

PART II
COMMUNICATION FACILITIES AND PROCEDURES

201. General

Upon the outbreak of war or other declared national emergency, the communication facilities and procedures listed and prescribed in this chapter shall be used by all U.S. Government owned vessels (excluding the operating forces of the U.S. Navy); privately owned U.S. Flag merchant vessels; and merchant vessels considered to be under the effective control of the U.S. Government.

202. Message Forms and Procedures

a. Since commercial form is not suitable for handling messages within Naval Communications, a modified "FROM" and "TO" message form will be used on messages addressed to or originated by government agencies. This modified message form, consisting of three parts — preamble, address, and text — provides an easy method of handling those messages containing "information addressees", eliminates the need for a "signature" and reduces the number of words necessary to effect the delivery of the message. An explanation of the basic parts of the message form follows:

(1) PREAMBLE.—The preamble consists of the call up, the serial number (if used), the precedence designator and the date-time group.

(2) ADDRESS.—The address contains the originator, the action addressee(s), the information addressee(s) (if any) and the group count.

(3) TEXT.—The text contains the message thought and includes everything after the address. The text is preceded and followed by the International Morse Code signal "break (BT (- - - - -))". These signals serve to identify the text of the

message, but are not counted as groups of the text.

b. The following shows an example of the message form, with an explanation of the various elements:

| | |
|--------------------------------|---|
| NPM DE WEDI | (1) (Call) |
| P 012345Z | (2) (Precedence designator and date-time group) |
| FM SS AMERICA | (3) (Originator) |
| TO COMHAWSEAFRON | (4) (Action addressee) |
| INFO NCSO PEARL HARBOR | (5) (Information addressee) |
| GR 4 | (6) (Group count) |
| BT ARRIVED PEARL HARBOR | (7) (text) |
| 012345Z BT | |

c. A further explanation of the various elements of the three basic message parts follows:

(1) *Call up and serial number*.—As in commercial procedure, the call up consists of the call sign of the station called, the word "DE" followed by the call sign of the station calling. A serial number is not used on messages to naval authorities. If used on other traffic, it is assigned by the transmitting station commencing with number one at 0001 GMT and continuing in sequence until 2400 GMT. A new series is used for each station to whom traffic is transmitted. (Note: For serial numbers assigned messages on broadcast schedules by shore stations see paragraph 204.f.).

(2) *Precedence*.—The precedence assigned to a message indicates the required speed of delivery and the relative order in which the message should be handled by communication personnel and noted by the addressee. The precedence designators shown below with their meanings are for use as indicated:

| Precedence Designator | Precedence | Used for Messages Pertaining to | Time Standards (Delivery Objectives) |
|-----------------------|------------|--|---|
| Z | FLASH | Initial enemy contact in matters of the greatest urgency, such as war warnings. | Handled as fast as humanly possible with an objective of less than 10 minutes. |
| O | IMMEDIATE | Typhoon and hurricane warnings. Distress. Storm conditions. Amplifying contact reports. | 30 minutes to 1 hour. Processed, transmitted and delivered ahead of all messages of lower precedence. |
| P | PRIORITY | Ship diversions. Normal weather conditions. Ship movement reports. | 1 to 6 hours. Immediate delivery on receipt at addressee destination. |
| R | ROUTINE | Matters which justify transmission by rapid means unless of sufficient urgency to require higher precedence. | 3 hours to start of business the following day. |

(3) *Date-Time Group*.—The time of origin of the message expressed in six digits, followed by the letter "Z" to indicate GMT. The first pair of digits indicate the date, the second pair the hour, and the third pair the minutes. If the day of the month is the ninth or earlier a zero will be used as the first digit in order to complete the six digit group; *e.g.* 071454Z indicates the 7th day of the month at 1454 GMT.

(4) *Originator*.—The originator is indicated by "FM" followed by the name of the ship or activity.

(5) *Action Addressee*.—The action addressee is indicated by "TO" followed by the name of the activity required to take action on the message.

(6) *Information Addressee*.—The information addressee is indicated by "INFO" followed by the name of the activity which needs to know the contents of the message for information purposes only.

(7) *Group Count*.—"GR" followed by a number indicates the number of words in the text of the message. Messages originated by ships should have a group count indicated. Shore stations may transmit messages with the group count "GRNC", indicating that the words in the text are not counted. The group count includes all groups between the BT's.

(8) *Text*.—The thought or idea the originator desires communicated. The text is preceded and followed by "BT".

203. Merchant Ship Broadcast System (MERCAST)

a. The primary method of delivering messages from Naval shore radio stations to merchant ships at sea is by a broadcast system known as MERCAST. Under the MERCAST system the U.S. Navy operates a number of shore radio stations, geographically located to provide the widest possible coverage, with each station assigned an area of responsibility within which it delivers traffic by means of scheduled broadcasts. Ships copying MERCAST will guard the appropriate schedules when in the respective station areas of responsibility as shown on the chart on page 10-10, and as directed by sailing or diversion orders issued by competent authority. The MERCAST is a broadcast concept under which no acknowledgement from ships addressed is required or desired.

b. Upon the declaration of a state of emergency or the commencement of hostilities all U.S. Flag merchant ships will begin to copy the appropriate MERCAST area broadcast.

c. The MERCAST area stations listed below are shown on the chart on page 10-10 of this publication. The frequencies and times employed for MERCAST by these stations are as follows.

| <u>Station</u> | <u>Call</u> | <u>Station</u> | <u>Call</u> |
|------------------|----------------------|------------------|----------------------|
| RADIO WASHINGTON | NSS | RADIO HONOLULU | NPM |
| <u>Time, GMT</u> | <u>Frequencies**</u> | <u>Time, GMT</u> | <u>Frequencies**</u> |
| 0230-0330 | 0162, 5870, | 0200-0400* | 131.05, 4525, |
| 0630-0730* | 9425, 13575, | 0600-730* | 9050, 13655, |
| 1030-1130 | 17050.4, 23650 | 1030-1130 | 16457.5, |
| 1430-1530* | | 2000-2200* | 20575, 22593 |
| 1830-1930 | | | |
| 2230-2330* | | | |

Note.— 0162 kcs except 1400-2000 Thursday during which 121.95 kcs is used.

| <u>Station</u> | <u>Call</u> | <u>Station</u> | <u>Call</u> |
|-------------------|--------------------|------------------|----------------------|
| RADIO PHILIPPINES | NPO | RADIO GUAM | NPN |
| <u>Time, GMT</u> | <u>Frequencies</u> | <u>Time, GMT</u> | <u>Frequencies**</u> |
| 0230-0330* | 4445 | 0200-0300* | 484, 4955, |
| 0630-0730 | 12200 | 0700-0800 | 8150, 13580, |
| 1030-1130* | 15925 | 1055-1150* | 17530, 21760 |
| 1430-1530 | | 1400-1500 | |
| 1830-1930* | | 1830-1930* | |
| 2230-2330 | | 2300-2345 | |

| <u>Station</u> | <u>Call</u> | <u>Station</u> | <u>Call</u> |
|---------------------|----------------------|-------------------|------------------------------|
| RADIO BALBOA | NBA | RADIO LONDONDERRY | NST |
| <u>Time, GMT</u> | <u>Frequencies**</u> | <u>Time, GMT</u> | <u>Frequencies**</u> |
| 0200-0330 | 147.85, 5448.5, | 0300-0400* | 2634, 5052, 5167, 6487, |
| 0800-0930* | 11080, 17697.5 | 0700-0800 | 7535, 9318, 13110. |
| 1400-1530 | | 1100-1200* | |
| 2000-2130* | | 1500-1600 | |
| | | 1900-2000* | |
| | | 2300-2400 | |
| <u>Station</u> | <u>Call</u> | <u>Station</u> | <u>Call</u> |
| RADIO SAN FRANCISCO | NPG | RADIO ASMARA | NKA |
| <u>Time, GMT</u> | <u>Frequencies**</u> | <u>Time, GMT</u> | <u>Frequencies**</u> |
| 0200-0255* | 114.95, 4010, | 0300-0400 | 03220, #4515, 9060, 12817.5, |
| 0600-0655 | 6428.5, 9277.5, | 0600-0700* | #17510, 22760. |
| 1000-1055* | 12988, 17055.2, | 1050-1145 | 03220 1900-0500 only. |
| 1400-1455 | 22685 | 1450-1545* | #4515 1800-0600 only. |
| 1800-1855* | | 1800-1900 | #17510 0630-2100 only. |
| 2200-2255 | | 2250-2345* | |

* One operator schedules.

** Simultaneous transmission on all frequencies, except as indicated, for all schedules.

MERCAST station, frequencies, and schedules are also shown in BROADCAST SCHEDULES of U.S. NAVY AND COAST GUARD STATIONS which should be posted in the radio room for ready reference.

204. Operation of MERCAST

a. Broadcast will commence at scheduled times and run until traffic on hand is cleared. If no traffic is awaiting transmission at a scheduled time the station will transmit the preliminary call up and the signal QRU for a period of five minutes.

b. In some cases schedules will be interrupted for the transmission of time signals. All stations transmitting MERCAST cease transmission of traffic during the international silent periods at which times they run a call tape on all frequencies (except those between 480-520 kcs.) to permit ships to remain on or return to the MERCAST frequency.

c. Traffic for ships with only one radio operator will be transmitted on "one-operator" schedules only. Traffic for ships with two or more radio operators will be transmitted on any schedule and these ships will be required to copy all schedules. (See Broadcast Schedules of U.S. Navy and Coast Guard Stations.)

d. Material for broadcast on MERCAST schedules will be transmitted in the following order:

- (1) Emergency warning (if any).
- (2) Traffic list.
- (3) Traffic.

e. The traffic list will consist of the call sign (transmitted twice) and the date time group of each message awaiting transmission, listed in order of precedence.

f. Messages will be transmitted in the same sequence as indicated in the traffic list. Each message transmitted on MER-

CAST will carry a serial number. Such numbers will be in sequence commencing with zero hours GMT the first day of each month. The transmitting stations' broadcast designator letters as shown in the chart on page 10-10, will precede the serial number. An additional serial number, immediately following the original serial number but separated therefrom by a slant sign (/) will be used for messages which are transmitted to one-operator ships. This latter number will be preceded by the letter "A",

EXAMPLE: Washington (NSS) MERCAST message number 32, when transmitted on a one-operator schedule as message number 12 of the one-operator series would carry the number: WM NR32/A12.

g. Should a message of Priority or higher precedence be received too late for inclusion in the traffic list, it may be transmitted on the schedule in progress. Such transmissions will be considered as extra. The transmission on the following appropriate schedule, in which the message is included in the traffic list, will be considered as the first transmission. MERCAST stations will indicate that a schedule is being interrupted for transmission of a high precedence message by "Q" signal, followed by a call-up to the ship for whom the message is intended.

h. Ships directed to copy MERCAST will copy the entire traffic lists of all appropriate schedules. When all messages addressed to the ship, as indicated by the traffic list, have been copied, or if no messages addressed to the ship are included in the traffic list, the operator may discontinue copying that schedule.

i. Speed of transmission on MERCAST schedules shall not exceed sixteen words per minute.

j. Each word or group of the preamble and address will always be transmitted twice. When the ship's name is used as the address, it will be transmitted only once.

k. The following is an illustration of a MERCAST schedule: Approximately five minutes prior to commencement of a schedule the MERCAST station will run a test call consisting of a series of V's, the from sign DE, the station call sign and the area broadcast designator transmitted three times, thus:

 VVV VVV VVV DE NSS NSS NSS WM WM WM

At the prescribed time the broadcast begins:

Call up: NUKO NUKO NUKO DE NSS NSS NSS MERCAST QTC 4 BT

Traffic List: WAYQ WAYQ 011635Z (O)
NUKO NUKO 011644Z (O)
NBUR NBUR 011722Z (P)
KIMK KIMK 010345Z (R)

Traffic listed in order
of precedence

Traffic: WM NR 116 WM NR 116
O O 011635Z 011635Z
FM FM COMEASTSEAFRON
TO TO SS SILVERPEAKE
GR6 GR6 BT
ORDERS CANCELLED RETURN TO PORT IMMEDIATELY
BT AR

WM NR 117 WM NR 117
O O 011644Z 011644Z
FM FM NAVY WEATHER WASHDC NSS
TO TO ALL SHIPS COPYING MERCAST
GR30 GR30 BT
GALE WARNING EAST COAST.....ETC.....BT AR

NOTE: At this point NSS has on hand a message OPERATIONAL IMMEDIATE for NDTX. Since it was not included in the traffic list, NSS transmits:

NUKO DE NSS AS O O
NDTX NDTX NDTX DE NSS NSS NSS
WM NR 118 WM NR 118 NDTX NDTX
O O 011245Z 011245Z
FM FM ECEA ECEA
TO TO NDTX NDTX
GR28 GR28 BT
-----ENCRYPTED TEXT-----BT AR

NUKO NUKO NUKO DE NSS NSS NSS RESUME MER-
CAST BT
WM NR 119/A42 WM NR 119/A42
P P 011722Z 011722Z
FM FM COMHANSEAFRON
TO TO USNS MISSION SANFRANCISCO
GR5 GR5 BT
REPORT CONDITION TANKS PRIOR ARRIVAL BT AR

WM NR 120 WM NR 120
R R 010345Z 010345Z
FM FM COMEASTSEAFRON
TO TO SS TRADEWIND
GR19 GR19 BT
AT POSITION BRAVO FOXTROT DIVERT TO THAT PORT
BEARING 179 DEGREES 214 MILES FROM ROMEO DELTA
X ETA 0142100Z BT AR

