. This position may have a co-located aerial, but regardless, the approximate locations of all aerials are shown under E, if known.

③

Ⓐ **A**
B

Letter designators are used to identify frequencies within the frequency table.

Ⓑ 1641
8755
Ch 25
Ch 26
Ch 23

VHF frequencies are identified by the International Maritime VHF Service Channel (Ch) designator. MF and HF frequencies are expressed in kHz. In the case of single sideband emissions the carrier frequency is quoted; in the case of Radio-Telex Services frequencies shown are assigned (mid-point of the F1B emissions), and care should be taken to ensure that the frequency of the suppressed carrier is set correctly, either 1·7 or 1·5 kHz below the assigned frequency, depending upon the equipment used.

Ⓒ *(Ch 813)*

International channel numbers for RT (HF) and Radio-Telex paired frequencies are shown in italic.

Ⓓ VHF
RT (MF)
RT (HF)
RADIO-TELEX
AM
FM

Mode of Transmission
VHF indicates Very High Frequency F3E speech
RT (MF) and RT (HF) indicates Radio Telephone SSB Upper Sideband, Medium Frequency and High Frequency respectively.
RADIO-TELEX indicates F1B Narrow Band Direct Printing.
AM – Amplitude Modulation (Long, Medium and High Frequency broadcasts)
FM – Frequency Modulation (VHF broadcasts)

Ⓔ Mykines
Tórshavn
Hesturin

Where a station has remote transmitting sites, the site names and positions are given together with the appropriate frequencies.

Ⓕ 62°06′·32N 7°35′·05W

The position of a transmitting site.

Ⓕ H24
1000- 1500

Hours of operation on the given frequency relate to UTC. These are only given when the station transmits at non-scheduled times, e.g. on receipt. In many instances the hours may not be known and the absence of an entry should not be taken to imply that the service is continuous. If a frequency is used for only a part of the year the period of operation may be given.

DIAGRAMS: pages 69, 76, 244 and 245

The diagrams referred to are those on which the Sea Areas covered by the weather bulletins, Navigational Warnings and ice broadcasts are depicted. It should be noted that a broadcast may not relate to all the Sea Areas on a diagram.

④

Ⓐ Broadcast times normally relate to UTC unless noted as local time (LT).

Ⓑ The content of transmissions is set out under section headings as follows:

Weather Bulletins

Weather Bulletins	
A: 0105 0640 1105 **B:** On request	Weather forecasts for Sea Areas 22–25
A: 0105 0640 1105	Met codes: FM 61-IV MAFOR

Weather Bulletins
These entries relate to routine weather bulletin transmissions. Details are given of the frequencies employed (identified by the letter designators used in the frequency table above), the times of the transmissions, the message content, the language used and the Sea Areas covered. Dates are added if the service is limited to a period of the year. Where a transmission is not qualified by a letter it takes place on all the quoted frequencies.

Met codes
These entries relate to coded meteorological information transmitted independently of plain language weather messages. Transmission times may be followed by observation times in parentheses. See “Meteorological Codes”.

Navigational Warnings

Navigational Warnings	
A-E: On receipt **A:** 0105 0640 1105	Navigational warnings in English.
C-E: Every even H+35	Navigational warnings in Færöese and English.
A-E: On receipt **A:** Every odd H+50	Storm and gale warnings for Sea Areas 22–25 in English.
C-E: Every even H+35	Storm and gale warnings for Sea Areas 22–25 in Færöese and English.
A: 0105 0640 1105	Ice reports, for the German Bight, Western Baltic and North Sea / Kiel Canal in German.

The content of transmissions is set out under section headings. The general heading of Navigational Warnings may include specific types of warnings, e.g. Firing Practice, Ice Warnings, if they are broadcast together with Navigational Warnings. Where specific warnings are transmitted independently, an appropriate heading is used.
Details are given of the frequencies employed, the times of transmissions, the type of warning, the language used and the Sea Areas covered. The frequency on which a service is transmitted is referred to by the letter designators used in the frequency table above. Where a transmission is not qualified by a letter it takes place on all the quoted frequencies.

Storm warnings
These entries relate to storm warnings which are transmitted independently of other meteorological information. The wind force, if quoted, is the minimum necessary for the issue of a warning.

Ice reports
As shown in the above table under “Navigational Warnings”

Firing and Practice Exercise Areas
Firing and bombing practices, and defence exercises, take place in a number of coastal areas. These areas are only in force over limited periods, and information concerning them will normally be broadcast by local Coast Radio Stations. See “Firing and Practice Exercise Areas”, for information on the broadcast of warnings for certain areas around the United Kingdom.

SERVICE DETAILS

ANTARCTICA

GENERAL NOTES

Navigational Warnings and Weather Bulletins for NAVAREA/METAREA VII are broadcast on request via SafetyNET and RT (HF), by the South African NAVAREA Coordinator in English. NAVAREA/METAREA VI information is broadcast via SafetyNET and Radio-Telex, by the Argentine NAVAREA Coordinator. The Argentine transmissions include information regarding the sea-ice edge, position of icebergs and their limits, and are broadcast in both Spanish and English. The mariner should consult EGC SafetyNET System table and other relevant sections/diagrams, in both parts of NP283, for full information on these broadcasts.

INTERNET WEATHER SERVICES

Australian Bureau of Meteorology www.bom.gov.au	Select the 'Antarctica' link on the Home page to access to high seas forecasts, weather, wave and sea-ice charts for Antarctic waters, in English.
Argentinian National Meteorological Service www.smn.gov.ar	Select the 'Meteorología Antártica' link under 'Productos Elaborados' to access maritime forecasts for Metarea VI and other related information, in Spanish.
Chilean Naval Meteorological Service http://meteoarmada.directemar.cl/site/pronosticos/pronostico_antartico.html	Maritime forecast for Metarea IX, in Spanish.
Chilean Naval Meteorological Service http://web.directemar.cl/met/jturno/indice/english.htm	Low bandwidth website containing ice charts, reports, weather station data, satellite imagery etc., in English and Spanish.
Brazilian Naval Meteorological Service https://www.mar.mil.br/dhn/chm/meteo/prev/antartica/antarticaing.htm	Synoptic weather and wave prediction charts, together with links to other Antarctic meteorological services, in English.
Servicio de Hidrografía Naval www.hidro.gob.ar	Maritime forecasts, navigational warnings, ice-charts and wave data, in Spanish and English.
U.S National Ice Center/Naval Ice Center www.natice.noaa.gov/index.html	Interagency portal that draws together information and links to various agencies concerned with both Arctic/Antarctic Ice conditions, in English. Various products and services are provided including: daily ice analysis data, ice edge information and forecasts, in a wide variety of downloadable formats.

BAHÍA FILDES (ANTÁRTICA CHILENA MRSC) (CBZ22)

Control Centre: 62°12′·09S 58°57′·67W

A	2738	RT (MF)		
B	Ch 09	VHF		

Diagram page 29

Weather Bulletins

A: 0150 1350 **B:** 0155 1355	Antarctic weather forecast for Sea Area 9 and present weather for the Bahía Fildes, in Spanish and English.

NOTE(S): After prior announcement on VHF Ch 16 or 2182 kHz as appropriate.

CENTRO METEOROLÓGICO BASE MARAMBIO (ARGENTINA) (LLU)

Control Centre: 64°14′·61S 56°37′·37W

A	4807	RADIO-TELEX		
B	10870			
C	16209·5			
D	20732			

Diagram page 21

Weather Bulletins

A: 0020 0320 0620 **B:** 0020 0320 0620 0920 1220 1520 1820 2120 **C:** 0920 1220 1820 2120 **D:** 1520	Gale warnings and synopsis.
A: 0020 **B:** 0020 1220 **C:** 1220	Maritime forecast for the Antarctic S of 60°S, 20°W to 90°W in Spanish and English.
A: 0320 **B:** 0320 1520 **D:** 1520	Aeronautical forecast for the Antarctic S of 60°S, 20°W to 90°W in Spanish and English.

Navigational Warnings

B, C: 2120 (Tues & Thurs)	Ice reports.

ARGENTINA

GENERAL NOTES

NAVAREA VI Warnings:
Navigational Warnings and weather bulletins for NAVAREA/METAREA VI, are broadcast via SafetyNET, by the Argentine NAVAREA Coordinator. The transmissions include information regarding the sea-ice edge, position of icebergs and their limits, and are broadcast in both Spanish and English (see EGC SafetyNET System for further information).

Coastal Warnings:
The stations listed in this section broadcast Navigational Warnings and Weather Bulletins as shown. If any NAVTEX station is off air, for whatever reason, coastal warnings will be issued by another NAVTEX station covering the same area. The warnings and bulletins will also be available via SafetyNET broadcasts, in Spanish and English.

INTERNET WEATHER SERVICES

Servicio Meteorológico Nacional www.smn.gov.ar	Weather forecast for shipping in Spanish and English.
Servicio de Hidrografía Naval http://www.hidro.gob.ar/Smara/GP/Boletines.asp	Maritime forecasts, navigational warnings, ice-charts and wave data for METAREA VI, in Spanish and English.

NAVTEX

P	Bahía Blanca	518 kHz	38°52′·00S 62°06′·00W
R	Buenos Aires		35°23′·00S 57°10′·00W
O	Comodoro Rivadavia		45°50′·53S 67°28′·41W
Q	Mar del Plata		38°03′·00S 57°32′·00W
N	Río Gallegos		51°37′·39S 69°12′·71W
M	Ushuaia		54°48′·00S 68°18′·00W
D	Bahía Blanca	490 kHz	38°52′·00S 62°06′·00W
F	Buenos Aires		35°23′·00S 57°10′·00W
C	Comodoro Rivadavia		45°50′·53S 67°28′·41W
E	Mar del Plata		38°03′·00S 57°32′·00W
B	Río Gallegos		51°37′·39S 69°12′·71W
A	Ushuaia		54°48′·00S 68°18′·00W

Diagrams pages 21, 40 and 41

Weather Bulletins

P: 0230 0630 1030 1430 1830 2230	Local weather bulletin in English.
R: 0250 0650 1050 1450 1850 2250	
O: 0220 0620 1020 1420 1820 2220	
Q: 0240 0640 1040 1440 1840 2240	
N: 0210 0610 1010 1410 1810 2210	
M: 0200 0600 1000 1400 1800 2200	
D: 0030 0430 0830 1230 1630 2030	Local weather bulletin in Spanish.
F: 0050 0450 0850 1250 1650 2050	
C: 0020 0420 0820 1220 1620 2020	
E: 0040 0440 0840 1240 1640 2040	
B: 0010 0410 0810 1210 1610 2010	
A: 0000 0400 0800 1200 1600 2000	

Navigational Warnings

P: 0230 0630 1030 1430 1830 2230	Local Navigational Warnings in English.
R: 0250 0650 1050 1450 1850 2250	
O: 0220 0620 1020 1420 1820 2220	
Q: 0240 0640 1040 1440 1840 2240	
N: 0210 0610 1010 1410 1810 2210	
M: 0200 0600 1000 1400 1800 2200	

Continued on next page

ARGENTINA

NAVTEX (Continued)

D:	0030 0430 0830 1230 1630 2030	Local Navigational Warnings in Spanish.
F:	0050 0450 0850 1250 1650 2050	
C:	0020 0420 0820 1220 1620 2020	
E:	0040 0440 0840 1240 1640 2040	
B:	0010 0410 0810 1210 1610 2010	
A:	0000 0400 0800 1200 1600 2000	

MARITIME SAFETY INFORMATION (MSI) ON THE INTERNET

The internet is not part of the Maritime Safety Information system and should never be relied upon as the only means to obtain the latest forecast and warning information. Access to the service may be interrupted or delayed from time to time, updates may also be delayed. Please refer to GMDSS services, INMARSAT SafetyNET or international NAVTEX for the latest information. However, the following website(s) may prove useful to the mariner:

www.hidro.gob.ar/nautica/inv.asp	Argentine Navy Hydrographic Service	Navigation Warnings in English
www.hidro.gob.ar/nautica/cnv.asp		Navigation Warnings in Spanish.

ARGENTINA (LSD836)

Control Centre: 34°36′·67S 58°27′·08W

	4387 *(Ch 411)* 4393 *(Ch 413)* 6522 *(Ch 608)* 8740 *(Ch 808)* 8776 *(Ch 820)* 13089 *(Ch 1205)* 13179 *(Ch 1235)*	RT (HF)		

Diagram page 21

Weather Bulletins

On request	Weather bulletins.

Navigational Warnings

On request	Navigational Warnings.

NOTE(S): Hours of operation: H24

BAHÍA BLANCA (Prefectura Naval) (L2N)

Control Centre: 38°55′·40S 62°03′·03W

	Ch 15	VHF		

Diagram page 21

Weather Bulletins

0010 0410 0810 1210 1610 2010	Local weather bulletins from Claromecó to the mouth of the Rio Negro in Spanish.

Navigational Warnings

0010 0410 0810 1210 1610 2010	Local Navigational Warnings in Spanish.
Every H+05	Water level reports in Spanish.

BUENOS AIRES (Prefectura Naval) (L2G)

Control Centre: 34°27′·00S 58°37′·00W

A	4210	RADIO-TELEX		
B	8416·5			
C	12579			
D	16806·5			
E	Ch 15	VHF		
F	Ch 21			

Diagram page 21

Continued overleaf

ARGENTINA

BUENOS AIRES (Prefectura Naval) (L2G) (Continued)

Weather Bulletins		
E:	0010 0410 0810 1210 1610 2010	Local weather bulletins in Spanish.
A-C: **D:**	0300 1400 1400	Weather bulletins and wave prognosis in Spanish and English.
Navigational Warnings		
A-C: **D:**	0030 0300 1000 1400 1530 1900 2100 0030 1400 1530 1900 2100	NAVAREA VI warnings in Spanish and English.
E: **F:**	0010 0410 0810 1210 1610 2010 Every H+00 H+15 H+30 & H+45	Local Navigational Warnings in Spanish.
A-C:	1000	Local and coastal Navigational Warnings in Spanish and English.
A-D:	1900	Local and coastal Navigational Warnings including numbers of warnings in force in Spanish and English.
E:	Every H+05	Water level reports in Spanish.

COMODORO RIVADAVIA (Prefectura Naval) (L3B)

Control Centre: 45°50′·81S 67°28′·99W

A	4210	RADIO-TELEX		
B	8416·5			
C	12579			
D	19680·5			
E	2065	RT (MF)		
F	4149	RT (HF)		
G	8294			
H	Ch 15	VHF		

Diagram page 21

Weather Bulletins	
H: 0350 0750 1050 1650 2250	Local weather bulletins in Spanish.
E: **F:** 0440 **G:** 0440 1740 1740	Weather bulletins in Spanish.
A: 0530 **B, C:** 0530 1830 **D:** 1830	Weather bulletins and wave prognosis in Spanish and English.
Navigational Warnings	
H: 0350 0750 1050 1650 2250	Local Navigational Warnings in Spanish.
E, F: 0740	Local and coastal Navigational Warnings in Spanish.
B-D: 1300	Local and coastal Navigational Warnings including numbers of warnings in force in Spanish and English.
F, G: 2040	Local and coastal Navigational Warnings including numbers of warnings in force in Spanish.
A-C: 2300	Local and coastal Navigational Warnings in Spanish and English.

MAR DEL PLATA (Prefectura Naval) (L2U)

Control Centre: 38°03′·00S 57°32′·00W

A	2065	RT (MF)		
B	4149	RT (HF)		
C	8294			
D	Ch 15	VHF		

Diagram page 21

Continued on next page

ARGENTINA

MAR DEL PLATA (Prefectura Naval) (L2U) (Continued)

Weather Bulletins	
D: 0230 0530 1130 1730 2330	Local weather bulletins in Spanish and English.
A: 0310 **B:** 0310 1610 **C:** 1610	Weather bulletins in Spanish.
Navigational Warnings	
A, B: 0010	Local and coastal Navigational Warnings in Spanish.
D: 0230 0530 1130 1730 2330	Local Navigational Warnings in Spanish.
B, C: 1210	Local and coastal Navigational Warnings including numbers of warnings in force in Spanish.

PUERTO MADRYN (Prefectura Naval) (L4S)

Control Centre: 42°46′·46S 65°01′·92W

	Ch 15	VHF		
Diagram page 21				
Weather Bulletins				
0010 0410 0810 1210 1610 2010	Local weather bulletins in Spanish.			
Navigational Warnings				
0010 0410 0810 1210 1610 2010	Local Navigational Warnings and water level reports in Spanish.			

QUEQUÉN (Prefectura Naval) (L5B)

Control Centre: 38°33′·75S 58°41′·55W

	Ch 15	VHF		
Diagram page 21				
Weather Bulletins				
0010 0410 0810 1210 1610 2010	Local weather bulletins in Spanish.			
Navigational Warnings				
0010 0410 0810 1210 1610 2010	Local Navigational Warnings in Spanish.			

RAWSON (Prefectura Naval) (L4R)

Control Centre: 43°20′·00S 65°04′·00W

	Ch 15	VHF		
Diagram page 21				
Weather Bulletins				
0010 0410 0810 1210 1610 2010	Local weather bulletins in Spanish.			
Navigational Warnings				
0010 0410 0810 1210 1610 2010	Local Navigational Warnings in Spanish.			

RECALADA RÍO DE LA PLATA (Prefectura Naval) (L3V)

Control Centre: 35°10′·00S 56°19′·00W

	Ch 15	VHF		
Diagram page 21				
Weather Bulletins				
0040 0440 0840 1240 1640 2040	Local weather bulletins in Spanish.			

Continued overleaf

ARGENTINA

RECALADA RÍO DE LA PLATA (Prefectura Naval) (L3V) (Continued)

Navigational Warnings	
0040 0440 0840 1240 1640 2040	Local Navigational Warnings in Spanish.
Every H+05	Water level reports in Spanish.

RIO GALLEGOS (Prefectura Naval) (L3I)

Control Centre: 51°37′·39S 69°12′·71W

	Ch 15	VHF		
Diagram page 21				
Weather Bulletins				
0010 0410 0810 1210 1610 2010	Local weather bulletins in Spanish.			
Navigational Warnings				
0010 0410 0810 1210 1610 2010	Local Navigational Warnings in Spanish.			

SAN ANTONIO OESTE (Prefectura Naval) (L4W)

Control Centre: 40°48′·09S 64°52′·73W

	Ch 15	VHF		
Diagram page 21				
Weather Bulletins				
0010 0410 0810 1210 1610 2010	Local weather bulletins in Spanish.			
Navigational Warnings				
0010 0410 0810 1210 1610 2010	Local Navigational Warnings in Spanish.			

USHUAIA MRCC (NAVY) & USHUAIA (Prefectura Naval) (L3P)

Control Centre: 54°47′·63S 68°18′·39W

	Ch 15	VHF		
Diagram page 21				
Weather Bulletins				
0010 0410 0810 1210 1610 2010	Local weather bulletins in Spanish.			
Navigational Warnings				
0010 0410 0810 1210 1610 2010	Local Navigational Warnings in Spanish.			

AUSTRALIA

GENERAL NOTES

In Australia, the promulgation of MSI by VHF radio is the responsibility of the various State and Northern Territory governments. The information is generally of a local nature and is primarily intended for smaller vessels under 300 tonnes. The volunteer marine rescue groups play a significant role in providing this service and contact should be made with the relevant group for the times of local broadcasts, in addition to the official times listed in this publication – see the Internet Weather Services entry for further information.

AUSTRALIA

INTERNET WEATHER SERVICES	
Bureau of Meteorology www.bom.gov.au/marine	Detailed coastal and high seas forecasts, tidal and related weather information, covering all Australian and Antarctic waters, in English. See separate topical note for additional information.
Department of Transport Western Australia. www.transport.wa.gov.au/imarine/safety-navigation-and-data.asp	Safety, navigation, tidal data and links to marine weather information in WA.
Australian Volunteer Coast Guard Association. http://coastguard.com.au/contact	Certain AVCGA radio stations provide routine MSI and weather bulletins around the Australian coast. Select the appropriate Flotilla and location for further information.
Volunteer Marine Rescue Association Queensland. http://marinerescueqld.org.au/	Certain VMRCQ radio stations will provide local weather information on request, but do not broadcast routine weather bulletins. Select the appropriate location for further information.
South Australia Volunteer Marine Rescue Coast Radio Network Schedules. http://www.sa.gov.au/__data/assets/pdf_file/0006/15819/p88tb10_cstgrd.pdf	PDF file listing regular weather report schedules from VMR Limited Coast Radio Stations in SA.

MARITIME SAFETY INFORMATION (MSI) ON THE INTERNET		
The internet is not part of the Maritime Safety Information system and should never be relied upon as the only means to obtain the latest forecast and warning information. Access to the service may be interrupted or delayed from time to time, updates may also be delayed. Please refer to GMDSS services, INMARSAT SafetyNET or international NAVTEX for the latest information. However, the following website(s) may prove useful to the mariner:		
https://www.amsa.gov.au/safety-navigation/navigation-systems/maritime-safety-information-database	Australian Maritime Safety Authority	Navigation Warnings in English. This service is also available via e-mail notification.
www.hydro.gov.au/n2m/notices.htm	Australian Hydrographic Service	Notices to Mariners and associated information.

BUREAU OF METEOROLOGY

MARINE WEATHER SERVICES

The Bureau of Meteorology provides Marine Weather Services through their website at: www.bom.gov.au/marine. The following are some of the services and products available:

Marine Forecasts and Warnings

Coastal waters and high seas forecasts and warnings are produced by the Bureau of Meteorology and broadcast by marine radio:

Coastal Waters Forecasts are for Sea Areas within 60 n miles of the coast. They are issued twice daily and monitored continuously for changes which may occur.

High Seas Forecasts are issued twice daily for the Sea Areas surrounding Australia.

Marine Weather Warnings are issued whenever strong winds, gales, storm or hurricane-force winds are expected. The initial warning attempts to provide a 24 hour lead- time and warnings are renewed every 6 hours.

Telephone Weather Services (TWS)

Bureau of Meteorology Telephone Weather Services deliver pre-recorded messages, accessible via various telephone numbers. Services with more than one message contain menus which help to reduce the length (and cost) of the call.

1900 services provide an extensive range of products (forecasts, outlooks, warnings and observations).

1300 services provide various types of warnings (cyclones, severe thunderstorms, etc.).

As warnings are not always current, the menus on 1300 services are dynamically constructed to present to the caller options which relate to current warnings only. Calls are chargeable and it should be noted that they do not work on satellite phones.

Telephone Weather Services Directory

Service	Telephone
National	
National Telephone Weather Services Directory	1900 926 113
National Telephone Weather Service	1900 955 369
National Marine Service	1900 955 370
Australian Tsunami Threat Information (1300 TSUNAMI)	1300 878 6264
Western Australia	
Perth Local Waters Service	1900 955 350
WA Marine Service	1900 926 150
Northern WA Coastal Waters Service	1900 969 901

Continued overleaf

AUSTRALIA

Bureau of Meteorology (Continued)

Western Australia	
Western WA Coastal Waters Service	1900 969 902
Southern WA Coastal Waters Service	1900 969 903
WA Tropical Cyclone Information	1300 659 210
WA Coastal Marine Warnings	1300 659 223

Northern Territory	
NT Tropical Cyclone Information	1300 659 211
NT Coastal and Land Weather Warnings	1300 659 214

South Australia	
SA Coastal Waters Service	1900 969 975

Queensland	
QLD Coastal Waters Service	1900 969 923
QLD Tropical Cyclone Warnings	1300 659 212
QLD Coastal Marine Warnings	1300 360 427
QLD Southeast Coast Service	1900 969 929
Southeast Queensland Boating Weather Service	1900 926 115

New South Wales	
Sydney Waters Service	1900 969 955
NSW Coastal Waters Service	1900 926 101

Victoria	
Port Phillip and Western Port: Local Waters Service	1900 926 110
Victoria: Coastal Waters Service	1900 969 930
Central Coast, Cape Otway to Wilsons Promontory: Coastal Waters Service	1900 969 931
Northern Tasmania: Coastal Waters Service	1900 969 932
East Coast, Wilsons Promontory to 60 n miles east of Gabo Island: Coastal Waters Service	1900 969 933
West Coast, SA/VIC border to Cape Otway: Coastal Waters Service	1900 969 934
Victoria: Coastal and Local Waters Service	1900 969 966
Yacht Forecast for Port Phillip and Western Port	1900 920 557

Tasmania	
TAS Boating Weather Service	1900 969 940

TORRES STRAIT TIDE GAUGES

Approximate Position: 10°33′·00S 142°05′·00E

Transmitting tide gauges and one current meter are located in the Torres Strait region as listed in the table:

Name	Position	Identification	Morse Ident	Hours of Operation
Booby Island	10°36'·15S 141°54'·60E	BB	— • • • — • • •	H24
Goods Island	10°33'·88S 142°08'·73E	GD	— — • — • •	
Turtle Head (Hammond I)	10°31'·23S 142°12'·78E	TH	— • • • •	
Nardana (height)	10°30'·28S 142°14'·63E	NT	— • —	
Nardana (stream)		NS	— • • • •	
Ince Point (Wednesday I)	10°30'·85S 142°18'·28E	IP	• • • — — •	

Continued on next page

AUSTRALIA

Torres Strait Tide Gauges (Continued)

1 All stations broadcast on VHF Ch 68. The tide data is broadcast in the sequence listed in the above table and each value is preceded by a station identification, which is broadcast as morse code.

2 The tidal height is transmitted as groups of pseudo morse 'dots', the number of dots in groups indicating respectively metres and tenths of metres of tidal height above chart datum. A zero is indicated by a 'dash' and negative heights indicated by a preceding 1·5 second warbling tone.

3 The tidal stream station character is followed by pseudo morse indication of tidal stream speed in knots and direction (east or west flowing) as:
[Direction] [knots in dots] [space] [knots/10 in dots]
East flowing is treated as a positive value and West flowing as a negative value.
E.g: 2·0 knots west flowing ~ [warble] [space] [dot, dot] [space] [dash]

4 The station identification and tide data broadcast cycle is repeated every 125 seconds.

5 All broadcasts are made from a radio transmitter at Hammond Hill (hill 152, which is 0·5 miles southeast of Turtle Head Lighthouse). The nominal range is 24 miles. Where line of sight to Hammond Hill is obscured reception may be lost.

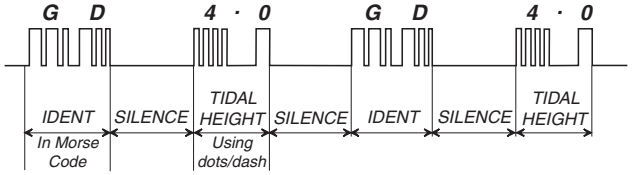
6 The tide data information is also available by a public telephone service which can be accessed by dialling 07 40692821. The telephone answering service disconnects the caller 4 minutes after connection.

