CHAPTER 31

REPORTING

NAVIGATIONAL AND OCEANOGRAPHIC REPORTS

3100. Opportunity to Contribute

Mariners at sea, because of their professional skills and location, represent a unique data collection capability unobtainable by any government agency. Provision of high quality navigational and oceanographic information by government agencies requires active participation by mariners in data collection and reporting. Examples of the type of information required are reports of obstructions, shoals or hazards to navigation, unusual sea ice or icebergs, unusual soundings, currents, geophysical phenomena such as magnetic disturbances and subsurface volcanic eruptions, and marine pollution. In addition, detailed reports of harbor conditions and facilities in both busy and out-of-the-way ports and harbors helps charting agencies keep their products current.

The responsibility for collecting hydrographic data by U.S. Naval vessels is detailed in various directives and instructions. Civilian mariners, because they often travel to a wider range of ports, also have an opportunity to contribute substantial amounts of valuable information.

3101. Responsibility for Information

The National Geospatial-Intelligence Agency (NGA), the U.S. Naval Oceanographic Office (NAVOCEANO), the U.S. Coast Guard (USCG) and the National Oceanic and Atmospheric Administration (NOAA) are the primary agencies which receive, process, and disseminate marine information in the U.S.

NGA produces charts, *Notice to Mariners* and other nautical materials for the U.S. military services and for navigators in general for waters outside the U.S.

NAVOCEANO conducts hydrographic and oceanographic surveys of primarily foreign or international waters, and disseminates information to naval forces, government agencies, and civilians.

NOAA conducts hydrographic and oceanographic surveys and provides charts for marine and air navigation in the coastal waters of the United States and its territories.

The U.S. Coast Guard is charged with protecting safety of life and property at sea, maintaining aids to navigation, law enforcement, and improving the quality of the marine environment. In the execution of these duties, the Coast Guard collects, analyzes, and disseminates navigational and oceanographic data.

Modern technology allows navigators to easily contribute to the body of hydrographic and oceanographic information.

Navigational reports are divided into four categories:

1. Safety Reports
2. Sounding Reports
3. Marine Data Reports
4. Port Information Reports

The seas and coastlines continually change through the actions of man and nature. Improvements realized over the years in the nautical products published by NGA, NOAA, and U.S. Coast Guard have been made possible in part by the reports and constructive criticism of seagoing observers, both naval and merchant marine. NGA and NOAA continue to rely to a great extent on the personal observations of those who have seen the changes and can compare charts and publications with actual conditions. In addition, many ocean areas and a significant portion of the world's coastal waters have never been adequately surveyed for the purpose of producing modern nautical charts.

Information from all sources is evaluated and used in the production and maintenance of NGA, NOAA and USCG charts and publications. Information from surveys, while originally accurate, is subject to continual change. As it is impossible for any hydrographic office to conduct continuous worldwide surveys, U.S. charting authorities depend on reports from mariners to provide a steady flow of valuable information from all parts of the globe.

After careful analysis of a report and comparison with all other data concerning the same area or subject, the organization receiving the information takes appropriate action. If the report is of sufficient urgency to affect the immediate safety of navigation, the information will be broadcast as a SafetyNET or NAVTEX message. Each report is compared with others and contributes in the compilation, construction, or correction of charts and publications. It is only through the constant flow of new information that charts and publications can be kept accurate and up-to-date.

SAFETY REPORTS

3102. Safety Reports

Safety reports are those involving navigational safety which must be reported and disseminated by message. The types of dangers to navigation which will be discussed in this section include ice, floating derelicts, wrecks, shoals, volcanic activity, mines, and other hazards to shipping.

1. Ice—The North American Ice Service (NAIS), a partnership comprised of the International Ice Patrol (IIP), the Canadian Ice Service (CIS), and the U.S. National Ice Center (NIC), provides year-round maritime safety information on iceberg and sea ice conditions in the vicinity of the Grand Banks of Newfoundland and the east coast of Labrador, Canada.

When mariners encounter ice, icebergs, bergy bits, or growlers in the North Atlantic, concentration, thickness, and the position of leading edge should be reported to Commander, International Ice Patrol, New London, CT through a U.S. Coast Guard communications station.

Satellite telephone calls may be made to the International Ice Patrol Operations Center throughout the season at +1 860 271 2626 (toll free 877 423 7287, fax: 860 271 2773, email: iipcomms@uscg.mil).

Figure 3102a. International Ice Patrol. http://www.navcen.uscg.gov/IIP.