NUKO NUKO NUKO DE NSS NSS NSS QRU AR

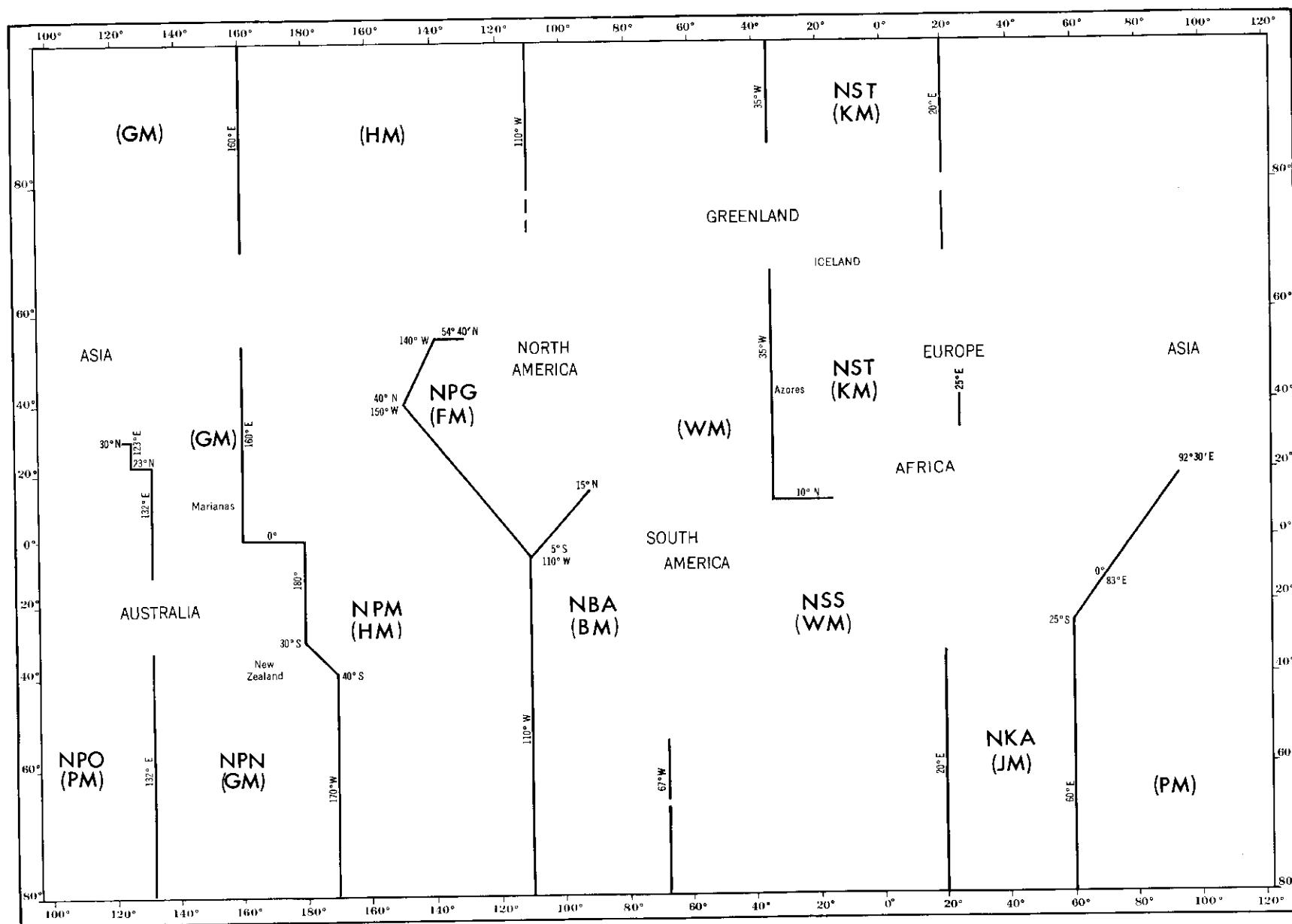
205. Ship-to-Shore Transmission

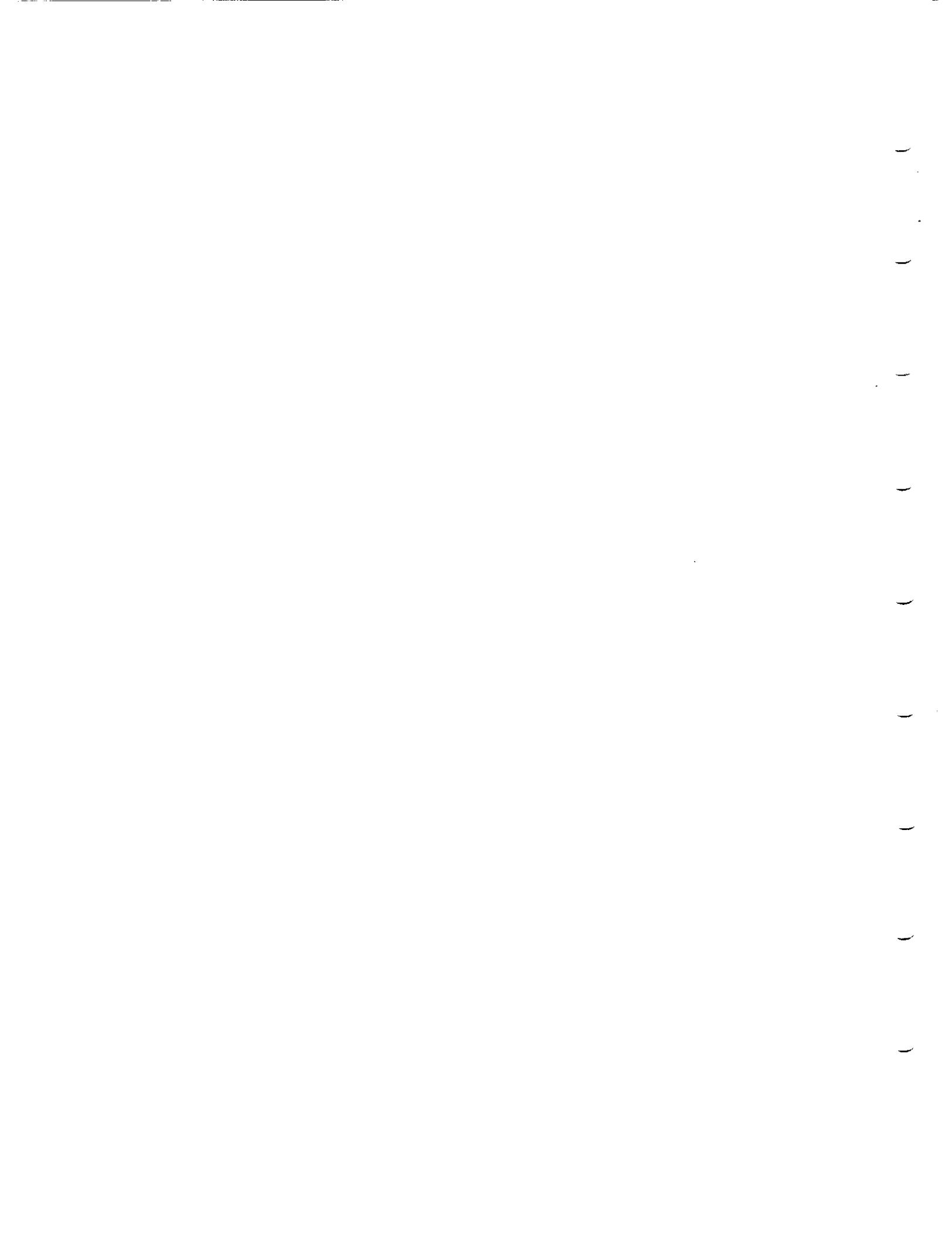
a. Upon the receipt of a general emergency message, Masters will ensure compliance with paragraph 103a (2) with regard to ship-to-shore transmissions. When absolutely necessary to transmit in extreme emergency, merchant ships will use naval facilities as explained below.

b. During wartime, or national emergency prior to an outbreak of hostilities, certain U.S. Naval shore radio stations may be contacted by merchant ships on the following frequencies: 2092.5, 4185, 6277.5, 8370, 12555, 16740 and 22260. These frequencies are available to merchant ships to transmit traffic to Naval Operational Control Authorities only when the breaking of radio silence is justified. Merchant ships which have traffic to transmit to naval authorities via naval radio stations on the above frequencies should call NQO (any or all U.S. Naval shore radio stations) and clear traffic with the answering station.

c. Naval and Coast Guard stations make every effort to provide adequate coverage of the distress frequencies 500 kcs. and 8364 kcs. A list of Navy and Coast Guard coastal stations, with the frequencies guarded, appears on pages 4-4 and 4-5.

U. S. MERCAST AREAS





PART III
SHIPPING CONTROL PROCEDURES

301. General

This section explains the responsibilities of Masters of Vessels sailing under the operational control of the Naval Control of Shipping Organization (NCSORG). While under this control Masters will comply with the provisions of this section and their voyage instructions which supersede any conflicting instructions they may have received previously from their owner, operator, or normal operational commander. If Masters have a thorough knowledge of the part they play in the system of shipping control, the utmost protection can be afforded their ship against enemy operations or other possible dangers. The Masters' cooperation is absolutely essential to the success of the task of shipping protection.

302. Naval Control of Shipping Organization

a. The mission of the Naval Control of Shipping Organization is to provide for the safety of merchant vessel movements in time of war or emergency. Where possible enemy operations make peacetime routes and sailing procedures unsafe, selected routes are used, a system of communication is organized, and ship movements are plotted closely so that naval authorities responsible for protection of shipping will, at all times, know the location of each ship.

b. The control of the movements of certain classes of ships within defined areas, by the NCSORG in peacetime, using modified methods to meet the requirements of current conditions is called Modified (Limited) Control of Shipping. Modified control is exercised for training purposes and facilitates rapid transition to wartime control of shipping.

303. Abbreviations and Terms used in NCSORG operations

The following abbreviations and terms have been adopted for use:

a. **NCSORG** (Naval Control of Shipping Organization) — The naval organization exercising control of movements of shipping during time of war or emergency.

b. **OCA** (Operational Control Authority) — The naval commander responsible for the control of the movement and for the protection of merchant shipping within specified geographical limits. The sea areas of the world are divided into zones of responsibility. U.S. OCA areas are shown in Part I.

c. **NCSO** (Naval Control of Shipping Officer) — A naval officer designated for duty within the Naval Control of Shipping Organization, who is the direct representative of his OCA. As such, he coordinates the procedures involved, and delivers orders concerning the routing and movements of OCA controlled ships into or out of the port in which he is located.

d. **NCSLO** (Naval Control of Shipping Liaison Officer) — A naval officer assigned to the staff of a foreign allied NCSO for the performance of shipping control duties.

e. **REPTOF** (Reporting Officer) — An officer of the armed services, a consular official in a foreign country, or a civilian official who, in addition to other duties, reports the movements of merchant shipping to the OCA in whose command he may be located or to such other authority the OCA may direct. He may

also be required to route merchant shipping as directed by the OCA. A reporting Officer may be designated in peacetime as well as in war. In general, reporting officers are required at minor ports or bases where the volume of merchant shipping does not justify establishing NCSO offices.

f. **SAILING ORDERS** — Each master of a vessel being sailed under the Naval Control of Shipping Organization receives a Sailing Orders Folder for each voyage containing general sailing orders which include the following:

- (1) Departure communications and instructions.
- (2) Channel information.
- (3) Communication plan.
- (4) General orders and bulletins.
- (5) Routing instructions if sailing independently.
- (6) Entrance instructions for ports.
- (7) Miscellaneous special instructions.

g. **CHOP** (Change of Operational Control) — The date and GMT at which the responsibility for the naval operational control of a ship or group of ships passes from one Operational Control Authority to another. (See Article 304).

h. **SHIFT** — The date and time at which controlled shipping shifts its radio watch from one Mercast area or sub area broadcast to the next.

i. **DESCHA** (Destination Change) — A change from the original destination made by an OCA at the request of the ship's destination authority. Destination changes may be required in order to conform to modified logistics requirements and the availability of port facilities. (See Article 307).

j. **DIVERSION** — An alteration to a route ordered by an OCA for an operational reason. (See Article 307).

k. **REFERENCE DIVERSION POINTS** — Geographical positions selected by the authority ordering the route in order to facilitate diversions at sea.

l. **EVASION** — An alteration to a route, ordered by the Escort Force Commander, the convoy Commodore, or the Master of an independent, in order to avoid local dangers after the voyage has commenced. If the evasion amounts to more than 15 miles to either side and more than 50 miles ahead or astern of the originally ordered route, the OCA must be informed by a corrected position report. (See Article 306).

m. **DTG (Z)** — GMT Date-time group.

n. **DECLARED SPEED** — The continuous speed which a Master declares his ship can maintain over the ground on a forthcoming voyage under moderate weather conditions; that is, a moderate sea, and not more than wind force 4 on the Beaufort Scale. He should have due regard to her present condition; that is, state of bottom, state of machinery and quality of bunkers.

o. **SOA** (Speed of Advance) — This is the speed made good over the ground along the route and is the basis upon which movements are plotted.

p. **ETA** — Estimated time of arrival.

q. MERCO – A method of reporting a movement of and information relating to the control of merchant ships by the NCSORG in war and when operating under modified shipping control procedures during peacetime.

r. R.O.B. (Reserve on Board) – Publications to be carried aboard but not used until directed.

304. Change of Operational Control (CHOP)

The date and time (GMT) at which a ship changes from the control of one OCA to another (CHOP Time) is given in the sailing orders. It is emphasized that control changes at the time stated in the sailing orders even though the ship's actual crossing of the boundary line might not be made exactly at that hour. Times of change of operational control will always be given in the sailing orders and are always automatic. No message from the ship is necessary when CHOPPING from one OCA to another.

305. General Instructions Pertaining to the Voyage.

a. Safe Navigation – Although, when sailing in convoy, the commodore is responsible for the safe conduct and cruising order of the convoy, *Masters of merchant ships, whether sailing in convoy or independently, are at all times responsible for the safe navigation and handling of their ships.* For example, instructions to keep "as close to the coast as safe navigation permits" must be interpreted literally, however, a Master must never take any navigational risk in order to comply with such instructions. Further, if as the result of regular reckoning or calculation of his ship's navigational position, the Master judges that the convoy is standing into danger, he must advise the Convoy Commodore immediately.

b. Security of routes – Masters are cautioned that the routes sailed by their ships under the wartime NCSORG are classified matters. The practice of posting information as to the ship's track and/or noon positions is not permitted. All deck officers and communications personnel must be fully conversant with the security requirements engendered by the control of the ship's movements by naval authorities.

306. Corrected Position Report

a. Purpose: Each OCA keeps a plot of his area showing the position of all ships sailing under naval control. It is of utmost importance that any significant deviation from the prescribed route be reported in order that these authorities can maintain a high degree of accuracy on their plots for the purpose of providing the maximum protection for the vessel.

b. Corrected Position Reports are made (under the conditions of radio silence imposed by the OCA) when the following situations occur:

- (1) When the actual position of the ship varies:
 - (a) More than 50 miles ahead or astern, or
 - (b) More than 15 miles to either side of the predetermined dead reckoning position.

(2) When it becomes evident, after the CHOP to the OCA of the area of the terminal port, that the actual time of arrival will be more than four hours earlier or later than the last ETA given.

(3) When the new ETA given in a diversion message cannot be met within four hours.

c. The dead reckoning position is based on the speed of advance and the sailing track designated in the sailing orders, or the speed of advance which may have been stated in a previously sent Corrected Position Report.

d. Reports are sent to the OCA's of the areas through which the convoy or vessel (if sailing independently) is moving or

will move at the time the corrected position is reported. The reports are to be encrypted in accordance with the communications instructions which the Master will receive prior to sailing.

e. Contents of a Corrected Position Report – Detailed instructions pertaining to the required sequence of items to be included in a "CORRECTED POSIT" report will be provided in communications instructions to be issued to all merchant vessels sailing under the NCSORG.

307. Diversion and Destination Changes

a. Orders.

(1) A ship may be diverted from its track (operational diversion), or to a port of destination different from that given in the sailing orders (destination change). If this happens, the Master will receive orders from the Operational Control Authority under whose control he is at the time the message is sent.

(2) Diverting a ship at sea from the original route will be known as DIVERSION.

(3) Changing the destination of a ship from its original destination will be known as DESCHA.

b. Acknowledgement of Orders – Acknowledgement of diversion and DESCHA orders shall not be made unless specifically requested by the OCA in the order message. The order message will not normally include a request for acknowledgement of receipt. However, if the position is such that the Master cannot meet, within four hours, the ETA specified in the order message, he will transmit a Corrected Position Report which will contain the new ETA. (See Article 306).

c. Specific Instructions contained in Diversion Orders – The Operational Control Authority will, when diverting a ship, provide the Master with a complete route to destination or the point of rejoining the original route.

d. Procedural details applicable to Diversion and Destination Change messages will be included (together with examples) in separate communications instructions.

308. Darken Ship Arrangements

Upon receipt of the general emergency message described in Part I of this chapter, masters at sea must darken ship. All doors, alleyways, skylights, or other openings capable of permitting light to escape to outside spaces must be fitted with heavy canvas screens or other devices of opaque material. The darken ship arrangements for doors opening on outer decks should include "stagger screens" and red "standing" lights, or other lighting of low power considered best for night vision adaptation.

309. Precautions in the Use of Electronic Equipment in War Zones

Normally, electronic silence must be maintained within danger zones, except when use of electronic navigation equipment is necessary for safe navigation. In this regard, it should be borne in mind that many electrical devices in common use on board ship are capable of producing noise in radio receivers, and in extreme cases, this electrical noise may be detected at some distance from the ship. The noise source may be located by process of elimination. Accordingly, every effort should be made to locate and remedy the trouble. Certain communication and direction finding receivers radiate sufficient energy to permit enemy vessels operating nearby to obtain direction finder bearings. Turn off receivers which have not been tested and approved as being non-radiating; however, in certain circumstances, the importance of receiving diversion and other official messages may outweigh the possible danger from use of non-approved receivers.

Including N.M. 37/66
Sept. 10, 1966

PART IV
NUCLEAR FALLOUT WARNING SYSTEM FOR MERCHANT SHIPS AT SEA

401. Introduction

a. Radioactive fallout resulting from nuclear explosions both on sea targets and land targets, but particularly from the latter, may affect large areas of adjacent waters from the outset of a Nuclear War. The areas affected will depend upon the prevailing weather conditions. Any merchant ship close to, or approaching these areas, will be in grave danger. It is therefore essential that shipping should be warned of the fallout hazards in order that:

- (1) Passive defense measures, such as switching on a wash-down system, may be taken, and
- (2) An emergency alteration of course away from the danger area may be made.

402. Danger Zones

a. All shipping at sea in waters out to 200 miles from coasts at the outset of a nuclear war, must regard themselves as being in an area of possible fallout danger from nuclear attacks on shore. Ships sailing in the following areas must be particularly regarded as being in serious danger from nuclear fallout:

- (1) Atlantic Areas
 - (a) The North Sea south of 57°N.
 - (b) The English Channel, east of 5°W.
 - (c) The Baltic Sea.
 - (d) The Mediterranean north of 40°N. and west of 20°E. including the Adriatic Sea.
 - (e) The Aegean Sea.
 - (f) The Eastern Seaboard of North America, south of 50°N. to the Gulf of Mexico.
- (2) Pacific Areas
 - (a) The West Coast of the United States.
 - (b) The Gulf of Alaska.
 - (c) The Hawaiian Islands, Midway and Guam Island areas.
 - (d) The Panama Canal.
 - (e) The Pacific Ocean east of Honshu Island, Japan and Luzon, Philippines.
 - (f) The Sea of Japan.
 - (g) The East China Sea.
 - (h) The South China Sea north of 5°N.
 - (i) The North Pacific Ocean north of 45°N.
 - (j) Eastern Indian Ocean during period December through May.

403. Fallout Pattern

a. To simplify the presentation of fallout information in ships, while preserving reasonable accuracy, a pattern is provided in Appendix B which is constructed so as to indicate Surface Zero, and the axis of the pattern (FALLOUT AXIS) with a boundary enclosing the area of potentially serious radioactive dosage (which corresponds to an estimated dose of 200 Roentgens (R) or greater in the first 48 hours after the burst). It is likely that fallout will be experienced in the area adjacent to, but outside, this boundary, but its intensity should not reach militarily significant levels.