7 See ADMIRALTY Tide Tables Volume 4 or the digital product ADMIRALTY TotalTide for additional information.

Examples of the format of the tide height broadcasts are as follows:

Signal Format for POSITIVE Tidal Height

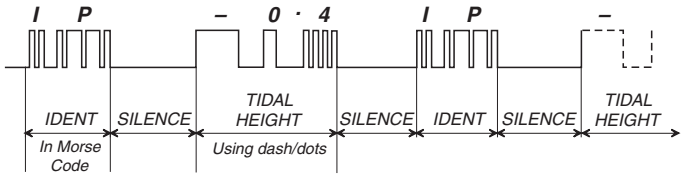
Example: Goods Island, 4·0 Metres



V3(2)AUSTSTG V002 12/08/11

Signal Format for NEGATIVE Tidal Height

Example: Ince Point, –0·4 Metres



TIME SCALE:

DOT = 160 ms
DASH (ZERO) = 480 ms
SPACE = 160 ms
SILENCE = 3·0 s
LETTER SPACE = 0·7 s
DECIMAL POINT = 1·0 s
MINUS SIGN = 1·6 s (Warble)

The tidal stream information from Nardana has the station identifier (NS) followed by the rate of the stream in knots broadcast in dash/dot format. East flowing streams are treated as positive and west as negative. West flowing steams are preceded by a warbling note.
Examples as follows:

Signal Format for Tidal Stream

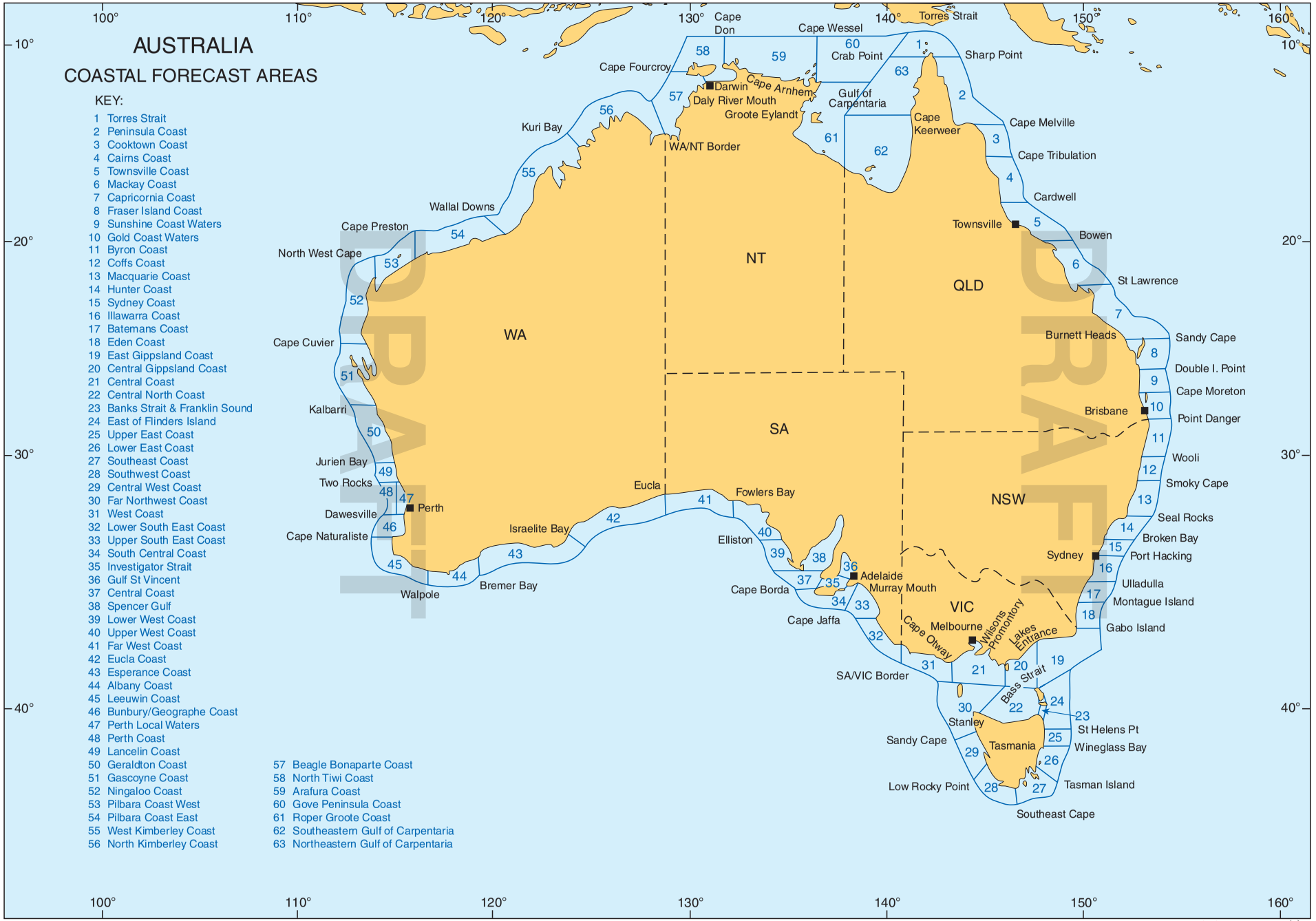
Example: Nardana east-going 3·2 knots

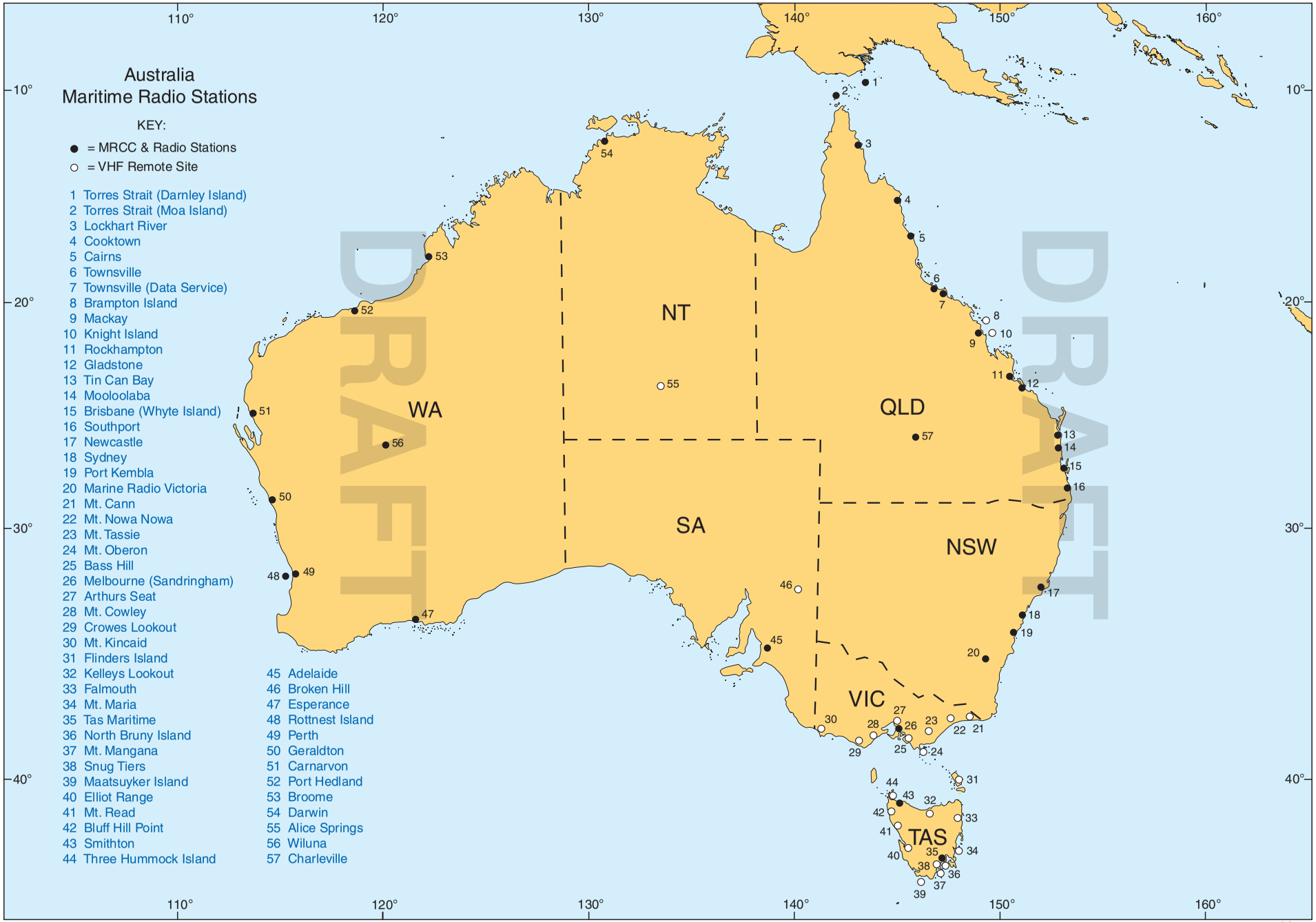
Example: Nardana west-going 2·5 knots

Example: Nardana west-going 0·3 knots

V3(2)AUSTSTS V001 09/10/07

Easterly flow is approximately in the direction of 080° true. Westerly flow is in the general direction 260° true.


AUSTRALIA
COASTAL FORECAST AREAS
KEY:
1 Torres Strait
2 Peninsula Coast
3 Cooktown Coast
4 Cairns Coast
5 Townsville Coast
6 Mackay Coast
7 Capricornia Coast
8 Fraser Island Coast
9 Sunshine Coast Waters
10 Gold Coast Waters
11 Byron Coast
12 Coffs Coast
13 Macquarie Coast
14 Hunter Coast
15 Sydney Coast
16 Illawarra Coast
17 Batemans Coast
18 Eden Coast
19 East Gippsland Coast
20 Central Gippsland Coast
21 Central Coast
22 Central North Coast
23 Banks Strait & Franklin Sound
24 East of Flinders Island
25 Upper East Coast
26 Lower East Coast
27 Southeast Coast
28 Southwest Coast
29 Central West Coast
30 Far Northwest Coast
31 West Coast
32 Lower South East Coast
33 Upper South East Coast
34 South Central Coast
35 Investigator Strait
36 Gulf St Vincent
37 Central Coast
38 Spencer Gulf
39 Lower West Coast
40 Upper West Coast
41 Far West Coast
42 Eucla Coast
43 Esperance Coast
44 Albany Coast
45 Leeuwin Coast
46 Bunbury/Geographe Coast
47 Perth Local Waters
48 Perth Coast
49 Lancelin Coast
50 Geraldton Coast
51 Gascoyne Coast
52 Ningaloo Coast
53 Pilbara Coast West
54 Pilbara Coast East
55 West Kimberley Coast
56 North Kimberley Coast
57 Beagle Bonaparte Coast
58 North Tiwi Coast
59 Arafura Coast
60 Gove Peninsula Coast
61 Roper Groote Coast
62 Southeastern Gulf of Carpentaria
63 Northeastern Gulf of Carpentaria
100°
110°
120°
130°
140°
150°
160°
10°
20°
30°
40°
Cape Don
Cape Wessel
Torres Strait
Crab Point
Sharp Point
Cape Fourcroy
Darwin
Cape Arnhem
Daly River Mouth
Groote Eylandt
Gulf of Carpentaria
Cape Keerweer
Cape Melville
Cape Tribulation
Cardwell
Townsville
Bowen
St Lawrence
Burnett Heads
Sandy Cape
Double I. Point
Cape Moreton
Brisbane
Point Danger
Wooli
Smoky Cape
Seal Rocks
Broken Bay
Port Hacking
Sydney
Ulladulla
Montague Island
Gabo Island
Kuri Bay
WA/NT Border
Wallal Downs
Cape Preston
North West Cape
Cape Cuvier
Kalbarri
Jurien Bay
Two Rocks
Perth
Dawesville
Cape Naturaliste
Walpole
Bremer Bay
Israelite Bay
Eucla
Fowlers Bay
Elliston
Cape Borda
Cape Jaffa
Adelaide
Murray Mouth
Melbourne
Wilsons Promontory
Lakes Entrance
Cape Otway
SA/VIC Border
Bass Strait
Stanley
Sandy Cape
Tasmania
Low Rocky Point
Southeast Cape
St Helens Pt
Wineglass Bay
Tasman Island
WA
NT
SA
QLD
NSW
VIC
DRAFT
V3(2)WAUS V009 11/08/16

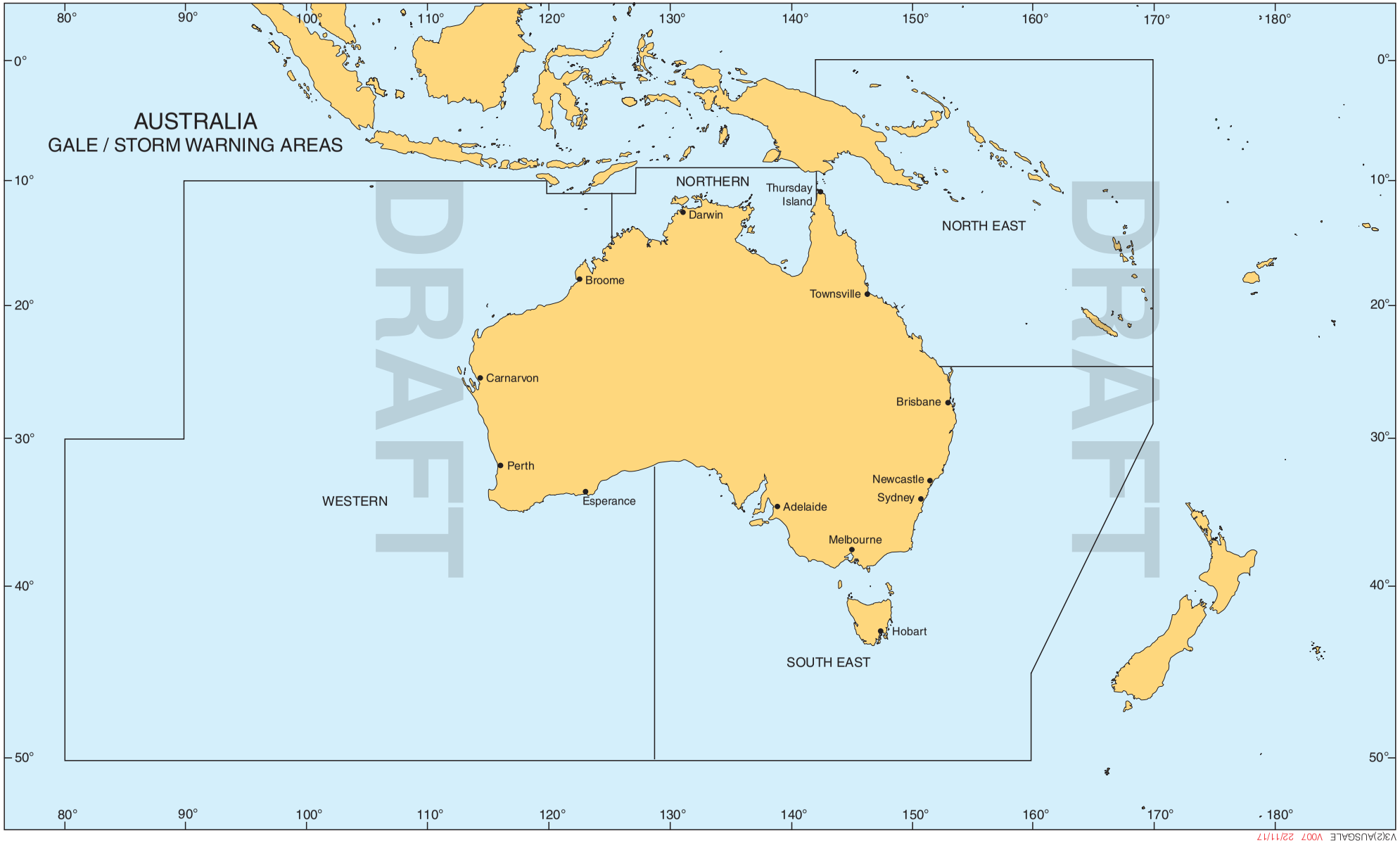


AUSTRALIA

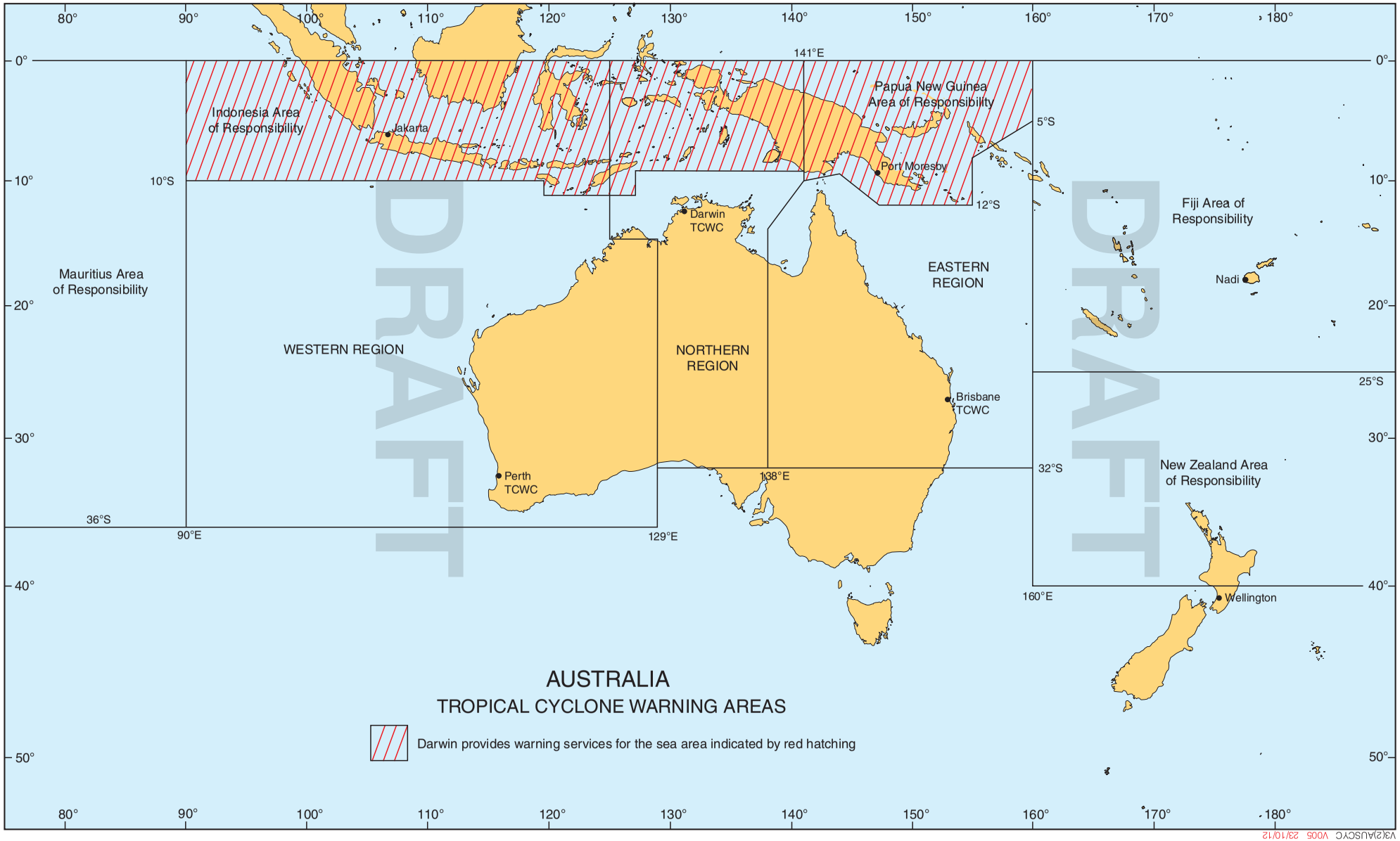
ADELAIDE (VIA)				
Control Centre: 34°56′·00S 138°40′·00E				
A	8176	RT (HF)		
B	Ch 67	VHF		
Diagrams pages 23, 92 and 93				
Navigational Warnings				
A: On receipt 0325 0725 **B:** On receipt 0357 0757	Navigational Warnings for Auscoast Sea Areas D, E and F.			

AUSTRALIA WEATHER EAST (CHARLEVILLE) (VMC)				
Control Centre: 26°19′·00S 146°16′·00E				
	2201[1]	RT (MF)		
	4426[2] 6507[1] 8176[3] 12365[3] 16546[2]	RT (HF)		
Diagrams pages 23, 92, 93, 95 and 96				
Weather Bulletins				
Every H+00	Warnings for Coastal Waters of Queensland, New South Wales, Victoria and Tasmania. Warnings for High Seas Areas Northern, North Eastern and South Eastern.			
Every H+25	Navigation MSI notices.			
0030 0430 0830 1230 1630 2030	Forecasts for coastal waters of Tasmania.			
0130 0530 0930 1330 1730 2130	Forecasts for coastal waters of Queensland.			
0230 0630 1030 1430 1830 2230	Forecasts for High Seas Areas Northern, North Eastern and South Eastern.			
0330 0730 1130 1530 1930 2330	Forecasts for coastal waters of New South Wales and Victoria.			
[1] Hours of operation: 0800–2100 [2] Hours of operation: 2100–0800 [3] Hours of operation: H24				

AUSTRALIA WEATHER WEST (WILUNA) (VMW)				
Control Centre: 26°21′·00S 120°34′·00E				
	2056[1]	RT (MF)		
	4149[2] 6230[1] 8113[3] 12362[3] 16528[2]	RT (HF)		
Diagrams pages 23, 92, 93, 95 and 96				
Weather Bulletins				
Every H+00	Warnings for Coastal Waters of Queensland (Gulf of Carpentaria), Northern Territory, Western Australia and South Australia. Warnings for High Seas Areas Northern and Western.			
Every H+25	Navigation MSI notices.			
0030 0430 0830 1230 1630 2030	Forecasts for coastal waters of Western Australia south of North West Cape.			
0330 0730 1130 1530 1930 2330	Forecasts for coastal waters of Western Australia north of North West Cape, including all the Northern Territory waters.			
0230 0630 1030 1430 1830 2230	Forecasts for High Seas Areas Northern and Western. Forecasts for coastal waters of Queensland (Gulf of Carpentaria).			
0130 0530 0930 1330 1730 2130	Forecasts for coastal waters of South Australia.			
[1] Hours: 1000–2300 [2] Hours: 2300–1000 [3] Hours: H24				



V3(2)AUSGALE V007 22/11/17



V3(2)AUSCYC V005 23/10/12

AUSTRALIA

BRISBANE (WHYTE I)				
Control Centre: 27°24′·10S 153°09′·88E				
	Ch 67	VHF		
Diagrams pages 92 and 93				
Weather Bulletins				
	Local forecasts.			

BROOME				
Control Centre: 17°57′·17S 122°14′·00E				
	Ch 72	VHF		
Diagrams pages 92 and 93				
Weather Bulletins				
0840 2240	Local coastal waters forecasts, warnings and observations.			
NOTE(S): After prior announcement on VHF Ch 16.				

CAIRNS				
Control Centre: 16°53′·61S 145°44′·90E				
A	8176	RT (HF)		
B	Ch 67	VHF		
C	Ch 81			
Diagrams pages 23, 92 and 93				
Weather Bulletins				
A-C: 0745[1] 0945 1145 1545[2]	Coastal waters warnings, forecasts and observations.			
Navigational Warnings				
A: On receipt 1125 2325 **B:** On receipt 0733 1935	Navigational Warnings for Auscoast Sea Areas H, A and B.			
[1] Sat–Sun & Public Holidays only. [2] Alternative broadcast time 1745.				
NOTE(S): After prior announcement on VHF Ch 16.				

CARNARVON				
Control Centre: 24°53′·02S 113°39′·80E				
	Ch 73	VHF		
Diagrams pages 92 and 93				
Weather Bulletins				
0405 0805 2205	Local coastal waters forecasts, warnings and observations.			
NOTE(S): After prior announcement on VHF Ch 16.				

COOKTOWN				
Control Centre: 15°22′·00S 145°16′·00E				
	Ch 11	VHF		
Diagrams pages 92 and 93				
Weather Bulletins				
0633 2033	Wind warnings and coastal weather forecasts.			

DARWIN (VKD999)				
Control Centre: 12°27′·91S 130°50′·55E				
A	8176	RT (HF)	Darwin (HF)	
B	Ch 67	VHF	Darwin (VHF)	12°27′·91S 130°50′·55E
C	Ch 28		Gove	
Diagrams pages 23, 92, 93 and 96				

Continued overleaf

AUSTRALIA

DARWIN (VKD999) (Continued)

Weather Bulletins	
B: 0803 1803 LT	Weather forecast for Darwin Harbour and coastal waters between Daly River and Cape Don.
C: 0803 1833 LT	Local weather.
Navigational Warnings	
A: On receipt 0125 0925 **B:** On receipt 0157 0957	Navigational Warnings for Auscoast Sea Areas G, H and A.

ESPERANCE

Control Centre: 33°52′·50S 121°53′·68E

	Ch 72	VHF		
Diagrams pages 92 and 93				
Weather Bulletins				
0415 0815 2215	Local coastal waters forecasts, warnings and observations.			
NOTE(S): After prior announcement on VHF Ch 16.				

GERALDTON

Control Centre: 28°47′·33S 114°41′·25E

	Ch 73	VHF		
Diagrams pages 92 and 93				
Weather Bulletins				
0415 0815 2215	Local coastal waters forecasts, warnings and observations.			
NOTE(S): After prior announcement on VHF Ch 16.				

GLADSTONE

Control Centre: 23°50′·35S 151°15′·18E

	8176	RT (HF)		
Diagrams pages 23, 92 and 93				
Navigational Warnings				
On receipt 1125 2225	Navigational Warnings for Auscoast Sea Areas A, B and C.			

LOCKHART RIVER

Control Centre: 12°47′·27S 143°21′·05E

	Ch 14	VHF		
Diagrams pages 92 and 93				
Weather Bulletins				
0633 2033	Wind warnings and coastal weather forecasts.			

MACKAY

Control Centre: 21°10′·20S 149°10′·47E

	Ch 67	VHF		
	Ch 21		Brampton I	20°48′·45S 149°16′·41E
	Ch 80		Knight I	21°26′·86S 149°42′·76E
Diagrams pages 92 and 93				
Weather Bulletins				
On request	Coastal waters warnings, forecasts and observations.			
NOTE(S): After prior announcement on VHF Ch 16.				

MELBOURNE

Control Centre: 38°27′·55S 144°54′·72E

A	8176	RT (HF)		
B	Ch 67	VHF	Port Phillip Western Port Bays	

Diagrams pages 23, 92 and 93

Weather Bulletins

B: 0848 2048	Local forecasts.

Navigational Warnings

A: On receipt 0225 2125 **B:** On receipt 0257 2157	Navigational Warnings for Auscoast Sea Areas C, D and E.
B: 0848 2048 (after Weather Bulletin)	Local warnings.

NOTE(S): Warnings preceded by an announcement on VHF Ch 16.

MOOLOOLABA

Control Centre: 26°41′·00S 153°07′·00E

	Ch 67	VHF		

Diagrams pages 92 and 93

Weather Bulletins

	Local forecasts.

NEWCASTLE

Control Centre: 32°57′·01S 151°43′·25E

	Ch 67	VHF		

Diagrams pages 92 and 93

Weather Bulletins

0733 2133	Local weather forecasts.

Navigational Warnings

On receipt 0733 2133	Local navigational and weather warnings.
On receipt and then every hour	Local severe weather warnings

PERTH

Control Centre: 31°51′·31S 115°49′·18E

A	8176	RT (HF)		
B	Ch 67	VHF	Water Police	

Diagrams pages 23, 92 and 93

Weather Bulletins

B: 1118 2318	Local weather forecasts.

Navigational Warnings

A: On receipt 0625 1025 **B:** On receipt 0657 1057	Navigational Warnings for Auscoast Sea Areas E, F and G.
B: 1118 2318	Local Navigational Warnings.
B: Every 2 hours	Severe weather warnings

PORT HEDLAND

Control Centre: 20°22′·90S 118°37′·62E

A	8176	RT (HF)		
B	Ch 67	VHF		

Diagrams pages 23, 92 and 93

Navigational Warnings

A: On receipt 0425 0825 **B:** On receipt 0457 0857	Navigational Warnings for Auscoast Sea Areas F, G and H.

AUSTRALIA

PORT KEMBLA				
Control Centre: 34°28′·00S 150°54′·00E				
	Ch 67	VHF		
Diagrams pages 92 and 93				
Weather Bulletins				
0733 2133	Local weather forecasts.			
Navigational Warnings				
On receipt 0733 2133	Local navigational and weather warnings.			
On receipt and then every hour	Local severe weather warnings.			

ROCKHAMPTON				
Control Centre: 23°23′·00S 150°29′·00E				
A	Ch 21	VHF		
B	Ch 82			
Diagrams pages 92 and 93				
Weather Bulletins				
A: 0210 0705 2120	Coastal waters warnings, forecasts and observations.			
B: 0140 0640 2040	Keppel Bay.			

ROTTNEST I				
Control Centre: 32°00′·43S 115°30′·24E				
	Ch 67	VHF		
Diagrams pages 92 and 93				
Weather Bulletins				
	Local forecasts.			

SMITHTON				
Control Centre: 40°50′·32S 145°07′·61E				
A	4483	RT (HF)		
B	Ch 81	VHF	Bluff Hill Point	41°00′·51S 144°36′·63E
	Ch 21		Three Hummock Island	40°28′·24S 144°53′·88E
Diagrams pages 92 and 93				
Weather Bulletins				
A: 0620 1720 LT	Weather observations and forecast for the Bass Strait.			
B: 0605 0815 1705 LT	Coastal weather observations and forecast the far northwest of Tasmania, broadcast initially from Three Hummock Island followed by the Bluff Hill Point transmitter.			
Navigational Warnings				
A: 0620 1720 LT **B:** 0605 0815 1705 LT	Weather warnings as necessary.			
NOTE(S): When the Smithton Radio is unmanned, Tas Maritime Radio broadcasts Weather Bulletins from Three Hummock Island, see relevant entry for details.				

SOUTHPORT				
Control Centre: 27°57′·36S 153°24′·61E				
	Ch 67	VHF		
Diagrams pages 92 and 93				
Weather Bulletins				
	Local forecasts.			

AUSTRALIA

SYDNEY

Control Centre: 33°48′·00S 150°52′·00E

A	8176	RT (HF)		
B	Ch 67	VHF		

Diagrams pages 23, 92 and 93

Weather Bulletins

B: 0733 2133	Local forecasts.

Navigational Warnings

A: On receipt 0025 1325 **B:** On receipt 0057 1357	Navigational Warnings for Auscoast Sea Areas B, C and D.
B: On receipt 0733 2133	Local Navigational Warnings.
B: On receipt and then every hour	Local severe weather warnings.

TAS MARITIME

Control Centre: 42°51′·72S 147°19′·19E

A	2524	RT (MF)	North Bruny Island	43°08′·18S 147°23′·21E
B	4146 6227	RT (HF)		
C	Ch 67	VHF	Elliot Range	42°28′·66S 145°43′·26E
			Mt. Mangana	43°22′·34S 147°17′·18E
D	Ch 68		Falmouth	41°32′·04S 148°10′·36E
			Kelleys Lookout	41°17′·98S 146°46′·39E
			Maatsuyker Island	43°38′·75S 146°16′·59E
			Mt. Read	41°50′·70S 145°32′·22E
E	Ch 69		Flinders Island	40°03′·38S 148°04′·86E
			Mt. Maria	42°37′·26S 148°06′·58E
			Three Hummock Island	40°28′·24S 144°53′·88E
F	Ch 01		Snug Tiers	43°05′·56S 147°12′·57E

Diagrams pages 22, 92 and 93

Weather Bulletins

A-D: 0745 1345 1733 LT **E**[1]**:** 0745 1345 1733 LT	Weather observations and forecasts for Tasmanian coastal waters.
F: H+00 H+30 LT	Automated weather forecast for the southeast coastal waters including: Derwent River, Storm Bay, Frederick-Henry Bay, Norfolk Bay, the D'Entrecasteaux Channel.

Navigational Warnings

A-E: 0745 LT	Navigational and storm warnings for high seas and Tasmanian coastal waters.
A-E: 0745 1345 LT	Local Notices to Mariners.
A-E: 1733 LT	Urgent local Notices to Mariners only.

[1] Weather observations and forecast for the far northwest coast (from Three Hummock Island) are only broadcast when Smithton Radio is unmanned.

NOTE(S): 1. After prior announcement on frequencies 2524, 4125 & 6215 kHz & VHF Ch 16.
2. Recorded weather forecasts for coastal waters are available from Maritime Safety Tasmania (MAST) by dialling the appropriate telephone numbers: South Coast 6233 9955, North Coast 6323 2555, East Coast 6376 0555 or West Coast 6498 7755.