When sea ice is observed, the concentration, thickness, and position of the leading edge should be reported. The size, position, and, if observed, rate and direction of drift, along with the local weather and sea surface temperature, should be reported when icebergs, bergy bits, or growlers are encountered.

Ice sightings should also be included in the regular synoptic ship weather report, using the five-figure group following the indicator for ice. This will assure the widest distribution to all interested ships and persons.

For more detailed information on ice reporting consult *Pub No. 117 Radio Navigation Aids,* under Chapter 3 - Radio Navigational Warnings (section 300I: and section 300J: International Ice Warnings). See Figure 3102b for link.

Figure 3102b. NGA- Radio Navigational Aids (Pub. No. 117). https://msi.nga.mil/NGAPortal/MSI.portal?_nfpb=true&_st=&_pageLabel=msi_portal_page_62&pubCode=0009

2. Floating Derelicts—All observed floating and drifting dangers to navigation that could damage the hull or propellers of a vessel at sea should be immediately reported by radio. The report should include a brief description of the danger, the date, time (GMT) and the location as exactly as can be determined (latitude and longitude).

3. Wrecks/Man-Made Obstructions—Information is needed to assure accurate charting of wrecks, man-made obstructions, other objects dangerous to surface and submerged navigation, and repeatable sonar contacts that may be of interest to the U.S. Navy. Man-made obstructions not in use or abandoned are particularly hazardous if unmarked and should be reported immediately. Examples include abandoned wellheads and pipelines, submerged platforms and pilings, and disused oil structures. Ship sinkings, strandings, disposals, or salvage data are also reportable, along with any large amounts of debris, particularly metallic.

Accuracy, especially in position, is vital. Therefore, the date and time of the observation, as well as the method used in establishing the position, and an estimate of the fix accuracy should be included. Reports should also include the depth of water, preferably measured by soundings (in fathoms or meters). If known, the name, tonnage, cargo, and cause of casualty should be provided.

Data concerning wrecks, man-made obstructions, other sunken objects, and any salvage work should be as complete as possible. Additional substantiating information is encouraged.

4. Shoals—When a vessel discovers an uncharted or erroneously charted shoal or an area that is dangerous to navigation, all essential details should be immediately reported to NGA's Maritime Safety Watch via 1-800-362-6289 or navsafety@nga.mil. An uncharted depth of 300 fathoms or less is considered an urgent danger to submarine navigation. Immediately upon receipt of any information reporting dangers to navigation, NGA may issue an appropriate navigation safety warning. The information must appear on published charts as "reported" until sufficient substantiating evidence (i.e. clear and properly annotated echograms and navigation logs, and any other supporting information) is received.

Therefore, originators of shoal reports are requested to verify and forward all substantiating evidence to NGA at the earliest opportunity. Clear and properly annotated echograms and navigation logs are especially important in verifying or disproving shoal reports.

5. Discolored Water—Discolored water is an area of seawater having a color distinctly different from the surrounding water. These observations will normally be of seawater having a color other than the blues and greens typically seen. Variations of the colors – including red, yellow, green and brown, as well as black and white – have been reported. This may be due to dumping (pollution), the existence of shoals, or underwater features such as submerged volcanoes. In near-shore areas, discoloration often results from disturbance of sediment, e.g., disturbances by propeller wash. Discolorations may appear in patches, streaks, or large areas and may be caused by concentrations of inorganic or organic particles or plankton.

In normally deep waters, discolored water can be a strong indication of undersea growth of coral reefs, submerged volcanoes, seamounts, pinnacles and the like. As these features grow in size and dimension, their only indication may be in the form of discolored water on the surface of the sea. Mariners must be prudent in such waters, as they will normally be in areas that are not well surveyed and outside of established routes for oceangoing vessels.

NGA does not maintain a database of such occurrences worldwide. In areas of active submerged volcanoes, discolored water is a common occurrence and all such reports are charted or included in a *Notice to Mariners* correction. Mariners are urged to submit new reports of discolored water to the nearest NAVAREA Coordinator via coast radio stations (for NAVAREA IV and NAVAREA XII) by e-mail to navsafety@nga.mil. Reports can also be submitted via the NGA Maritime Safety Information Web site (https://msi.nga.mil).