404. Area Fallout Warnings

a. In the event of nuclear attack, or threatened nuclear attack, area fallout forecasts for merchant shipping will be originated by naval authorities, and for this purpose the following standard warning messages are established:

(1) MERWARN - PREBURST Messages

A PRE-BURST prediction of likely fallout data for nuclear bursts, valid over a specified sea area for a specified period.

Aim. To allow a master of a merchant ship at sea observing a nuclear detonation to be able to plot immediately the likely fallout pattern resulting.

(2) MERWARN - FALLOUT Messages

A POST-BURST prediction of the sea areas effected by fallout as the result of a nuclear burst, or general nuclear attack, for a specified period.

Aim. To inform masters of merchant ships at sea of the actual sea areas rendered dangerous over a particular period, as a result of nuclear bursts.

405. Method of Promulgation

a. All MERWARN PREBURST/FALLOUT messages will be transmitted in plain language, using GMT, preceded by the International Safety Signal (TTT on CW circuits and SECURITE on Voice) from the appropriate MERCRAFT station and from all the coastal radio stations of the area concerned. Thus, Masters need not concern themselves with the identity of MERWARN originators, but only with the sea areas covered by each message.

406. MERWARN-PREBURST Messages

a. These will be issued continuously at 12 hourly intervals from the time of activation of the MERCRAFT system. They will be valid up to the time stated in the text. Each message will give the Effective Fallout Wind (EFW) and the Down Wind Distance (DWD) from surface zero (SZ) to the limit of dangerous fallout.

b. The following standard format will be used by the Naval MERWARN originating authority:

(1) Message Identifier - MERWARN PREBURST followed by time to which valid (GMT).

(2) Specified sea areas.

(3) EFW and DWD.

EXAMPLE

(a) MERWARN - PREBURST to 190600Z.

(b) Mediterranean west of 2° east.

(c) 030/30, 55.

NOTE: Items (b) and (c) may be repeated by the originating naval authority for different sea areas, thus covering the whole MERCRAFT area should this be considered necessary.

407. Action by Masters

a. Detailed instructions for using the information in a MERWARN PREBURST message are contained in Appendix A and Appendix B.

b. Detailed instructions to be taken by Masters against nuclear fallout in emergencies are contained in Appendix C.

408. MERWARN FALLOUT Messages

a. These will be issued immediately after a nuclear burst or general nuclear attack has taken place and at 6 hourly intervals (to the nearest hour) thereafter, for as long as FALLOUT danger exists.

The following standard format will be used:

(1) Message Identifier — MERWARN FALLOUT followed by time to which valid (GMT).

(2) Surface zero and time of detonations if possible, or dangerous zone(s) delineated by any of the following:

- (a) Latitude and longitude (to the nearest degree).
- (b) Stretch of coast between well known navigational features including distance to seaward.
- (c) Self-evident terms (e.g. English Channel).
- (d) Weather forecast areas, using the preamble "weather area".

(3) Estimated movement of danger area(s) and/or any information of interest or, if available, EFW and DWD. If only surface zero, EFW and DWD are given, the pattern at Appendix B should be used to obtain the Fallout Area.

EXAMPLE — (1)

- (a) MERWARN FALLOUT to 020900Z.
- (b) NORFOLK to HATTERAS out to 100 miles.
- (c) Extending east at 15 knots.

**EXAMPLE — (2) (2nd 6 hourly MERWARN FALLOUT
for this area)**

- (a) MERWARN FALLOUT to 261900Z.
- (b) NORFOLK to HATTERAS from 25 out to 150 miles.
- (c) Moving E-SE 10 knots — disappearing.

EXAMPLE — (3)

- (a) MERWARN FALLOUT to 092800Z.
- (b) LISBON 091700Z.
- (c) 120/10, 30.

409. Amending MERWARN Messages

a. For both the PREBURST and FALLOUT messages, it may be necessary, due to a change in wind or further nuclear bursts, for originating authorities to issue additional or amending information during the period covered by a particular message. In these cases, this will always be done in the form of an amending message referring specifically to the PREBURST/FALLOUT message concerned, by sea area and time period.

EXAMPLE (1)

MERWARN — PREBURST message for Mediterranean west of 2° east to 190600Z amend (c) 210-30, 20.

EXAMPLE (2)

MERWARN FALLOUT message for NORFOLK to HATTERAS up to 261900Z amend (c) New concentration up to 30 miles from coast moving south-east 20 knots.

410. MERWARN DIVERTORD Messages

a. In addition to the origination of the MERWARN PREBURST/FALLOUT messages, naval authorities may, if circumstances dictate, broadcast general diversion orders, based upon the FALLOUT threat, whereby merchant ships proceeding independently will be passed evasive routing instructions of a general nature, using the Standard Naval Control of Shipping identifier DIVERTORD.

EXAMPLE

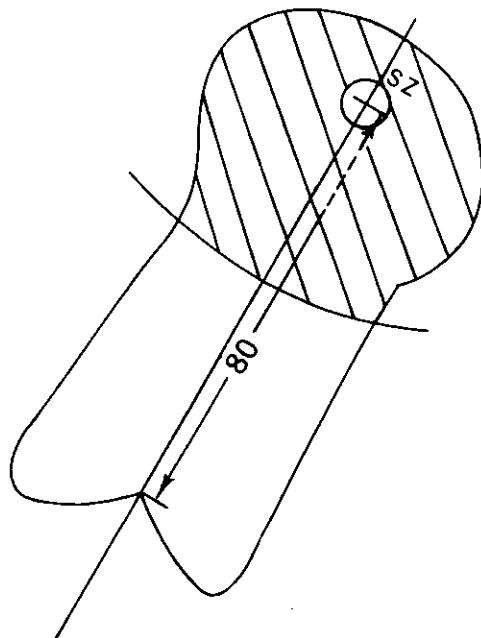
- (a) MERWARN DIVERTORD.
- (b) English Channel closed. All evacuating shipping in North Sea remain north of 52°N. until 021500Z.

APPENDIX A
MERWARN PREBURST PLOTTING

ACTION BY MASTERS

1. Immediately after a nuclear detonation is observed, the master of a merchant ship should attempt to estimate the position of the Surface Zero.
2. A plot of the likely area of fallout can now be prepared using the appropriate data for the area concerned from the current MERWARN - PREBURST message as follows:
 - a. Plot the position of the burst on a chart, plotting sheet or maneuvering board.
 - b. Through the position of burst, plot the fallout axis in the downwind direction of the EFW.
 - c. Along the fallout axis lay off the DWD signalled.
 - d. Place the pattern (Appendix B) over the plotting sheet with Surface Zero over the point of burst and its axis along the fallout axis.
 - e. Select the contour which crosses the axis nearest to the point obtained by c above.
 - f. Prick off this contour, remove the pattern and complete the contour on the plotting sheet.

All points outside the area enclosed by this contour may



be expected to receive a total dose less than 200 R in 48 hours. The intensity of contamination will be greatest on the fallout axis.

3. Time of Fallout

Fallout will not occur simultaneously within the entire area contained by this boundary. It will commence in the vicinity of Surface Zero and may be expected to move down the fallout pattern (i.e., in the direction of the fallout axis) with approximately the speed of the EFW. The approximate zone in which deposition at the surface is taking place at a given time after the burst may be determined by the following procedure:

- a. Multiply the EFW speed by the time (in hours) after the burst.
- b. To this distance add and subtract a safety distance of 15 miles, to allow for finite cloud size, diffusion and wind fluctuations.
- c. With Surface Zero as center and the distances obtained in b above as radii, describe arcs across the fallout pattern.
- d. The zone enclosed between these arcs will contain, in most circumstances, the area of deposition.

EXAMPLE (See below)

EXAMPLE

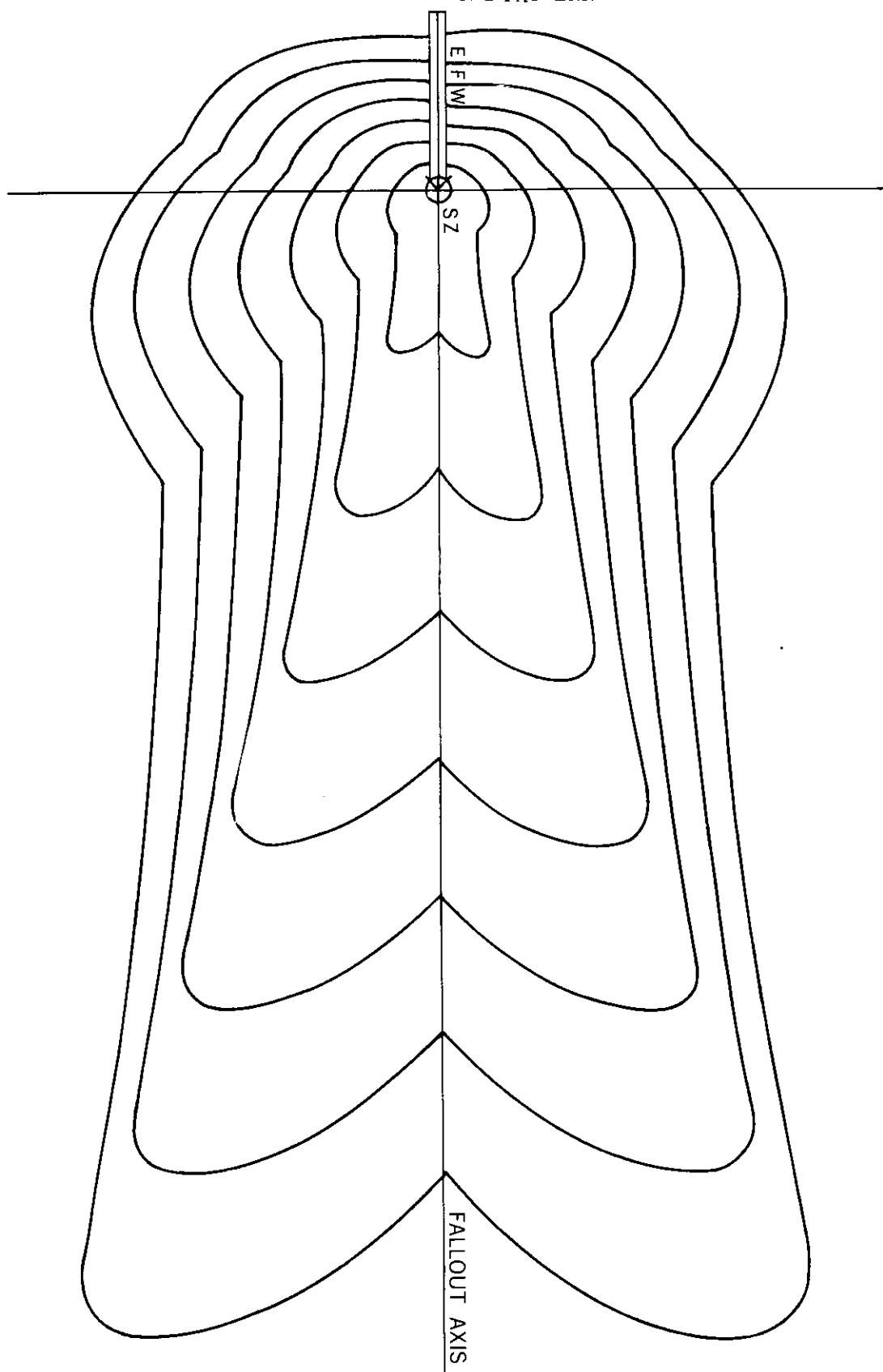
Find (a) total fallout area (b) the area in which fallout is falling after $\frac{1}{2}$ hour.

PREBURST

- a. To 190600Z.
- b. Mediterranean W. of 2°E.
- c. 030/40, 80.

- (a) (i) Plot SZ.
(ii) Lay off axis down-wind of EFW.
(iii) Place pattern on SZ with axis along 210°.
(iv) Mark off 80 miles on axis and draw curve. This is dangerous area.
- (b) (i) Center of fallout is $\frac{1}{2} \times 40$ down-wind = 20 miles.
(ii) Safety distance from SZ 15.
(iii) Draw arcs 5 miles and 35 miles radius.
(iv) Shaded area is dangerous area $\frac{1}{2}$ hour after burst.

APPENDIX B
PREBURST PLOTTING PATTERN



APPENDIX C
INSTRUCTIONS TO MASTERS IN AN EMERGENCY ON DEFENSE
AGAINST NUCLEAR FALLOUT

1. Attacks with nuclear weapons may be expected on land targets adjacent to your route. Such attacks are likely to result in radioactive fallout being deposited over large areas of sea, through which you may have to pass. It may be possible to issue a general warning to indicate which areas are likely to be dangerous at any particular time.

2. As fallout will probably be in the form of fine dust which may well be invisible, you should observe the following precautions at all times when in the sea areas:

| | | |
|-----------------|---|--------------------|
| ENGLISH CHANNEL | - | East of 5° West |
| NORTH SEA | - | South of 57° North |
| NORTH PACIFIC | - | North of 45° North |
| SEA OF JAPAN | | |
| EAST CHINA SEA | | |

3. If your ship is equipped with the necessary instruments to detect fallout, these precautions may be relaxed accordingly.

PRECAUTIONS TO BE TAKEN

4. If your ship has a pre-arranged radioactive countermeasure plan prepared, ensure that all the measures laid down in that plan are carried out. If no such plan is in existence, improvise measures as indicated below:

a. Select a group, or groups, of compartments as low down in the ship and as far removed from the ship's side as possible within which the crew can take shelter. These spaces should be equipped with washing and lavatory facilities, and sufficient food should be stowed there to last for the passage through the dangerous area. Spaces selected should be capable of being completely shut down with all ventilation and other openings secured.

b. Strike below, or cover, as much gear on the weather decks as possible, particularly absorbent materials such as rope, awnings, etc. Ensure that food stores and galleys are closed down with all openings closed. Stop all ventilation fans and close or cover all ventilation and other openings which are not essential for running machinery and continued steaming. In the absence of suitable closures, the use of adhesive tape, etc., is recommended.

c. Rig all available fire-fighting/wash-deck hoses and nozzles to spray water continuously over as much of the weather decks and superstructure as possible, to prevent contamination settling. If complete coverage is impossible, concentrate effort on the navigating position, over the top of the shelter position(s) and above the machinery spaces.

d. If a continual spraying of the upper-works is impracticable, organize working parties at frequent intervals to wash down the weather decks and superstructure to reduce the build-up of contamination.

e. Reduce the number of your crew who must remain on the weather decks or in positions near the weather decks, or in machinery spaces, to the bare minimum required for safe steaming, and keep the remainder in the selected shelter position(s).

f. Ensure that all men who must remain in exposed positions (including machinery spaces, unless ventilation can be stopped) are fully clothed, preferably in 'foul weather' clothing, with all the skin covered so far as practicable.

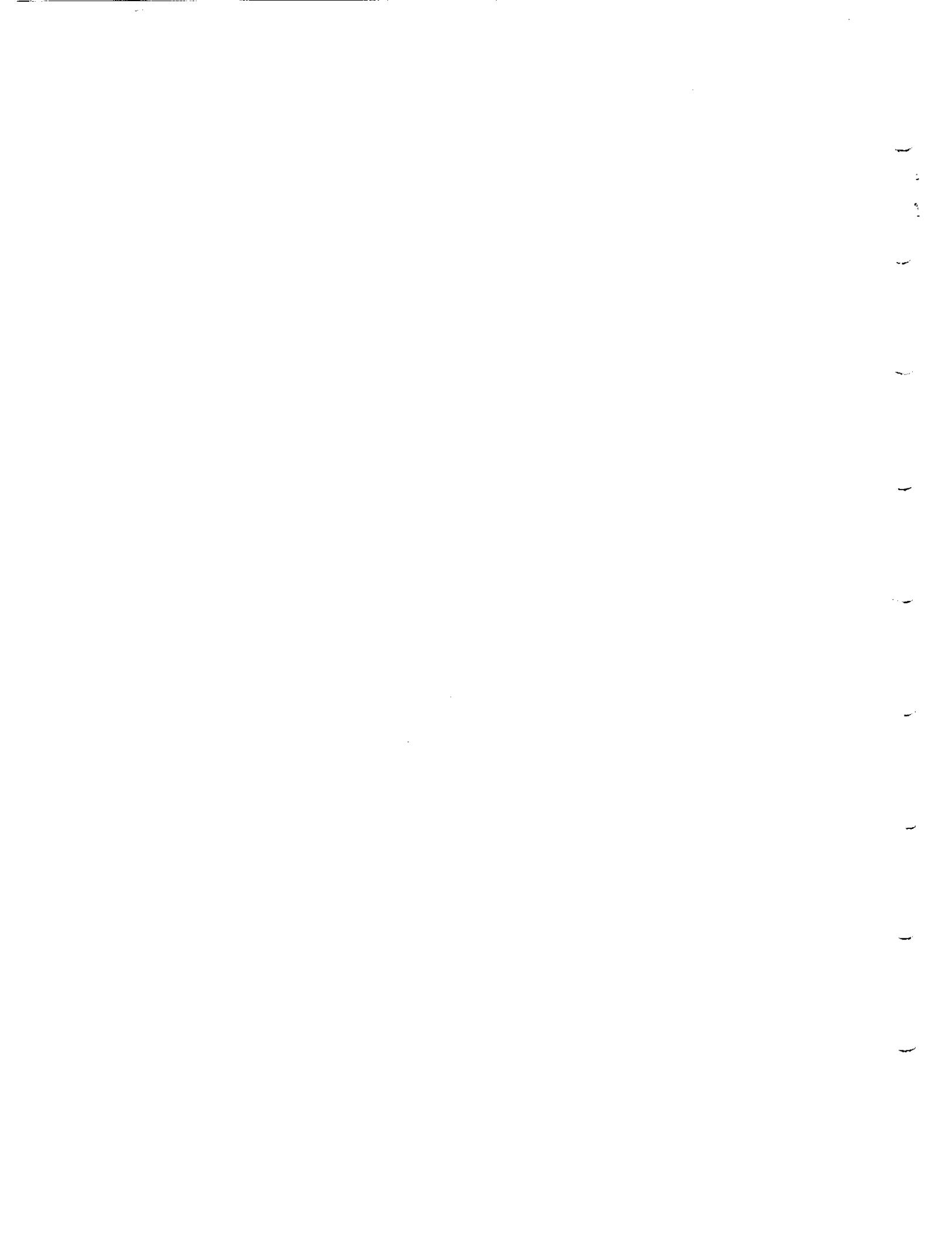
g. During your passage, so far as the numbers of appropriately skilled personnel allow, change round these men manning exposed or relatively unsheltered positions (including the machinery spaces) as often as possible, in order to spread the radiation dosage. Remember that this advice also applies to YOU; take as much shelter as the safe navigation of your ship will permit.

h. Ensure that all men who have been exposed remove at least their outer clothing on returning to shelter, wash thoroughly their exposed skin, especially the hands, face and neck, as soon as possible, and in any case before drinking or eating.

i. Restrict unnecessary movement throughout the ship, to minimize the possible spread of contamination.

j. Unless essential, do not distil water for drinking while in the dangerous area.

k. As soon as possible after clearing the dangerous area, carry out a thorough hosing down of the entire weather decks and superstructure.