TIN CAN BAY

Control Centre: 25°55′·00S 153°00′·00E

	Ch 67	VHF		

Diagrams pages 92 and 93

Weather Bulletins

	Local forecasts.

AUSTRALIA

TORRES STRAIT (Darnley Island)				
Control Centre: 9°34′·89S 143°45′·93E				
	Ch 14	VHF		
Diagrams pages 92 and 93				
Weather Bulletins				
0633 2033	Wind warnings and coastal weather forecasts.			

TORRES STRAIT (Moa Island)				
Control Centre: 10°11′·68S 142°19′·84E				
	Ch 14	VHF		
Diagrams pages 92 and 93				
Weather Bulletins				
0633 2033	Wind warnings and coastal weather forecasts.			

TOWNSVILLE				
Control Centre: 19°15′·00S 146°47′·98E				
	Ch 22 67 80	VHF		
Diagrams pages 92 and 93				
Weather Bulletins				
0215 0715 2215	Coastal waters warnings, forecasts and observations.			
NOTE(S): After prior announcement on VHF Ch 16.				

BAHAMAS, THE

INTERNET WEATHER SERVICES	
The Bahamas Meteorology Department www.bahamasweather.org.bs	Marine forecast in English.

FIRING PRACTICE AREA - CORAL HARBOUR
Approximate Position: 24°58′·95N 77°28′·25W

Gunfire warnings: The range, rectangular in shape, encompasses and area from Coral Harbour entrance (approximate position 24°58′·95N 77°28′·25W) extending 9 nautical miles westwards and 8·5 nautical miles southwards.

Pleasure craft cruising within the area should maintain a listening watch on VHF Ch 16 and maintain course and speed. Warning broadcasts are made at regular intervals while the range is in use. If firing commences, clear the area at the earliest possible moment.

NOTE: Due to the Sandy Bottom Project, the Coral Harbour firing practice area has been suspended during construction work until further notice. For further updates see the following webpage: http://rbdf.gov.bs/sandy-bottom-project

BARBADOS

INTERNET WEATHER SERVICES	
Barbados Meteorological Service www.barbadosweather.org/Overseers/Wx_Data/getMarineForecastData.php?country=Barbados	4-day marine weather forecast and tidal information, in English.

BARBADOS COAST GUARD MRSC (8PZ)				
Control Centre: 13°06′·65N 59°37′·83W				
	Ch 12 16	VHF		
Weather Bulletins				
On receipt 0950 1550 2150	Storm warnings for Caribbean Sea, Antilles and adjacent Atlantic waters in English.			
Navigational Warnings				
On receipt 0950 1550 2150	Local navigational warnings including firing practice notices.			

BELIZE

INTERNET WEATHER SERVICES

Belize National Meteorological Service www.hydromet.gov.bz	Marine synopsis and forecasts for the next 24 hours, together with tide times, in English.

BERMUDA (UK)

INTERNET WEATHER SERVICES

Bermuda Weather Service www.weather.bm	Marine forecast in English.

NAVTEX

B	Bermuda	518 kHz	32°21′·07N 64°39′·48W
Diagrams pages 18, 39, 244, 251 and 266			
Weather Bulletins			
B: 0010 0410 0810 1210 1610 2010	Weather forecast for METAREA IV USA National Weather Service High Seas N of 31°N up to 67°N, W of 35°W, the Southwest North Atlantic, S of 31°N, W of 65°W and Local Bermuda Area Forecast. Tropical weather advisories are included during 1 June to 30 Nov when the event concerned is within the boundaries 18°N to 42°N and 50°W to 80°W.		
Navigational Warnings			
B: 0010 0410 0810 1210 1610 2010	Latest urgent navigational and weather warnings including tropical weather warnings for METAREA IV USA N of 31°N up to 67°N, W of 35°W, the Southwest North Atlantic, S of 31°N, W of 65°W, local inshore and offshore Navigational Warnings.		

MARITIME SAFETY INFORMATION (MSI) ON THE INTERNET

The internet is not part of the Maritime Safety Information system and should never be relied upon as the only means to obtain the latest forecast and warning information. Access to the service may be interrupted or delayed from time to time, updates may also be delayed. Please refer to GMDSS services, INMARSAT SafetyNET or international NAVTEX for the latest information. However, the following website(s) may prove useful to the mariner:

www.marineandports.bm/nav_warnings.aspx	Department of Marine & Ports Services	Local Navigational Warnings.

BERMUDA (ZBR)

Control Centre: 32°22′·82N 64°40′·97W

A	2582[1]	RT (MF)	Bermuda Radio (MF)	32°22′·82N 64°40′·97W
	Ch 27[1]	VHF	Bermuda Radio (VHF)	32°18′·00N 64°45′·93W
B	162·4 MHz *(Ch WX2)*			
Diagrams pages 18, 244, 251 and 266				
Weather Bulletins				
A: 0035 0435 0835 1235 1635 2035	Local Bermuda area forecast. Tropical weather advisories for 18°N to 42°N and 50°W to 80°W (1 June to 30 Nov).			
B: Continuous Broadcast	Local marine weather forecast, tropical weather advisories (1 June to 30 Nov) and US National Hurricane Center tropical weather outlook.			
A, B: On request	Latest US National Weather Service High Seas forecast for METAREA IV, N of 7°N to 67°N and W of 35°W and US NWS Southwest North Atlantic and offshore forecasts.			
Navigational Warnings				
A: 0035 0435 0835 1235 1635 2035	Navigational and weather warnings.			

[1] After announcement on VHF Ch 16 and RT (MF) 2182 kHz.

BRAZIL

INTERNET WEATHER SERVICES

Centro de Hidrografia da Marinha https://www.marinha.mil.br/chm/dados-do-smm/warnings-and-forecasts	Weather Warnings, Weather Forecasts, Meteorological Charts, in Portuguese and English.

MARITIME SAFETY INFORMATION (MSI) ON THE INTERNET

The internet is not part of the Maritime Safety Information system and should never be relied upon as the only means to obtain the latest forecast and warning information. Access to the service may be interrupted or delayed from time to time, updates may also be delayed. Please refer to GMDSS services, INMARSAT SafetyNET or international NAVTEX for the latest information. However, the following website(s) may prove useful to the mariner:

www.marinha.mil.br/dhn	Directoria de Hidrografia e Navegação	Links to Navigation Warnings, Notices to Mariners, marine weather, tidal data and other related information in Portuguese and English.

FIRING PRACTICE AREAS

Full details of the areas concerned are published in the Brazilian Annual Notices to Mariners bulletin at the beginning of each year – see under 'Maritime Safety Information (MSI) on the Internet'. Radio navigational Warnings, concerning commencement of practice, are announced five day before any exercise and if necessary the mariner can contact the range controller on VHF Ch 16 during firing.

RIO DE JANEIRO (RENEC - EMBRATEL) (PPR)

Control Centre: 22°57′·88S 43°40′·38W

	4125	RT (HF)	Belém-Sede (PPL)	1°24′·53S 48°26′·48W
			Olinda (PPO)	8°03′·92S 34°55′·73W
	Ch 16	VHF	Almeirim (PTT)	1°29′·72S 52°36′·10W
			Angra dos Reis (PTR)	23°02′·35S 44°13′·15W
			Aracajú (PTA)	10°55′·57S 37°02′·58W
			Aracati (PTF)	4°35′·35S 37°41′·47W
			Bacanga (PPB)	2°33′·86S 44°18′·74W
			Belém-Sede (PPL)	1°24′·53S 48°26′·48W
			Breves (PRL)	1°40′·75S 50°29′·42W
			Cabedelo (PTN)	7°07′·58S 34°53′·13W
			Casimiro de Abreu (PRR)	22°26′·06S 42°03′·83W
			Cavalinho (PPE)	19°43′·00S 40°23′·93W
			Fernando de Noronha (PTO)	3°50′·86S 32°24′·07W
			Florianópolis (PTC)	27°35′·35S 48°32′·00W
			Guarajá (PPE42)	23°58′·90S 46°15′·30W
			Itacoatiara (PTM)	3°08′·52S 58°26′·62W
			Itaoca (PTV)	21°47′·85S 41°26′·45W
			Jacutinga (PPI)	14°25′·19S 39°16′·26W
			Joinville (PRD)	26°17′·00S 48°50′·82W
			Junção (PPJ)	32°02′·97S 52°08′·48W
			Laguna (PRC)	28°26′·78S 48°51′·83W
			Livramento (PPR)	22°53′·87S 43°11′·43W
			Macapá (PTL)	0°00′·94S 51°03′·63W
			Manaus (PPM)	3°06′·27S 59°54′·22W
			Morro do Brilhante (PPC)	27°04′·62S 48°46′·37W
			Morro do Meio (PPG)	25°33′·55S 48°58′·37W
			Mosqueiro (PPL)	1°07′·55S 48°26′·12W
			Olinda (PPO)	8°03′·92S 34°55′·73W
			Paranaguá (PPG)	25°30′·97S 48°30′·72W
			Paranapiacaba (PPS)	23°47′·36S 46°18′·28W
			Parintins (PRM)	2°37′·62S 56°44′·23W
			Pelotas (PRP)	31°46′·00S 52°20′·44W

Continued on page 106


V3(2)BRACRS V005 26/07/17
DRAFT
DRAFT
BRAZIL
Maritime Radio Stations
KEY:
= Control Centres
= Remote sites
= NAVTEX Station
1 Manaus
2 Itacoatiara
3 Parintins
4 Almeirim
5 Macapá
6 Breves
7 Mosqueiro
8 Belém-Sede (MRCC North)
9 Bacanga
10 Fernando de Noronha
11 Aracati
12 Cabedelo
13 Olinda
14 Aracajú
15 Salvador-Paripe
16 Salvador-Sede (MRCC East)
17 Jacutinga
18 São Mateus
19 Cavalinho
20 Rio Novo do Sul
21 Itaoca
22 Casimiro de Abreu
23 Livramento
24 Rio de Janeiro (Santa Cruz) (Brazil MRCC)
25 Angra dos Reis
26 São Sebastião
27 Paranapiacaba
28 Guarajá
29 Paranaguá
30 Morro de Meio
31 Joinville
32 Morro de Brilhante
33 Florianópolis
34 Laguna
35 Pelotas
36 Junção (MRCC South)
60°
50°
40°
0°
10°
20°
30°

BRAZIL

RIO DE JANEIRO (RENEC - EMBRATEL) (PPR) (Continued)

	Ch 16	VHF	Rio de Janeiro (Santa Cruz) (PPR)	22°57′·88S 43°40′·38W
			Rio Novo do Sul (PRI)	20°50′·90S 40°54′·63W
			Salvador-Paripe (PPA)	12°50′·13S 38°27′·67W
			Salvador-Sede (PPA)	12°58′·61S 38°30′·44W
			São Mateus (PRV)	18°33′·17S 39°54′·00W
			São Sebastião (PTS)	23°44′·96S 45°25′·73W
Diagram page 105				
Weather Bulletins				
On request	Weather forecast in Portuguese and English.			
Navigational Warnings				
On receipt	Storm warnings, NAVAREA V, coastal and local Navigational Warnings in Portuguese and English. SAR information in Portuguese and English.			

RIO DE JANEIRO NAVAL (PWZ33)

Control Centre: 22°56′·00S 43°20′·00W

	4266[1] 6448 8580 12709 16974	RADIO-DATA (J2D)		
Diagrams pages 20 and 105				
Weather Bulletins				
0230 0600 1845	Weather warnings and weather forecast in Portuguese and English.			
Navigational Warnings				
0400 1430 2130	NAVAREA V warnings, coastal warnings and SAR information in Portuguese and English. Local warnings in Portuguese.			

[1] On request.

BRUNEI

INTERNET WEATHER SERVICES

Brunei Darussalam Meteorological Department www.bruneiweather.com.bn/weather	Marine weather forecast and warnings, together with astronomical data, in English.

MARITIME SAFETY INFORMATION (MSI) ON THE INTERNET

The internet is not part of the Maritime Safety Information system and should never be relied upon as the only means to obtain the latest forecast and warning information. Access to the service may be interrupted or delayed from time to time, updates may also be delayed. Please refer to GMDSS services, INMARSAT SafetyNET or international NAVTEX for the latest information. However, the following website(s) may prove useful to the mariner:

www.mincom.gov.bn/marine/Theme/Home.aspx	Marine Department Ministry of Communication	Notice to Mariners and tidal information, in English.

CAMBODIA

INTERNET WEATHER SERVICES

Cambodian Department of Meteorology www.cambodiameteo.com/productview/index/	Select 'Marine' from the main menu to access coastal marine forecast, outlook and warnings, in English and Khmer.

CANADA

GENERAL NOTES

Canada — VHF Channels

The channels and frequencies listed below are those in general use by the Canadian CG and Coast Radio Stations for weather and Navigational Warnings.
The suffix B indicates that the ship station only receives on the coast radio stations upper broadcast frequency.

Channel designator	Transmitting frequencies (MHz)
21B	161·65
83B	161·775
WX2	162·4
WX3	162·475
WX1	162·55

Canada — Notices to Shipping

Notices to Shipping (NOTSHIPs) are issued for the Atlantic, Great Lakes and Arctic areas of Canada, each being designated by an alpha character which identifies the Canadian Coast Guard NOTSHIPs issuing authority. The alpha character is followed by a sequential number, commencing with the number 001 on 1st January each year and are as follows:
A – Arctic, C – Central, H – Athabasca-Mackenzie Watershed, M – Maritimes, N – Newfoundland, P – Western and Q – Quebec.

Weatheradio Canada

Weatheradio Canada is a public service designed to make weather information continously available over VHF or FM radio.
Broadcasts include warnings, marine weather forecasts, synopses, sea state forecasts and ice conditions. Hourly updated observations from coastal stations and offshore buoys are all incorporated in the broadcast.

Stations	Frequency (MHz)	Position
British Columbia		
Masset	162·425	54°00'·13N 132°07'·11W
Port Alberni	162·525	49°13'·12N 124°48'·68W
Port Hardy	162·525	50°42'·60N 127°26'·58W
Port Hardy (FM)	103·7	50°42'·60N 127°26'·58W
Prince Rupert	162·525	54°17'·00N 130°18'·87W
Texada Island	162·525	49°41'·88N 124°26'·34W
Ucluelet	162·525	48°57'·56N 125°29'·57W
Vancouver	162·550	49°16'·76N 122°54'·55W
Victoria	162·400	48°46'·01N 123°30'·46W
New Brunswick		
Dalhousie	162·550	48°03'·54N 66°22'·68W
Miscou Island	162·550	47°56'·20N 64°34'·17W
Moncton	162·550	46°10'·43N 64°54'·13W
Saint Isidore	162·400	47°32'·47N 65°05'·88W
Scotch Mountain (Sussex)	162·400	45°45'·68N 65°47'·58W
St. Stephen	162·475	45°09'·94N 66°54'·34W
Newfoundland and Labrador		
Bay St. George (Stevenville)	162·400	48°08'·98N 58°46'·65W
Brent's Cove	162·400	49°54'·62N 55°40'·23W
Carmanville	162·475	49°25'·21N 54°17'·36W
Conche	162·550	50°53'·68N 55°53'·15W
Corner Brook	162·550	48°54'·88N 57°55'·17W
Gander	162·400	48°56'·75N 54°34'·57W
Grand Falls- Windsor	162·550	49°11'·85N 55°22'·08W
Hermitage	162·550	47°33'·60N 55°56'·27W

Continued overleaf

CANADA

General Notes (Continued)

Newfoundland and Labrador		
Marystown	162·400	47°08'·50N 55°09'·00W
Mount St. Margaret (Plum Point)	162·550	51°01'·08N 56°48'·78W
Port Rexton	162·550	48°26'·50N 53°21'·35W
Portland Creek	162·400	50°08'·68N 57°37'·65W
Red Rocks	162·550	47°40'·65N 59°18'·21W
St. Anthony	162·400	51°21'·62N 55°37'·15W
St. John's	162·400	47°32'·18N 52°47'·15W
Trepassey	162·550	46°43'·92N 53°24'·75W

Nova Scotia		
Aspen	162·400	45°14'·67N 62°01'·67W
Bay St. Lawrence (Dingwall)	162·550	47°00'·63N 60°25·68W
Ben Eoin (East Bay)	162·475	45°57'·27N 60°28'·00W
Bridgewater	162·400	44°23'·28N 64°40'·78W
Cheticamp	162·475	46°34'·54N 60°59'·09W
Halifax	162·550	44°39'·07N 63°39'·48W
Middleton	162·550	45°04'·86N 64°50'·80W
New Tusket	162·550	44°15'·80N 65°54'·15W
Oak Park	162·475	43°35'·07N 65°37'·90W
River Denys	162·550	45°47'·82N 61°11'·38W
Shelburne	162·550	43°46'·28N 65°17'·14W
Sydney	162·400	46°10'·00N 60°07'·08W
Truro	162·400	45°33'·25N 63°13'·50W
Yarmouth	162·475	43°53'·77N 66°04'·51W

Nunavut		
Arviat	162·400	61°06'·50N 94°03'·50W
Cape Dorset (Kingait)	162·550	64°13'·85N 76°32'·78W
Iqaluit	162·550	63°45'·17N 68°30'·50W
Iqaluit (FM)	93·3	63°44'·33N 68°33'·42W
Rankin Inlet (Kangiqliniq)	162·400	62°49'·00N 92°07'·00W

Ontario		
Belleville	162·425	44°18'·84N 77°12'·44W
Collingwood	162·475	44°28'·70N 80°19'·72W
Goderich	162·400	43°43'·62N 81°34'·71W
Kingston	162·400	44°17'·41N 76°28'·70W
Little Current	162·475	45°57'·22N 81°56'·81W
London	162·475	42°59'·14N 81°14'·80W
Marathon	162·550	48°45'·19N 86°34'·90W
Montreal River	162·475	47°14'·86N 84°35'·74W
Moose Creek	162·450	45°18'·19N 74°56'·61W
Nipigon	162·550	48°58'·23N 88°18'·33W
Normandale	162·450	42°43'·63N 80°17'·47W
Paisley	162·550	44°20'·27N 81°14'·79W
Peterborough	162·550	44°07'·26N 78°08'·14W
St. Catharines	162·475	43°06'·87N 79°11'·17W

Continued on next page

CANADA

General Notes (Continued)

Ontario		
Sarnia-Oil Springs	162·400	42°42'·82N 82°08'·08W
Sault Ste. Marie	162·400	46°42'·68N 84°10'·67W
Thunder Bay	162·475	48°31'·42N 89°06'·92W
Toronto	162·400	43°38'·56N 79°23'·23W
Windsor	162·475	42°10'·24N 82°59'·48W

Prince Edward Island		
Charlottetown	162·400	46°21'·88N 63°24'·65W
O'Leary	162·475	46°42'·33N 64°13'·30W
Souris	162·525	46°22'·48N 62°20'·70W

Quebec		
Amqui	162·400	48°25'·50N 67°46'·70W
Baie-Trinité	162·475	49°23'·47N 67°28'·55W
Blanc-Sablon	162·400	51°26'·58N 57°13'·03W
Carleton-sur-mer	162·500	48°08'·05N 66°06'·85W
Gaspé	162·550	48°42'·43N 64°30'·50W
Gatineau-Ottawa	162·550	45°02'·92N 76°40'·00W
Harrington Harbour	162·550	50°30'·03N 59°29'·30W
Îles-de-la-Madeleine	162·550	47°23'·15N 61°53'·73W
Kegaska	162·475	50°10'·55N 61°15'·96W
La Malbaie	162·400	47°46'·72N 70°09'·08W
Longue-Pointe-de-Mingan (Mingan)	162·400	50°16'·41N 64°07'·89W
Matane (Baie Trinité)	162·475	49°23'·55N 67°28'·43W
Mont-Fournier (Montmagny)	162·400	47°07'·25N 70°09'·25W
Montréal	162·550	45°30'·33N 73°35'·53W
Québec	162·550	46°49'·37N 71°29'·75W
Rimouski	162·550	48°25'·58N 68°29'·15W
Rivière-au-Renard	162·475	48°59'·81N 64°25'·80W
Saguenay (Mont Valin)	162·550	48°36'·07N 70°49'·77W
Sainte-Anne-Des-Monts	162·550	49°07'·53N 66°29'·00W
Sainte-Marie (Beauce)	162·525	46°20'·13N 71°08'·50W
Sept-Îles	162·550	50°08'·89N 66°28'·16W
Trois-Rivières	162·400	46°29'·78N 72°38'·47W

INTERNET WEATHER SERVICES	
Environment Canada http://weatheroffice.gc.ca/marine/index_e.html	Marine weather forecast in English and French.
Canadian Ice Service http://www.ice-glaces.ec.gc.ca/	Ice bulletins, synopsis, forecasts, charts and related information, available in English and French.
Canadian Government Marine Transportation Portal https://www.canada.ca/en/services/transport/marine/navigation.html	Weather, ice and navigational information portal, available in English and French.

MARITIME SAFETY INFORMATION (MSI) ON THE INTERNET

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www.ccg-gcc.gc.ca/e0004476?todo=warning	Canadian Coast Guard	Navigation Warnings for NAVAREAs XVII and XVIII, in English.
http://notmar.gc.ca/		Notice to Mariners in English and French, issued on the last Friday of each month.

CANADA (Arctic Coast, Atlantic Coast and Saint Lawrence River)

NAVTEX			
X	Cartwright	518 kHz	53°42′·50N 57°01′·28W
U	Chebogue		43°44′·67N 66°07′·29W
T	Iqaluit[1]		63°43′·79N 68°32′·73W
C	Moisie		50°11′·76N 66°06′·70W
Q	Port Caledonia		46°11′·16N 59°53′·64W
O	Robin Hood Bay		47°36′·65N 52°40′·18W
V	Chebogue	490 kHz	43°44′·67N 66°07′·29W
S	Iqaluit[1]		63°43′·79N 68°32′·73W
D	Moisie		50°11′·76N 66°06′·70W
J	Port Caledonia		46°11′·16N 59°53′·64W

Diagrams pages 39, 112, 113, 114, 115 and 116

Weather Bulletins	
X: 0350 0750 1550 1950	Weather forecasts in English.
U: 0720	Weather and wave height forecasts for Sea Areas 201–208 in English.
U: 1120 1920 2320	Weather and seastate forecasts for Sea Ares 201–208 in English.
U: 0720 1120 1920 2320	US weather forecast for coastal waters - Eastport to Schoodic Point, Maine.
T: 0310 1110 1510 2310	Weather forecasts for Sea Areas 143–145 and 147–150 in English.
C: 0020 0820 1220 2020	Weather forecasts for Sea Areas 215, 217–222 and 301–304 in English – summer schedule.
C: 0820 1220 2020	Weather forecasts for Sea Areas 215, 217–222 and 301–304 in English – winter schedule.
Q: 0640 1040 1840 2240 O: 0220 0620 1420	Weather forecasts in English – summer schedule.
Q: 0640 1040 1840 O: 0220 1020 1420 2220	Weather forecasts in English – winter schedule.
O: 1820	Weather and wave height forecasts in English – summer schedule.
V: 0730	Weather and wave height forecasts for Sea Ares 201–208 in French.
V: 1130 1930 2330	Weather and seastate forecasts for Sea Areas 201–208 in French.
S: 0300 1100 1500 2300	Weather forecasts for Sea Areas 143–145 and 147–150 in French.
D: 0030 0830 1230 2030	Weather forecasts for Sea Areas 215, 217–222 and 301–304 in French – summer schedule.
D: 0830 1230 2030	Weather forecasts for Sea Areas 215, 217–222 and 301–304 in French – winter schedule.
J: 0130 0530 0930 1730	Weather forecasts in French – summer schedule.
J: 0530 0930 1730	Weather forecasts in French – winter schedule.
Navigational Warnings	
X: 1150 2350 O: 1020 2220	Notices to shipping in English – summer schedule.
X: 1150 O: 0620	Notices to shipping in English – winter schedule.
U: 0320 1520 C: 0420 1620 Q: 0240 1440	Notices to shipping in English.
T: 0710 1910	Notices to Shipping 'Series A' for NORDREG waters in English, Sea Areas 143–145 and 147–150. For full details of NORDREG see ALRS Volume 6, Part 5 (NP286(5)).
V: 0330 1530 D: 0430 1630 J: 1330 2130	Notices to shipping in French.
S: 0700 1900	Notices to Shipping 'Series A' for NORDREG waters in French, Sea Areas 143–145 and 147–150. For full details of NORDREG see ALRS Volume 6, Part 5 (NP286(5)).

Continued on next page

CANADA (Arctic Coast, Atlantic Coast and Saint Lawrence River)

Ice Warnings and Reports	
X: 2350 Q: 2240 O: 1820	Ice bulletins in English – winter schedule.
T: 0710 1910	Ice hazard bulletins for Sea Areas 143–145 and 147–150 in English.
C: 0020	Ice information in English – winter schedule.
O: 2220	Ice bulletins in English – summer schedule.
S: 0700 1900	Ice hazard bulletins for Sea Areas 143–145 and 147–150 in French.
D: 0030	Ice information in French – winter schedule.
J: 0130	Ice bulletins in French – winter schedule.
[1] Operational between mid June to late Dec approx. NAVTEX temporarily inoperative.	

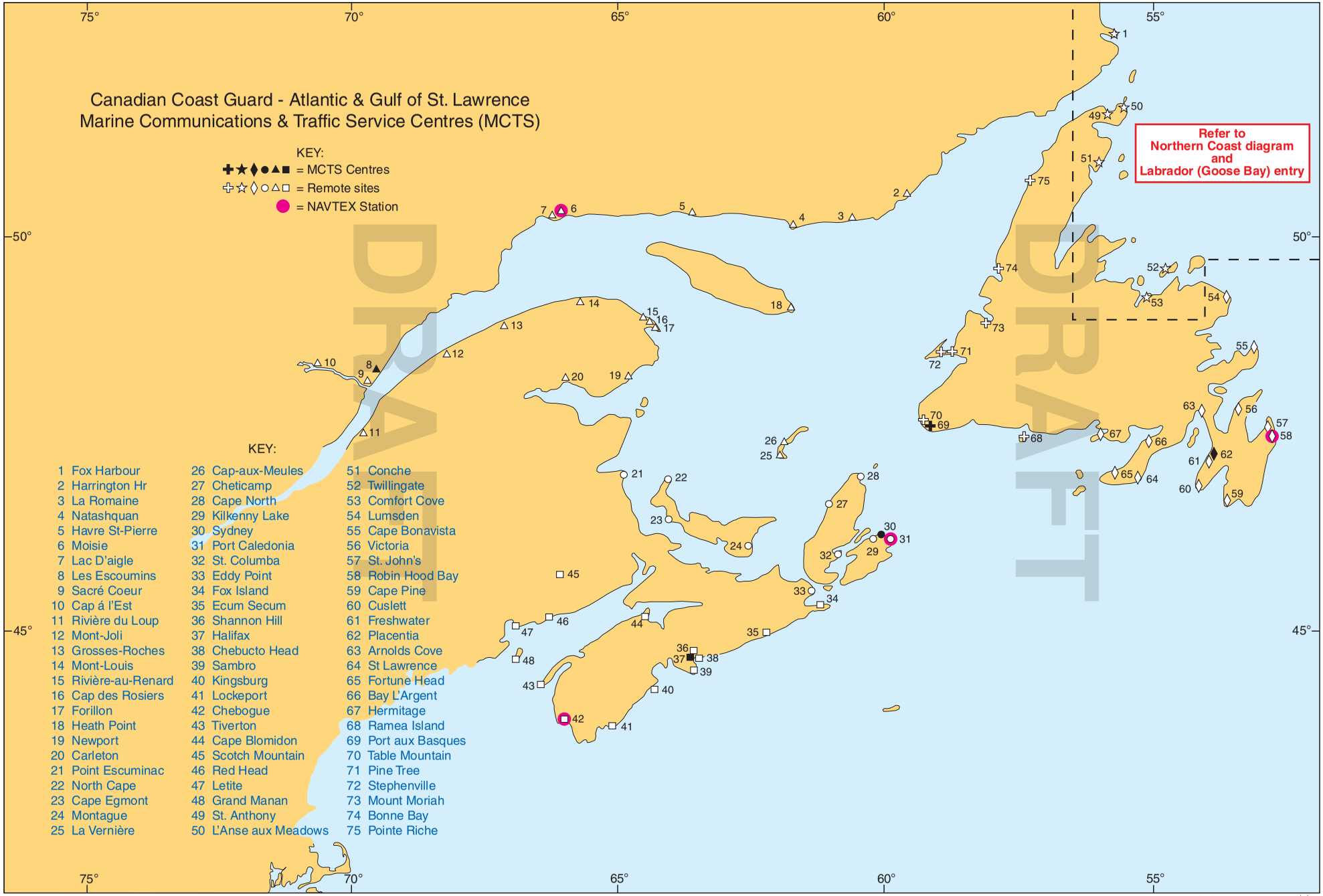
HALIFAX (CANADIAN COAST GUARD) (VCS)