The legend "discolored water" appears on many NGA charts, particularly those of the Pacific Ocean where underwater volcanic action is known to occur. In such areas, shoal water or discolored water may suddenly appear where only deep water has been historically depicted. Most of these legends remain on the charts from the last century, when very few deep sea soundings were available and less was known about the causes of discolored water. Few reports of discolored water have proved on examination to be caused by shoals. Nonetheless, due to the isolated areas normally in question, mariners should always give prudent respect to what may lie beneath the surface.

Today, such reports can be compared with the accumulated information for the area concerned. A more thorough assessment can be made using imagery if the water conditions and depth (roughly less than 100 feet) allow.

Mariners are therefore encouraged, while having due regard to the safety of their vessels, to approach sightings and areas of discolored water to find whether or not the discoloration is due to shoaling. If there is good reason to suppose the discoloration is due to shoal water, a report should be made as noted above.

Volcanic Activity. On occasion, volcanic eruptions may occur beneath the surface of the water. These submarine eruptions may occur more frequently and may be more widespread than has been suspected in the past. Sometimes the only evidence of a submarine eruption is a noticeable discoloration of the water, a marked rise in sea surface temperature, or floating pumice (see Figure 3102c). Mariners witnessing submarine volcanic activity have reported trails of steam with a foul sulfurous odor rising from the sea surface and unusual sounds heard through the hull, including shocks resembling a sudden grounding. A subsea volcanic eruption may be accompanied by rumbling and hissing, as hot lava meets the cooler sea.

In some cases, reports of discolored water at the sea surface have been investigated and found to be the result of newly-formed volcanic cones on the sea floor. These cones can grow rapidly and constitute a hazardous shoal in only a few years.

Figure 3102c. USS Bainbridge stopped near a pumice raft in the Red Sea.

Variations in Color. The normal color of the sea in the open ocean in middle and low latitudes is an intense blue or ultramarine. The following variations in appearance occur elsewhere:

- In coastal regions and in the open sea at higher latitudes, where the minute floating animal and vegetable life of the sea (plankton) is in greater abundance, the blue of the sea is modified to shades of green and bluish-green. This discoloration results from a soluble yellow pigment discharged by the plant constituents of the plankton.
- When plankton is found in dense concentrations, the color of the organisms themselves may discolor the sea, giving it a more or less intense brown or red color. The Red Sea, Gulf of California, the region of the Peru Current, South African waters, and the Malabar Coast of India are particularly liable to this variation, seasonally.

- Plankton is sometimes exterminated suddenly by changes in sea conditions, producing a dirty brown or grayish-brown discoloration. This occurs on an unusually extensive scale at times off the Peruvian coast, where the phenomenon is called "Aguaje."
- Larger masses of animate matter, such as fish spawn or floating kelp may produce other kinds of temporary discoloration.
- Mud carried down by rivers produces discoloration which, in the case of the great rivers, may affect a large sea area, such as the Amazon River outfall. Soil or sand particles may be carried out to sea by wind or dust storms, and volcanic dust may fall over a sea area. In all such cases, the water is more or less muddy in appearance.
- Submarine earthquakes may also produce mud or sand discoloration in relatively shallow water, and crude oil has sometimes been seen to gush up. The sea may be extensively covered with floating pumice after a volcanic eruption.
- Isolated shoals in deep water may make the water appear discolored, the color varying with the depth of the water. The play of the sun and cloud on the sea may often produce patches appearing at a distance convincingly like shoal water.

Visibility. The distance at which coral reefs can be seen is dependent upon the observer's height-of-eye, the state of the sea, and the relative position of the sun. When the sea is glassy calm, it is extremely difficult to distinguish the color difference between shallow and deep water. The best conditions for sighting reefs result from a relatively high position, with the sun above 20 degrees elevation and behind the observer, and a sea ruffled by a slight breeze. Under these conditions, with a height of eye of 10-15 meters it is usually possible to sight patches at a depth of less than 6-8 meters from a distance of a few hundred yards.

The use of polarized lenses is strongly recommended, as they make the variations in color of the water stand out more clearly.

If the water is clear, patches with depths of less than 1 meter will appear to be light brown in color; those with depths of 2 meters or more appear to be light green, deepening to a darker green for depths of about 6 meters, and finally to a deep blue for depths over 25 meters. Cloud shadows and shoals of fish may be quite indistinguishable from reefs, but it may be possible to identify them by their movement.

The edges of coral reefs are usually more uniform on their windward or exposed sides and are therefore more easily seen, while the leeward sides are frequently characterized by detached coral heads that are more difficult to see clearly. Water over submerged coral reefs is normally a light blue.