Chapter 11

ALLIED MERCAST SYSTEM

1101. This chapter contains information on the Allied Mercast System which is the radio communication organization whereby official messages are transmitted to merchant ships at sea when under the Allied Naval Control of Shipping Organization. It is promulgated in peacetime in order that U.S. merchant ships at sea or in foreign ports will have this information available for immediate use in the event of an outbreak of hostilities. **THIS MERCAST WILL NOT BE USED IN LIEU OF THE U.S. MERCAST UNTIL DIRECTED BY COMPETENT U.S. NAVAL AUTHORITY.**

1102. In the Allied MERCAST System, the world's ocean areas are divided into Allied MERCAST Areas, each identified by a number. Each Allied MERCAST area is covered by a high power shore radio station. Medium power coast stations are also available in certain areas. The high power radio stations known as "Allied MERCAST Area Stations" broadcast simultaneously on two or more frequencies on fixed schedules and provide long range communications. The medium power radio stations known as "Coast Stations" provide short range communications and are used to broadcast Allied MERCAST messages to merchant ships known to be within range. Allied MERCAST Area boundaries are established for communication purposes only and are not boundaries for command purposes.

1103. Details of frequencies, call signs and operating schedules of Allied MERCAST Area Stations and Coast Stations are given below:

a. The MERCAST is not a continuous service. Transmissions will commence at scheduled times at four-hour intervals from 0000 GMT. This spacing of schedules coincides with the international watchkeeping periods for ships carrying less than three radio operators and ensures that ships with two operators in any part of the world can copy all schedules of their appropriate MERCAST. The schedules copied by ships with only one radio operator will vary depending on the MERC-
CAST area watch being maintained.

b. One-operator schedules carry general messages and messages for one operator ships. The schedules to be copied by ships with only one operator are listed below according to area.

c. Ships with two or more operators are required to copy all schedules of the appropriate MERCAST.

d. Transmissions of traffic by MERCAST Area Stations will commence precisely at the scheduled time and will continue within the indicated time limits of the schedule until traffic on hand is cleared. Schedules normally last for a maximum of two hours.

e. All MERCAST Area Stations will cease transmission of traffic during the international silence periods in order to permit ships to ensure watch on 500 kcs. During these periods a call tape will be run on all MERCAST frequencies in use (except those between 485 kcs. and 515 kcs.) to permit ships to remain on or return to the MERCAST frequencies expeditiously.

f. MERCAST Area Stations may also interrupt scheduled transmissions of traffic to transmit time signals.

g. Defects or damage may occur to any of the MERC-
CAST Area Stations. If nothing is heard of the MERC-
CAST Area Station on any of its listed frequencies for two schedules under conditions in which reception is possible, ships are to shift to the adjacent MERC-
CAST, but are to check reception of their proper station during the calling period at each schedule thereafter, until they are able to report the shift of watch. Such emergency shifts are to be made to the next MERC-
CAST Area Station in the direction in which the ship is proceeding.

1104. Ship-to-Shore Communications

a. The need for radio silence in wartime cannot be over-emphasized. However, should the Master deem it necessary to break radio silence, ships are authorized to use any of the Allied coast stations. Radio officers are warned of the possibility that some stations may have been closed down without notice. Ships are responsible for ensuring that adequate passing (relay) instructions are included with all messages.

b. Instructions on when the breaking of electronic (radio) silence is permitted are contained in ACP 149, but should merchant ships not holding this publication be in doubt, the Master should be guided by consideration of whether in his opinion the need for transmitting a message (e.g. to report damage or breakdown) outweighs the danger of enemy interception and DF of his transmission. Unless specifically ordered otherwise, merchant ships in convoy should always pass such traffic to the convoy commodore or an escorting warship for relay to addressees. (Visual communications must always be used where possible before resorting to the use of radio.)

1105. General Messages

a. General messages are those which require a wide distribution. They are given an identifying title and serial number. General messages of an urgent nature are transmitted by radio in order to effect timely delivery. Less urgent messages which do not warrant transmission to ships on MERCAST are disseminated to Naval Control of Shipping Officers (NCSOs) ashore who will retain them for collection by Masters on arrival in port.

b. General messages to merchant ships will be broadcast by both MERCAST Area Stations and Coast Stations and will use the following collective titles and call signs:

| TITLE | CALL SIGN | MEANING |
|-------------|----------------------------|--|
| ALMERBEL | ONXA | All Belgian Merchant Ships |
| ALMERBRIT | GBMS | All British Merchant Ships |
| ALMERCAN | VGGG | All Canadian Merchant Ships |
| ALMERDEN | OXXO | All Danish Merchant Ships |
| ALMERFRA | FBBA | All French Merchant Ships |
| ALMERGER | DAAZ | All German Merchant Ships |
| ALMERGRK | SWOL | All Greek Merchant Ships |
| ALMERITAL | IAAC | All Italian Merchant Ships |
| ALMERNETH | PAAB | All Netherlands Merchant Ships |
| ALMERNOR | LMKO | All Norwegian Merchant Ships |
| ALMERPORT | CSAA | All Portuguese Merchant Ships |
| ALMERTURK | TCTQ | All Turkish Merchant Ships |
| ALMERUS | NADN | All United States Merchant Ships |
| ALMERLANT | NRMS 2/4/6 | All Allied Merchant Ships in the Atlantic (see note (1) below) |
| ALMERMED | NRMS 8 | All Allied Merchant Ships in the Mediterranean |
| ALMERPAC | NRMS 1/3/5/7/9/13/14/15/16 | All Allied Merchant Ships in the Pacific (see note (1) below) |
| ALMERIND | NRMS 11/12 | All Allied Merchant Ships in the Indian Ocean (see note (1) below) |
| ALMERSOLANT | NRMS 10 | All Allied Merchant Ships in the South Atlantic Area |
| ALMERGEN | NRMS | All Allied Merchant Ships |
| ALMERCAST | NUKO | All Ships copying MERCAST |

Note: (1) When it is desired to address only Allied Merchant Ships in a particular MERCAST Area this will be achieved by the addition of the appropriate area suffix only (e.g.: NRMS 2-All Allied Merchant Ships in MERCAST Area II.) Similarly, these suffixes may be applied to other call signs listed above (e.g. GBMS 3-All British Merchant Ships in MERCAST Area III.)

1106. Call Signs

a. Merchant ships transmitting messages are to employ the following call signs:

(1) International Call Signs—Only when communicating with a neutral station. If the other call signs referred to in (2) below have not been allocated, ships not in convoy may use their International Call Sign.

(2) Other call signs—In accordance with instructions in ACP 149 and amplified if necessary by further instructions issued separately.

b. If it is necessary for merchant ships to communicate by radio with an Allied warship, it is essential not to divulge the identity and nationality of the warship. Instructions for use of call signs in convoy are included in ACP 149 and will be amplified as necessary in NCSO's orders issued before sailing. Under any other circumstances, in the absence of instructions to the contrary, messages are to be made to "NAWS" meaning "any or all Allied warships".

1107. Masters and Radio Officers are urged to become familiar with this information and to retain it on board for use if needed. It will serve to provide information on additional MERCAST and ship/shore services, and, as such, supplements but does not supersede the provisions of Chapter 10.

Including N.M. 22/66
May 28, 1966

1108. ALLIED MERCAST AREAS

AREA I
MARIANAS-BONINS

From 23-00N, 132-00E by rhumb line to 30-00N, 145-00E; thence due East to 160-00E; thence due South to 3-30N, 160-00E; thence due West to 3-30N, 132-00E; thence due North to 23-00N, 132-00E.

| MERCAST AREA STATION | SCHEDULES GMT | CALL SIGN | FREQUENCIES | REMARKS |
|----------------------|--|-----------|--|---|
| Guam | 0000-0200* 0400-0600* 0800-1000* 1200-1400* 1600-1800 2000-2200 | NPN | 484 kc/s 4955 8150 13530 17530 21760 | Simultaneous transmissions on all frequencies on all schedules *One-operator schedules |
| COAST STATION | CALL SIGN | FREQUENCY | BROADCAST SCHEDULES | |
| Guam | NPN | 470 kc/s | Same as for Guam MERCAST Area Station including one-operator schedules | |

AREA II
NORTH WEST ATLANTIC

Meridian 67-00W from the USA-Canada border due South to parallel 43-00N; thence along a rhumb line to position 42-00N, 65-00W; thence due south along meridian 65-00W to parallel 38-00N; thence Easterly along a rhumb line to position 41-00N, 44-00W; thence along a rhumb line to position 51-30N, 31-00W; thence along a rhumb line to position where meridian 48-00W meets the coast of Greenland (NE of Cape Farewell); thence Westerly along the south coast and Northerly along the west coast of Greenland into Baffin Bay; from the opposite side of Baffin Bay South along the east coast of Canada to meridian 67-00W.

| MERCAST AREA STATION | SCHEDULES GMT | CALL SIGN | FREQUENCIES | REMARKS |
|----------------------|--|-----------|---|---|
| Halifax | 0000-0200* 0400-0600 0800-1000 1200-1400* 1600-1800* 2000-2200* | CFH | 115.3 kc/s 4356.5 6449.5 8662 12984 17218.4 22587 | Continuous Continuous Continuous Continuous Continuous Continuous On request *One-operator schedules |

| COAST STATION | CALL SIGN | FREQUENCY | BROADCAST SCHEDULES GMT |
|--------------------------|-----------|-----------|---|
| Belle Isle, Labrador | VCM | 489 kc/s | †1305, 2100, 0210 Winter schedule: 1115-1930, 2100-0115 |
| Cape Hopes Advance, Que. | VAY | 446 | †1350, 0150 |
| Cape Race, Nfld. | VCE | 420 | 1310, 2120, 0150 |
| St. John's, Nfld. | VON | 478 | |
| Goose Bay, Labrador | VAZ | 418 | † |
| Cartwright, Labrador | VOK | 416 | † |
| Hopedale, Labrador | VOQ | 416 | † |
| Resolution Is., N.W.T. | VAW | 484 | †1320, 0120 |
| Nottingham Is., N.W.T. | VCB | 458 | † |
| Port Harrison, Quebec | VAL | 480 | † |
| Churchill, Manitoba | VAP | 420 | 1210, 0010 |
| Halifax, N.S. | VCS | 484 | 1200, 2100 |
| Cornerbrook, Nfld. | VOJ | 416 | |
| Canso, N.S. | VAX | 446 | 1220, 2140 |
| Yarmouth, N.S. | VAU | 489 | 1810, 2130 |
| Sept Iles, Quebec | VCK | 420 | |
| Fox River, Quebec | VCG | 434 | 1240, 0040 |
| Mont Joli, Quebec | VCF | 446 | 1230, 0030 |
| Grindstone, Miquelon Is. | VCN | 440 | 1230, 0350 |
| North Sydney, N.S. | VCO | 489 | 1800, 0100 |
| Quebec, Quebec | VCC | 434 | 1220, 1720, 0020 |
| Three Rivers, Quebec | VBK | 478 | † Hourly 30 minutes past the hour |
| Montreal, Quebec | VFN | 420 | †1210, 1710, 0010 Winter schedule: 1200-2359 |
| St. John, N.B. | VAR | 430 | 1200, 2200 |
| Argentia, Nfld. | NJN | 427 | 0000-0200* 1200-1400* 0400-0600 1600-1800* 0800-1000 2000-2200* |

†Continuous during navigation season

*One-operator schedules

AREA III
CENTRAL PACIFIC

From 20-00S, 177-00W, thence due North to 3-30N, 177-00W; thence due West to 3-30N, 160-00E; thence due North to 40-00N, thence due East to 150-00W, thence by rhumb line to 5-00S, 110-00W; thence due South to 20-00S; thence due West to 20-00S, 177-00W.

| MERCAST AREA STATION | SCHEDULES GMT | CALL SIGN | FREQUENCIES | REMARKS |
|----------------------|---------------|-----------|-------------|---|
| Honolulu, Hawaii | 0000-0200* | NPM | 181.05 kc/s | *One-operator schedules |
| | 0400-0600* | | 4525 | |
| | 0800-1000* | | 9050 | |
| | 1200-1400 | | 13655 | |
| | 1600-1800 | | 16457.5 | Simultaneous transmissions on all frequencies on all schedules. |
| | 2000-2200* | | 20575 | |
| | | | 22593 | |

| COAST STATION | CALL SIGN | FREQUENCY | BROADCAST SCHEDULES GMT |
|------------------|-----------|-----------|--|
| Honolulu, Hawaii | NMO | 440 kc/s | 0000-0200* 1200-1400 0400-0600* 1600-1800 0800-1000* 2000-2200* *One-operator schedules |

AREA IV
EASTERN ATLANTIC

A rhumb line from the point where meridian 43-00W meets the coast of Greenland (NE of Cape Farewell); Southerly to a position 42-00N, 20-00W; thence due South to the Tropic of Cancer at 23-30N; thence due East to the African Coast and along the African Coast to parallel 33-00N; thence due West to meridian 10-00W; thence North along meridian 10-00W to parallel 38-00N, thence due East to the Portuguese coast; thence Northerly along the west coast of the European mainland, including the Baltic Sea to 45-00E; thence due North to the Arctic; thence from the Arctic South along the East coast of Greenland to the point where meridian 43-00W meets the coast of Greenland.

| MERCAST AREA STATION | SCHEDULES GMT | CALL SIGN | FREQUENCIES | REMARKS |
|------------------------|--|--|--|--|
| Portishead | 0000-0200 0400-0600 0800-1000* 1200-1400* 1600-1800* 2000-2200* | GKU GRL GKA2 GKA3 GKA4 GKA5 GKA6 GKA7 | 129.95 kc/s 1612 4267.9 6397 8581.6 12858 17136.8 22431 | 129.95 and 1612 continuous all schedules. Other frequencies in use according to time and season. *One-operator schedules |
| COAST STATION | CALL SIGN | FREQUENCY | BROADCAST SCHEDULES GMT | |
| Stonehaven | GND | 458 kc/s | 3-operator ships: 30 mins. past every even hour. | |
| Humber | GKZ | 441 | 2-operator ships: 0030, 0230, 0430, 0630, 1030, 1230, 1630, 2030. | |
| Niton | GNI | 464 | 1-operator ships: 0830, 1230, 1630, 2030. | |
| Ilfracombe | GIL | 476 | | |
| Portpatrick | GPK | 472 | | |
| Wick | GKR | 432 | 3-operator ships: 48 mins. past every even hour. | |
| Cullercoats | GCC | 484 | 2-operator ships: 0048, 0248, 0448, 0848, 1048, 1248, 1648, 2048. | |
| North Forland | GNF | 418 | 1-operator ships: 0848, 1248, 1648, 2048. | |
| Land's End | GLD | 438, 522 | | |
| Englesey | GLV | 447 | | |
| Arcachon Radio | FFC | 421 | 35 mins. past every even hour. | |
| Brest, LeConquet Radio | FFU | 487 | Beginning of every odd hour. | |
| Boulogne Sur Mer Radio | FFB | 450 | Beginning of every even hour. | |
| Scheveningen Radio | PCH | 421, 461, 500 | Keeps watch in accordance with particulars listed in the ITU publication "List of Coast Stations". | |
| Blaavand | OXB | 429 | 0150, 0350, 0550, etc. (See Notes 1 and 2 below) | |
| Lyngby | OXZ | 487 | 0150, 0350, 0550, etc. (See Notes 1 and 2 below) | |
| Skagen | OXP | 464 | 0150, 0350, 0550, etc. (See Notes 1 and 2 below) | |

Notes: 1. All stations operated by PTT personnel.