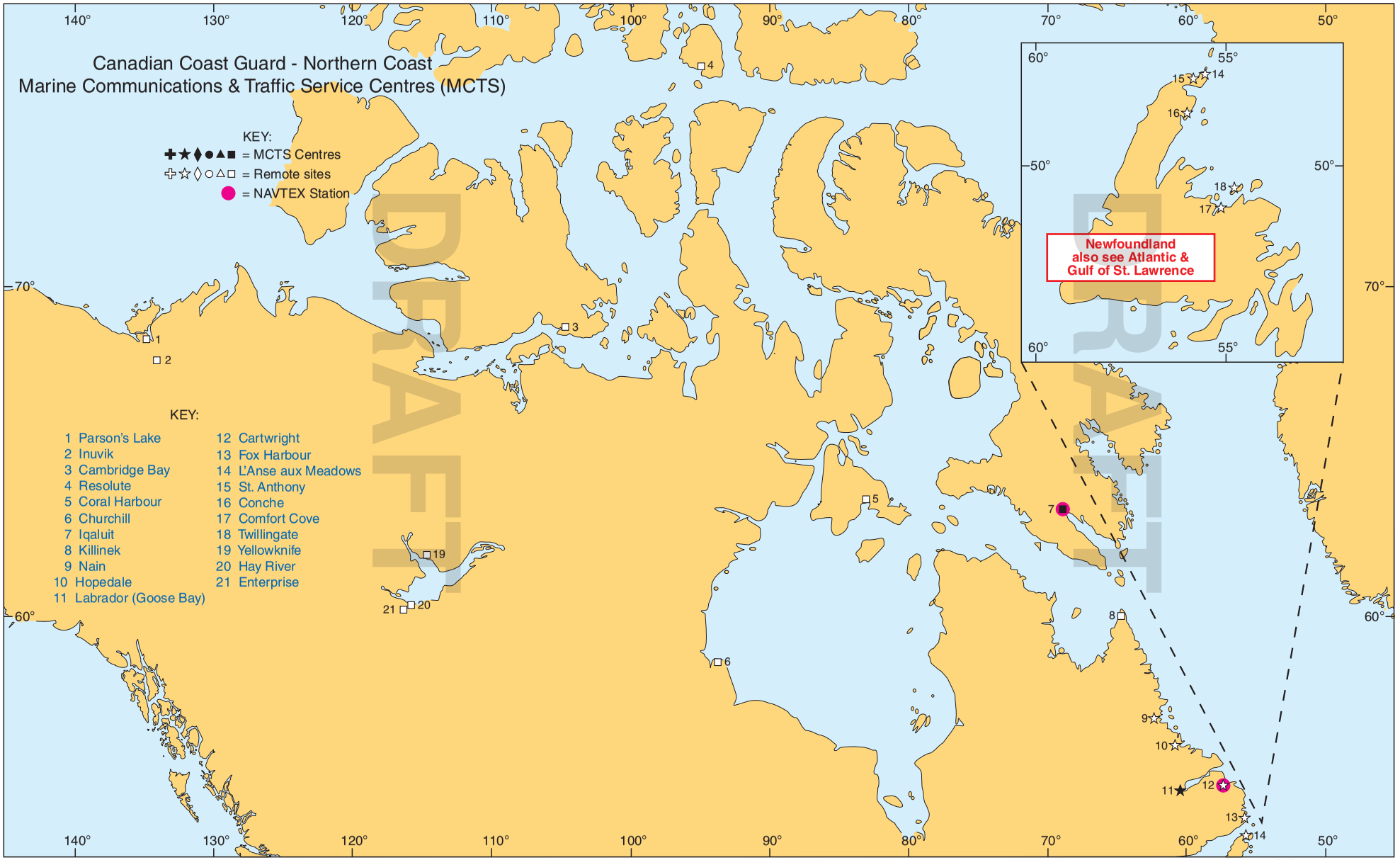
Control Centre: 44°41′·04N 63°36′·60W

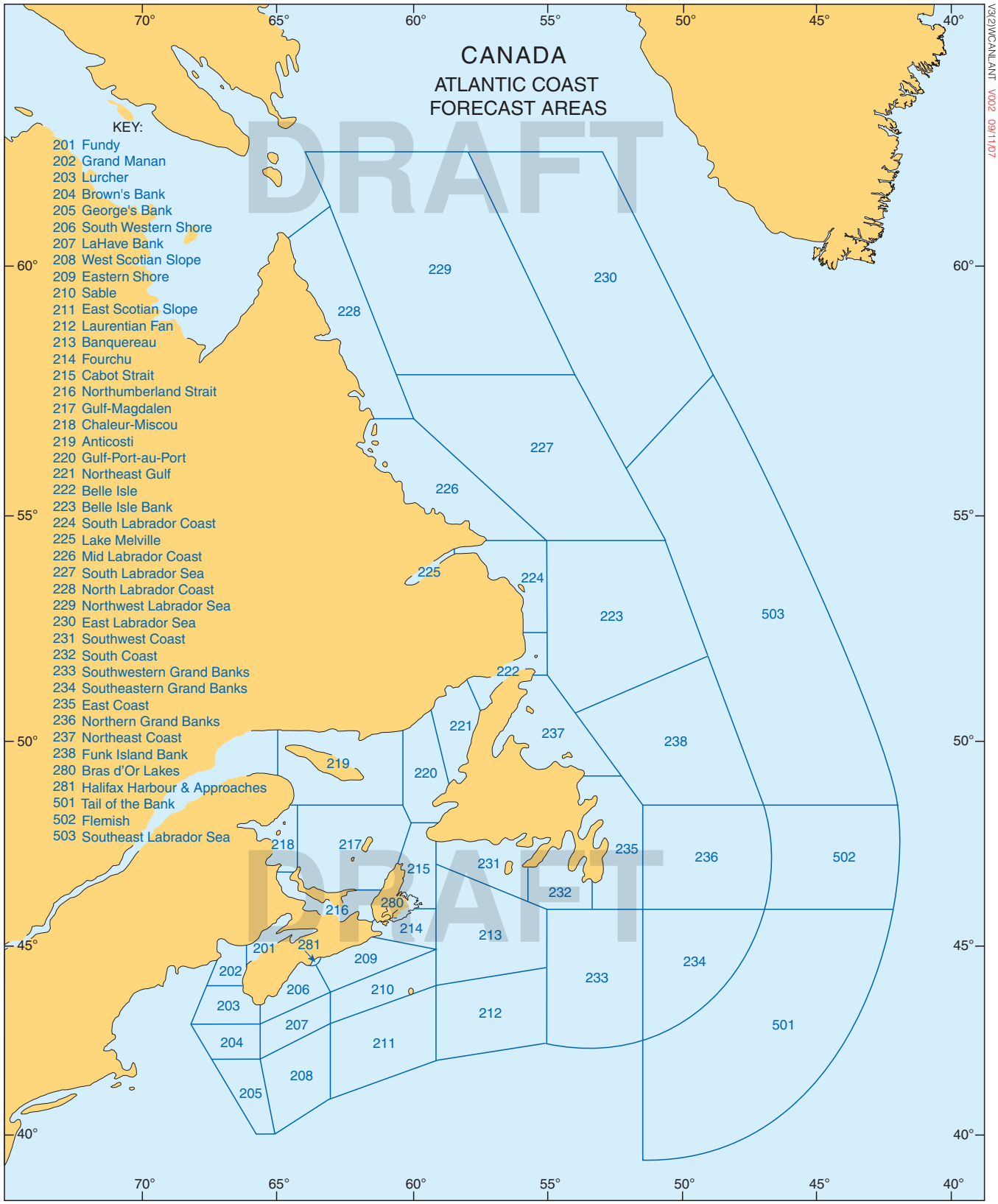
A	2749	RT (MF)	Chebogue	43°44′·67N 66°07′·29W
B			Sambro	44°28′·34N 63°37′·23W
C	Ch 83B	VHF	Ecum Secum	44°57′·89N 62°08′·94W
	Ch 21B		Fox Island	45°19′·78N 61°04′·76W
			Sambro	44°28′·34N 63°37′·23W
D	Ch 83B		Cape Blomidon	45°13′·92N 64°24′·08W
			Chebogue	43°44′·67N 66°07′·29W
	Ch 21B		Red Head	45°14′·01N 65°59′·06W

Diagrams pages 112, 113 and 114

Weather Bulletins	
A: 0140 1040 1640 2040 D: Continuous	Weather synopsis, forecasts and wave height forecasts for Sea Areas 201–214. U.S. weather forecasts for coastal waters - Eastport to Schoodic Point, Maine and Offshore Waters - Gulf of Maine to the Hague Line. In English followed by French.
B: 0240 0810 1540 2120 C: Continuous	Weather synopsis, forecasts and wave height forecasts for Sea Areas 201–214.
Navigational Warnings	
A: 0140 1640 D: Continuous	Notices to shipping for sea areas Bay of Fundy, south and west coast of Nova Scotia, in English followed by French.
B: 0240 1540 C: Continuous	Notices to shipping for south coast of Nova Scotia area. Notices to shipping revising the position of every reported offshore exploration and exploitation vessel.
A: 1040 2040 D: Continuous	Notices to fishermen when available, in English followed by French.
B: 0810 2120 C: Continuous	Notices to fishermen when available.


Canadian Coast Guard - Atlantic & Gulf of St. Lawrence
Marine Communications & Traffic Service Centres (MCTS)
KEY:
= MCTS Centres
= Remote sites
= NAVTEX Station
Refer to
Northern Coast diagram
and
Labrador (Goose Bay) entry
75°
70°
65°
60°
55°
50°
45°
DRAFT
KEY:
1 Fox Harbour
2 Harrington Hr
3 La Romaine
4 Natashquan
5 Havre St-Pierre
6 Moisie
7 Lac D'aigle
8 Les Escoumins
9 Sacré Coeur
10 Cap á l'Est
11 Rivière du Loup
12 Mont-Joli
13 Grosses-Roches
14 Mont-Louis
15 Rivière-au-Renard
16 Cap des Rosiers
17 Forillon
18 Heath Point
19 Newport
20 Carleton
21 Point Escuminac
22 North Cape
23 Cape Egmont
24 Montague
25 La Vernière
26 Cap-aux-Meules
27 Cheticamp
28 Cape North
29 Kilkenny Lake
30 Sydney
31 Port Caledonia
32 St. Columba
33 Eddy Point
34 Fox Island
35 Ecum Secum
36 Shannon Hill
37 Halifax
38 Chebucto Head
39 Sambro
40 Kingsburg
41 Lockeport
42 Chebogue
43 Tiverton
44 Cape Blomidon
45 Scotch Mountain
46 Red Head
47 Letite
48 Grand Manan
49 St. Anthony
50 L'Anse aux Meadows
51 Conche
52 Twillingate
53 Comfort Cove
54 Lumsden
55 Cape Bonavista
56 Victoria
57 St. John's
58 Robin Hood Bay
59 Cape Pine
60 Cuslett
61 Freshwater
62 Placentia
63 Arnolds Cove
64 St Lawrence
65 Fortune Head
66 Bay L'Argent
67 Hermitage
68 Ramea Island
69 Port aux Basques
70 Table Mountain
71 Pine Tree
72 Stephenville
73 Mount Moriah
74 Bonne Bay
75 Pointe Riche

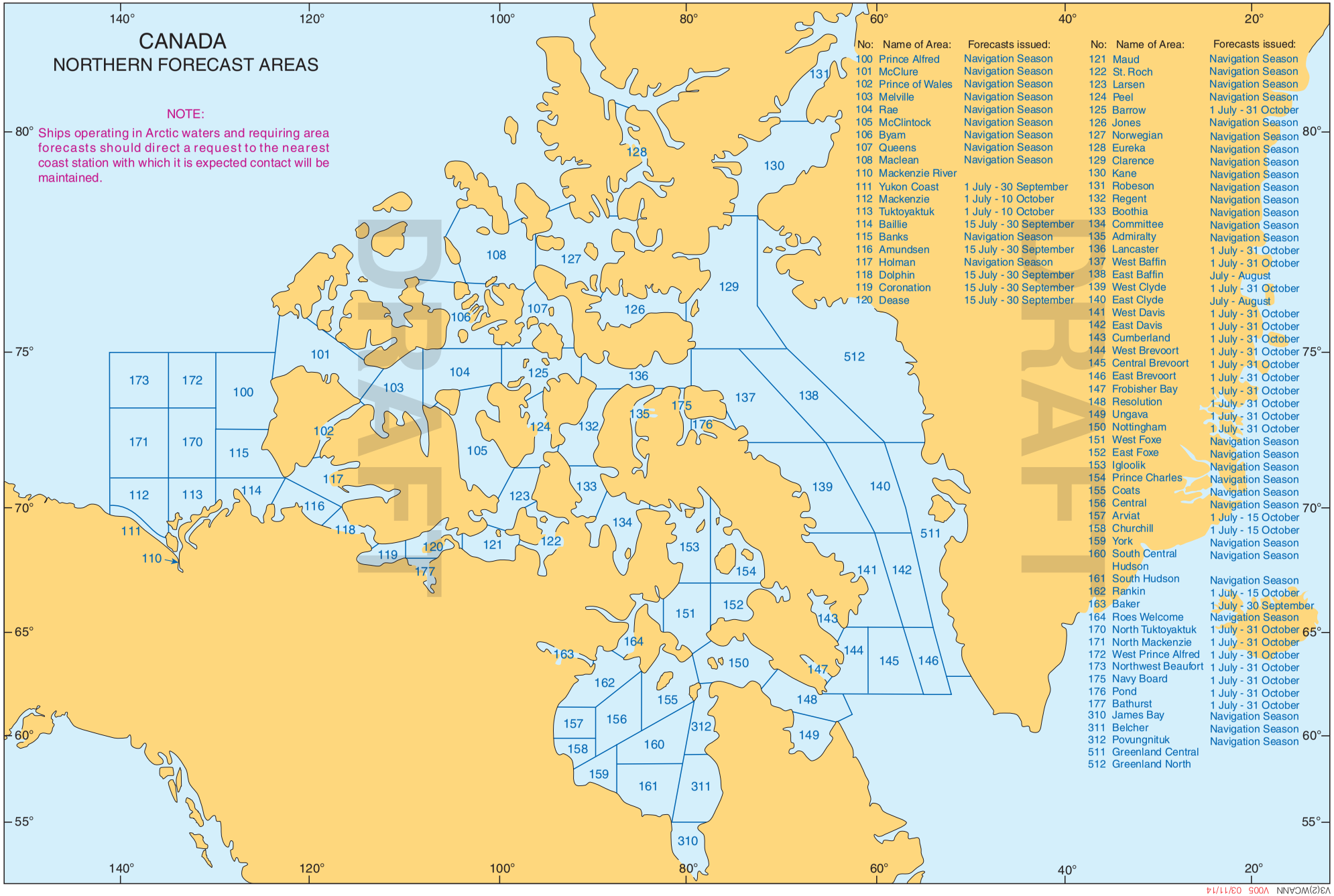

Canadian Coast Guard - Northern Coast
Marine Communications & Traffic Service Centres (MCTS)
KEY:
= MCTS Centres
= Remote sites
= NAVTEX Station
Newfoundland
also see Atlantic &
Gulf of St. Lawrence
KEY:
1 Parson's Lake
2 Inuvik
3 Cambridge Bay
4 Resolute
5 Coral Harbour
6 Churchill
7 Iqaluit
8 Killinek
9 Nain
10 Hopedale
11 Labrador (Goose Bay)
12 Cartwright
13 Fox Harbour
14 L'Anse aux Meadows
15 St. Anthony
16 Conche
17 Comfort Cove
18 Twillingate
19 Yellowknife
20 Hay River
21 Enterprise
DRAFT
V18V3NCAN V001 11/12/15



V3(2)WCANLANT V002 09/11/07

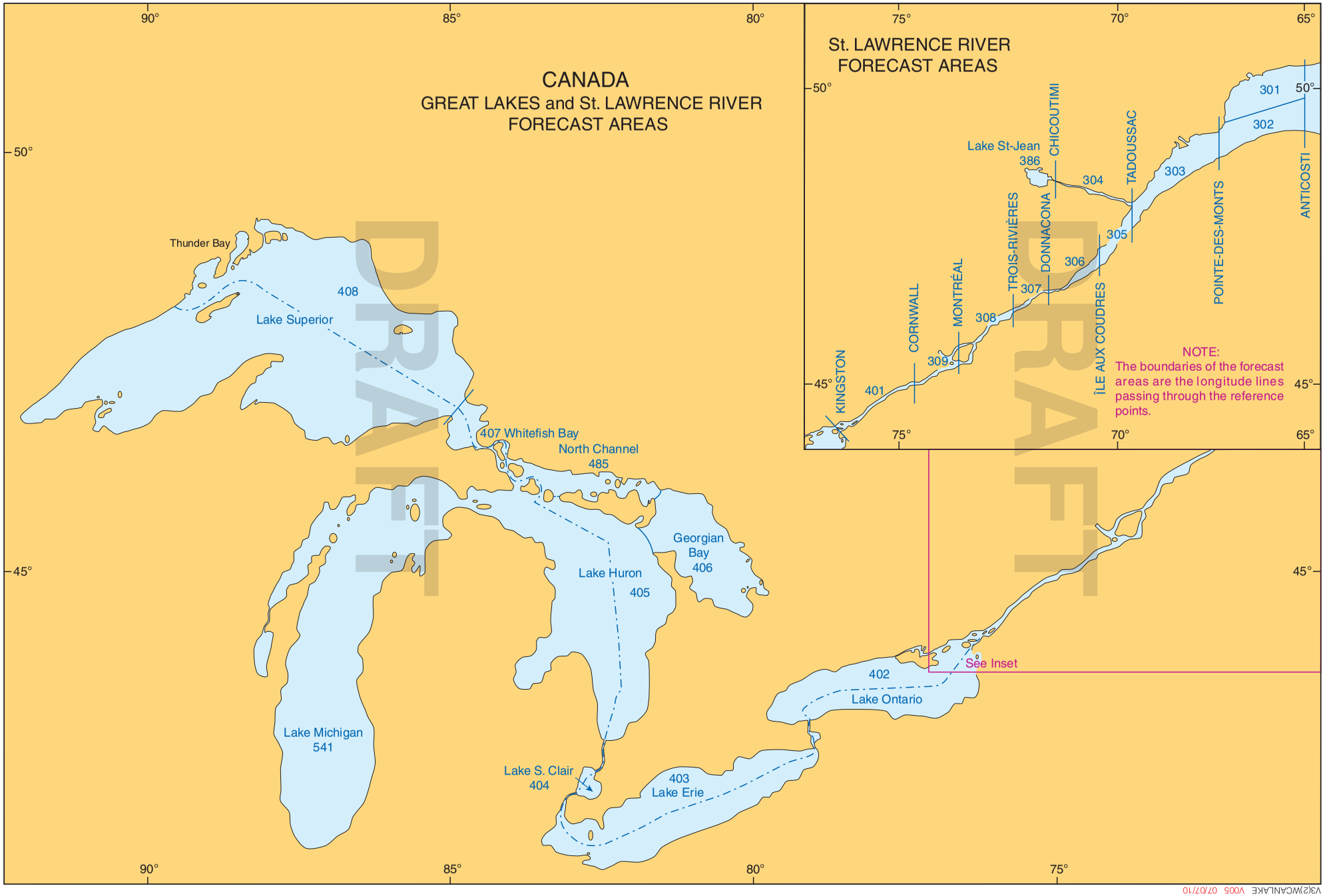
CANADA
NORTHERN FORECAST AREAS

NOTE:
Ships operating in Arctic waters and requiring area forecasts should direct a request to the nearest coast station with which it is expected contact will be maintained.



No:	Name of Area:	Forecasts issued:
100	Prince Alfred	Navigation Season
101	McClure	Navigation Season
102	Prince of Wales	Navigation Season
103	Melville	Navigation Season
104	Rae	Navigation Season
105	McClintock	Navigation Season
106	Byam	Navigation Season
107	Queens	Navigation Season
108	Maclean	Navigation Season
110	Mackenzie River	
111	Yukon Coast	1 July - 30 September
112	Mackenzie	1 July - 10 October
113	Tuktoyaktuk	1 July - 10 October
114	Baillie	15 July - 30 September
115	Banks	Navigation Season
116	Amundsen	15 July - 30 September
117	Holman	Navigation Season
118	Dolphin	15 July - 30 September
119	Coronation	15 July - 30 September
120	Dease	15 July - 30 September

No:	Name of Area:	Forecasts issued:
121	Maud	Navigation Season
122	St. Roch	Navigation Season
123	Larsen	Navigation Season
124	Peel	Navigation Season
125	Barrow	1 July - 31 October
126	Jones	Navigation Season
127	Norwegian	Navigation Season
128	Eureka	Navigation Season
129	Clarence	Navigation Season
130	Kane	Navigation Season
131	Robeson	Navigation Season
132	Regent	Navigation Season
133	Boothia	Navigation Season
134	Committee	Navigation Season
135	Admiralty	Navigation Season
136	Lancaster	1 July - 31 October
137	West Baffin	1 July - 31 October
138	East Baffin	July - August
139	West Clyde	1 July - 31 October
140	East Clyde	July - August
141	West Davis	1 July - 31 October
142	East Davis	1 July - 31 October
143	Cumberland	1 July - 31 October
144	West Brevoort	1 July - 31 October
145	Central Brevoort	1 July - 31 October
146	East Brevoort	1 July - 31 October
147	Frobisher Bay	1 July - 31 October
148	Resolution	1 July - 31 October
149	Ungava	1 July - 31 October
150	Nottingham	1 July - 31 October
151	West Foxe	Navigation Season
152	East Foxe	Navigation Season
153	Igloolik	Navigation Season
154	Prince Charles	Navigation Season
155	Coats	Navigation Season
156	Central	Navigation Season
157	Arviat	1 July - 15 October
158	Churchill	1 July - 15 October
159	York	Navigation Season
160	South Central Hudson	Navigation Season
161	South Hudson	Navigation Season
162	Rankin	1 July - 15 October
163	Baker	1 July - 30 September
164	Roes Welcome	Navigation Season
170	North Tuktoyaktuk	1 July - 31 October
171	North Mackenzie	1 July - 31 October
172	West Prince Alfred	1 July - 31 October
173	Northwest Beaufort	1 July - 31 October
175	Navy Board	1 July - 31 October
176	Pond	1 July - 31 October
177	Bathurst	1 July - 31 October
310	James Bay	Navigation Season
311	Belcher	Navigation Season
312	Povungnituk	Navigation Season
511	Greenland Central	Navigation Season
512	Greenland North	


CANADA
GREAT LAKES and St. LAWRENCE RIVER
FORECAST AREAS
St. LAWRENCE RIVER
FORECAST AREAS
90°
85°
80°
75°
70°
65°
50°
45°
Thunder Bay
408
Lake Superior
407 Whitefish Bay
North Channel
485
Georgian
Bay
406
Lake Huron
405
Lake Michigan
541
Lake S. Clair
404
403
Lake Erie
402
Lake Ontario
See Inset
Lake St-Jean
386
CHICOUTIMI
TADOUSSAC
ANTICOSTI
301
302
303
304
305
306
307
308
309
401
KINGSTON
CORNWALL
MONTRÉAL
TROIS-RIVIÈRES
DONNACONA
ÎLE AUX COUDRES
POINTE-DES-MONTS
NOTE:
The boundaries of the forecast areas are the longitude lines passing through the reference points.
DRAFT
V3(2)WCANLAKE V005 07/07/10

CANADA (Arctic Coast, Atlantic Coast and Saint Lawrence River)

IQALUIT (NUNAVUT) (CANADIAN COAST GUARD) (VFF)

Control Centre: 63°44′·09N 68°32′·94W

A	8416·5	RADIOTELEX	Iqaluit[1]	63°44′·09N 68°32′·94W
B	2514	RT (MF)	Coral Harbour[2]	64°09′·02N 83°22′·37W
C			Killinek[3]	60°25′·45N 64°50′·50W
D	2582		Iqaluit[1]	63°44′·09N 68°32′·94W
E			Resolute[2]	74°44′·77N 95°00′·22W
F	4363 *(Ch 403)*	RT (HF)	Cambridge Bay[4]	69°06′·88N 105°01′·18W
G			Hay River[5]	60°50′·45N 115°46′·20W
H			Iqaluit[1]	63°44′·09N 68°32′·94W
I			Resolute[2]	74°44′·77N 95°00′·22W
J	5803		Inuvik[5]	68°19′·50N 133°35′·78W
K	6218·6			
L	6507 *(Ch 603)*		Coral Harbour[2]	64°09′·02N 83°22′·37W
M			Iqaluit[1]	63°44′·09N 68°32′·94W
N	Ch 26	VHF	Enterprise[5]	60°36′·50N 116°13′·22W
O			Parson's Lake[5]	68°53′·63N 133°56′·52W
P	Ch 85		Yellowknife[5]	62°25′·75N 114°24′·73W

Diagrams pages 113, 114, 115 and 118

Weather Bulletins

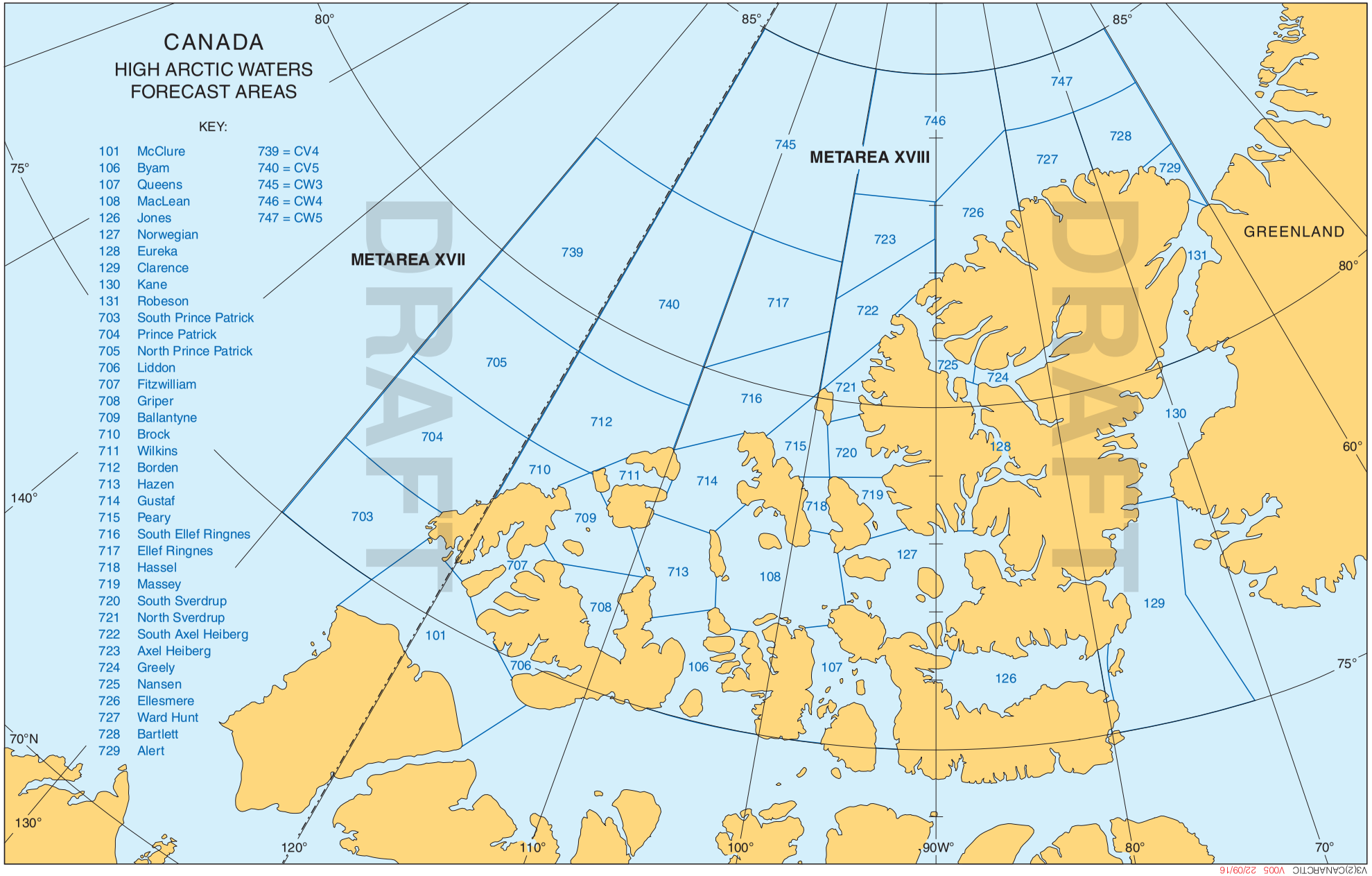
A:	0330 1530	METAREA XVII and XVIII bulletins for Sea Areas within Canadian waters.
B, L:	0110 1320	Weather synopsis and forecasts for Sea Areas 155–158, 162, 163, 311 and 312. Following areas on request 151–154, 159–161, 164 and 310.
E, I:	1240 2310	Weather synopsis and forecasts for Sea Areas 125 and 135–138.
C, D, H, M:	1410 2235	Weather synopsis and forecasts for Sea Areas 139–150 and 228–230. Following areas on request 137 and 138.
F, K:	0235 1435	Weather synopsis for western Arctic waters. Weather forecast for Sea Areas 111–122.
G, J, N, O, P:	0115 1315	Weather synopsis for western Arctic waters (if applicable for Macenzie River and Great Slave Lake area). Weather forecast for Sea Areas 110 (Mackenzie River), Mackenzie Delta and 180 (Grate Slave Lake). ODAS Weather Buoy 45141 and 45150 reports.

Navigational Warnings

A:	0330 1530	NAVAREA XVII and XVIII warnings.
B, L:	0110 1320	Notices to Shipping 'Series A' for all NORDREG waters east of 106°W and along the Labrador Coast southward to 58°N, including Hudson Strait, Hudson Bay, Ungava Bay, Foxe Basin, James Bay and Chesterfield Inlet to Baker Lake.
C, D, H, M:	1410 2235	Notices to Shipping 'Series A' for all NORDREG waters east of 106°W and along the Labrador Coast southward to 58°N bound by Shipping Safety Control Zones 9, 10 and 15, including Ungava Bay.
E, I:	1240 2310	Notices to Shipping 'Series A' for all NORDREG waters bound by Shipping Safety Control Zones 1–3, 5, 6, 9 and 13.
F, K:	0235 1435	Notices to Shipping 'Series A' for all NORDREG waters west of Taloyoak.
G, J, N, O, P:	0115 1315	Notices to Shipping 'Series H'.
B, C, D, E, F, H, I, K, L, M:	1705	Ice boundary information. Ice forecasts for Sea Areas 111–122, 125, 135–142, 144–150, 155–158, 162, 163, 228–230, 311 and 312 for Hudson Bay and Foxe Basin.