2. Traffic list covering all three stations will be broadcast by Blaavand on even dates and Skagen on odd dates. Traffic for ships will follow immediately after traffic lists in the following way: The station transmitting traffic list will continue with traffic for ships in 10 minutes. Next station will take over and transmit for 10 minutes in succession as follows:

- Even dates—Blaavand, Lyngby, Skagen.
- Odd dates—Skagen, Lyngby, Blaavand.

| COAST STATION | CALL SIGN | FREQUENCY | BROADCAST SCHEDULES GMT |
|-----------------|-----------|-----------|---|
| Norddeich Radio | DAN | 474 kc/s | Schedules as per ITU publication "List of Coast Stations". |
| Kiel Radio | DAO | 474 | Continuous |
| Lisbon | CUL | 435 | Continuous when CUL (Lisbon) inoperative. Station to be selected in accordance with prevailing operating circumstances. |
| Apulia | CTN | 516 | |
| Cascais | CTC | 516 | |
| Sagres | CTS | 516 | |

AREA V
EASTERN PACIFIC

From the West coast of North America at 54-50N, due West to 54-50N, 140-00W; thence by rhumb line to 40-00N, 150-00W; thence by rhumb line to 05-00S, 110-00W; thence by rhumb line to the Mexico-Guatemala border at 14-38N, 92-19W; thence northerly along the West Coast of North America to 54-50N.

| <u>MERCAST AREA STATION</u> | <u>SCHEDULES GMT</u> | <u>CALL SIGN</u> | <u>FREQUENCIES</u> | <u>REMARKS</u> |
|-----------------------------|----------------------|------------------|--------------------|---|
| San Francisco | 0000-0200* | NPG | 114.95 kc/s | Simultaneous transmissions on all frequencies on all schedules *One-operator schedules |
| | 0400-0600* | | 4010 | |
| | 0800-1000 | | 6428.5 | |
| | 1200-1400 | | 9277.5 | |
| | 1600-1800* | | 12966 | |
| | 2000-2200* | | 17055.2 22635 | |

| <u>COAST STATION</u> | <u>CALL SIGN</u> | <u>FREQUENCY</u> | <u>BROADCAST SCHEDULES GMT</u> |
|-----------------------|------------------|------------------|--|
| Alert Bay, B.C. | VAF | 430 kc/s | |
| Bull Harbor, B.C. | VAG | 484 | 1620 |
| Prince Rupert, B.C. | VAJ | 420 | 0430, 1630, 2030 |
| Sandspit, B.C. | VAH | 478 | |
| Tofino, B.C. | VAE | 478 | 0420, 1620, 2020 |
| Vancouver, B.C. | VAI | 420 | |
| Victoria, B.C. | VAK | 430 | |
| Westport, Wash. | NMW | 440 | 0000-0200* 1200-1400 0400-0600* 1600-1800* 0800-1000 2000-2200* *One-operator schedules |
| San Francisco, Calif. | NMC | 486 | (Same as Westport, Wash.) |
| Long Beach, Calif. | NMQ | 472 | (Same as Westport, Wash.) |

AREA VI
WESTERN ATLANTIC

From the U.S. Canadian Border southward along the Atlantic and Gulf Coast of North America to the Mexican-British Honduras border on Yucatan peninsula; thence due East along 18-00N to 85-00W; thence North along 85-00W to the Western tip of Cuba; thence East along the North Coast of Cuba to Cape Maisi; thence by rhumb line to Mathewtown on Great Inagua; thence along the south coast of Great Inagua departing due east along 21-00N to 60-00W; thence by rhumb line to 20-00N, 65-00W; thence by rhumb line to 19-00N, 62-00W; thence by rhumb line to 17-00N, 00-00W; thence to Bardos Island; thence to the British Guiana-Venezuela border; thence southwesterly along the coast of South America to 12-00S; thence by rhumb line to the west coast of Africa at the equator; thence North along the west coast of Africa to 23-30N; thence west to 23-30N, 20-00W; thence north to 42-00N, 20-00W; thence by rhumb line to 51-30N, 31-00W; thence by rhumb line to 41-00N, 44-00W; thence by rhumb line to 38-00N, 65-00W; thence north to 42-00N, 64-00W; thence by rhumb line to 48-00N, 67-00W; thence North to the USA-Canada border.

| <u>MERCAST AREA STATION</u> | <u>SCHEDULES GMT</u> | <u>CALL SIGN</u> | <u>FREQUENCIES</u> | <u>REMARKS</u> |
|-----------------------------|----------------------|------------------|--------------------|---|
| Washington | 0000-0200* | NSS | 162 kc/s | 162 kc/s replaced by 121.95 kc/s at 1400-2000 on Thursdays Simultaneous transmissions on all frequencies except as noted above. *One-operator schedules |
| | 0400-0600 | | 5670 | |
| | 0800-1000 | | 9425 | |
| | 1200-1400* | | 13575 | |
| | 1600-1800* | | 17050.4 | |
| | 2000-2200* | | 23650 | |

| COAST STATION | CALL SIGN | FREQUENCY | BROADCAST SCHEDULES GMT |
|---------------------|-----------|-----------|--|
| Pt. Delgada, Azores | CTH | 487 kc/s | Continuous |
| Horta, Azores | CTD | 487 | Continuous when CTH (Pt. Delgada) inoperative. |
| Bermuda | VRT | 426 | Continuous watch on 500 kc/s. Transmits traffic lists on 426 kc/s at 0100, 0400, 0600, 0935, 1300, 1700, 2100 after navigational warnings. |
| Turks Island | VSI | 458 | |
| Nassau | VPN | 426 | |
| Demerara, B.G. | VRV | 422 | |
| Bermuda | NOC | 440 | 0000-0200* 1200-1400* 0400-0600 1600-1800* 0800-1000 2000-2200* |
| Boston, Mass. | NMF | 472 | (Same as for Bermuda, NOC) |
| New York, N.Y. | NMY | 486 | (Same as for Bermuda, NOC) |
| Norfolk, Va. | NMN | 466 | (Same as for Bermuda, NOC) |
| Jacksonville, Fla. | NMV | 430 | (Same as for Bermuda, NOC) |
| Miami, Fla. | NMA | 440 | (Same as for Bermuda, NOC) |
| New Orleans, La. | NMG | 428 | (Same as for Bermuda, NOC) |
| Galveston, Texas | NOY | 457 | (Same as for Bermuda, NOC) |

*One-operator schedules

AREA VII
EASTERN SOUTH PACIFIC AND CARIBBEAN

Pacific portion: From the Antarctic North along 110-00W to 05-00S; thence by rhumb line to the Mexico-Guatemala border at 14-38N, 92-19W; thence Southerly along the Central and South American coast to 67-00W; thence due South to the Antarctic. Atlantic portion: From the Mexican-British Honduras border on Yucatan Peninsula, due East along 18-00N to 85-00W; thence North along 85-00W to the western tip of Cuba; thence East along the North Coast of Cuba to Cape Maisi; thence by rhumb line to Mathewtown on Great Inagua; thence along the South Coast of Great Inagua departing due East along 21-00N to 70-00W; thence by rhumb line to 20-00N, 65-00W; thence by rhumb line to 19-00N, 62-00W; thence by rhumb line to 17-00N, 60-00W; thence to Barbados Island; thence to the British Guiana-Venezuela border.

| MERCAST AREA STATION | SCHEDULES GMT | CALL SIGN | FREQUENCIES | REMARKS |
|----------------------|--|-----------|---|--|
| Balboa, C.Z. | 0000-0200* 0400-1600 0800-1000 1200-1400* 1600-1800* 2000-2200* | NBA | 147.85 kc/s 5448.5 11080 17697.5 | Simultaneous transmissions on all frequencies on all schedules |
| | | | | *One-operator schedules |

| COAST STATION | CALL SIGN | FREQUENCY | BROADCAST SCHEDULES GMT |
|----------------------|-----------|-----------|---|
| Balboa, C.Z. | NBA | 470 kc/s | 0000-0200* 1200-1400* 0400-0600 1600-1800* 0800-1000 2000-2200* |
| San Juan, P.R. | NMR | 466 | *One-operator schedules |
| North Post, Trinidad | VPL | 476 | (Same as for Balboa, C.Z.) |
| Kingston, Jamaica | VQI | 458 | |
| Barbados | VPO | 484.5 | |
| Montserrat | ZBA | 458 | |

AREA VIII
MEDITERRANEAN

This area embraces the Mediterranean Sea, the Black Sea, that part of the Red Sea North of latitude 15-00N and that part of the Atlantic Ocean bounded as follows: From Gibraltar Westward and Northward along the coast of Spain and Portugal to parallel 38-00N; thence due West to meridian 10-00W, thence South along meridian 10-00W to parallel 33-00N; thence East along parallel 33-00N to the African coast; thence Northeast along the African Coast to Gibraltar.

| MERCAST AREA STATION | SCHEDULES GMT | CALL SIGN | FREQUENCIES | REMARKS |
|----------------------|---------------|-----------|-------------|-------------------------|
| Rome | 0000-0200 | IAR | 118.45 kc/s | |
| | 0400-0600 | | 4310 | |
| | 0800-1000* | | 6442.5 | |
| | 1200-1400* | | 8646 | |
| | 1600-1800* | | 12741 | |
| | 2000-2200* | | | *One-operator schedules |

| COAST STATION | CALL SIGN | FREQUENCY | BROADCAST SCHEDULES GMT |
|---------------|-----------|-----------|---|
| Gibraltar | ZDK | 464 kc/s | Transmits traffic lists on 464 kc/s after call on 500 kc/s at 0448, 0848, 1048, 1248, 1648, 2048. |
| Malta | VPT | 461 | Every odd hour |
| Marseilles | FFM | 432 | 30 min. past every odd hour |
| Alcona | ICA | 489 | Continuous |
| Augusta | IGJ | 429 | Continuous |
| Cagliari | IDC | 458 | Continuous |
| Taranto | ICT | 432 | Continuous |
| Genoa | ICB | 457 | Continuous |
| Naples | IQH | 435 | Continuous |
| Trieste | IQX | 476 | Continuous |
| Rome | IAR | 516 | Continuous |
| La Maddalena | ICH | 473 | Continuous |
| Athens | SVA | 418 | Continuous |
| Iskenderun | TAM4 | 516 | Continuous |
| Mersin | TAM5 | 516 | 0700-1500 |
| Antalya | TAM6 | 516 | 0700-1500 |
| Izmir | TAN2 | 458 | Continuous |
| Canakkale | TAN7 | 458 | 0700-1500 |
| Istanbul | TAH | 441 | Continuous |

AREA IX
SOUTH PACIFIC

From the Antarctic North along 160-00E to 45-00S; thence by rhumb line to 30-00S, 170-00E; thence due North to 01-00S; thence due West to 169-00E; thence due North to 03-30N; thence due East to 177-00W; thence due South to 20-00S; thence due East to 110-00W; thence South to the Antarctic.

| MERCAST AREA STATION | SCHEDULES GMT | CALL SIGN | FREQUENCIES | REMARKS |
|----------------------|---------------|-----------|-------------|-------------------------|
| Wellington | 0000-0200 | ZLW4 | 8702 kc/s | Continuous. |
| | 0400-0600 | ZLW5 | 13056 | One-operator schedules: |
| | 0800-1000 | ZLW6 | 17170.4 | West of 140-00W |
| | 1200-1400 | | | 0000-0200, 0400-0600, |
| | 1600-1800 | | | 0800-1000, 2000-2200. |
| | 2000-2200 | | | East of 140-00W |
| | | | | 0000-0200, 0400-0600, |
| | | | | 1600-1800, 2000-2200. |

| COAST STATION | CALL SIGN | FREQUENCY | BROADCAST SCHEDULES GMT |
|-----------------|-----------|-----------|-------------------------|
| Auckland | ZLD | 524 kc/s | |
| Wellington | ZLW | 417.5 | |
| Awarua | ZLB | 515 | |
| Apia | 5WA | 483 | |
| Rarotonga | ZKR | 483 | |
| Chatham Islands | ZLC | 483 | |

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May 28, 1966

AREA X
SOUTH ATLANTIC

From the Antarctic North along 67-00W to Cape Horn; thence northward along the East coast of South America to 12-00S; thence by rhumb line to the West coast of Africa at the equator; thence southward along the West coast and northward along the east coast of Africa to 11-00S; thence due East to 55-00E; thence due South to 30-00S; thence due East to 80-00E; thence due South to the Antarctic.

| MERCAST AREA STATION | SCHEDULES GMT | CALL SIGN | FREQUENCIES | REMARKS |
|----------------------|---------------|-----------|-------------|---------|
| Capetown | 0000-0200 | ZSL | 119.15 kc/s | |
| | 0400-0600 | ZSL2 | 8741.5 | |
| | 0800-1000 | ZSL3 | 6487 | |
| | 1200-1400 | ZSL4 | 8502 | |
| | 1600-1800 | ZSL5 | 12772.5 | |
| | 2000-2200 | ZSL6 | 17228 | |
| | | ZSL7 | 22455 | |

| COAST STATION | CALL SIGN | FREQUENCY | BROADCAST SCHEDULES GMT |
|----------------------------|-----------|-----------------------|-------------------------|
| Port Stanley, Falkland Is. | VPC | 125, 417 kc/s | |
| Capetown | ZSC | 418, 435, 441, 484 | |
| Durban | ZSD | 429, 432 438 | |
| Port Elizabeth | ZSQ | 472, 524 | |
| Walvis Bay | ZSV | 458, 519 | |
| Ascension | ZBI | 472 | |
| St. Helena | ZHH | 461 | |

AREA XI
EASTERN INDIAN OCEAN

From the Antarctic North along 160-00E to 45-00S; thence by rhumb line to 30-00S, 170-00E; thence due North to 01-00S; thence due West to 169-00E; thence due North to 03-30N, 169-00E; thence due West to 125-00E; thence due South to the Celebes; thence westerly and southerly along the North and West Coasts of the Celebes to 120-00E; thence due South along 120-00E to 11-30S; thence due West to 11-30S, 95-00E; thence due South to 30-00S; thence due West to 80-00E; thence South along 80-00E to the Antarctic.

| MERCAST AREA STATION | SCHEDULES GMT | CALL SIGN | FREQUENCIES | REMARKS |
|----------------------|---------------|-----------|-------------|-------------------------|
| Sydney | 0000-0200* | VIX | 44 kc/s | |
| | 0400-0600* | VIX2 | 4286 | |
| | 0800-1000* | VIX3 | 6428.5 | |
| | 1200-1400* | VIX4 | 8478 | |
| | 1600-1800 | VIX5 | 12907.5 | |
| | 2000-2200 | VIX6 | 17256.8 | |
| | | VIX7 | 22485 | *One-operator schedules |

| COAST STATION | CALL SIGN | FREQUENCY | BROADCAST SCHEDULES GMT |
|-----------------|-----------|-----------|-------------------------|
| Wewak | VJW | 440 kc/s | |
| Madang | VIV | 445 | |
| Manus | VJV | 435 | |
| Kavieng | VJY | 435 | |
| Rabaul | VJZ | 430 | |
| Samarai | VIJ | 472 | |
| Port Moresby | VIG | 484 | |
| Thursday Island | VII | 464 | |
| Darwin | VID | 445 | |
| Wyndham | VIW | 464 | |
| Broome | VIO | 440 | |
| Geraldton | VIN | 420.5 | |
| Perth | VIP | 484 | |
| Esperance | VIE | 435 | |
| Adelaide | VIA | 472 | |
| Melbourne | VIM | 430 | |
| Hobart | VIH | 440 | |
| Sydney | VIS8 | 476 | |
| Brisbane | VIB | 435 | |
| Rockhampton | VIR | 472 | |
| Townsville | VIT | 420.5 | |
| Cairns | VIK | 476 | |
| Willis Islets | VIQ | 445 | |

AREA XII
CENTRAL INDIAN OCEAN

The ocean area to Northward of a line commencing from the East coast of Africa at 11-00S, due East to 55-00E; thence due South to 30-00S; thence due East to 95-00E; thence due North to 00-00N, 95-00E; thence by rhumb line to position 22-00N, 89-00E including the southern part of Red Sea bounded on the North by 15-00N.