[1] Operational approximately mid June to late December.
[2] Operational approximately mid July to late October.
[3] Operational approximately early July to late December.
[4] Operational approximately early July to mid October.
[5] Operational approximately mid May to late October.

NOTE(S): 1. Available in English and French.
2. For full details of NORDREG see ALRS Volume 6(5) (NP286(5)).


CANADA
HIGH ARCTIC WATERS
FORECAST AREAS
KEY:
101 McClure
106 Byam
107 Queens
108 MacLean
126 Jones
127 Norwegian
128 Eureka
129 Clarence
130 Kane
131 Robeson
703 South Prince Patrick
704 Prince Patrick
705 North Prince Patrick
706 Liddon
707 Fitzwilliam
708 Griper
709 Ballantyne
710 Brock
711 Wilkins
712 Borden
713 Hazen
714 Gustaf
715 Peary
716 South Ellef Ringnes
717 Ellef Ringnes
718 Hassel
719 Massey
720 South Sverdrup
721 North Sverdrup
722 South Axel Heiberg
723 Axel Heiberg
724 Greely
725 Nansen
726 Ellesmere
727 Ward Hunt
728 Bartlett
729 Alert
739 = CV4
740 = CV5
745 = CW3
746 = CW4
747 = CW5
METAREA XVII
METAREA XVIII
GREENLAND
DRAFT
80°
85°
75°
140°
130°
120°
110°
100°
90W°
70°N
60°
70°

CANADA (Arctic Coast, Atlantic Coast and Saint Lawrence River)

LABRADOR (GOOSE BAY) (CANADIAN COAST GUARD) (VOK)

Control Centre: 53°18′·20N 60°31′·45W

A	2598	RT (MF)	St. Anthony	51°30′·00N 55°49′·43W
B			Cartwright (MF)	53°42′·50N 57°01′·28W
			Hopedale	55°27′·45N 60°12′·55W
C	Ch 83B	VHF	Cartwright	53°43′·63N 56°58′·10W
	Ch 21B		Goose Bay	53°18′·20N 60°31′·45W
			Hopedale	55°27′·45N 60°12′·55W
	Ch 83B		Nain	56°32′·82N 61°42′·82W
D	Ch 21B		Comfort Cove	49°16′·43N 54°52′·53W
			Conche	50°53′·68N 55°53′·05W
			Fox Harbour (Labrador)	52°22′·17N 55°39′·70W
	Ch 83B		L'Anse aux Meadows	51°34′·33N 55°29′·45W
			Twillingate	49°41′·17N 54°48′·00W

Diagrams pages 112, 113 and 114

Weather Bulletins

A: 0107 1337 1937 **B:** 0137 1007 **C, D:** Continuous	Weather synopsis, forecasts and wave height forecasts for Sea Areas 220–230, 235, 237 and 238.
A: 0907 **B:** 1437 2037	Weather synopsis, forecasts for Sea Areas 220–230, 235, 237 and 238.
C: Continuous	Actual weather observations when available, for the following sites: Goose Bay, Cartwright, Makkovik, Hopedale, Nain, Mary's Harbour.
D: Continuous	Actual weather observations when available, for the following sites: St. Anthony Airport, Englee, La Scie, Blanc Sablon, Mary's Harbour, Twillingate, Pool's Island, St. Anthony's Harbour.

Navigational Warnings

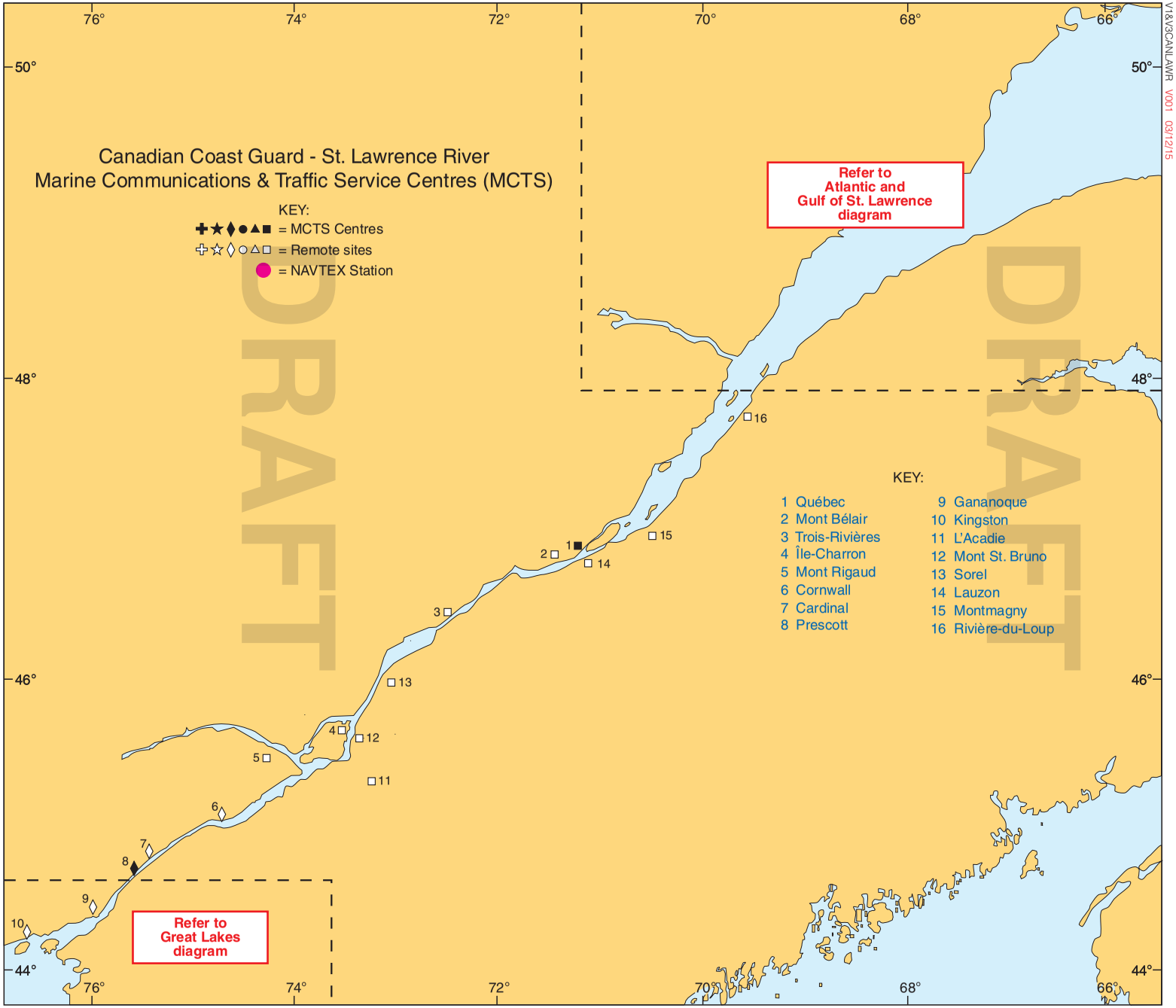
A: 1237 1907 **D:** Continuous	Notices to shipping for an area bounded by Flower's Cove to the west, Cartwright to the north and Cape Freels to the southeast.
B: 1107 2307	Notices to shipping: Nearshore - Belle Isle to Cape Chidley; Offshore - North Atlantic, Cape Bauld to Cape Chidley.
C: Continuous	Notices to shipping: Belle Isle to Cape Chidley.
A: 1237 1907 **B:** 1107 2037 **C, D:** Continuous	Notices to fishermen when available.
A: 0107	Iceberg bulletin for the Newfoundland coast and the Strait of Belle Isle.
A: 0907 1907 **D:** Continuous	Iceberg bulletin for the east coast of Newfoundland and the Strait of Belle Isle.
A: 0107 0907 1907 **D:** Continuous	Ice conditions and forecast for the east coast of Newfoundland and the Labrador coast south of 54°N.
B: 0137 2037 **C:** Continuous	Ice edge and conditions for the Labrador coast.
B: 1007 1437	Ice conditions and forecast for the Labrador coast.

LES ESCOUMINS (CANADIAN COAST GUARD) (VCF)

Control Centre: 48°19′·07N 69°25′·22W

A	2749	RT (MF)	La Vernière	47°21′·46N 61°55′·49W
	2598		Natashquan	50°08′·67N 61°48′·00W
B	Ch 21B	VHF	Cap-aux-Meules	47°23′·23N 61°51′·67W
			Carleton	48°08′·00N 66°07′·33W
			Forillon	48°50′·03N 64°15′·50W
	Ch 25B		Harrington Harbour	50°30′·00N 59°29′·28W
	Ch 83B		Havre St-Pierre	50°16′·25N 63°40′·73W
	Ch 25B		Heath Point	49°05′·08N 61°42′·15W
	Ch 83B		La Romaine	50°12′·95N 60°41′·22W

Continued on page 121


Canadian Coast Guard - St. Lawrence River
Marine Communications & Traffic Service Centres (MCTS)
KEY:
= MCTS Centres
= Remote sites
= NAVTEX Station
Refer to Atlantic and Gulf of St. Lawrence diagram
Refer to Great Lakes diagram
KEY:
1 Québec
2 Mont Bélair
3 Trois-Rivières
4 Île-Charron
5 Mont Rigaud
6 Cornwall
7 Cardinal
8 Prescott
9 Gananoque
10 Kingston
11 L'Acadie
12 Mont St. Bruno
13 Sorel
14 Lauzon
15 Montmagny
16 Rivière-du-Loup
76°
74°
72°
70°
68°
66°
50°
48°
46°
44°
DRAFT
V1&V3CANLAWR V001 03/12/15

CANADA (Arctic Coast, Atlantic Coast and Saint Lawrence River)

LES ESCOUMINS (CANADIAN COAST GUARD) (VCF) (Continued)

B	Ch 21B	VHF	Natashquan	50°08′·67N 61°48′·00W
	Ch 83B		Newport	48°13′·62N 64°47′·55W
C	Ch 21B		Cap à l'Est	48°22′·96N 70°41′·21W
			Grosses-Roches	48°54′·83N 67°06′·61W
			Lac D'aigle	50°17′·35N 66°18′·68W
	Ch 83B		Mont-Joli	48°36′·42N 68°13′·55W
			Mont-Louis	49°12′·88N 65°46′·44W
			Sacré Coeur	48°12′·83N 69°52′·23W

Diagrams pages 112, 114, 116 and 120

Weather Bulletins

A: 0437 0847 1407 2317 **B:** Continuous	Weather synopsis and forecast for sea areas 215–221 and 301–302. Wave height forecasts for sea areas 215, 217, 219–221, 301–302.
C: Continuous	Weather forecasts for sea areas 219 and 301–305.

Navigational Warnings

A: 0937 1737	Notices to shipping. Notices to shipping revising the position of every reported offshore exploration and exploitation vessel.
A: 0437 0937 1737 2317 **B, C:** Continuous	Notices to fishermen when available.
A: 0937 1737 **B:** Continuous	Ice reports.
B: Continuous	Notices to shipping for the Gulf of St. Lawrence including the Magdalene Islands, the coast between Sept-Îles and Blanc Sablon, the southern shore of 66°W eastward including the Baie des Chaleurs up to Miramichi beach. Notices to shipping revising the position of every reported offshore exploration and exploitation vessel.
C: Continuous	Notices to shipping for the Saguenay River and the St. Lawrence River from Île aux Coudres to a line from Mingan to Cap Gaspé including Port Menier and the western point of Anticosti Island. Ice information for the Saguenay River and the St. Lawrence River from Île aux Coudres to Cabot and Belle-Isle Straits when available.

NOTE(S): 1. All broadcasts are made in English and French.
2. Hourly weather observations for certain specific locations, weather synopsis, other forecast areas and MAFOR codes are available on request.

PLACENTIA (CANADIAN COAST GUARD) (VCP)

Control Centre: 47°17′·00N 53°59′·00W

A	2598	RT (MF)	St. Lawrence	46°55′·10N 55°22′·72W
B		RT(MF)	St. John's	47°36′·67N 52°40′·02W
C	Ch 21B	VHF	Bay L'Argent	47°32′·00N 54°51′·77W
	Ch 83B		Cape Pine	46°36′·95N 53°32′·03W
			Fortune Head	47°04′·03N 55°50′·87W
	Ch 23B		Freshwater	47°15′·76N 53°59′·04W
	Ch 28B		Hermitage	47°33′·57N 55°56′·32W
	Ch 21B		St. Lawrence	46°55′·10N 55°22′·72W
D			Cape Bonavista	48°41′·80N 53°05′·30W
	Ch 28B		Lumsden	49°17′·23N 53°35′·08W
	Ch 21B		St. John's	47°36′·67N 52°40′·02W
	Ch 83B		Victoria	47°49′·90N 53°18′·08W

Diagrams pages 112, 113 and 114

Weather Bulletins

A: 0048 1607	Weather synopsis, forecasts and wave height forecasts for Sea Areas 231–238. Weather and wave height forecasts for Sea Area 213.
A: 0737 2137	Weather synopsis and forecasts for Sea Areas 231–238. Weather forecasts for Sea Area 213.
B: 0007 1637	Weather synopsis, forecasts and wave height forecasts for Sea Areas 231–238.
B: 0837 2007	Weather synopsis and forecasts for Sea Areas 231–238.

Continued overleaf

CANADA (Arctic Coast, Atlantic Coast and Saint Lawrence River)

PLACENTIA (CANADIAN COAST GUARD) (VCP) (Continued)

C: Continuous	Weather synopsis, forecasts and wave height forecasts for Sea Areas 231–238. Weather and wave height forecasts for Sea Area 213. Actual weather observations when available for the following sites: Cape Race, Argentia, St. Pierre, Marticot, Sagona and St. Lawrence
D: Continuous	Weather synopsis, forecasts and wave height forecasts for Sea Areas 231–238. Actual weather observations, when available, for the following sites: Pool's Island, Bonavista, Grates Cove, St. John's, Cape Race and Argentia
Navigational Warnings	
A: 1137 1807 **C:** Continuous	Notices to shipping, Ramea Island to Cape Ballard. Notices to shipping revising the position of every reported offshore exploration and exploitation vessel.
B: 0007 0837 1637 2007 **D:** Continuous	Ice edge and conditions for East Newfoundland coast south of Strait of Belle Isle and approaches.
A: 0737 2137 **C:** Continuous	Ice edge and conditions for south coast east of Penguin Island, east coast to Cape Freels.
B: 1307 2207	Notices to shipping: Nearshore - Cape Pine to Twillingate Offshore - North Atlantic to Cape Bauld. Notices to shipping revising the position of every reported offshore exploration and exploitation vessel.
A: 0737 2137 **B:** 0837 2207 **C, D:** Continuous	Notices to fishermen when available.
C: Continuous	Notices to shipping, Placentia Bay and Approaches, Ferryland Head to Cape St. Mary's on VHF Ch 23B only.
D: Continuous	Notices to shipping Cape Pine to Twillingate.

PORT AUX BASQUES (CANADIAN COAST GUARD) (VOJ)

Control Centre: 47°34′·32N 59°07′·96W

A[1]	2598	RT (MF)	Stephenville	48°33′·28N 58°45′·53W
English				
B	Ch 83B	VHF	Bonne Bay	49°36′·17N 57°57′·40W
	Ch 28B		Mount Moriah	48°58′·12N 58°02′·82W
			Pine Tree	48°35′·33N 58°39′·90W
	Ch 21B		Pointe Riche	50°41′·98N 57°24′·32W
			Ramea Island	47°30′·75N 57°24′·52W
	Ch 28B		Table Mountain	47°41′·23N 59°16′·43W
French				
C	Ch 21B	VHF	Bonne Bay	49°36′·17N 57°57′·40W
	Ch 83B		Mount Moriah	48°58′·12N 58°02′·82W
			Pine Tree	48°35′·33N 58°39′·90W
	Ch 23B		Pointe Riche	50°41′·98N 57°24′·32W

Diagrams pages 112 and 114

Weather Bulletins	
A: 0207 1507 **B, C:** Continuous	Weather synopsis, forecasts and wave height forecasts for Sea Areas 220–222 and 231. Weather forecasts and wave height forecasts for Sea Areas 215, 217 and 219.
A: 0807 2107	Weather synopsis and forecasts for Sea Areas 220–222 and 231. Weather forecasts for Sea Areas 215, 217 and 219.
B, C: Continuous	Actual weather observations when available for the following sites: (a) St. Paul Island (b) Burgeo (c) Port aux Basque (d) Wreckhouse (e) Stephenville (f) Corner Brook (g) Rocky Harbour (h) Daniel's Harbour (i) Ferolle Point (j) Blanc Sablon.
Navigational Warnings	
A: 1207 1837 **B, C:** Continuous	Notices to shipping for Penguin Island to Cape Norman, including Labrador Coast between West Point (Red Bay) and the Québec / Labrador border.
A: 1207 2107 **B, C:** Continuous	Notices to fishermen when available.
A: 0807 1837 **B, C:** Continuous	Ice edge and conditions for Sea Areas 215, 217, 219–221 and 231.

[1] Broadcast are made in English followed by French.

CANADA (Arctic Coast, Atlantic Coast and Saint Lawrence River)

QUÉBEC (CANADIAN COAST GUARD) (VCC)

Control Centre: 46°47′·77N 71°13′·30W

A	Ch 83B	VHF	L'Acadie[1]	45°19′·28N 73°18′·57W
B	Ch 21B		Lauzon	46°48′·78N 71°09′·57W
	Ch 83B		Montmagny	46°55′·70N 70°30′·75W
	Ch 21B		Rivière du Loup	47°45′·58N 69°36′·20W
	Ch 83B		Trois-Rivières	46°23′·82N 72°27′·21W
C	Ch 25B		Mont Rigaud[2]	45°27′·00N 74°17′·80W
	Ch 21B		Mont Saint-Bruno	45°33′·42N 73°19′·55W
D	Ch 25B		Sorel	46°02′·80N 73°06′·90W

Diagrams pages 116 and 120

Weather Bulletins

A-D: Continuous	Weather synopsis and forecasts for Sea Areas 303[1] and 305–309.

Navigational Warnings

A-D: Continuous	Notices to Shipping for the region: from a line Les Escoumins–Trois-Pistoles to Cornwall (Ontario), including the Ottawa River, Lac des Deux-Montagnes between buoy H331 (Papineauville) and Ste.Anne de Bellevue, Lake St.François, Lake St.Louis, Rivière des Milles-Îles, Rivière des Prairies and Rivière Richelieu up to U.S boundaries, including Missisquoi Bay.
A-D: Continuous	Water level reports for Montréal, Sorel, Trois-Rivières, Pointe Claire[1], Ste.Anne de Bellevue[1].
A-D: Continuous	Ice Reports.
A-D: Continuous	Seaway Message.

[1] Operational 1 May–31 Oct
[2] Operational mid Mar–end of Dec

NOTE(S): 1. Broadcasts in English and French.
2. MAFOR available on request.

SYDNEY (CANADIAN COAST GUARD) (VCO)

Control Centre: 46°11′·23N 59°53′·98W

A	2749	RT (MF)	Port Caledonia	46°11′·16N 59°53′·64W
B	Ch 83B	VHF	Cape Egmont	46°24′·13N 64°08′·03W
			Cape North	47°00′·63N 60°25′·68W
	Ch 21B		Montague	46°11′·67N 62°39′·58W
			Point Escuminac	47°04′·42N 64°47′·88W
			Port Caledonia	46°11′·16N 59°53′·64W

Diagrams pages 112 and 114

Weather Bulletins

A: 0040 0740 1440 2010 **B:** Continuous	Weather synopsis and forecasts for Sea Areas 209, 213–218, 231 and 232. Wave height forecasts for Sea Areas 209, 213–215 and 217.

Navigational Warnings

A: 0040 1440 **B:** Continuous	Notices to shipping in areas Cape Breton Shore (covering Cabot Strait to Banquereau Bank), Gulf of St. Lawrence, Newfoundland south coast, Prince Edward Island and Miramichi Bay. Notices to shipping revising the position of every reported offshore exploration and exploitation vessel.
A: 0740 2010 **B:** Continuous	Notices to fishermen when available.
B: Continuous	Ice forecasts for Prince Edward Island fishermen.

NOTE(S): All broadcasts are made in English and French.

CANADA (Great Lakes)

NAVTEX

H	Ferndale	518 kHz	44°56′·22N 81°14′·00W
P	Pass Lake		48°33′·80N 88°39′·37W

Diagrams pages 39, 116 and 125

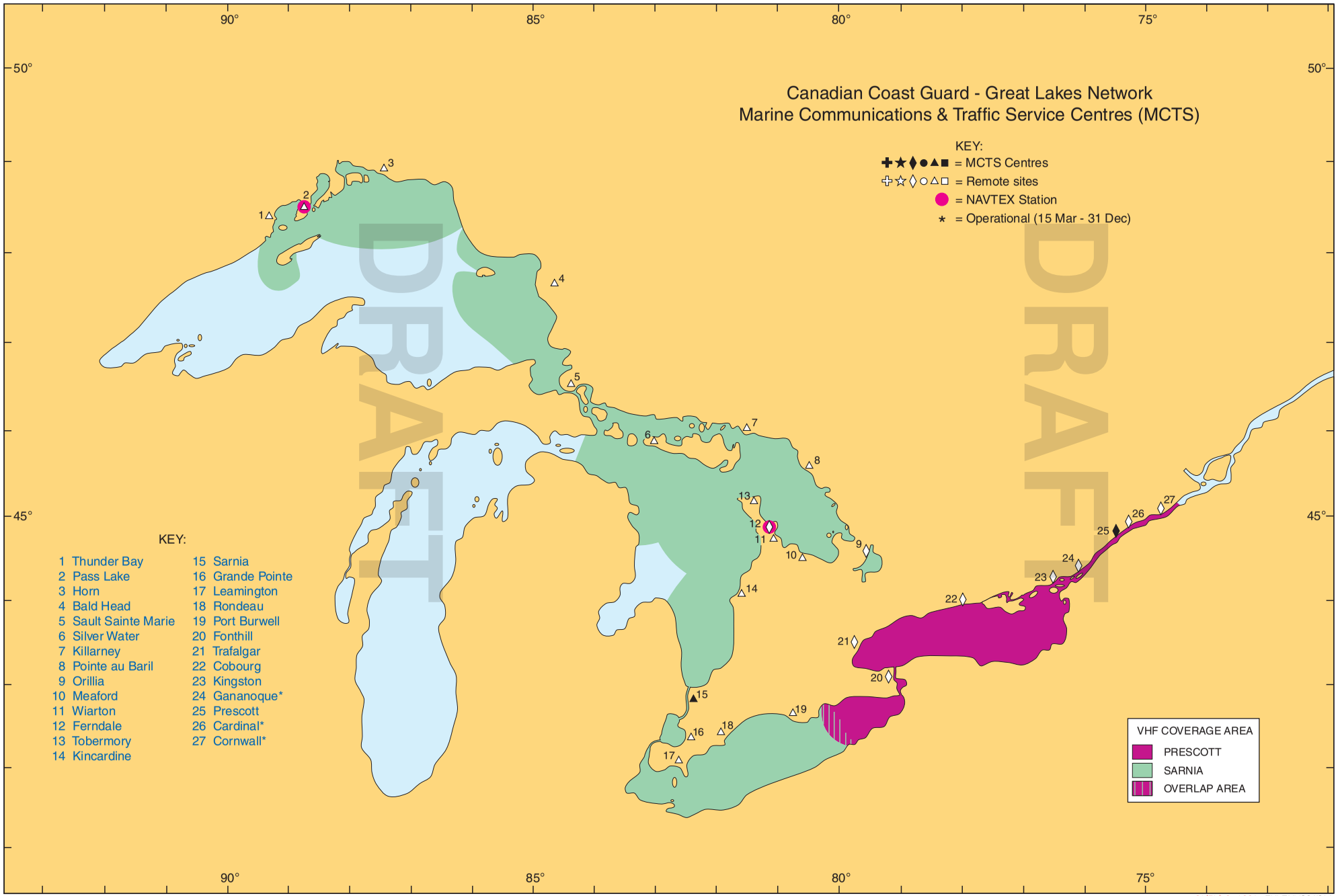
Continued overleaf

CANADA (Great Lakes)

NAVTEX (Continued)

Weather Bulletins	
H: 0510 0910 1710 2110 P: 0230 1030 1430 2230	Weather forecast.
Navigational Warnings	
H: 0110 1310 P: 0630 1830	Notices to shipping.
Ice Warnings and Reports	
H: 0110 1310 P: 0630 1830	Ice information (during the season).

PRESCOTT (CANADIAN COAST GUARD) (VBR)				
Control Centre: 44°42′·40N 75°31′·10W				
English				
A	Ch 21B	VHF	Cardinal[1]	44°47′·28N 75°25′·34W
	Ch 83B		Cornwall[1]	45°01′·10N 74°43′·78W
			Kingston	44°15′·77N 76°40′·65W
B	Ch 21B		Cobourg	44°03′·98N 78°12′·68W
	Ch 83B		Fonthill	43°03′·18N 79°18′·70W
C	Ch 21B		Orillia	44°34′·67N 79°17′·67W
French				
D	Ch 28B	VHF	Cardinal[1]	44°47′·28N 75°25′·34W
	Ch 23B		Cornwall[1]	45°01′·10N 74°43′·78W
			Kingston[1]	44°15′·77N 76°40′·65W
Diagrams pages 116, 120 and 125				
Weather Bulletins				
A: Continuous (CMB EAST)	Localised weather warnings / watches, marine weather statements, weather synopsis, regular marine forecasts, MAFOR code (on request), wave height forecast and extended marine forecasts for Sea Areas 309, 401 and 402.			
B: Continuous (CMB WEST)	Localised weather warnings / watches, marine weather statements, weather synopsis, regular marine forecasts, MAFOR code (on request), wave height forecast and extended marine forecasts for Sea Areas 402 and 403.			
C: Continuous	Localised weather warnings / watches, marine weather statements, weather synopsis, regular marine forecasts, MAFOR code (on request), wave height forecast and extended marine forecasts for Sea Area 406. Current small craft weather reports.			
D: Continuous	Localised weather warnings / watches, marine weather statements, weather synopsis, regular marine forecasts, MAFOR code (on request) and extended marine forecasts for Sea Areas 309 and 401.			
Navigational Warnings				
A: Continuous (CMB EAST)	Notices to Shipping for St. Lawrence River west of Melocheville, Lake Ontario east of 77°40′W, Trent River and portions of the Rideau Canal receiving coverage from the Kingston transmitter. Water level reports for Montréal Harbour and Lake Ontario. Ice forecast for Lake Ontario and Lake Erie.			
B: Continuous (CMB WEST)	Notices to Shipping on Lake Ontario and Lake Erie east of 80°20′W and portions of the Trent-Severn waterway system receiving coverage from the Cobourg transmitter. Notices to shipping revising the position of every reported offshore exploration and exploitation vessel. Water level reports for Toronto Harbour, Lake Ontario and Lake Erie. Ice forecast for Lake Ontario and Lake Erie.			
C: Continuous	Notices to Shipping for the Trent Severn waterway and southern Georgian Bay contiguous from the Severn River to 80°W. Water level reports for Lake Huron.			
D: Continuous	Notices to Shipping for St. Lawrence River west of Melocheville. Water level reports for Montréal Harbour.			
[1] Seasonal operational period: 15th March through 31st December.				

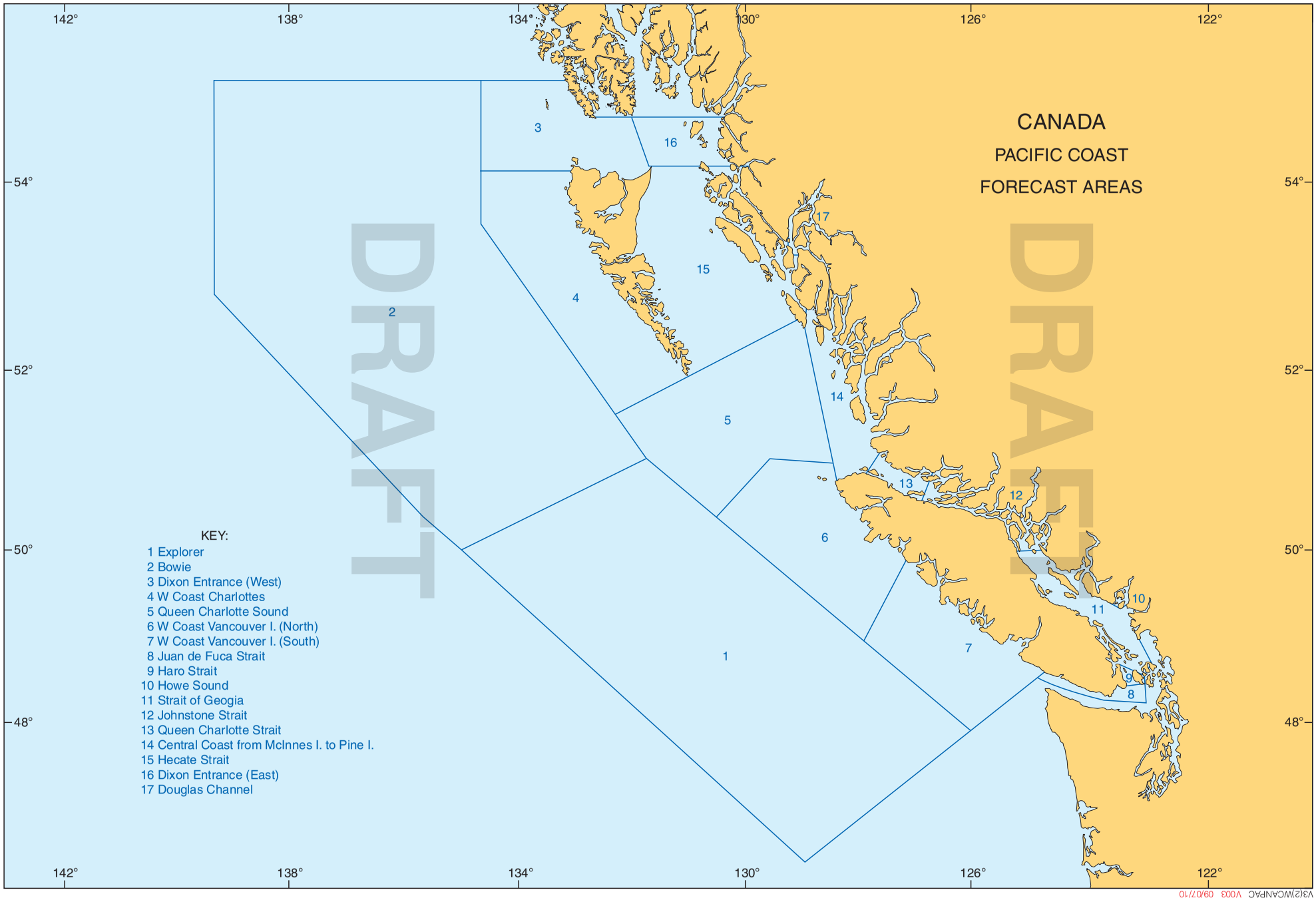

Canadian Coast Guard - Great Lakes Network
Marine Communications & Traffic Service Centres (MCTS)
KEY:
= MCTS Centres
= Remote sites
= NAVTEX Station
= Operational (15 Mar - 31 Dec)
90°
85°
80°
75°
50°
45°
KEY:
1 Thunder Bay
2 Pass Lake
3 Horn
4 Bald Head
5 Sault Sainte Marie
6 Silver Water
7 Killarney
8 Pointe au Baril
9 Orillia
10 Meaford
11 Wiarton
12 Ferndale
13 Tobermory
14 Kincardine
15 Sarnia
16 Grande Pointe
17 Leamington
18 Rondeau
19 Port Burwell
20 Fonthill
21 Trafalgar
22 Cobourg
23 Kingston
24 Gananoque*
25 Prescott
26 Cardinal*
27 Cornwall*
VHF COVERAGE AREA
PRESCOTT
SARNIA
OVERLAP AREA
DRAFT
DRAFT
V18V3CANLAKE V001 04/12/15

CANADA (Great Lakes)

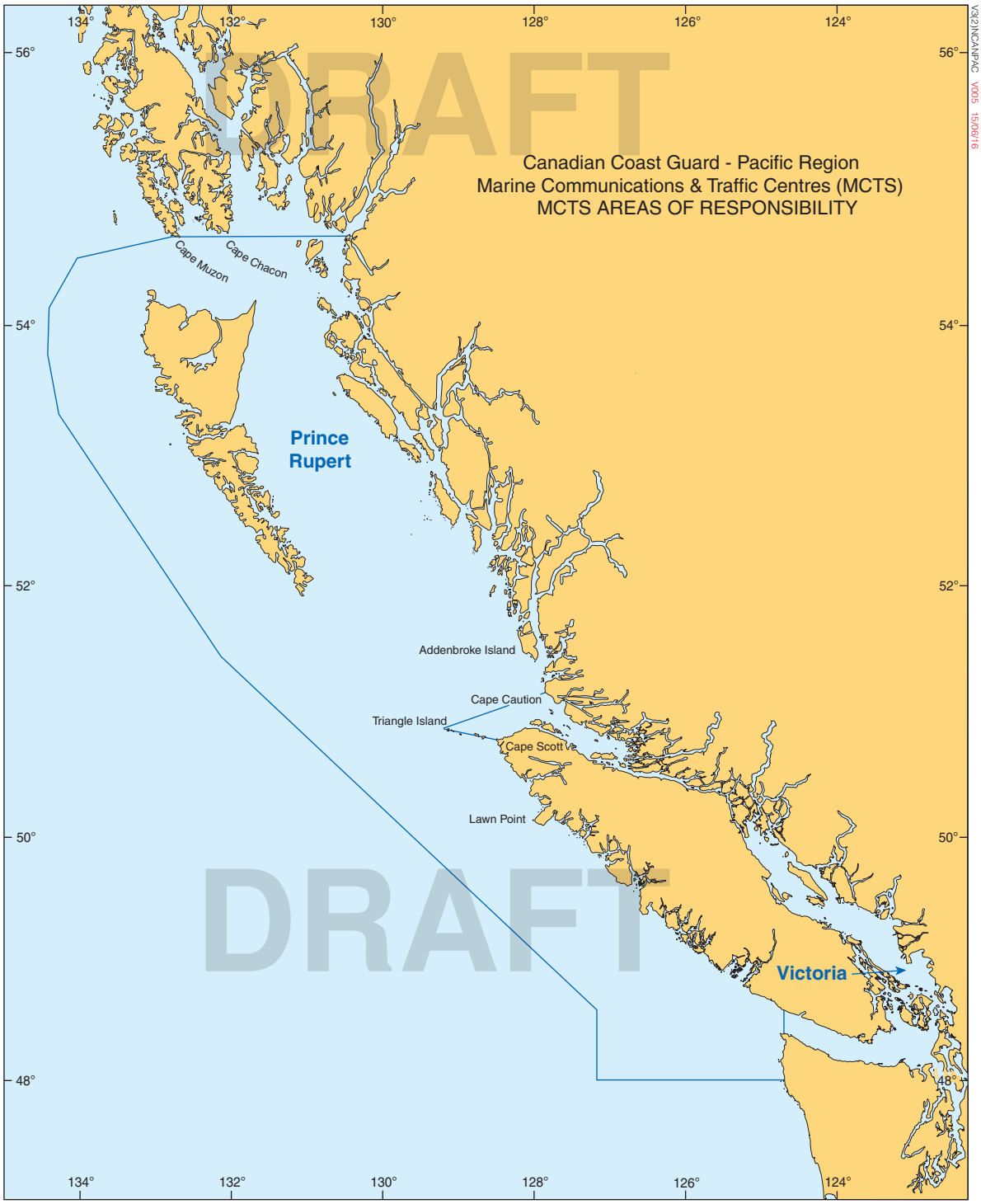
SARNIA (CANADIAN COAST GUARD) (VBE)				
Control Centre: 43°01′·68N 82°11′·15W				
A	Ch 83B	VHF	Kincardine	44°07′·03N 81°41′·40W
	Ch 21B		Sarnia	43°01′·68N 82°11′·15W
B	Ch 83B		Leamington	42°04′·17N 82°39′·97W
	Ch 21B		Port Burwell	42°34′·97N 80°36′·23W
C	Ch 83B		Bald Head	47°39′·79N 84°47′·69W
	Ch 21B		Horn	48°49′·04N 87°21′·25W
			Sault Ste. Marie (Gros Cap)	46°32′·27N 84°34′·92W
	Ch 83B		Thunder Bay	48°26′·03N 89°18′·10W
D	Ch 21B		Killarney	45°58′·09N 81°29′·36W
	Ch 83B		Meaford	44°30′·95N 80°34′·00W
	Ch 21B		Pointe au Baril	45°33′·88N 80°19′·03W
	Ch 83B		Silver Water (Manitoulin Island)	45°54′·05N 82°54′·83W
	Ch 21B		Tobermory	45°09′·60N 81°29′·75W
Diagrams pages 116 and 125				
Weather Bulletins				
A: Continuous (CMB NORTH) **B:** Continuous (CMB SOUTH) **C:** Continuous (CMB WEST) **D:** Continuous (CMB EAST)	Weather warnings / watches, marine weather statements, weather synopsis, regular marine forecasts, MAFOR code (available on request), wave height forecast and extended marine forecasts for Sea Areas 403–406 and 408.			
D: Continuous (CMB EAST)	Recreational marine forecast for the North Channel.			
Navigational Warnings				
A: Continuous (CMB NORTH)	Notices to Shipping for Lake Huron south of 45°10′N, St. Clair River, Lake St. Clair and Detroit River. Water level reports for Lakes Erie, St. Clair and Huron. Ice forecast for Lakes Erie, St. Clair and Huron.			
B: Continuous (CMB SOUTH)	Notices to Shipping in St. Clair River, Lake St. Clair, Detroit River and Lake Erie west of 79°40′W. Notices to Shipping revising the position of every reported offshore exploration and exploitation vessel. Water level reports for Lakes Erie, St. Clair and Huron. Ice forecast for Lakes Erie, St. Clair and Huron.			
C: Continuous (CMB WEST)	Notices to Shipping for Lake Superior and the St. Mary's River. Water levels for Lakes Superior and Huron. Ice forecast for Lakes Superior and Huron.			
D: Continuous (CMB EAST)	Notices to Shipping for Lake Huron north of latitude 44°N, Georgian Bay (including Port Severn Lock), the North Channel and the St. Mary's River. Water levels for Lakes Superior and Huron. Ice forecast for Lakes Superior and Huron.			
NOTE(S): Broadcasts are in English only.				

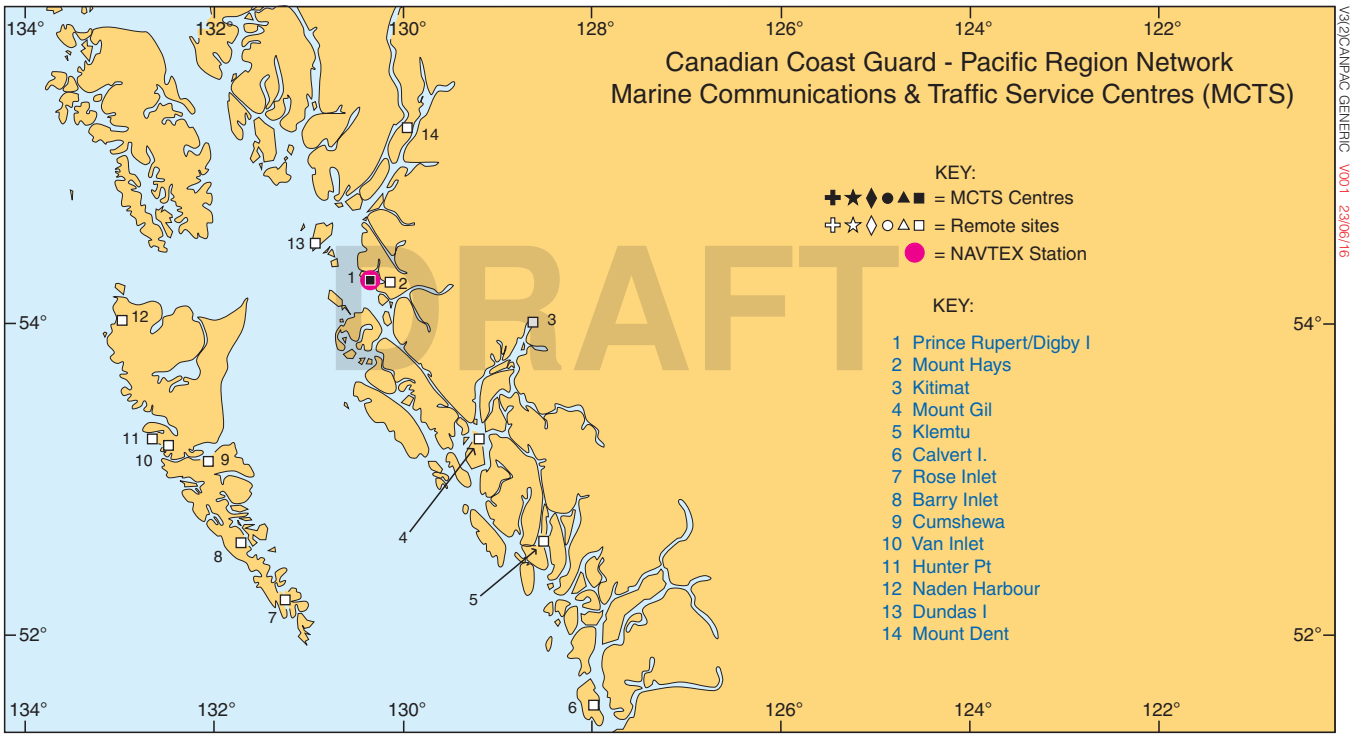
CANADA (Pacific Coast)

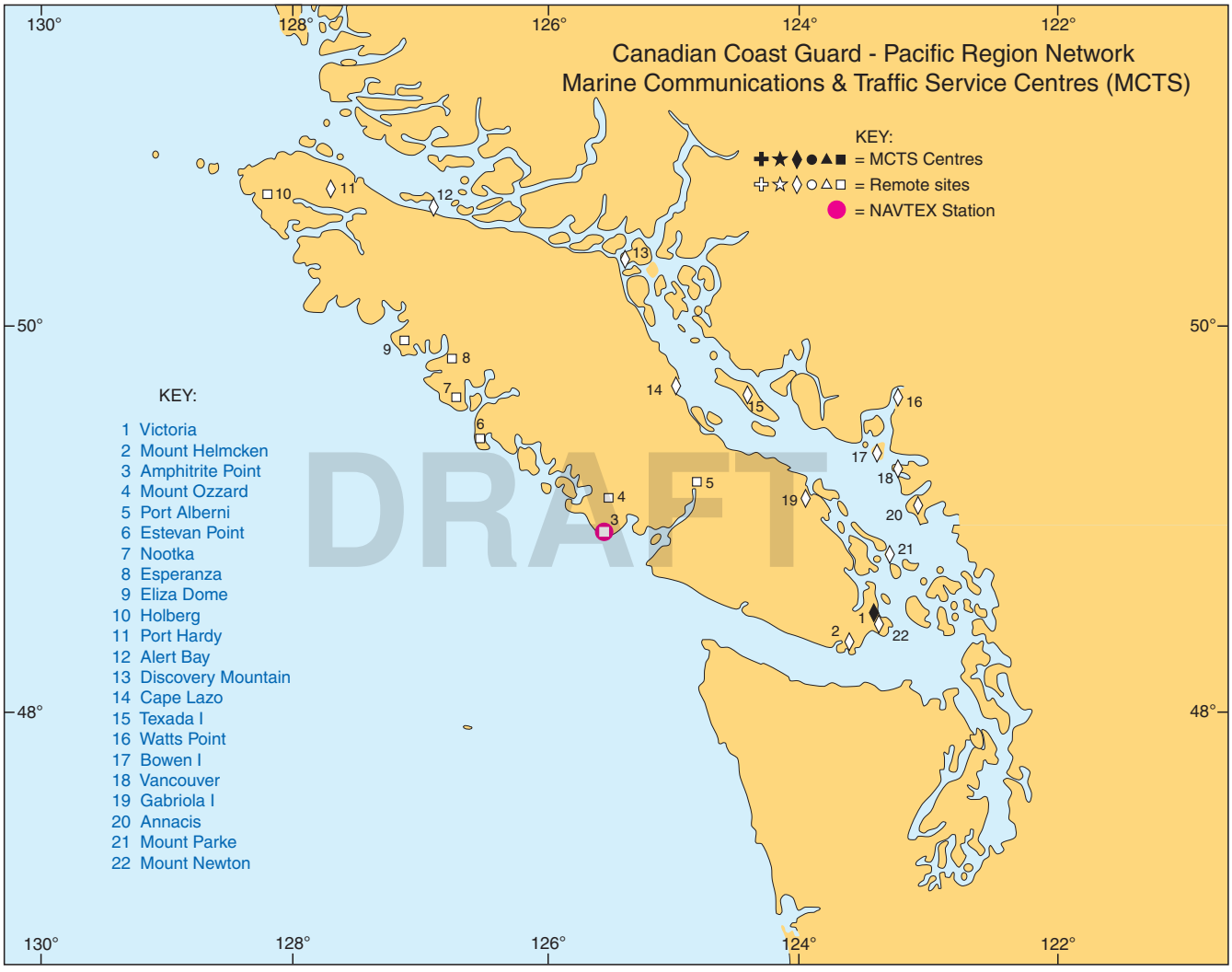
NAVTEX			
H	Amphitrite Point (Prince Rupert MCTS)	518 kHz	48°55′·51N 125°32′·50W
D	Digby Island (Prince Rupert MCTS)		54°17′·91N 130°25′·06W
Diagrams pages 39, 127, 128 and 129			
Weather Bulletins			
H: 0510 0910 1710 2110	Weather forecast for Sea Areas 1 and 5–7.		
H: 0110 0510 0910 1310 1710 2110	Ocean buoy reports: South Nomad, South Brooks, La Perouse Bank and East Dellwood.		
D: 0030 0430 1230 1630	Weather forecast for Sea Areas 2–4.		
D: 0030 0430 1230 1630	Ocean buoy reports: North Nomad, Middle Nomad, West Dixon Entrance, West Moresby and South Moresby.		
Navigational Warnings			
H: 0110 1310 1710 2110 **D:** 0830 2030	Offshore Notices to Shipping.		



V3(2)WCANPAC V003 09/07/10


Canadian Coast Guard - Pacific Region
Marine Communications & Traffic Centres (MCTS)
MCTS AREAS OF RESPONSIBILITY
DRAFT
DRAFT
V3R2INCANPAC V005 15/09/16
134°
132°
130°
128°
126°
124°
56°
54°
52°
50°
48°
Cape Muzon
Cape Chacon
Prince Rupert
Addenbroke Island
Cape Caution
Triangle Island
Cape Scott
Lawn Point
Victoria


Canadian Coast Guard - Pacific Region Network
Marine Communications & Traffic Service Centres (MCTS)
KEY:
= MCTS Centres
= Remote sites
= NAVTEX Station
KEY:
1 Prince Rupert/Digby I
2 Mount Hays
3 Kitimat
4 Mount Gil
5 Klemtu
6 Calvert I.
7 Rose Inlet
8 Barry Inlet
9 Cumshewa
10 Van Inlet
11 Hunter Pt
12 Naden Harbour
13 Dundas I
14 Mount Dent
DRAFT
134°
132°
130°
128°
126°
124°
122°
54°
52°


Canadian Coast Guard - Pacific Region Network
Marine Communications & Traffic Service Centres (MCTS)
KEY:
= MCTS Centres
= Remote sites
= NAVTEX Station
KEY:
1 Victoria
2 Mount Helmcken
3 Amphitrite Point
4 Mount Ozzard
5 Port Alberni
6 Estevan Point
7 Nootka
8 Esperanza
9 Eliza Dome
10 Holberg
11 Port Hardy
12 Alert Bay
13 Discovery Mountain
14 Cape Lazo
15 Texada I
16 Watts Point
17 Bowen I
18 Vancouver
19 Gabriola I
20 Annacis
21 Mount Parke
22 Mount Newton
DRAFT
130°
128°
126°
124°
122°
50°
48°

CANADA (Pacific Coast)

FIRING PRACTICE AREA – WP

Approximate Position: 49°20′·00N 128°00′·00W

Located on the approach to Juan de Fuca Strait, Vancouver Island; surface and air firing practice may be conducted in any part of area WP. However, the majority of practice takes place within the two areas designated West Coast Firing Area North (WCFA North) and West Coast Firing Area South (WCFA South), in approximate position 49° 15′·00 N 127° 21′·00 W. For information concerning firing practice operations contact Prince Rupert Traffic on VHF Ch 74.

FIRING PRACTICE AREA – WG

Approximate Position: 49°18′·00N 123°54′·00W

Located in the Strait of Georgia, armed forces equipment tests are frequently conducted in Exercise Area WG. Equipment recovery vessels operate by day or night and exhibit a flashing red light, in addition to the prescribed lights and shapes. They should not be approached closer than 1400 metres due to outlying unlit buoys, which may also be located randomly within the area and are not charted. Vessels are therefore strongly advised to avoid practice area WG, particularly during the hours of darkness or reduced visibility. During testing, any vessel within the area will be required to clear or stop on demand from 'Winchelsea Island Control' or any range vessels/helicopter. Additional information may be obtained as follows:

1. Winchelsea Island Control on VHF Ch 10 or 16 and Victoria Traffic on VHF Ch 11 (for safe transit area information when approaching Area 'WG'.
2. VHF Ch 21B or WX3 (listen only, for active times).
3. Winchelsea Island Control telephone +1 888 2211011 (next day's activity only).
4. CFMETR Range Officer telephone +1 250 468 5002 (long range planning).
5. Victoria MCTS Centre telephone +1 250-3638904 or e-mail mcts@pac.dfo-mpo.gc.ca

PRINCE RUPERT (CANADIAN COAST GUARD) (VAJ)

Control Centre: 54°19′·80N 130°16′·70W

A	2054	RT (MF)	Amphitrite Point	48°55′·52N 125°32′·42W
B			Digby Island	54°17′·91N 130°25′·06W
			Hunter Point	53°15′·52N 132°42′·88W
C	162·55 MHz *(Ch WX1)*	VHF	Eliza Dome	49°52′·38N 127°07′·38W
	162·475 MHz *(Ch WX3)*		Estevan Point	49°22′·98N 126°32′·64W
	162·4 MHz *(Ch WX2)*		Nootka	49°35′·56N 126°36′·92W
D			Port Alberni	49°13′·12N 124°48′·72W
			Barry Inlet	52°34′·50N 131°45′·22W
			Calvert Island	51°35′·35N 128°00′·72W
	162·475 MHz *(Ch WX3)*		Cumshewa	53°09′·55N 131°59′·78W
	162·4 MHz *(Ch WX2)*		Dundas Island	54°31′·27N 130°54′·92W
	Ch 21B		Kitimat	54°03′·33N 128°37′·85W
	162·55 MHz *(Ch WX1)*		Klemtu	52°34′·75N 128°33′·75W
	Ch 21B		Mount Dent	55°12′·97N 129°59′·30W
	162·4 MHz *(Ch WX2)*		Mount Gil	53°15′·77N 129°11′·70W
	Ch 21B		Mount Hays	54°17′·20N 130°18′·82W
	162·475 MHz *(Ch WX3)*		Naden Harbour	53°57′·30N 132°56′·50W
	Ch 21B		Rose Inlet	52°13′·30N 131°12′·90W
	162·55 MHz *(Ch WX1)*		Van Inlet	53°15′·13N 132°32′·52W
E	Ch 21B		Esperanza	49°50′·53N 126°48′·37W
			Holberg	50°38′·39N 128°08′·22W
			Mount Ozzard	48°57′·55N 125°29′·58W

Diagrams pages 127, 128 and 129

Weather Bulletins

A:	0450 1050 1650 2250	Weather synopsis and forecast for Sea Areas 1 and 5–7 Wave height forecast for Sea Areas 1 and 5–7. Extended forecast for Sea Areas 1 and 5–7. Ocean buoy reports: South Nomad, South Brooks, La Perouse Bank and East Dellwood.
B:	0515 1115 1715 2315	Weather synopsis and forecast for Sea Areas 2–4. Wave height forecast for Sea Areas 2–4. Extended forecast for Sea Areas 2–4. Ocean buoy reports: North Nomad, Middle Nomad, West Dixon Entrance, West Moresby and South Moresby.

Continued on next page

CANADA (Pacific Coast)

PRINCE RUPERT (CANADIAN COAST GUARD) (VAJ) (Continued)

C[1], E[1]:	Continuous	Weather synopsis and forecast for Sea Areas: 1, 5–8 and 13–14. Wave height forecast for Sea Areas 1, 5–7 and 14. Extended forecast for Sea Areas 1, 5–8 and 13–14. Automated weather reports: Cape St. James, Herbert Island, Sartine Island, Solander Island, Sheringham Point, Race Rocks, Discovery Island. Ocean buoy reports: West Sea Otter, East Dellwood, South Brooks, La Perouse, South Moresby. Local and lighthouse weather reports: Trial Island, Carmanah Point, Pachena Point, Cape Beale, Lennard Island, Estevan Point, Nootka, Quatsino, Cape Scott, Pine Island, Egg Island, McInnes Island.
D[2]:	Continuous	Weather synopsis and forecast for Sea Areas 2–5 and 13–17. Wave height forecast for Sea Areas 2–5 and 14–16. Extended marine forecast for Sea Areas 2–5 and 13–17. Automated weather reports: Grey Islet, Lucy Island, Holland Rock, Bonilla Island, Rose Spit, Kindakun Rock, Prince Rupert, Langara Island, Sandspit, Cumshewa Island, Cape St. James, Cathedral Point, Sartine Island, Herbert Island. Ocean buoy reports: North Nomad, Middle Nomad, West Dixon Entrance, Central Dixon Entrance, North Hecate Strait, South Hecate Strait, West Moresby, Nanakwa Shoal, West Sea Otter, South Moresby, East Dellwood. Lighthouse weather reports: Green Island, Triple Island, Bonilla Island, Langara Island, Boat Bluff, McInnes Island, Ivory Island, Dryad Point, Addenbroke Island, Egg Island, Pine Island, Cape Scott.
Navigational Warnings		
A: **B:**	0450 1050 1650 2250 0515 1115 1715 2315	Offshore Notices to Shipping and Notices to fishermen.
C[1], E[1]: **D[2]:**	Continuous Continuous	Safety Notices to Shipping only, together with Notices to fishermen.

[1] Continuous marine broadcasts are interrupted during live MF broadcasts and at 0715, 1315 and 2015 for all Notices to Shipping and Notices to Fishermen transmissions.
[2] Continuous marine broadcasts are interrupted during live MF broadcasts and at 0705, 1305 and 2005 for all Notices to Shipping and Notices to Fishermen transmissions.

NOTE(S): Continuous marine broadcast information is available by telephone: +1 250 6249009 (CMB North) or +1 250 7263415 (CMB South).

VICTORIA (CANADIAN COAST GUARD) (VAK)

Control Centre: 48°39′·10N 123°26′·80W

A	Ch 21B	VHF	Cape Lazo	49°42′·35N 124°51′·75W
			Discovery Mountain	50°19′·42N 125°22′·27W
B			Mount Parke	48°50′·38N 123°17′·68W
C	162·55 MHz *(Ch WX1)*		Texada Island	49°41′·88N 124°26′·34W
D			Alert Bay	50°35′·22N 126°55′·49W
E			Watts Point (Howe Sound)	49°38′·90N 123°12′·60W
F	162·475 MHz *(Ch WX3)*		Port Hardy	50°41′·58N 127°41′·88W
G			Bowen Island	49°20′·73N 123°23′·17W
H			Mount Helmcken	48°24′·12N 123°34′·28W

Diagrams pages 127, 128 and 129

Continued overleaf

CANADA (Pacific Coast)

VICTORIA (CANADIAN COAST GUARD) (VAK) (Continued)

Weather Bulletins		
B, E, G:	Continuous (except during live broadcasts)	Weather synopsis and forecasts for Sea Areas 8–11. Extended forecast for Sea Areas 7–11. Lighthouse weather reports: Chrome Island, Merry Island, Entrance Island and Trial Island. Automated weather reports: Sheringham Point, Race Rocks, Victoria/Gonzales Point, Discovery Island, Kelp Reef, Saturna Island, Sandheads, Point Atkinson, Pam Rocks, Entrance Island, Ballenas Island and Sisters Islet. Ocean buoy report: Halibut Bank. Local weather reports: Tsawwassen.
H:	Continuous (except during live broadcasts)	Weather synopsis and forecasts for Sea Areas 7–11. Wave height forecast for Sea Area 7. Extended forecast for Sea Areas 7–11. Local and Lighthouse weather reports: Estevan Point, Lennard Island, Amphitrite Point, Cape Beale, Pachena Point, Carmanah Point and Trial Island. Automated weather reports: Sheringham Point, Race Rocks, Victoria/Gonzales Point, Discovery Island, Kelp Reef, Saturna Island and Sandheads. Ocean buoy report: La Perouse Bank. Automated weather reports for Juan de Fuca Strait: Cape Flattery, “JA” Buoy, Hein Bank, Smith Island and Ogden Point.
D, F:	Continuous (except during live broadcasts)	Weather synopsis and weather forecast for Sea Areas 5, 6 and 11–14. Wave height forecast for Sea Areas 5, 6 and 14. Extended forecast for Sea Areas 5, 6, 11–14. Lighthouse weather reports: McInnes Island, Addenbroke Island, Egg Island, Pine Island, Scarlett Point, Pulteney Point, Chatham Point, Cape Scott and Quatsino. Automated weather reports: Fanny Island, Herbert Island, Cape St. James, Sartine Island and Solander Island. Ocean buoy reports: South Hecate Strait, South Morseby, East Dellwood, West Sea Otter and South Brooks.
A, C:	Continuous (except during live broadcasts)	Weather synopsis and forecast for Sea Areas 11–13. Extended forecast for Sea Areas 11–13. Local and Lighthouse weather reports: Chatham Point, Cape Mudge, Cape Lazo, Chrome Island, Merry Island and Entrance Island. Automated weather reports: Fanny Island, Grief Point, Sisters Islet, Ballenas Island and Entrance Island. Ocean buoy reports: Sentry Shoal and Halibut Bank.
Navigational Warnings		
B, E, G, H: **A, C, D, F:**	0710 1310 2110 0720 1320 2020	Notices to shipping.
A-H:	Continuous (except during live broadcasts)	Safety notices to shipping only.
B, E, G, H: **A, C, D, F:**	1310 2110 1320 2020	Notices to fishermen.
B, E, G, H: **A, C, D, F:**	0710 (Tues) 0720 (Tues)	Notices to fishermen - Weekly shellfish update every Tuesday.
B, E, G:	Continuous (except during live broadcasts)	Fraser River salmon fishery information.
NOTE(S):	Continuous marine broadcast information is available by telephone: +1 250 3636880 (Mount Helmcken), +1 250 3636492 & +1 604 6663655 (Bowen Island/Mount Parke), +1 250 3390748 Mid-Island area and +1 250 9745305 North Island area.	

CHILE

GENERAL NOTES

Maritime Safety Information Broadcasts
Storm Warnings, Weather Bulletins and Navigational Warnings are announced on 2182 kHz or VHF Ch 16, before being broadcast on the scheduled frequency or channel number.