| MERCAST AREA STATION | SCHEDULES GMT | CALL SIGN | FREQUENCIES | REMARKS |
|----------------------|---------------|-----------|-------------|--|
| Mauritius | 0000-0200 | GZC | 123 kc/s | 123 and 12988.5 continuous all schedules. |
| | 0400-0600* | GZC2 | 4295 | Other frequencies in use according to time |
| | 0800-1000* | GZC3 | 6519.5 | and season. |
| | 1200-1400* | GZC4 | 8726 | |
| | 1600-1800* | GZC5 | 12988.5 | |
| | 2000-2200 | GZC6 | 16978.4 | *One-operator schedules |
| | | GZC7 | 22587 | |

| COAST STATION | CALL SIGN | FREQUENCY | BROADCAST SCHEDULES GMT |
|---------------|-----------|---------------|-------------------------|
| Aden | ZNR | 476 kc/s | |
| Bombay | VWB | 476 | |
| Bahrain | GNV | 487 | |
| Mombasa | 5ZF | 524 | |
| Mauritius | VRS | 421, 522, 480 | |
| Seychelles | ZCQ | 432 | |

AREA XIII
SOUTHEAST ASIA

From the Thailand-Cambodia border South to 10-00N, 102-45E; thence by thumb line to 08-00N, 103-30E; thence due East to 08-00N, 119-00E; thence by rhumb line to 03-30N, 120-00E; thence due East to 125-00E; thence due South to the Celebes; thence westerly thence due North to 00-00N, 95-00E; thence by thumb line to position 22-00N, 89-00E; thence along the coast of East Pakistan, Thailand, Malaya, and Thailand to the Thailand-Cambodia border.

| MERCAST AREA STATION | SCHEDULES GMT | CALL SIGN | FREQUENCIES | REMARKS |
|----------------------|--|---|--|--|
| Singapore | 0000-0200* 0400-0600* 0800-1000* 1200-1400* 1600-1800 2000-2200 | GYS GYS2 GYS3 GYS4 GYS5 GYS6 GYS7 | 112.85 kc/s 4334 6481 8630 12781.5 17266.4 22521 | 112.85 continuous all schedules. Other frequencies in use according to time and season. *One-operator schedules |
| COAST STATION | CALL SIGN | FREQUENCY | BROADCAST SCHEDULES GMT | |
| Singapore | VPW | 419.5, 516 kc/s | | |
| Penang | 9VG | 522.5 | | |

AREA XIV
SOUTH CHINA SEA-PHILIPPINES

From the China coast at 32-00N due East to 32-00N, 128-00E; thence due South to 23-00N; thence due East to 23-00N, 132-00E; thence due South to 03-30N, 132-00E; thence due West to 120-00E; thence by rhumb line to 08-00N, 119-00E; thence due West to 08-00N, 103-30E; thence by thumb line to 10-00N, 102-45E; thence North to the Thailand-Cambodia border; thence along the coasts of Vietnam and China to 32-00N.

| MERCAST AREA STATION | SCHEDULES GMT | CALL SIGN | FREQUENCIES | REMARKS |
|----------------------|--|-------------------|------------------------------------|--|
| San Miguel, R.P. | 0000-0200* 0400-0600* 0800-1000* 1200-1400* 1600-1800 2000-2200 | NPO | 464 kc/s 4445 12200 15925 | Simultaneous transmissions on all frequencies on all schedules. *One-operator schedules |
| COAST STATION | CALL SIGN | FREQUENCY | BROADCAST SCHEDULES GMT | |
| Hong Kong | VPS | 435 kc/s 527.5 | | |

AREA XV
NORTH PACIFIC

From Point Shipunski on Kamchatka Peninsula South along 160-00E to 40-00N; thence due East to 150-00W; thence by thumb line to 54-40N, 140-00W; thence due East to the west coast of North America.

| <u>MERCAST AREA STATION</u> | <u>SCHEDULES GMT</u> | <u>CALL SIGN</u> | <u>FREQUENCIES</u> | <u>REMARKS</u> |
|--------------------------------|----------------------|------------------|-------------------------|---|
| Kodiak | 0000-0200* | NHB | 73.25 kc/s | Simultaneous transmissions on all frequencies on all schedules. |
| | 0400-0600* | | 147.15 | |
| | 0800-1000* | | 4328 | |
| | 1200-1400 | | 8676 | |
| | 1600-1800 | | 10712.5 | |
| | 2000-2200* | | 13045 | |
| <u>BROADCAST SCHEDULES GMT</u> | | | | |
| COAST STATION Kodiak | <u>CALL SIGN</u> | <u>FREQUENCY</u> | 0000-0200* 1200-1400 | |
| | NHB/NOJ | 470 kc/s | 0400-0600* 1600-1800 | |
| Ketchikan | NMJ | 466 | 0800-1000* 2000-2200* | |
| | | | (Same as Kodiak) | |
| | | | *One-operator schedules | |

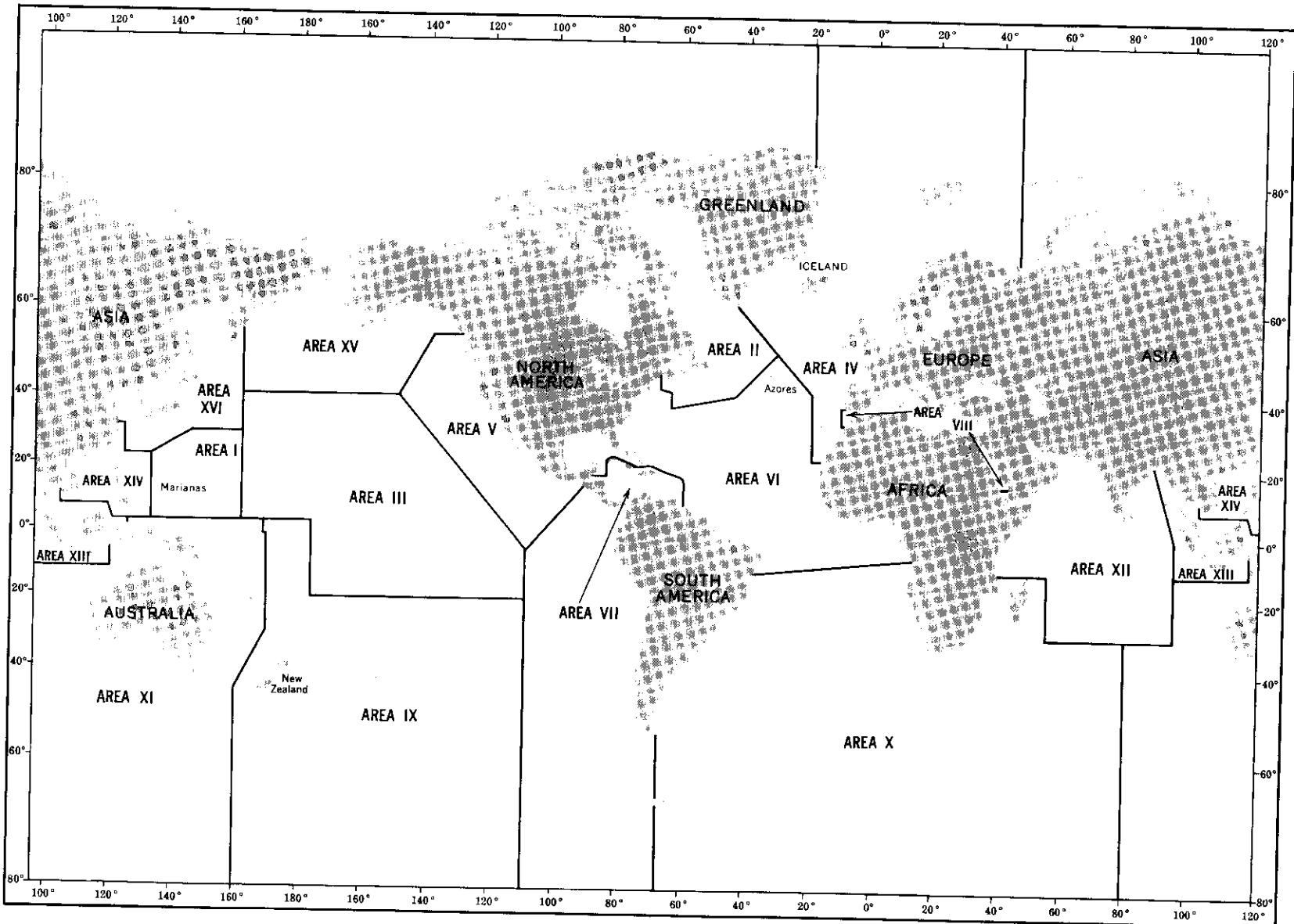
AREA XVI
NORTH WEST PACIFIC

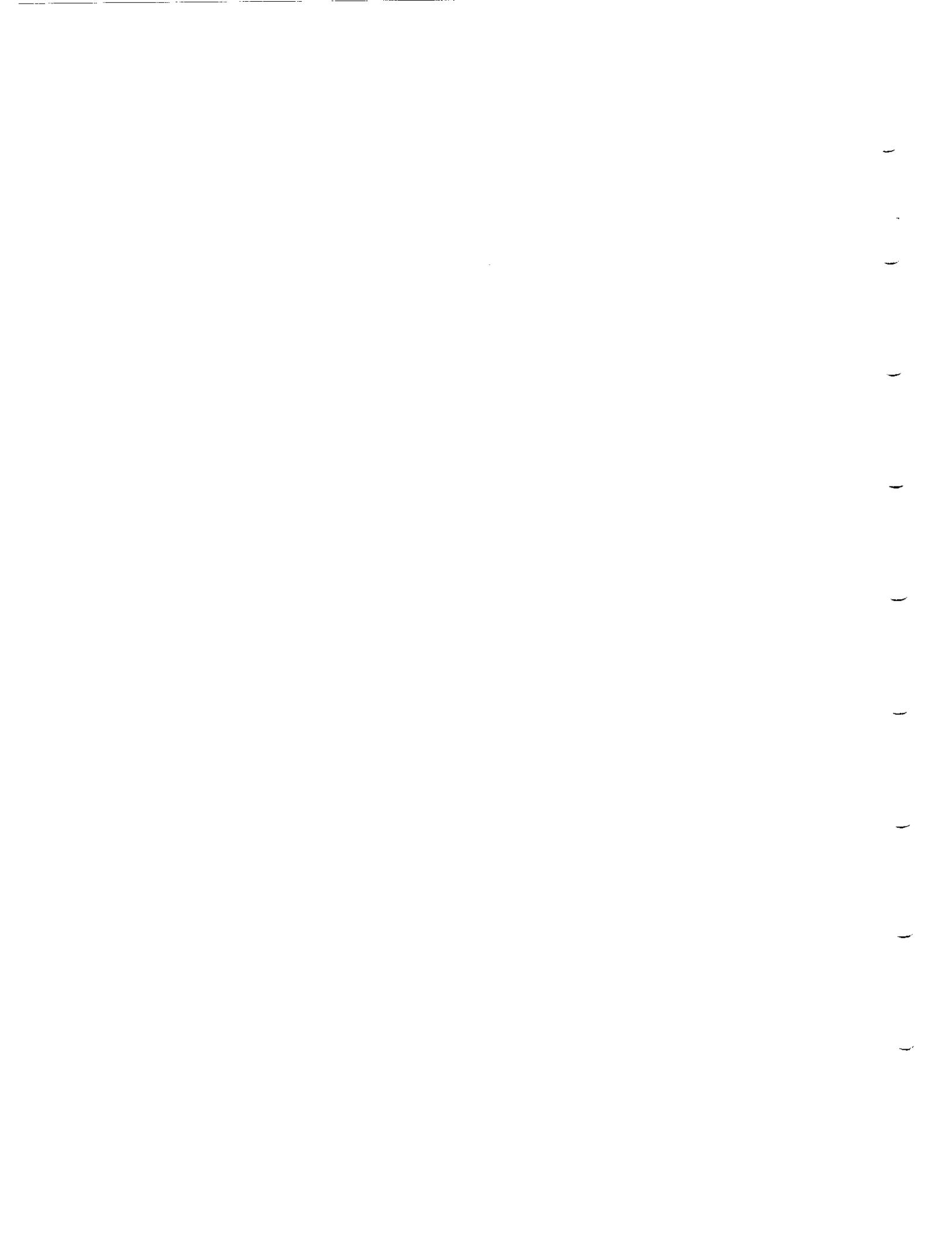
From the China coast at 32-00N due East to 32-00N, 123-00E; thence due South to 23-00N, thence due East to 132-00E; thence by thumb line to 30-00N, 145-00E; thence due East to 160-00E; thence due North along 160-00E to the Kamchatka Peninsula; thence South along the coast of the USSR and China to 32-00N.

| <u>MERCAST AREA STATION</u> | <u>SCHEDULES GMT</u> | <u>CALL SIGN</u> | <u>FREQUENCIES</u> | <u>REMARKS</u> |
|-----------------------------|----------------------|------------------|--------------------|---|
| Yokosuka | 0000-0200* | NDT | 75.95 kc/s | Simultaneous transmissions on all frequencies on all schedules. |
| | 0400-0600* | | 3900 | |
| | 0800-1000* | | 4535 | |
| | 1200-1400* | | 7445 | |
| | 1600-1800 | | 10265 | |
| | 2000-2200 | | 13577.5 | |
| | | | 17210 | *One-operator schedules |

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ALLIED MERCATOR AREA CHART





1109. MERCHANT SHIP—SHORE WATCH

| SHIP—SHORE STATION | CALL SIGN | ANSWERING FREQUENCY | HOURS (GMT) OF WATCHKEEPING | CALLING BAND |
|-----------------------|-----------|---|--|---------------|
| Portishead | GKH | 4274 kc/s | Continuous | 4177—4187 |
| | GKV | 6379.5 | Continuous | 6265.5—6280.5 |
| | GKL | 8558 | Continuous | 8354—8374 |
| | GKG | 12835.5 | 0400—2200 | 12531—12561 |
| | GKS | 17112.8 | 0800—2200 | 16708—16748 |
| | GKI | 22449 | 0800—1800 | 22220—22270 |
| Malta | GYX3 | 6386.5 | Continuous | 6265.5—6280.5 |
| | GYX4 | 8566 | Continuous | 8354—8374 |
| | GYX5 | 12849 | Continuous | 12531—12561 |
| Gibraltar | GYU2 | 4283 | Continuous | 4177—4187 |
| | GYU4 | 8566 | Continuous | 8354—8374 |
| Saint Lys | FFL | Will assume watch in accordance with frequencies and schedules listed in the ITU publication "List of Coast Stations" | | |
| Lisbon | CTV8 | 8642 | Continuous | 8366—8376 |
| | CTV3 | 13042.5 | 2000—0800 | 12534—12564 |
| | CTU7 | 17088.8 | 0800—2000 | 16712—16752 |
| Apulia | CTN6 | 6509 | 2000—0800 | 6267—6282 |
| | CTN3 | 13123.5 | 0800—2000 | 12534—12564 |
| Pt. Delgada, Azores | CTD4 | 4364 | 2000—0800 | 4178—4188 |
| | CTD8 | 8642 | 0800—2000 | 8356—8376 |
| Horta, Azores | CTH6 | 6522 | 2000—0800 | 6267—6282 |
| | CTH3 | 13069.5 | 0800—2000 | 12534—12564 |
| Halifax, N.S. | VCS | 4293.5 | 0000—1000 (1000—2400 on request) | 4177—4187 |
| | VCS | 6491.5 | Continuous | 6265.5—6280.5 |
| | VCS | 8710 | Continuous | 8354—8374 |
| | VCS | 13087.5 | Continuous | 12531—12561 |
| | NJN | 6477.5 | Night-time only | 6265.5—6280.5 |
| Argentia, Nfld. | | 8734 | Continuous | 8354—8374 |
| | | 12718.5 | Day-time only | 12531—12561 |
| | NMF | 8734 | Continuous | 8354—8374 |
| New York, N.Y. | NMY | 8710 | Continuous | 8354—8374 |
| | | 4361 | Night-time only | 4177—4187 |
| Washington, D.C. | NMH | 12718.5 | Continuous | 12531—12561 |
| | | 17002.4 | Day-time only | 16708—16748 |
| Norfolk, Va. | NMN | 8734 | Continuous | 8354—8374 |
| Jacksonville, Fla. | NMV | 8734 | Continuous | 8354—8374 |
| Miami, Fla. | NMA | 8710 | Continuous | 8354—8374 |
| New Orleans, La. | NMG | 4361 | Night-time only | 4177—4187 |
| | | 8710 | Day-time only | 8354—8374 |
| San Juan, P.R. | NMR | 4361 | Night-time only | 4177—4187 |
| | | 8710 | Continuous | 8354—8374 |
| | | 12718.5 | Day-time only | 12531—12561 |
| Balboa, C.Z. | NBA | 4352 | 2300—1100 | 4177—4187 |
| | | 8614 | Continuous | 8354—8374 |
| | | 12883 | Continuous | 12531—12561 |
| | | 17136.8 | 1100—2300 | 16708—16748 |
| San Francisco, Calif. | NMC | 8650 | Continuous | 8364 kc/s |
| Vancouver | CKN2 | 4277 | Continuous | 4177—4187 |
| | CKN3 | 6393.5 | Continuous | 6265.5—6280.5 |
| | CKN4 | 8554 | 0400—1600 | 8354—8374 |
| | CKN5 | 12831 | 1600—0400 | 12531—12561 |
| | CKN6 | 17108 | 1600—0400 | 16708—16748 |