INTERNET WEATHER SERVICES

Servicio Meteorologico de la Armada de Chile http://meteoarmada.directemar.cl	Marine weather forecasts and warnings in Spanish.

NAVTEX

A	Antofagasta	518 kHz	23°29′·54S 70°25′·46W
F	Isla de Pascua (Easter Island)[1]		27°09′·11S 109°25′·49W
D	Puerto Montt		41°28′·90S 72°57′·57W
E	Punta Arenas (Magallanes)		53°09′·91S 70°54′·27W
C	Talcahuano		36°41′·50S 73°06′·51W
B	Valparaíso Playa Ancha		33°04′·70S 71°36′·80W
G	Antofagasta	490 kHz	23°29′·54S 70°25′·46W
L	Isla de Pascua (Easter Island)[1]		27°09′·11S 109°25′·49W
J	Puerto Montt		41°28′·90S 72°57′·57W
K	Punta Arenas (Magallanes)		53°09′·91S 70°54′·27W
I	Talcahuano		36°41′·50S 73°06′·51W
H	Valparaíso Playa Ancha		33°04′·70S 71°36′·80W

Diagrams pages 29 and 40

Weather Bulletins

A: 0000 1200	Weather forecast for Sea Areas 1–3 in English.
F: 0050 1250	Weather forecast for Isla de Pascua (Easter Island) and Sea Area 10 in English.
D: 0030 1230	Weather forecast for Sea Areas 4–7 in English.
E: 0040 1240	Weather forecast for Sea Areas 6–9 in English.
C: 0020 1220	Weather forecast for Sea Areas 3–5 in English.
B: 0010 1210	Weather forecast for Sea Areas 2–3 in English.
G: 0100 1300	Weather forecast for Sea Areas 1–3 in Spanish.
L: 0150 1350	Weather forecast for Isla de Pascua (Easter Island) and Sea Area 10 in Spanish.
J: 0130 1330	Weather forecast for Sea Areas 4–7 in Spanish.
K: 0140 1340	Weather forecast for Sea Areas 6–9 in Spanish.
I: 0120 1320	Weather forecast for Sea Areas 3–5 in Spanish.
H: 0110 1310	Weather forecast for Sea Areas 2–3 in Spanish.

Navigational Warnings

A: 0400 0800 1600 2000	Coastal Navigational Warnings between 18°21´ S and 32°00´ S in English.
F: 0450 0850 1650 2050	Coastal Navigational Warnings up to 400 nm from Isla de Pascua (Easter Island) in English.
D: 0430 0830 1630 2030	Coastal Navigational Warnings between 39°00´ S and 48°00´ S in English.
E: 0440 0840 1640 2040	Coastal Navigational Warnings between 47°00 S´ and the Antarctic area in English.
C: 0420 0820 1620 2020	Coastal Navigational Warnings between 32°00´ S and 41°00´S in English.
B: 0410 0810 1610 2010	Coastal navigational Warnings between 27°00´ S and 37°00´ S in English.
G: 0500 0900 1700 2100	Coastal Navigational Warnings between 18°21´ S and 32°00´ S in Spanish.
L: 0550 0950 1750 2150	Coastal Navigational Warnings up to 400 nm from Isla de Pascua (Easter Island) in Spanish.
J: 0530 0930 1730 2130	Coastal Navigational Warnings between 39°00´ S and 48°00´ S in Spanish.
K: 0540 0940 1740 2140	Coastal Navigational Warnings between 47°00 S´ and the Antarctic area in Spanish.
I: 0520 0920 1720 2120	Coastal Navigational Warnings between 32°00´ S and 41°00´S in Spanish.
H: 0510 0910 1710 2110	Coastal navigational Warnings between 27°00´ S and 37°00´ S in Spanish.

Continued overleaf

CHILE

NAVTEX (Continued)

Ice Warnings and Reports	
E: 0040 1240	Ice reports during the season as necessary in English.
K: 0140 1340	Ice reports during the season as necessary in Spanish.

[1] Temporarily inoperative.

MARITIME SAFETY INFORMATION (MSI) ON THE INTERNET

The internet is not part of the Maritime Safety Information system and should never be relied upon as the only means to obtain the latest forecast and warning information. Access to the service may be interrupted or delayed from time to time, updates may also be delayed. Please refer to GMDSS services, INMARSAT SafetyNET or international NAVTEX for the latest information. However, the following website(s) may prove useful to the mariner:

www.shoa.mil.cl/en/our-services/radio-warnings	Chilean Navy Hydrographic and Oceanographic Service	Navigation Warnings for Chilean coastal waters, as well as NAVAREA XV, in English.
www.shoa.mil.cl/nuestros-servicios/radioavisos		Navigation Warnings for Chilean coastal waters, as well as NAVAREA XV, in Spanish.

FIRING PRACTICE AREAS

The Hydrographic and Oceanographic Service of the Navy (SHOA), is responsible for coordinating the promulgation of firing practice and exercise warnings. Exercises taking place more than 5 nm from the coast are issued via SafetyNET, NAVTEX or maritime radio services, whereas those being held within 5 nm are broadcast by the relevant maritime radio station on VHF Ch 09 or 10. SHOA can be contacted via the following methods:
e-mail: oirs@shoa.cl or telephone: +56 322 266666 – see also MSI on the Internet entry above.

Further details can also be obtained from MRCC Chile via the following contact methods: e-mail: mrccchile@directemar.cl or telephone: +56 322 208637, 208638 or 208639

ACHAO (CBP25)

Control Centre: 42°28′·00S 73°30′·00W

	Ch 09	VHF		
Diagram page 29				
Weather Bulletins				
0115 1315	Weather forecast for waters east of Isla Chiloé, in Spanish.			

ANTOFAGASTA ZONAL RADIO STATION (CBA)

Control Centre: 23°38′·93S 70°24′·02W

A	2738	RT (MF)		
B	4357	RT (HF)		
C	Ch 09	VHF		
Diagram page 29				
Weather Bulletins				
A, B: 0045 1245	Weather forecast for Sea Areas 1–3 and the bay of Antofagasta, in Spanish.			
C: 0105 1305	Weather forecast for Sea Area 1 and the bay of Antofagasta, in Spanish.			

ARICA MRSC (CBA2)

Control Centre: 18°28′·58S 70°19′·25W

A	2738	RT (MF)		
B	Ch 09	VHF		
Diagram page 29				
Weather Bulletins				
A: 0055 1255 **B:** 0115 1315	Weather forecast for Sea Area 1 and the bay of Arica, in Spanish.			

CHILE

BAHÍA FÉLIX (CBX)

Control Centre: 52°57′·72S 74°04′·85W

A	2738	RT (MF)		
B	Ch 09	VHF		

Diagram page 29

Weather Bulletins

A: 0135 1335 **B:** 0125 1325	Weather forecast for Sea Area 7 together with the waters between Felix Bay and Cape Froward. Present meteorological conditions for the areas of Evangelista Islets, Felix Bay and the Fairway Islets, in Spanish.

CABO CARRANZA, LIGHT (CBT2)

Control Centre: 35°33′·57S 72°36′·82W

A	2738	RT (MF)		
B	Ch 09	VHF		

Diagram page 29

Weather Bulletins

A: 0145 1345 **B:** 0135 1335	Weather forecast for Sea Area 4 and present meteorological conditions in the area of Carranza Light, in Spanish.

CABO RÁPER, LIGHT (CBM2)

Control Centre: 46°49′·09S 75°37′·39W

A	2738	RT (MF)		
B	Ch 09	VHF		

Diagram page 29

Weather Bulletins

A: 0040 1240 **B:** 0045 1245	Weather forecast for Sea Area 6 and present meteorological conditions in the area of Cabo Ráper and San Pedro lighthouses, in Spanish.
A: 0640 1840 **B:** 0645 1845	Present weather conditions in the Cabo Ráper lighthouse area, in Spanish.

CALDERA MRSC (CBA5)

Control Centre: 27°03′·97S 70°49′·38W

A	2738	RT (MF)		
B	Ch 09	VHF		

Diagram page 29

Weather Bulletins

A: 0115 1315	Weather forecast for Sea Areas 1, 2 and Caldera Bay, in Spanish.
B: 0105 1305	Weather forecast for Sea Area 1 and Caldera Bay, in Spanish.

CARAHUE (CBT37)

Control Centre: 38°47′·13S 73°24′·51W

	Ch 09	VHF		

Diagram page 29

Weather Bulletins

0055 1255	Weather forecast for Sea Area 5 and the bay of Puerto Saavedra, in Spanish.

CASTRO (CBP2)

Control Centre: 42°28′·97S 73°46′·06W

A	2738	RT (MF)		
	4146	RT (HF)		
B	Ch 09	VHF		

Diagram page 29

Continued overleaf

CHILE

CASTRO (CBP2) (Continued)

Weather Bulletins	
A: 0055 1255 **B:** 0105 1305	Weather forecast for Sea Area 6 and the waters east of Isla Chiloé, in Spanish.

CHAÑARAL (CBA23)

Control Centre: 26°21′·00S 70°38′·33W

A	2738	RT (MF)		
B	Ch 09	VHF		

Diagram page 29

Weather Bulletins	
A: 0105 1305 **B:** 0055 1255	Weather forecast for Sea Area 1 and the bay of Chañaral, in Spanish.

CONSTITUCIÓN (CBT21)

Control Centre: 35°20′·10S 72°25′·13W

A	2738	RT (MF)		
B	Ch 09	VHF		

Diagram page 29

Weather Bulletins	
A: 0135 1335 **B:** 0125 1325	Weather forecast for Sea Areas 3 and 4, together with the bay of Constitución, in Spanish.

COQUIMBO MRSC (CBA4)

Control Centre: 29°56′·97S 71°20′·13W

A	2738	RT (MF)		
B	Ch 09	VHF		

Diagram page 29

Weather Bulletins	
A: 0055 1255 **B:** 0105 1305	Weather forecast for Sea Areas 1 and 2, together with Coquimbo Bay, in Spanish.

CORONEL (CBT24)

Control Centre: 37°01′·41S 73°09′·31W

	Ch 09			

Diagram page 29

Weather Bulletins	
0125 1325	Weather forecast for the Bay of Coronel, in Spanish.

CORRAL (CBT26)

Control Centre: 39°53′·25S 73°25′·70W

	Ch 09	VHF	Corral	39°53′·42S 73°25′·74W

Diagram page 29

Weather Bulletins	
0115 1315	Weather forecast for Sea Area 5 and the Bays of Corral and Mehuin, in Spanish.

HUASCO (CBA24)

Control Centre: 28°27′·66S 71°13′·50W

A	2738	RT (MF)		
B	Ch 09	VHF		

Diagram page 29

Continued on next page

Weather Bulletins	
A: 0125 1325	Weather forecast for Sea Areas 1, 2 and the bay of Huasco, in Spanish.
B: 0115 1315	Weather forecast for Sea Area 1 and the bay of Huasco, in Spanish.

IQUIQUE MRCC (CBA3)

Control Centre: 20°12′·65S 70°09′·15W

A	2738	RT (MF)		
B	Ch 09	VHF		

Diagram page 29

Weather Bulletins	
A: 0115 1315 **B:** 0105 1305	Weather forecast for Sea Area 1 and Iquique Bay, in Spanish.

ISLA DE PASCUA (EASTER ISLAND) AREA RADIO STATION (CBY)

Control Centre: 27°10′·97S 109°25′·82W

A	2738	RT (MF)		
B	Ch 09	VHF		

Diagram page 29

Weather Bulletins	
A: 0225 1425 **B:** 0215 1415	Weather forecast for Sea Area 10 and Isla de Pascua (Easter Island), in Spanish.

ISLA DIEGO RAMÍREZ (CBM30)

Control Centre: 56°31′·40S 68°42′·60W

A	2738	RT (MF)		
B	Ch 09	VHF		

Diagram page 29

Weather Bulletins	
A: 0115 1315 **B:** 0105 1305	Weather forecast for the Drake Passage area and present meteorological conditions for the Diego Ramírez Islands, in Spanish.

ISLA GUAFO, LIGHT (CBP4)

Control Centre: 43°34′·08S 74°49′·97W

A	2738	RT (MF)		
B	Ch 09	VHF		

Diagram page 29

Weather Bulletins	
A: 0340 1540 **B:** 0350 1550	Weather forecast for Sea Area 6, the waters east of Chiloé, Boca del Guafo and present conditions for the waters of Guafo Island, in Spanish.
A: 0940 2140 **B:** 0950 2150	Present weather for the Isla Guafo area in Spanish.

ISLA MOCHA, LIGHT (CBT3)

Control Centre: 38°24′·92S 73°53′·63W

A	2738	RT (MF)		
B	Ch 09	VHF		

Diagram page 29

Weather Bulletins	
A: 0105 1305 **B:** 0115 1315	Weather forecast for Sea Area 4 and present conditions for the waters around Mocha Island, in Spanish.

CHILE

ISLA QUIRIQUINA, LIGHT (CBT70)				
Control Centre: 36°36′·63S 73°03′·08W				
	Ch 09	VHF		
Diagram page 29				
Weather Bulletins				
0135 1335	Present weather for the Quiriquina Island area in Spanish.			

ISLA SAN PEDRO (CBS)				
Control Centre: 47°41′·95S 74°51′·92W				
A	2738	RT (MF)		
B	Ch 09	VHF		
Diagram page 29				
Weather Bulletins				
A: 0105 1305 **B:** 0115 1315	Forecast for Sea Areas 6, 7 and for the Gulf of Penas, together with present conditions in the waters around the Cabo Ráper and San Pedro lighthouses, in Spanish.			

ISLOTES EVANGELISTAS, LIGHT (CBM3)				
Control Centre: 52°23′·12S 75°05′·90W				
A	2738	RT (MF)		
B	Ch 09	VHF		
Diagram page 29				
Weather Bulletins				
A: 0115 1315 **B:** 0105 1305	Weather forecasts for Sea Areas 7, 8, the Estrecho Nelson and Felix/Froward areas, together with present weather for the western Estrecho de Magallanes, Felix and Fairway waters, in Spanish.			

ISLOTES FAIRWAY, LIGHT (CBM4)				
Control Centre: 52°43′·92S 73°46′·88W				
A	2738	RT (MF)		
B	Ch 09	VHF		
Diagram page 29				
Weather Bulletins				
A: 0150 1350 **B:** 0155 1355	Weather forecast for the Tamar Pass, Puerto Natales and present weather conditions in the area of the Islets Fairway and Felix Bay, in Spanish.			

JUAN FERNÁNDEZ (CBF)				
Control Centre: 33°38′·16S 78°49′·97W				
A	2738	RT (MF)		
B	Ch 09	VHF		
Diagram page 29				
Weather Bulletins				
A: 0220 1420 **B:** 0205 1405	Weather forecast for Sea Area 2 and the archipelago of Juan Fernández, in Spanish.			

LEBU (CBT25)				
Control Centre: 37°36′·99S 73°40′·12W				
A	2738	RT (MF)		
B	Ch 09	VHF		
Diagram page 29				
Weather Bulletins				
A: 0055 1255 **B:** 0105 1305	Weather forecast for Sea Area 4 and the bay of Lebu, in Spanish.			

LIRQUÉN (CBT22)				
Control Centre: 36°42′·50S 72°58′·50W				
	Ch 09	VHF		
Diagram page 29				
Weather Bulletins				
0105 1305	Weather forecast for the bay of Lirquén in Spanish.			

LOS VILOS (CBA26)				
Control Centre: 31°54′·60S 71°30′·85W				
A	2738	RT (MF)		
B	Ch 09	VHF	Los Vilos	31°54′·60S 71°30′·85W
Diagram page 29				
Weather Bulletins				
A: 0105 1305 **B:** 0125 1325	Weather forecast for Sea Area 2 and Los Vilos Bay, in Spanish.			

MAGALLANES ZONAL RADIO STATION (CBM)				
Control Centre: 53°09′·91S 70°54′·27W				
A	2738	RT (MF)		
B	4146	RT (HF)		
C	Ch 09	VHF		
Diagram page 29				
Weather Bulletins				
A, B: 0035 1235 **C:** 0010 1210	Weather forecasts for Sea Areas 6–8, bay of Punta Arenas and the southern channels. Summary of the present weather conditions in for the waters around Isla Guafo and Cabo Ráper lighthouses. Special forecasts for the following areas: Estrecho Nelson, Puerto Natales (bay), Paso Tamar, Felix/Froward, Froward/Punta Delgada, Punta Arenas (bay), Punta Delgada/Dungeness, Canal Brecknock, Timbales/Navarino, Navarino/Isla Nueva, Puerto Williams (bay), Bahia Nassau/Cabo de Hornos and Cabo de Hornos, in Spanish.			
B: 0035 1235	Present weather conditions for the waters around Evangelistas and Fairway lighthouses, in Spanish.			

MEJILLONES (CBA22)				
Control Centre: 23°05′·92S 70°26′·97W				
	Ch 09	VHF	Mejillones	23°06′·01S 70°26′·90W
Diagram page 29				
Weather Bulletins				
0115 1315	Weather forecast for Sea Area 1 and the Bay of Mejillones, in Spanish.			

PATACHE (CBA49)				
Control Centre: 20°47′·42S 70°10′·50W				
	Ch 09	VHF		
Diagram page 29				
Weather Bulletins				
0115 1315	Weather forecast for the bay of Patache in Spanish.			

PICHILEMU (CBV25)				
Control Centre: 34°23′·96S 72°01′·03W				
	Ch 09	VHF		
Diagram page 29				
Weather Bulletins				
0125 1325	Weather forecast for Sea Area 3 in Spanish.			

CHILE

PUERTO AYSÉN (CBP3)				
Control Centre: 45°24′·48S 72°43′·08W				
A	2738	RT (MF)		
B	Ch 09	VHF		
Diagram page 29				
Weather Bulletins				
A: 0135 1335 **B:** 0125 1325	Weather forecast for Sea Area 6 and the bay of Puerto Chacabuco, in Spanish.			

PUERTO CHACABUCO (CBP32)				
Control Centre: 45°27′·63S 72°49′·06W				
	Ch 09	VHF		
Diagram page 29				
Weather Bulletins				
0115 1315	Weather forecast for Sea Area 6 and Puerto Chacabuco Bay, in Spanish.			

PUERTO MONTT AREA RADIO STATION (CBP)				
Control Centre: 41°28′·90S 72°57′·57W				
A	2738	RT (MF)		
B	4146	RT (HF)		
C	Ch 09	VHF		
Diagram page 29				
Weather Bulletins				
A, B: 1130 2325	Forecast for Sea Areas 4–6 and for the bay of Puerto Montt, together with a summary of the present weather conditions for the waters around Corona, Guafo and Ráper lighthouses, in Spanish.			
C: 1150 2345	Weather forecast for Sea Areas 5, 6, waters east of Isla Chiloé, together with the bay of Puerto Montt, in Spanish.			

PUERTO NATALES (CBM22)				
Control Centre: 51°44′·35S 72°32′·21W				
	Ch 09	VHF		
Diagram page 29				
Weather Bulletins				
0105 1305	Weather forecast for Sea Area 7, the bay of Puerto Natales and Paso Tamar, in Spanish.			

PUERTO WILLIAMS CAPUERTO (CBM24)				
Control Centre: 54°55′·95S 67°36′·45W				
	Ch 09	VHF		
Diagram page 29				
Weather Bulletins				
0125 1325	Weather forecast for Puerto Williams bay and the sea area between Puerto Navarino and Isla Nueva, in Spanish.			

PUNTA CORONA, LIGHT (CBP70)				
Control Centre: 41°47′·03S 73°52′·81W				
A	2738	RT (MF)		
B	Ch 09	VHF		
Diagram page 29				
Weather Bulletins				
A: 0045 1245 **B:** 0055 1255	Weather forecast for the ocean access area to the Chacao Channel, Puerto Montt bay, together with the present weather conditions for the waters around the Guafo, Corona and Ráper lighthouses, in Spanish.			
A: 0645 1845 **B:** 0655 1855	Present weather conditions for the waters around the Guafo, Corona and Ráper lighhouses, in Spanish.			

PUNTA DELGADA (CBM5)

Control Centre: 52°27′·35S 69°32′·82W

A	2738	RT (MF)		
B	Ch 09	VHF		

Diagram page 29

Weather Bulletins

A: 0055 1255 **B:** 0105 1305	Weather forecast for the sea area between: Punta Delgada and Punta Dúngenes, Cabo Froward and Punta Delgada, together with the present weather conditions for the eastern part of the Estrecho de Magallanes, in Spanish.

PUNTA DUNGENESS, LIGHT (CBM71)

Control Centre: 52°23′·69S 68°25′·84W

A	2738	RT (MF)		
B	Ch 09	VHF		

Diagram page 29

Weather Bulletins

A: 0105 1305 **B:** 0115 1315	Weather forecast for the sea area between Punta Delgada and Punta Dúngenes, together with the present weather conditions for the eastern part of the Estrecho de Magallanes, in Spanish.

QUELLÓN (CBP28)

Control Centre: 43°08′·18S 73°37′·89W

A	2738	RT (MF)		
B	Ch 09	VHF		

Diagram page 29

Weather Bulletins

A: 0105 1305 **B:** 0055 1255	Weather forecast for Sea Area 4 and the waters east of Isla Chiloé and the Boca del Golfo, in Spanish.

SAN ANTONIO MRSC (CBV22)

Control Centre: 33°34′·31S 71°36′·97W

A	2738	RT (MF)	San Antonio	33°34′·31S 71°36′·97W
B	Ch 09	VHF		

Diagram page 29

Weather Bulletins

A: 0115 1315 **B:** 0105 1305	Forecast for Sea Area 3 and San Antonio bay, in Spanish.

SAN VICENTE (CBT23)

Control Centre: 36°42′·70S 73°07′·68W

	Ch 09	VHF		

Weather Bulletins

0115 1315	Weather forecast for San Vicente bay in Spanish.

TALCAHUANO ZONAL RADIO STATION (CBT)

Control Centre: 36°41′·50S 73°06′·51W

A	2738	RT (MF)		
B	4357	RT (HF)		
C	Ch 09	VHF		

Diagram page 29

Weather Bulletins

A, B: 0045 1245 **C:** 0055 1255	Forecast for Sea Areas 3–5 and Talcahuano bay, in Spanish.

CHILE

TALTAL (CBA27)				
Control Centre: 25°24′·39S 70°28′·76W				
	Ch 09	VHF		
Diagram page 29				
Weather Bulletins				
0115 1315	Weather forecast for Sea Area 1 and Taltal bay, in Spanish.			

TIMBALES (CBM41)				
Control Centre: 54°58′·55S 70°15′·88W				
A	2738	RT (MF)		
B	Ch 09	VHF		
Diagram page 29				
Weather Bulletins				
A: 0140 1340 **B:** 0150 1350	Weather report for Canal Brecknock, the waters between Timbales and Puerto Navarino and the present weather conditions in the Timbales area, in Spanish.			

TOCOPILLA (CBA21)				
Control Centre: 22°06′·05S 70°12′·24W				
	Ch 09	VHF		
Diagram page 29				
Weather Bulletins				
0105 1305	Weather forecast for Sea Area 1 and the bay of Tocopilla, in Spanish.			

TONGOY (CBA41)				
Control Centre: 30°15′·15S 71°30′·08W				
	Ch 09	VHF		
Diagram page 29				
Weather Bulletins				
0115 1315	Weather forecast for Sea Area 2 in Spanish.			

VALDIVIA MRSC (CBT4)				
Control Centre: 39°53′·36S 73°25′·59W				
A	2738	RT (MF)		
B	Ch 09	VHF		
Diagram page 29				
Weather Bulletins				
A: 0115 1315 **B:** 0105 1305	Weather forecast for Sea Area 5 and Corral Bay, in Spanish.			

VALPARAÍSO (PLAYA ANCHA) PRINCIPAL RADIO STATION (CBV)				
Control Centre: 33°01′·24S 71°38′·55W				
A	2738	RT (MF)		
	4357	RT (HF)		
B	Ch 09	VHF		
Diagram page 29				
Weather Bulletins				
A: 1235 2335	Weather forecast for Sea Areas 1–6 in Spanish.			
B: 0055 1255	Weather forecast for Sea Areas 2, 3 and Valparaíso Bay, in Spanish.			

CHILE

WOLLASTON (CBN)

Control Centre: 55°36′·80S 67°25′·80W

A	2738	RT (MF)		
B	Ch 09	VHF		

Diagram page 29

Weather Bulletins

A: 0145 1345 **B:** 0135 1335	Weather forecast for the following sea areas: Nassau Bay to Cape Horn, Cape Horn Bay and present weather conditions for the waters around Islas Wollaston, in Spanish.

CHINA

INTERNET WEATHER SERVICES

Hong Kong Observatory www.hko.gov.hk	Marine weather forecasts and warnings in Chinese and English.

NAVTEX

R	Dalian	518 kHz	38°50′·69N 121°31′·09E
O	Fuzhou		25°59′·96N 119°26′·50E
N	Guangzhou		23°09′·56N 113°30′·80E
L	Hong Kong		22°12′·55N 114°15′·29E
M	Sanya		18°17′·49N 109°21′·80E
Q	Shanghai		31°06′·79N 121°32′·79E

Diagrams pages 37, 38, 144, 145, 146, 147 and 148

Weather Bulletins

R: 0250 1050	Gale warnings, weather situation and 24 hour forecast for Sea Areas 1–4 in English.
N: 0210 1010 1410 2210	Tropical storm warnings in English.
N: 0210 1410	24 hour forecast in English.
L: 0150 0550 0950 1350 1750 2150	Storm warnings and weather synopsis for 10°N–30°N, 105°E–125°E and 24 hour forecast for Sea Areas 1–10 in English.
Q: 0240 1040	Gale warnings and weather synopsis for East Asia, 24 hour forecast for Sea Areas 1–14 and Shanghai Harbour in English.

Navigational Warnings

R: 0650 1450 1850 2250	Navigational Warnings in English.
O: 0220 0620 1020 1420 1820 2220	
N: 0610 1410 1810 2210	
L: 0150 0550 0950 1350 1750 2150	
M: 0200 0600 1000 1400 1800 2200	
Q: 0640 1440 1840 2240	

MARITIME SAFETY INFORMATION (MSI) ON THE INTERNET

The internet is not part of the Maritime Safety Information system and should never be relied upon as the only means to obtain the latest forecast and warning information. Access to the service may be interrupted or delayed from time to time, updates may also be delayed. Please refer to GMDSS services, INMARSAT SafetyNET or international NAVTEX for the latest information. However, the following website(s) may prove useful to the mariner:

http://en.msa.gov.cn/index.php	Maritime Safety Administration	Notices to Mariners, weather and associated safety information, in English and Chinese.