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(Chg 12)

11-15

| SHIP-SHORE STATION | CALL SIGN | ANSWERING FREQUENCY | HOURS (GMT) OF WATCHKEEPING | CALLING BAND |
|--------------------|-----------|---------------------|-----------------------------|---------------|
| Honolulu, Hawaii | NMO | 8650 | Continuous | 8364 kc/s |
| Bombay | VTF4 | 8566 | Continuous | 8354-8374 |
| | VTF5 | 12849 | Continuous | 12531-12561 |
| | VTF6 | 17132 | 0230-1430 | 16708-16748 |
| Irirangi | ZLO2 | 4277 | Continuous | 4177-4187 |
| | ZLO3 | 6393.5 | 0600-1800 | 6265.5-6280.5 |
| | ZLO6 | 17108 | 1800-0600 | 16708-16748 |
| Awarua | ZLB4 | 8554 | Continuous | 8354-8374 |
| | ZLB5 | 12831 | 1800-0600 | 12531-12561 |
| Sydney | VIS3 | 6463.5 | 0900-1800 | 6265.5-6280.5 |
| | VIS4 | 8662 | Continuous | 8354-8374 |
| | VIS5 | 12952.5 | Continuous | 12531-12561 |
| | VIS6 | 17160.8 | 2230-0900 | 16708-16748 |
| Darwin | VHM4 | 8554 | 1000-2200 | 8354-8374 |
| | VHM5 | 12831 | Continuous | 12531-12561 |
| | VHM6 | 17108 | 2200-1000 | 16708-16748 |
| Canberra | VHK2 | 4277 | 1000-2400 | 4177-4187 |
| | VHK3 | 6393.5 | 1800-1000 | 6265.5-6280.5 |
| | VHK4 | 8554 | Continuous | 8354-8374 |
| | VHK5 | 12831 | 1000-1800 | 12531-12561 |
| | VHK6 | 17108 | 0001-1000 | 16708-16748 |
| Vizagapatam | VTO4 | 8566 | Continuous | 8354-8374 |
| | VTO5 | 12849 | Continuous | 12531-12561 |
| Singapore | GYL4 | 8554 | Continuous | 8354-8374 |
| | GYL5 | 12831 | Continuous | 12531-12561 |
| Hong Kong | GZO5 | 12849 | Continuous | 12531-12561 |
| Capetown | ZSJ2 | 4283 | 2000-0400 | 4177-4187 |
| | ZSJ3 | 6386.5 | 2000-0400 | 6265.5-6280.5 |
| | ZSJ4 | 8566 | Continuous | 8354-8374 |
| | ZSJ5 | 12849 | 0400-2000 | 12531-12561 |
| | ZSJ6 | 17182 | 0400-2000 | 16708-16748 |
| Mauritius | GXO2 | 4277 | 1800-0300 | 4177-4187 |
| | GXO3 | 6393.5 | 1500-0300 | 6265.5-6280.5 |
| | GXO4 | 8554 | 1200-0600 | 8354-8374 |
| | GXO5 | 12831 | Continuous | 12531-12561 |
| | GXO6 | 17108 | 0300-1800 | 16708-16748 |
| | GXO7 | 22533 | 0300-1500 | 22220-22270 |

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| | |
|-----------------------|--------|
| Abashiri..... | 1559 |
| Acapulco..... | 1053 |
| Active Pass..... | 1162 |
| Adak..... | 1270 |
| Adak..... | 6220 |
| Adelaide..... | 1748 |
| Adelaide..... | 3680 |
| Adelaide..... | 4888 |
| Adelaide..... | 6660 |
| Aden..... | 1332 |
| Afrika, Mys..... | 1541 |
| Agulhas, Cape..... | 1286 |
| Aitutaki..... | 1925 |
| Akkeshi Ko..... | 1563 |
| Akita..... | 4776 |
| Akyab..... | 1397 |
| Al Basrah..... | 4570 |
| Al Basrah..... | 6310 |
| Al Faw..... | 4565 |
| Al Faw..... | 6320 |
| Al Kuwayt..... | 1358 |
| Al Kuwayt..... | 6300 |
| Al Waziriyah..... | 4560 |
| Albert Head..... | 1160 |
| Alert Bay..... | 4325 |
| Alert Bay..... | 6140 |
| Alki Point..... | 1147 |
| Amboina..... | 4836 |
| Ambon..... | 4836 |
| Amphitrite Point..... | 1129 |
| Anacapa Island..... | 1084 |
| Anchorage..... | 1226 |
| Andaman Island..... | 4595 |
| Angeles, Punta..... | 1016 |
| Aniva, Mys..... | 1475 |
| Antalah..... | 1313 |
| Antofagasta..... | 1022 |
| Aonae Misaki..... | 1578 |
| Aqaba..... | 1329.7 |
| Arago, Cape..... | 1116 |
| Arena, Point..... | 1094 |
| Arenas, Punta..... | 1000 |
| Arenas, Punta..... | 3020 |
| Arenas, Punta..... | 4080 |
| Arguello, Point..... | 1068 |
| Arica..... | 1024 |
| Ashburton..... | 1800 |
| Ashizuri Zaki..... | 1632 |
| Askol'd, Ostrov..... | 1461 |
| Asmara..... | 4545 |

| | |
|----------------------|------|
| Assab..... | 1328 |
| Atkinson, Point..... | 1152 |
| Atoiya Misaki..... | 1551 |
| Auckland..... | 2800 |
| Auckland..... | 2810 |
| Auckland..... | 4904 |
| Auckland..... | 6730 |
| Avachinskiy..... | 1535 |
| Avalon..... | 1072 |
| Awarua..... | 4908 |
| Awarua..... | 6750 |
| Az Zahran..... | 6290 |
| Azaiba..... | 1340 |

B

| | |
|-------------------------------|------|
| Bahia— <i>see proper name</i> | |
| Bahrain..... | 1350 |
| Bahrain..... | 4555 |
| Balboa..... | 3120 |
| Balboa..... | 4100 |
| Balboa..... | 6010 |
| Balikpapan..... | 4815 |
| Balyuzek, Mys..... | 1468 |
| Barbara, Santa..... | 1086 |
| Baring Head..... | 1788 |
| Barrow, Point..... | 1256 |
| Barter Island..... | 1264 |
| Baydukov, Ostrov..... | 1500 |
| Beale, Cape..... | 1157 |
| Beira..... | 1305 |
| Belawan Deli..... | 1700 |
| Belkina, Mys..... | 1473 |
| Biorka..... | 1200 |
| Blaize, Cape St..... | 1288 |
| Blanco, Cape..... | 1115 |
| Blunt, Point..... | 1106 |
| Blunts Reef..... | 1095 |
| Bol'shoy Shantar, Ostrov..... | 1503 |
| Bombay..... | 4580 |
| Bombay..... | 4582 |
| Bombay..... | 6330 |
| Bonilla Island..... | 1178 |
| Bonita Point..... | 1104 |
| Booby Island..... | 1771 |
| Borda, Cape..... | 1750 |
| Brinera, Mys..... | 1469 |
| Brisbane..... | 4880 |
| Brisbane..... | 6620 |
| Broome..... | 1766 |
| Broome..... | 4896 |
| Broome..... | 6700 |

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|--------------------------------|------|
| Bryusa, Mys | 1455 |
| Bukhta— <i>see proper name</i> | |
| Bull Harbor | 4330 |
| Bull Harbor | 6130 |
| Burgess Islet | 1774 |
| Byelkin | 1473 |

C

| | |
|------------------------------|--------|
| Cagayan de Oro | 1694 |
| Cairns | 1721 |
| Cairns | 4872 |
| Cairns | 6590 |
| Calcutta | 2350 |
| Calcutta | 3410 |
| Calcutta | 4592 |
| Calcutta | 6350 |
| Callao | 1030 |
| Callao | 2000 |
| Callao | 3110 |
| Cam Ranh Bay | 1417.8 |
| Campbell, Cape | 1796 |
| Canberra | 3665 |
| Canton Island | 1910 |
| Cape— <i>see proper name</i> | |
| Capetown | 4500 |
| Capetown | 6240 |
| Car Nicobar | 1404 |
| Carmanah | 1130 |
| Carnarvon | 1762 |
| Ceduna | 1754 |
| Ch'i-hou Shan | 1667 |
| Chabunco | 1000 |
| Chaji Do | 1444 |
| Channgi Gap | 1449.5 |
| Chayvo | 1513 |
| Cheju | 1443 |
| Chibuyny, Mys | 1528 |
| Chi-lung | 1680 |
| Chi-lung | 4785 |
| Chiclayo | 1036 |
| Chikyu Misaki | 1568 |
| China Bay | 1392 |
| Chirikova, Mys | 1522 |
| Chittagong | 1388 |
| Chittagong | 2370 |
| Chittagong | 4610 |
| Choryong Do | 1448 |
| Choshi | 4738 |
| Choshi | 6450 |
| Chumunjin Dan | 1451 |
| Chuk To | 1438 |

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|--------------------------------|------|
| Cochin | 1378 |
| Cochin | 4587 |
| Coffs Harbor | 1726 |
| Cold Bay | 1234 |
| Colombo | 1391 |
| Colombo | 3450 |
| Colombo | 4605 |
| Colombo | 6360 |
| Columbia River Lightship | 1118 |
| Comox | 1164 |
| Comox | 4320 |
| Comox | 6150 |
| Concepcion | 3060 |
| Concepcion, Bahia | 1010 |
| Constitucion | 1011 |
| Cooktown | 1720 |
| Coolangatta | 1724 |
| Cooper | 1298 |
| Corona, Punta | 1006 |
| Coronado | 1060 |
| Cruz— <i>see proper name</i> | |
| Cubi Point | 1686 |
| Cuvier Island | 1776 |

D

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|----------------------------|------|
| d'Aguilar, Cape | 4655 |
| Daio Zaki | 1624 |
| Danang | 1419 |
| Dar-es-Salaam | 1318 |
| Dar es Salaam | 6280 |
| Darwin | 1770 |
| Darwin | 4900 |
| Darwin | 6720 |
| Das Island | 1346 |
| Datta, Mys | 1492 |
| Decision, Cape | 1198 |
| Destruction Island | 1126 |
| Dhahran | 1352 |
| Diamond Head | 1876 |
| Diego Suarez | 1314 |
| Diego Suarez | 4520 |
| Disappointment, Cape | 1119 |
| Diu Head | 1369 |
| Djakarta | 1708 |
| Djakarta | 3640 |
| Djakarta | 4820 |
| Djibouti | 1326 |
| Djibouti | 4540 |
| Dog Island | 1804 |
| Doha | 1348 |
| Dolphins Nose | 1383 |

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|---------------------|------|
| Domingo, Santo..... | 1012 |
| Don Muang..... | 1416 |
| Driftwood Bay..... | 1268 |
| Dumai..... | 4816 |
| Dunedin | 2880 |
| Durban | 4504 |
| Durban | 6250 |
| Dzaoudzi | 1316 |

E

| | |
|-----------------------------|--------|
| East Cape | 1782 |
| Echizen Misaki..... | 1651.5 |
| Ediz Hook | 1137 |
| Efate | 1895 |
| Eldred Rock | 1204 |
| Elias, Cape St | 1218 |
| Eniwetok | 1845 |
| Erimo Misaki..... | 2520 |
| Erimo Saki..... | 1566 |
| Erimo Saki..... | 2510 |
| Esan Saki | 1570 |
| Esan Saki | 2525 |
| Esmeraldas | 1042 |
| Esperance | 4890 |
| Esperance | 6670 |
| Estero de Punta Banda | 1058.5 |
| Estevan Point..... | 1166 |
| Ethelda Bay | 1185 |

F

| | |
|----------------------------|--------|
| False Point..... | 1385 |
| Farallon | 1102 |
| Fiji..... | 1900 |
| Five Fingers..... | 1202 |
| Flattery, Cape | 1128 |
| Flaxman Island..... | 1262 |
| Flinders Island..... | 1732 |
| Francis, Cape St | 1291 |
| French Frigate Shoals..... | 1868 |
| Fu-Kuei Chiao | 1676 |
| Fukuyama | 1576 |
| Fushiki | 4772 |
| Fushiki Ko | 1652.2 |

G

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|-----------------------|------|
| Gabo Island..... | 1731 |
| Gamova, Mys | 1460 |
| George | 1290 |
| George Reef, St | 1112 |

| | |
|--------------------|------|
| Geraldton..... | 1760 |
| Geraldton..... | 4894 |
| Geraldton..... | 6690 |
| Gisborne | 1784 |
| Goa | 4584 |
| Godley Head | 1798 |
| Grays Harbor..... | 1125 |
| Guam | 1825 |
| Guam | 3800 |
| Guam | 4912 |
| Guam | 6770 |
| Guard Island | 1194 |
| Guard Island | 1196 |
| Gustavus | 1210 |

H

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|--------------------------|--------|
| Hachijo Jima..... | 1614 |
| Hachijo Jima..... | 2560 |
| Hachinohe | 4736 |
| Hakodate | 4730 |
| Hakodate | 6430 |
| Hamada Ko | 1648 |
| Hanasaki | 1560 |
| Hanasaki Byachi | 2500 |
| Hassanudin | 1712 |
| Hekura Jima | 1652 |
| Heng-ch'un | 1666 |
| Hermes, Cape | 1296 |
| Hinchinbrook, Cape | 1220 |
| Hinchinbrook, Cape | 1222 |
| Hino Misaki..... | 1628 |
| Hiran Point | 1386 |
| Hiroo | 1565 |
| Hiroshima | 4746 |
| Hobart | 4884 |
| Hobart | 6640 |
| Hong Kong..... | 3550 |
| Honolulu | 3900 |
| Honolulu | 4915 |
| Honolulu | 4920 |
| Honolulu | 6780 |
| Hood Point | 1294 |
| Horsburgh | 1412 |
| Hsin-chu | 1672 |
| Hu-lu-tao | 2450 |
| Hua-lien..... | 1662 |
| Hua-niao Shan..... | 1423 |
| Hue | 1419.2 |
| Humboldt Bay | 1110 |

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|----------------------|------|
| I-lan | 1682 |
| Imai Saki | 1528 |
| Inch'on | 4665 |
| Inubo Saki | 1610 |
| Inubo Saki | 2535 |
| Inubo Saki | 2540 |
| Iro Saki | 1620 |
| Iro Saki | 2570 |
| Isla—see proper name | |
| Iso Saki | 1608 |
| Iwo Jima | 1820 |
| Iztapa | 1050 |
| Izu O Shima | 1618 |
| Izu O Shima | 2565 |
| Izuhara | 4762 |

J

| | |
|-----------------------|------|
| Jacques, Cap St | 1417 |
| James, Cape St | 1174 |
| James Island | 1133 |
| Jamnagar | 1368 |
| Jedda | 1330 |
| Jesselton | 1696 |
| Jiwani | 1360 |
| Johannesburg | 3300 |
| Johns, Port St | 1296 |
| Johnston Island | 1865 |
| Johore Bahru | 1408 |

K

| | |
|-------------------------------|------|
| Kadena | 1659 |
| Kagoshima | 4758 |
| Kains Island | 1167 |
| Kamen Opasnosti, Ostrov | 1480 |
| Kandla | 4581 |
| Kang-shan | 1668 |
| Kangnung | 1450 |
| Kangnung | 4685 |
| Kannon Saki | 2545 |
| Kao-hsiung | 4790 |
| Karachi | 1364 |
| Karachi | 2300 |
| Karachi | 4575 |
| Karwar | 4585 |
| Katsuura Ko | 1611 |
| Katunayake | 1391 |
| Kavieng | 1880 |
| Ketchikan | 4350 |

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|-----------------------------|--------|
| Ketchikan | 6200 |
| Khanderi | 1372 |
| Kholmsk | 4705 |
| Khormaksar | 1332 |
| Kilauea Point | 1870 |
| King Island | 1744 |
| King Salmon | 1232 |
| Kiritappu | 1562 |
| Kloster-Kamp, Mys | 1495 |
| Kobe | 4752 |
| Kobe | 6527 |
| Kochi | 4744 |
| Kodiak | 1230 |
| Kodiak | 4355 |
| Kodiak | 6210 |
| Koggala | 1394 |
| Komakuk | 1266 |
| Komun Do | 1446 |
| Koror | 1810 |
| Korsakov | 1482 |
| Kota Bahru | 1414 |
| Kotzebue | 1250 |
| Krasnyy Partizan, Mys | 1486 |
| Kril'on, Mys | 1476 |
| Kronotskiy, Mys | 1540 |
| Kuantan | 6380 |
| Kuching | 4810 |
| Kuching | 6540 |
| Kunsan | 4680 |
| Kurbatova, Mys | 1531 |
| Kure | 4748 |
| Kushiro | 4724 |
| Kushiro Saki | 1564 |
| Kwajalein | 1855 |
| Lamanon, Mys | 1491 |
| Langara | 1179 |
| Lao-tieh-shan-hsi | 1427 |
| Las Salinas | 3080 |
| Las Salinas | 4070 |
| Lauthala Bay | 1905 |
| Lawn Point | 1190 |
| Lay, Point | 1252 |
| Leeuwin, Cape | 1756 |
| Lennard Island | 1166.5 |
| Likhacbeva, Mys | 1547 |
| Lima | 1030 |
| Litke, Mys | 1502 |