COMMERCIAL RADIO 1

Control Centre: 22°12′·32N 114°08′·30E

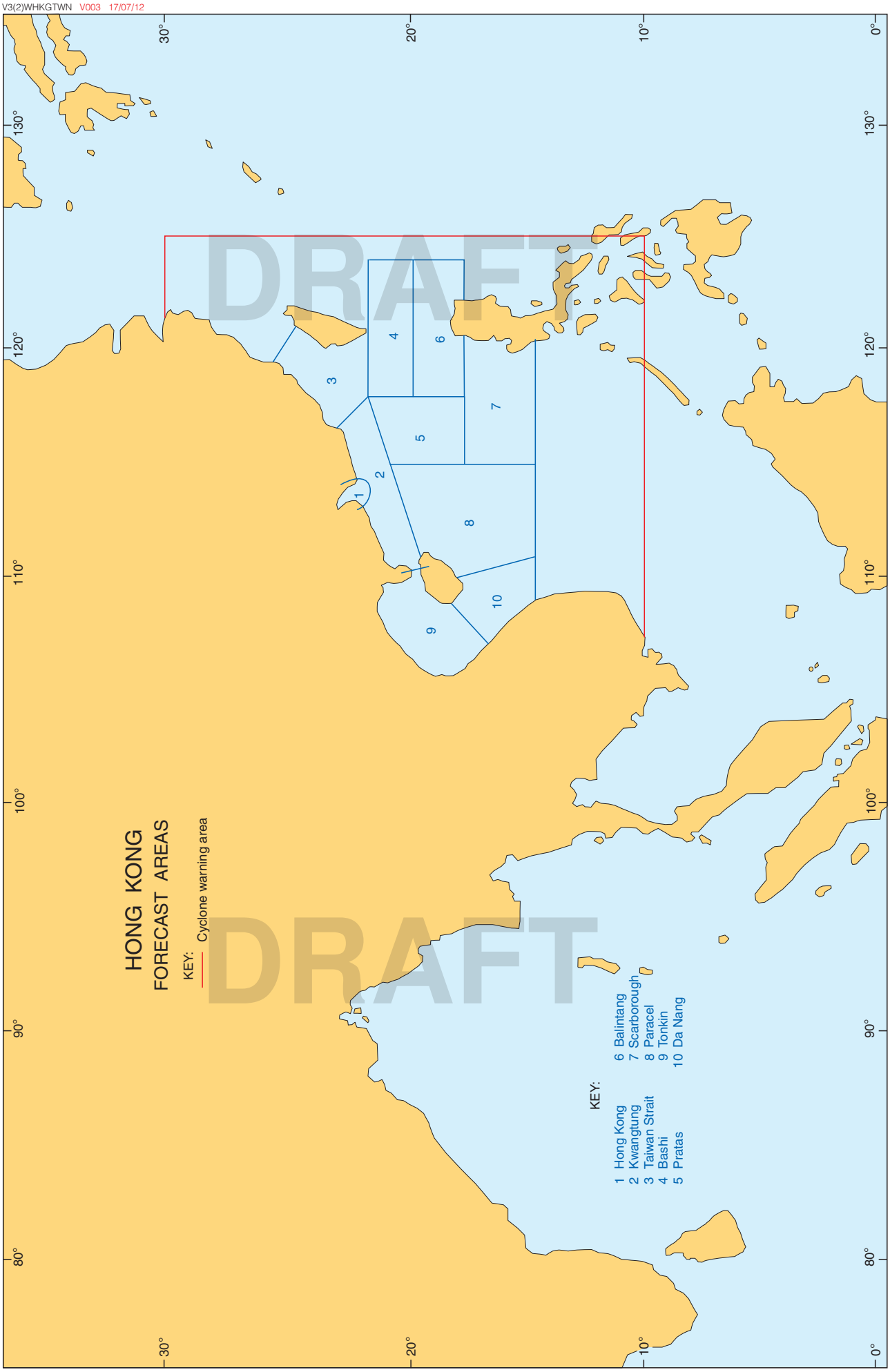
	88·1-89·5 MHz	FM		

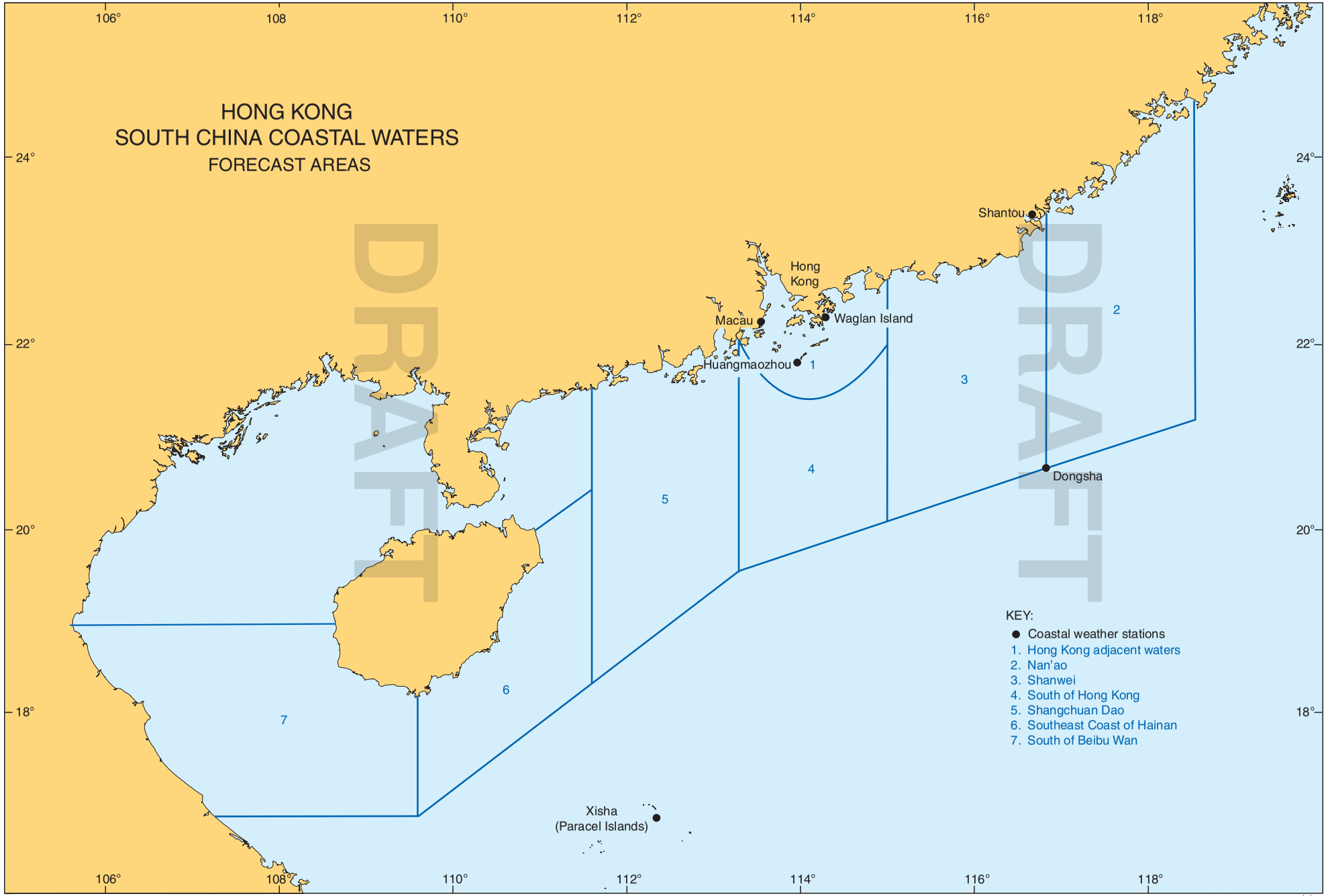
Diagram page 145

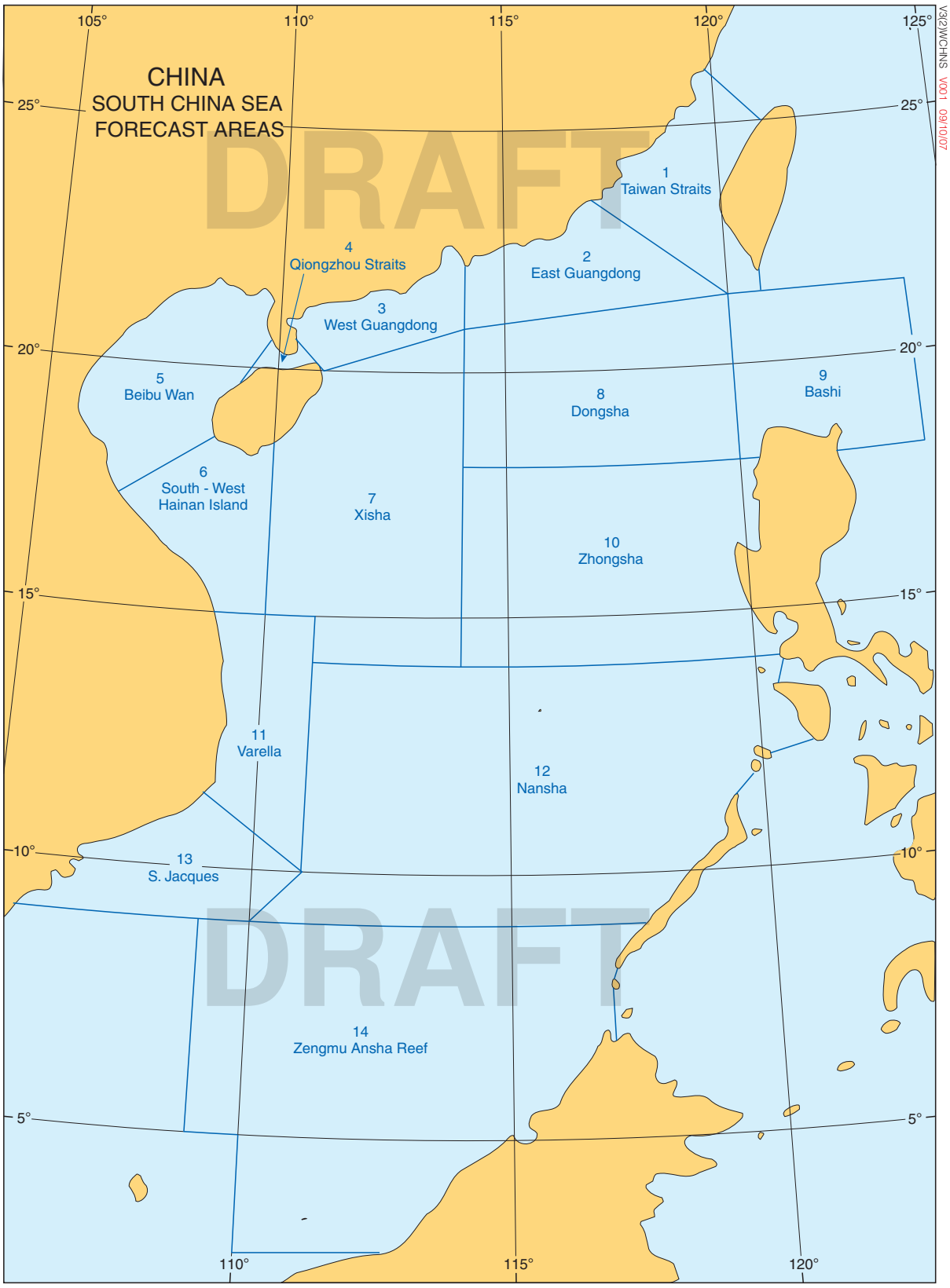
Weather Bulletins

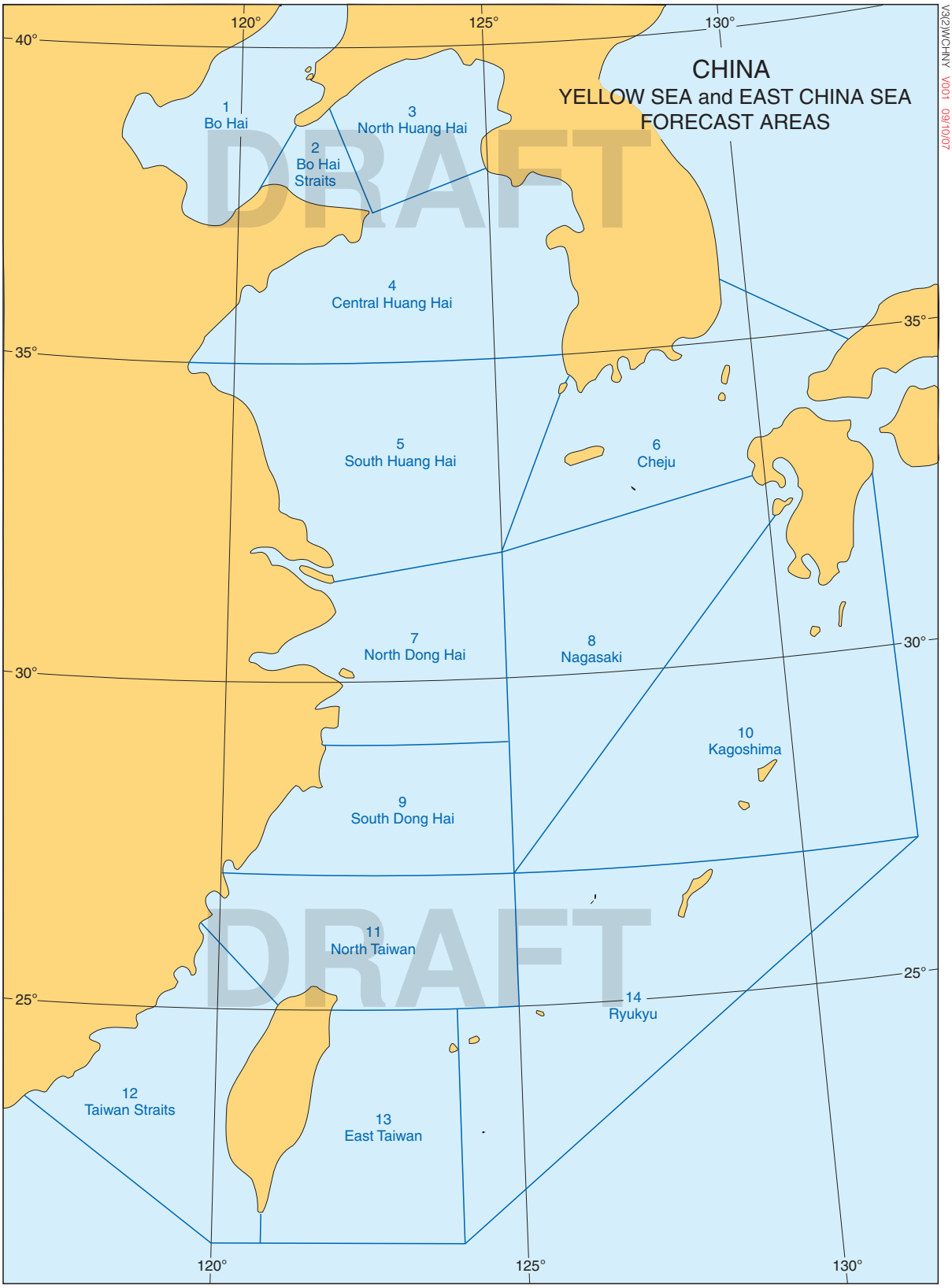
0000 0400 0600 1100 1300[1] 1330[2] 1700 2000 LT	Storm warnings, weather situation, 24 hour forecast of wind, significant weather and sea state for Sea Areas 1–7, outlook for following 24 hours and latest reports from coastal weather stations in Chinese.

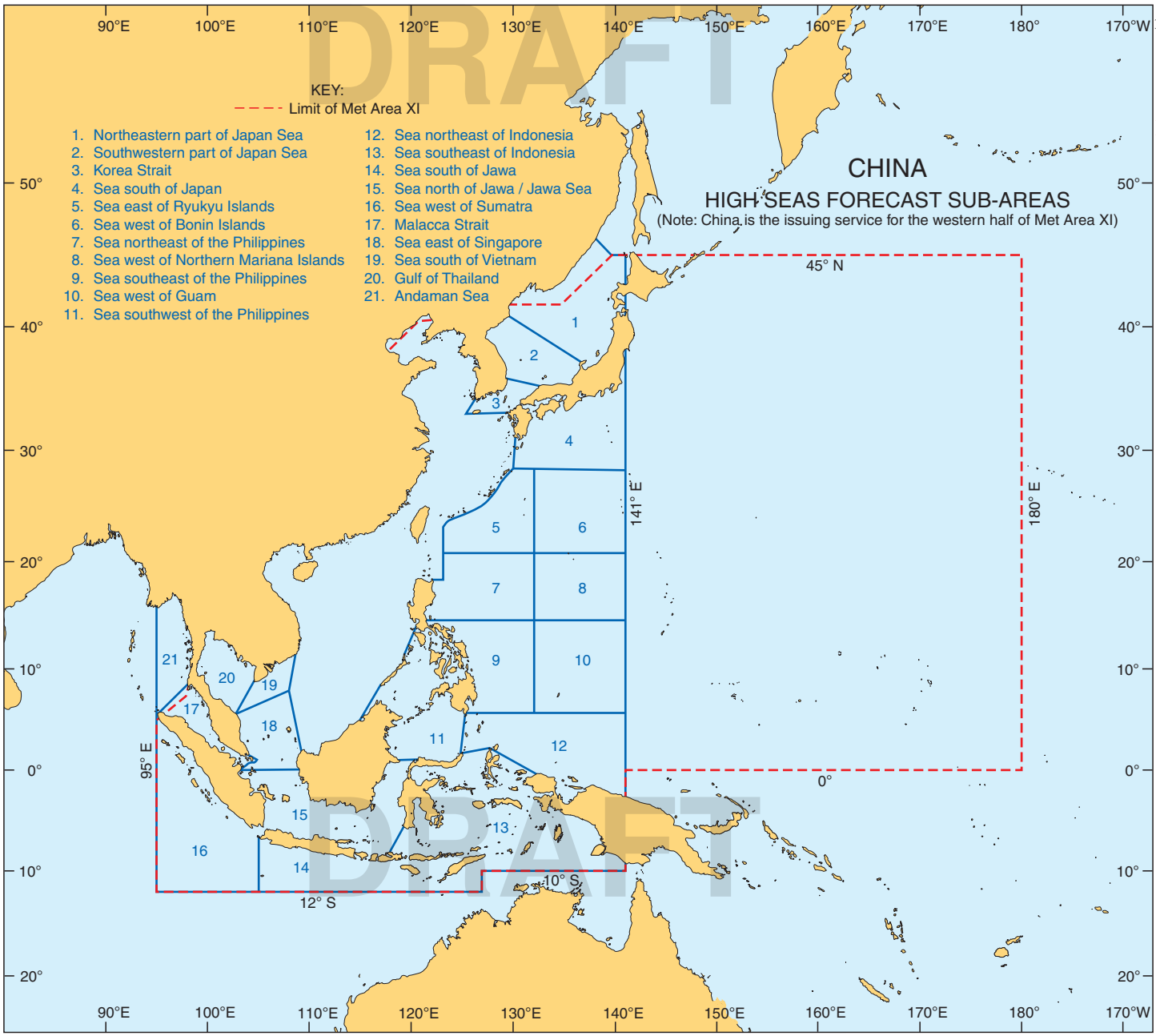
[1] Sat and Sun.
[2] Mon–Fri.


V3(2)WHKGTWN V003 17/07/12
HONG KONG
FORECAST AREAS
KEY:
Cyclone warning area
DRAFT
DRAFT
KEY:
1 Hong Kong
2 Kwangtung
3 Taiwan Strait
4 Bashi
5 Pratas
6 Balintang
7 Scarborough
8 Paracel
9 Tonkin
10 Da Nang
30°
20°
10°
0°
80°
90°
100°
110°
120°
130°


HONG KONG
SOUTH CHINA COASTAL WATERS
FORECAST AREAS
106°
108
110°
112°
114°
116°
118°
24°
22°
20°
18°
Shantou
Hong Kong
Macau
Waglan Island
Huangmaozhou
Dongsha
Xisha
(Paracel Islands)
1
2
3
4
5
6
7
KEY:
Coastal weather stations
1. Hong Kong adjacent waters
2. Nan'ao
3. Shanwei
4. South of Hong Kong
5. Shangchuan Dao
6. Southeast Coast of Hainan
7. South of Beibu Wan
DRAFT
V3(2)HKSCS V003 17/07/12


CHINA
SOUTH CHINA SEA
FORECAST AREAS
DRAFT
DRAFT
105°
110°
115°
120°
125°
25°
20°
15°
10°
5°
1
Taiwan Straits
2
East Guangdong
3
West Guangdong
4
Qiongzhou Straits
5
Beibu Wan
6
South - West
Hainan Island
7
Xisha
8
Dongsha
9
Bashi
10
Zhongsha
11
Varella
12
Nansha
13
S. Jacques
14
Zengmu Ansha Reef
V23/WCHNS v001 09/10/07


CHINA
YELLOW SEA and EAST CHINA SEA
FORECAST AREAS
V3i2JWCHNY V001 09/10/07
DRAFT
DRAFT
1
Bo Hai
2
Bo Hai
Straits
3
North Huang Hai
4
Central Huang Hai
5
South Huang Hai
6
Cheju
7
North Dong Hai
8
Nagasaki
9
South Dong Hai
10
Kagoshima
11
North Taiwan
12
Taiwan Straits
13
East Taiwan
14
Ryukyu
40°
35°
30°
25°
120°
125°
130°


KEY:
Limit of Met Area XI
1. Northeastern part of Japan Sea
2. Southwestern part of Japan Sea
3. Korea Strait
4. Sea south of Japan
5. Sea east of Ryukyu Islands
6. Sea west of Bonin Islands
7. Sea northeast of the Philippines
8. Sea west of Northern Mariana Islands
9. Sea southeast of the Philippines
10. Sea west of Guam
11. Sea southwest of the Philippines
12. Sea northeast of Indonesia
13. Sea southeast of Indonesia
14. Sea south of Jawa
15. Sea north of Jawa / Jawa Sea
16. Sea west of Sumatra
17. Malacca Strait
18. Sea east of Singapore
19. Sea south of Vietnam
20. Gulf of Thailand
21. Andaman Sea
CHINA
HIGH SEAS FORECAST SUB-AREAS
(Note: China is the issuing service for the western half of Met Area XI)
DRAFT
DRAFT
90°E
100°E
110°E
120°E
130°E
140°E
150°E
160°E
170°E
180°
170°W
50°
40°
30°
20°
10°
0°
45° N
141° E
180° E
95° E
12° S
10° S
V3/2/CHSFS V001 22/09/16

DALIAN (XSZ)

Control Centre: 38°55′·00N 121°39′·00E

A	462	WT (MF)	Dalian	38°50′·69N 121°31′·09E
B	500	WT(MF)		
C	4305 12710	WT(HF)		
D	6333·5			
E	8694			

Diagrams pages 147 and 148

Weather Bulletins

A, D, E: 0850 1850	Weather reports.
A, B, C, E: H+05	Weather reports.

Navigational Warnings

A, D, E: 0850 1850	Gale and typhoon warnings as necessary.
A: Every 2 hours H+48	Navigation Warnings including repeat of any existing gale and typhoon warnings.

GUANGZHOU (XSQ) [2017]

Control Centre: 23°06′·96N 113°16′·44E

A	4219[1] 6329[2] 8431 12622·5 16854	RADIOTELEX		
B	445	WT (MF)		
C	4340[3] 6382[4] 8458 12973	WT (HF)		
D	17287[5] 19779[5]	RT (HF)		

Diagrams pages 146 and 148

Weather Bulletins

A: 0920 2120 **B, C:** 0830 2030	24 hour forecast in English.
B, C: 0900 2100	24 hour forecast in Chinese.
D: Every hour H+00[6] Every odd hour H+00[7]	24 hour forecast, language unspecified.

Navigational Warnings

A: 0620 1120 1720 2320 **B, C:** 0830 2030	Tropical storm warnings as necessary, for coastal waters of China S of 24°N in English.
B, C: 0900 2100	Tropical storm warnings as necessary, for coastal waters of China S of 24°N in Chinese.
D: Every hour H+00[6] Every odd hour H+00[7]	Tropical storm warnings as necessary, for coastal waters of China S of 24°N, language unspecified.
A: 1520 **B, C:** 1400	Navigational Warnings and tropical storm warnings as necessary, for coastal waters of China S of 24°N in English.
A: 0920 2120 **B, C:** 1000 1530 2200	Navigational Warnings and tropical storm warnings as necessary, for coastal waters of China S of 24°N in Chinese.
B, C: 0048 0448 0648 1048 1248 1648 1848 2248	Navigational Warnings and tropical storm warnings as necessary, for coastal waters of China S of 24°N, language unspecified.

[1] Operational: 2000–0800.
[2] Operational: 0800–2000.
[3] Operational: 1800–0600.
[4] Operational: 0600–1800.
[5] Operational: 0900–2300.
[6] Between 0900 and 1500.
[7] Between 1600 and 2300.

CHINA

NANTONG

Control Centre: 32°01′·00N 120°51′·00E

	Ch 09 10	VHF		
Diagram page 147				
Navigational Warnings				
On request	Local Navigational warnings.			

QINGDAO (XST) [2018]

Control Centre: 36°04′·00N 120°22′·00E

	435	WT(MF)		
Diagrams pages 147 and 148				
Navigational Warnings				
H+18	Navigation warnings repeated.			

RADIO TELEVISION HONG KONG

Control Centre: 22°12′·32N 114°08′·30E

A	92·6-94·4 MHz	FM	Radio 1	
	94·8-96·9 MHz		Radio 2	
B	567 kHz 1584 kHz	AM	Radio 3	
	97·9 MHz 106·8 MHz 107·8 MHz	FM		
C	783 kHz	AM	Radio 5	
	92·3 MHz 95·2 MHz 99·4 MHz 106·8 MHz	FM		
Diagram page 145				
Weather Bulletins				
A: 0000 0400 0600 1300 2000[1] **C:** 0000 0400 0600 1000 1300 1700 2000	Storm warnings, weather situation, 24 hour forecast of wind, significant weather and sea state for Sea Areas 1–7, outlook for following 24 hours and latest reports from coastal weather stations in Chinese.			
B[2]**:** 2358	Storm warnings, weather situation, 24 hour forecast of wind, significant weather and sea state for Sea Areas 1–5, outlook for following 24 hours and latest reports from coastal weather stations in English.			

[1] Except Sundays on Radio 2.
[2] Before the news.

NOTE(S): 1. All times quoted are LT.
2. All broadcasts follow after the news, except those on Radio 3.

SHANGHAI (XSG) [2010]

Control Centre: 31°06′·00N 121°32′·00E

A	4215·5[1] 6326[2] 8425·5[3] 12637·5[3] 16898·5[3]	RADIO-TELEX		
B	522·5[3]	WT (MF)		
C	4259[1] 6454[2] 8665[3] 12856[3] 17103·2[3]	WT (HF)		
Diagrams pages 147 and 148				

Continued on next page

CHINA

SHANGHAI (XSG) [2010] (Continued)

Weather Bulletins	
A: 1050 1650 **B, C:** 1100 1700	Weather reports in English.
B, C: 1130 1730	Weather reports in Chinese.
B, C: 0200 0500 0800 1100 1400 1700 2000 2300	Weather warnings (if any) in Chinese.
Navigational Warnings	
A: 0750 1450 2150 **B, C:** 0800 1500 2200	Navigational Warnings for coastal waters of China N of 24°N in Chinese.
A: 0750 1050 1650 2150 **B, C:** 1000	Navigational Warnings for coastal waters of China N of 24°N in English.
[1] Operational: 1800–0600. [2] Operational: 0600–1800. [3] Operational: H24.	

TIANJIN (XSV) [2012]

Control Centre: 39°03′·00N 117°25′·50E

	4212·5 *(Ch 405)* 8417·5 *(Ch 803)* 12581·5 *(Ch 1205)*	RADIO-TELEX		

Diagrams pages 147 and 148

Navigational Warnings	
0500 0700 1200 1600 2000 2300	Gale warnings in Chinese and English.
0500 1200 2300	Navigational Warnings for Bo Hai in Chinese.
0700	Navigational Warnings for Bo Hai in English.
0500 1200 2300	Ice reports for Bo Hai in Chinese and English.

WENZHOU (XSO)

Control Centre: 28°01′·06N 120°38′·08E

	Ch 08 10	VHF		

Diagram page 147

Weather Bulletins	
Every even H+00	Weather information for the Wenzhou coastal area between 27°10´N and 29°10´N.
Navigational Warnings	
Every even H+00	Navigational Warnings.

ZHENJIANG

Control Centre: 32°10′·00N 119°30′·00E

	Ch 11	VHF		

Diagram page 147

Weather Bulletins	
On request	Local weather bulletins and tidal information.
Navigational Warnings	
On request	Local navigational warnings.

COLOMBIA

MARITIME SAFETY INFORMATION (MSI) ON THE INTERNET

The internet is not part of the Maritime Safety Information system and should never be relied upon as the only means to obtain the latest forecast and warning information. Access to the service may be interrupted or delayed from time to time, updates may also be delayed. Please refer to GMDSS services, INMARSAT SafetyNET or international NAVTEX for the latest information. However, the following website(s) may prove useful to the mariner:

www.cioh.org.co	Colombian Institute for Oceanography and Hydrography	Navigation Warnings in Spanish and English.

COOK ISLANDS (New Zealand)

INTERNET WEATHER SERVICES

Cook Islands Meteorological Service www.met.gov.ck/northern-southern-forecast.html	Weather Bulletins for the Cook Islands, in English.

RAROTONGA (E5R)

Control Centre: 21°12′·54S 159°48′·60W

	2207	RT (MF)		
		Weather Bulletins		
0015 0615 1815	Forecast for Cook Islands coastal waters.			

COSTA RICA

INTERNET WEATHER SERVICES

Instituto Meteorológico Nacional www.imn.ac.cr	Marine weather bulletin in Spanish.

LIMÓN

Control Centre: 9°59′·00N 83°02′·00W

	98·3 MHz	FM	Radio Casino	
	107·9 MHz		Radio Bahía	
		Diagram page 156		
		Weather Bulletins		
0000 1300	Offshore and coastal marine forecast in Spanish.			

RADIO BAHÍA, PUNTARENAS

Control Centre: 9°58′·65N 84°49′·81W

	107·9 MHz	FM		
		Diagram page 156		
		Weather Bulletins		
0100 1300	Offshore and coastal marine forecast in Spanish.			

RADIO DOS

Control Centre: 9°56′·00N 84°05′·00W

	99·5 MHz	FM		
		Diagram page 156		
		Weather Bulletins		
1400	Offshore and coastal marine forecast in English.			

RADIO PAMPA, GUANACASTE

Control Centre: 10°38′·00N 85°26′·00W

	1420 kHz	AM		
		Diagram page 156		
		Weather Bulletins		
0100 1200	Offshore and coastal marine forecast in Spanish.			

CUBA

INTERNET WEATHER SERVICES

Instituto de Meteorología de la República de Cuba (INSMET) www.insmet.cu	Marine weather forecast in Spanish.

MARITIME SAFETY INFORMATION (MSI) ON THE INTERNET

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www.iderc.cu/web/iderc/avisos-radiados	Cuban Geospatial Data Authority	Navigation Warnings in Spanish and English

HABANA (CLT)

Control Centre: 23°10′·00N 82°19′·00W

	2760	RT (MF)		

Navigational Warnings

1003 2203	Navigational Warnings in Spanish.
0203 1403	Artillery practice warnings in Spanish.

NOTE(S): After prior announcement on 2182 kHz.

CURAÇAO

INTERNET WEATHER SERVICES

Meteorological Department Curaçao www.meteo.cw	Marine forecast in English.

NAVTEX

H	Curaçao	518 kHz	12°10′·31N 68°51′·82W

Diagrams pages 39 and 41

Weather Bulletins

H: 1310	Weather synopsis, 24 hour and 48 hour wind forecast, visibility and outlook forecast for Caribbean Sea.

Navigational Warnings

H: 0110 0510 0910 1310 1710 2110	Local Navigational Warnings for Caribbean Sea.
H: 1310	Gale warnings for Caribbean Sea.

CURAÇAO (JRCC) (PJC)

Control Centre: 12°06′·00N 68°55′·00W

A	2182	RT (MF)	Ronde Klip	12°10′·31N 68°51′·82W
B	Ch 16 26	VHF	Bonaire (Sibu Rincon) (Netherlands)	12°14′·00N 68°20′·00W
			Curaçao (Seru Gracia)	12°20′·00N 69°08′·00W
C	Ch 16 27		Jamanota (Aruba)	12°29′·00N 69°56′·00W

Weather Bulletins

A-C: On request 1310	Weather synopsis, 24 hour and 48 hour wind forecast, visibility and outlook forecast for Caribbean Sea in English.

Navigational Warnings

A-C: On receipt 0110 0510 0910 1310 1710 2110	Gale and Navigational Warnings for Caribbean Sea in English.