L

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|--------------|------|
| Labuan | 1698 |
| Lae | 4868 |

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|--------------------------------------|------|
| Little Quoin Island | 1342 |
| Loma, Point | 1065 |
| Lonely | 1258 |
| Long Beach..... | 1076 |
| Long Beach | 4200 |
| Long Beach | 6030 |
| Lopatka, Mys | 1532 |
| Loran Stations, Asiatic Area | 7040 |
| Loran Stations, Central Pacific..... | 7020 |
| Loran Stations, Japanese Area | 7060 |
| Loran Stations, North Pacific..... | 7010 |
| Loran Stations, South Pacific | 7030 |
| Loran Stations, West Coast-U.S.A... | 7050 |
| Los Angeles | 1066 |
| Los Angeles | 1078 |
| Los Angeles | 1082 |
| Los Angeles | 6040 |
| Los Mochis | 1056 |
| Lourenco Marques | 1302 |
| Lourenco Marques | 3350 |
| Lourenco Marques | 4508 |
| Lovtsova, Mys | 1551 |
| Lucia, Cape St | 1300 |

M

| | |
|----------------------|--------|
| Mackay..... | 1723 |
| Macuti | 1304 |
| Madras | 1382 |
| Madras | 4589 |
| Madras | 6340 |
| Mahina | 4950 |
| Maizuru | 4768 |
| Maizuru | 6490 |
| Majunga | 1310 |
| Majunga | 4515 |
| Majunga | 6260 |
| Makapuu Point | 1874 |
| Makasar | 1712 |
| Makasar | 4830 |
| Maki | 1652.5 |
| Mangalore | 1376 |
| Mangalore | 4586 |
| Manila | 3630 |
| Manila | 3635 |
| Manila | 4795 |
| Manila | 4800 |
| Manta | 1040 |
| Manus..... | 4938 |
| Marcus Island | 1835 |
| Marekan, Mys | 1520 |
| Marina del Rey | 1080 |

| | |
|-----------------------|--------|
| Mary Island | 1182 |
| Masirah Island | 1338 |
| Massawa | 1329 |
| Matsumae..... | 1576 |
| Mauripur..... | 1362 |
| Mayachnyy, Mys..... | 1538 |
| Mazatlan | 1054 |
| Mazin | 1397.5 |
| Mbashe Point | 1295 |
| McInnes Island | 1177 |
| Me Shima | 1638 |
| Medan..... | 4817 |
| Melbourne | 3670 |
| Melbourne | 4886 |
| Melbourne | 6650 |
| Mergui | 1402 |
| Middleton Island..... | 1224 |
| Midway..... | 1860 |
| Mikoyanovskiy | 1533 |
| Mina al Ahmadi..... | 1356 |
| Mingaladon | 1398 |
| Miri..... | 4805 |
| Miri..... | 6530 |
| Miyako Jima | 1660 |
| Mogadiscio | 1324 |
| Mogadiscio | 4535 |
| Moji | 4756 |
| Mokp'o | 4670 |
| Mombetsu Ko..... | 1558 |
| Moneron, Ostrov..... | 1477 |
| Mormugao..... | 6335 |
| Morombe..... | 1307 |
| Morondava | 1308 |
| Morro Bay | 1098 |
| Moses Point | 1246 |
| Moskal'vo | 1501 |
| Mount Victoria | 2800 |
| Mount Victoria | 2810 |
| Muroto Zaki..... | 1630 |
| Mys—see proper name | |

N

| | |
|-------------------|------|
| Nabil | 1514 |
| Nagaono Hana..... | 1650 |
| Nagasaki | 4760 |
| Nagasaki | 6520 |
| Nagoya..... | 4742 |
| Nagoya..... | 6460 |
| Nakhodka..... | 1457 |
| Nandi | 1900 |
| Nauru | 1885 |

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|---------------------------|------|
| Nauru | 6800 |
| Neah Bay..... | 1135 |
| New Dungeness | 1140 |
| New Ireland..... | 1880 |
| Newchang | 2460 |
| Nemuro | 4726 |
| Newport Bay | 1074 |
| Nha Trang | 1418 |
| Niigata..... | 4774 |
| Niigata | 6500 |
| Nikolayevsk-na-Amure..... | 4710 |
| Nizmennyy, Mys | 1464 |
| Nobonotsu Misaki..... | 1550 |
| Nojima Saki..... | 2555 |
| Nojima Zaki | 1612 |
| Nojima Zaki | 2550 |
| Nome | 1248 |
| Norfolk Island..... | 1890 |
| Noumea | 4940 |
| Nyudo Saki | 1655 |

O

| | |
|-------------------------------------|--------|
| Ocean Station Vessel November | 1280 |
| Ocean Station Vessel November | 6235 |
| Ocean Station Vessel Papa | 1282 |
| Ocean Station Vessel Victor | 1284 |
| Ocean Station Vessel Victor | 6230 |
| Ocean Station Vessels | 2100 |
| Oceanside | 1070 |
| Och'ong Do | 1435 |
| Ochiishi | 4726 |
| Ochiishi | 6420 |
| Ofunato Ko | 1603 |
| Oita | 4754 |
| Oita | 6510 |
| Okha..... | 1366 |
| Okhotsk | 1520 |
| Okinawa Jima | 1656 |
| Okino-erabu Shima | 1655.5 |
| Okuma | 1658 |
| Oliktok | 1260 |
| Omae Zaki | 1622 |
| Osaka | 2580 |
| Ose Zaki | 1640 |
| Ostrov— <i>see proper name</i> | |
| Ostrovnoy, Mys | 1463 |
| Otago Harbor..... | 2870 |
| Otaru | 4732 |
| Otaru | 6440 |
| Otway, Cape | 1742 |
| Ozernoy, Mys | 1542 |

P

| | |
|-------------------------------|--------|
| P'almi Do | 1431 |
| P'eng-hu | 1684 |
| Padang..... | 1706 |
| Pago Pago | 1915 |
| Pago Pago | 4948 |
| Palau Islands | 1810 |
| Palembang | 4819 |
| Pamanzi | 1316 |
| Panape | 1840 |
| Pangkalpinang | 1704 |
| Papeete | 1930 |
| Patos Island | 1150 |
| Paul Island, St | 1240 |
| Penang | 4635 |
| Penang | 6382 |
| Penasco, Punta | 1058 |
| Perak | 1710 |
| Perth | 1758 |
| Perth | 3690 |
| Perth | 4892 |
| Perth | 6680 |
| Peschanyy | 1490 |
| Phan Thiet | 1417.5 |
| Pigeon Point | 1092 |
| Pil'tun | 1512 |
| Pine Island | 1169 |
| Pinos, Point | 1100 |
| Pisco | 1028 |
| Point— <i>see proper name</i> | |
| Poluostrov Terpeniya | 1488 |
| Poona | 3400 |
| Poronaysk | 1516 |
| Port Angeles | 4240 |
| Port Blair | 4595 |
| Port Elizabeth | 4502 |
| Port Elizabeth | 6245 |
| Port Hardy | 1172 |
| Port Hardy | 1170 |
| Port Hedland | 1764 |
| Port Hueneme | 1067 |
| Port Kholmsk | 1478 |
| Port Moresby | 4866 |
| Port Moresby | 6570 |
| Port Shepstone | 1296.5 |
| Port St. Johns | 1296 |
| Portland Island | 1786 |
| Pos'yeta | 1452 |
| Posiette Bay | 1452 |
| Povorotnyy, Mys | 1462 |
| Prince Rupert | 1192 |

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|-------------------------------|--------|-------------------------------|--------|
| Prince Rupert | 4345 | Salinas | 1032 |
| Prince Rupert | 6180 | Same Kaku | 1600 |
| Provideniya, Bukhta | 1547 | San Francisco | 3130 |
| Puerto Armuelles | 6020 | San Francisco | 4210 |
| Puerto Montt | 3030 | San Francisco | 4220 |
| Punta— <i>see proper name</i> | | San Francisco | 6050 |
| Pusan | 4690 | San Francisco | 6060 |
| Puysegur Point | 1806 | San Francisco | 6065 |
| Q | | | |
| Quatsino | 1167 | San Francisco | 7600 |
| Quintero | 1018 | San Francisco Lightship | 1093 |
| Quiriquina, Isla | 1010 | San Jose | 1690 |
| R | | | |
| Ra's at Tannurah | 1354 | San Juan | 1026 |
| Ra's at Tannurah | 4550 | San Luis Obispo | 1090 |
| Rabaul | 4935 | Sand Heads | 1151 |
| Rabaul | 6790 | Sand Island | 1860 |
| Race Rocks | 1144 | Sandoway | 1397.5 |
| Radio Australia | 3650 | Sandspit | 1187 |
| Rangoon | 1398 | Sandspit | 4340 |
| Rangoon | 2400 | Sandspit | 6170 |
| Rangoon | 4615 | Sangley Point | 4800 |
| Rangoon | 6370 | Santa— <i>see proper name</i> | |
| Rarotonga | 1920 | Santiago | 3070 |
| Ras Serani | 1320 | Santiago | 4065 |
| Ratmalana | 1396 | Santo— <i>see proper name</i> | |
| Ratnagiri | 4583 | Sarichef, Cape | 1238 |
| Recife, Cape | 1292 | Sasebo | 4764 |
| Reinga, Cape | 1772 | Saugor | 1385.5 |
| Retreat, Point | 1206 | Schanck, Cape | 1738 |
| Reyes, Point | 1108 | Scotch Cap | 1236 |
| Riyan | 1334 | Scott, Cape | 1168 |
| Rockhampton | 4878 | Seattle | 4250 |
| Rockhampton | 6610 | Seattle | 6070 |
| Romanzof, Cape | 1242 | Seattle | 6080 |
| Rosario | 1688 | Shang-hai | 3570 |
| Ryori Saki | 1602.3 | Shang-hai | 4660 |
| S | | | |
| Sada Misaki | 2590 | Shang-hai | 6400 |
| Sai Gon | 4650 | Sharjah | 1344 |
| Sai Gon | 6390 | Shikotan To | 1552 |
| Saint-Denis | 4530 | Shimizu | 6525 |
| Saipan | 1828 | Shimonoseki | 4766 |
| Sakai | 4770 | Shimonoseki | 6480 |
| Sakata | 1654 | Shinminato Ko | 1652.3 |
| Salalah | 1336 | Shiogama | 4728 |
| | | Shiono Misaki | 1626 |
| | | Shiono Misaki | 2575 |
| | | Shiono Misaki | 4750 |
| | | Shiono Misaki | 6470 |
| | | Shioya Misaki | 1606 |
| | | Shiroyazaki | 1606 |
| | | Shipunskiy, Mys | 1539 |
| | | Shiriya Saki | 1598 |
| | | Shpanberga, Ostrov | 1552 |

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|-----------------------------|------|
| Shumshu, Ostrov | 1526 |
| Shuyak Island | 1228 |
| Singapore | 1410 |
| Singapore | 4640 |
| Singapore | 4645 |
| Singapore | 6380 |
| Sinjon | 1410 |
| Sisters Island | 1208 |
| Sitka | 1200 |
| Skrypleva, Ostrov | 1456 |
| Smith Island | 1141 |
| Songkhla | 1415 |
| Soya Misaki | 1556 |
| Spafar'yeva, Ostrov | 1521 |
| Spencer, Cape | 1212 |
| St.— <i>see proper name</i> | |
| Stephens Island | 1794 |
| Strahan | 1735 |
| Sukarnapuro | 4840 |
| Sur, Point | 1091 |
| Surabaja | 1710 |
| Surabaja | 4824 |
| Susnova, Mys | 1484 |
| Suva | 1905 |
| Suva | 4945 |
| Suva | 6810 |
| Suyong Man | 1449 |
| Sydney | 1728 |
| Sydney | 3655 |
| Sydney | 3660 |
| Sydney | 4882 |
| Sydney | 6630 |
| Syrkum, Mys | 1493 |

T

| | |
|-----------------------|------|
| Ta-Chi Shan | 1422 |
| T'ai-nan | 1670 |
| T'ai-tung | 1664 |
| T'ao-yuan | 1674 |
| Ta-san-shan Tao | 1428 |
| Tabing | 1706 |
| Taboga, Isla | 1046 |
| Tafuna | 1915 |
| Tai Long Head | 3500 |
| Tai Long Head | 4655 |
| Taiaroa Head | 1802 |
| Taiaroa Head | 2870 |
| Taiaroa Head | 2880 |
| Talara | 1038 |
| Tamatave | 1312 |
| Tamatave | 4525 |

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|---------------------------|------|
| Tamatave | 6270 |
| Tandjungpriok | 4822 |
| Tango | 1651 |
| Tappi Saki | 1585 |
| Tauranga | 1780 |
| Tavoy | 1400 |
| Temuco | 3050 |
| Tern Island | 1868 |
| Terpeniya, Mys | 1515 |
| Teshio | 1581 |
| Tetyukhe | 1469 |
| The Brothers | 1790 |
| Thursday Island | 4870 |
| Thursday Island | 6580 |
| Tientsin | 3575 |
| Tikyu Misaki | 1568 |
| Timaru | 2860 |
| Timaru Harbor | 2850 |
| Todo Saki | 1602 |
| Todos Santos, Islas | 1059 |
| Tofino | 1155 |
| Tofino | 4335 |
| Tofino | 6120 |
| Toi Misaki | 1634 |
| Tokyo | 3610 |
| Tokyo | 3620 |
| Tokyo | 4720 |
| Tomari Aniva, Mys | 1482 |
| Townsville | 1722 |
| Townsville | 4876 |
| Townsville | 6600 |
| Tree Point | 1181 |
| Trincomalee | 1392 |
| Triple Islands | 1180 |
| Trivandrum | 1380 |
| Troughton Island | 1768 |
| Troughton Island | 2700 |
| Trujillo | 1034 |
| Truk Island | 1830 |
| Tsuno Shima | 1646 |
| Tsurugi Saki | 1616 |
| Tulear | 1306 |
| Tulear | 4510 |
| Tumaco | 1044 |
| Tuticorin | 4588 |
| Tyl'skiy, Mys | 1504 |

U

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|-------------------------------|------|
| Ulneung | 4695 |
| Umatilla Reef Lightship | 1127 |
| Unalakleet | 1244 |

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| Unalaska Island | 1268 |
| Uno Saki | 1605 |
| Utarom | 1714 |

V

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|----------------------|------|
| Valdivia..... | 3040 |
| Valparaiso..... | 1016 |
| Valparaiso..... | 3080 |
| Valparaiso..... | 4070 |
| Vancouver | 2200 |
| Vancouver | 2210 |
| Vancouver | 4310 |
| Vancouver | 6160 |
| Van-der-Lind, Mys | 1550 |
| Vasil'yeva, Mys..... | 1530 |
| Vasiliya, Mys..... | 1545 |
| Vengurla Rocks | 1373 |
| Victoria | 4300 |
| Victoria | 6110 |
| Vila | 1895 |
| Vishakhapatnam | 1384 |
| Vishakhapatnam | 4590 |
| Vladivostok..... | 4700 |
| Vladivostok..... | 6410 |
| Vung Tau..... | 1417 |

W

| | |
|-----------------------|--------|
| Wainwright..... | 1254 |
| Wakamiya Shima | 1644 |
| Wake Island..... | 1850 |
| Wakkai | 4734 |
| Wakkai Ko | 1581.5 |
| Wan-jen-t'ui Pi | 1678 |
| Wang Lan..... | 1420 |
| Wanganui | 1792 |
| Wellington | 3700 |

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|---------------------|------|
| Wellington | 3710 |
| Wellington | 4906 |
| Wellington | 6740 |
| West Island | 1406 |
| West Point..... | 1143 |
| Westport..... | 2830 |
| Westport..... | 2840 |
| Westport..... | 4230 |
| Whyalla | 1752 |
| Wickham, Cape | 1746 |
| Willapa Bay..... | 1120 |
| Wilson, Point | 1142 |
| Wonthaggi | 1736 |
| Wyndham | 4898 |
| Wyndham | 6710 |
| Wynyard | 1734 |

Y

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|----------------------|------|
| Yakataga | 1216 |
| Yakishiri Jima | 1582 |
| Yakutat | 1214 |
| Yangtze North..... | 1424 |
| Yap Island..... | 1815 |
| Yaquina Head | 1117 |
| Yegorova, Mys | 1465 |
| Yelizavety, Mys..... | 1511 |
| Ying-K'ou | 2460 |
| Yokohama | 4740 |
| Yokohama | 6522 |
| Yuan Tao..... | 1429 |
| Yuzhnyy, Mys..... | 1523 |

Z

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|----------------------|------|
| Zhonkiyer, Mys | 1494 |
| Zolotoy, Mys..... | 1474 |