Due to the uncertainty of what discolored water may indicate, mariners are always urged to exercise extreme caution when in its vicinity. New reports of discolored water should be reported immediately with resulting chart, publication and radio/satellite warnings issued as appropriate.

6. **Mines**—All mines or objects resembling mines should be considered armed and dangerous. An immediate radio report to NGA should include (if possible):

1. Greenwich Mean Time (UT) and date
2. Position of mine, and how near it was approached
3. Size, shape, color, condition of paint, and presence of marine growth
4. Presence or absence of horns or rings
5. Certainty of identification

3103. Instructions for Safety Report Messages

The International Convention for the Safety of Life at Sea (1974), which is applicable to all U.S. flag ships, states "The master of every ship which meets with dangerous ice, dangerous derelict, or any other direct danger to navigation, or a tropical storm, or encounters subfreezing air temperatures associated with gale force winds causing severe ice accretion on superstructures, or winds of force 10 or above on the Beaufort scale for which no storm warning has been received, is bound to communicate the information by all means at his disposal to ships in the vicinity, and also to the competent authorities at the first point on the coast with which he can communicate."

The transmission of information regarding ice, derelicts, tropical storms, or any other direct danger to navigation is obligatory. The form in which the information is sent is not obligatory. It may be transmitted either in plain language (preferably English) or by any means of *International Code of Signals* (wireless telegraphy section). It should be sent to all vessels in the area and to the first station with which communication can be made, with the request that it be transmitted to the appropriate authority. A vessel will not be charged for radio messages to government authorities reporting dangers to navigation.

Each radio report of a danger to navigation should answer briefly three questions:

1. What? A description of the object or phenomenon
2. Where? Latitude and longitude
3. When? Universal Time (UT) and date

Examples:

Ice

SECURITE. ICE: LARGE BERG SIGHTED DRIFTING SW AT 0.5 KT 4605N, 4410W, AT 0800 GMT, MAY 15.

Derelicts

SECURITE. DERELICT: OBSERVED WOODEN 25 METER DERELICT ALMOST SUBMERGED AT 4406N, 1243W AT 1530 GMT, APRIL 21.

The report should be addressed to one of the following shore authorities as appropriate:

1. U.S. Inland Waters—Commander of the Local Coast Guard District
2. Outside U.S. Waters—NGA NAVSAFETY SPRINGFIELD VA

Whenever possible, messages should be transmitted via the nearest government radio station. If it is impractical to use a government station, a commercial station may be used. U.S. government navigational warning messages should invariably be sent through U.S. radio stations, government or commercial, and never through foreign stations. Detailed instructions for reporting via radio are contained in NGA *Pub. 117, Radio Navigational Aids* (see Figure 3102b for link).

SOUNDING REPORTS

3104. Sounding Reports

Acquisition of reliable sounding data from all ocean areas of the world is a continuing effort of NGA, NAVOCEANO, and NOAA. There are vast ocean areas where few soundings have ever been acquired. Much of the bathymetric data shown on charts has been compiled from information submitted by mariners. Continued cooperation in observing and submitting sounding data is absolutely necessary to enable the compilation of accurate charts. Compliance with sounding data collection procedures by merchant ships is voluntary, but for U.S. Naval vessels compliance is required under various fleet directives.

3105. Areas Where Soundings are Needed

Prior to a voyage, navigators can determine the importance of recording sounding data by checking the charts for the route. Indications that soundings may be particularly useful are:

1. Old sources listed on source diagram or note
2. Absence of soundings in large areas
3. Presence of soundings, but only along well-defined lines with few or no soundings between tracks
4. Legends such as “Unexplored area”

3106. Fix Accuracy

A realistic goal of open ocean positioning for sounding reports is a few meters using GPS. Depths of 300 fathoms or less should always be reported regardless of the fix accuracy. When such depths are uncharted or erroneously charted, they should be reported by message to NGA NAVSAFETY SPRINGFIELD VA, giving the best available positioning accuracy. Echograms and other supporting information should then be forwarded by mail to NGA: Maritime Safety Office, Mail Stop N64-SFH, National Geospatial-Intelligence Agency, 7500 Geoint Dr., Springfield, VA 22150-7500.

The accuracy goal noted above has been established to enable NGA to create a high quality data base which will support the compilation of accurate nautical charts. It is particularly important that reports contain the navigator’s best estimate of his fix accuracy and that the positioning system being used be identified.

3107. False Shoals

Many poorly identified shoals and banks shown on charts are probably based on encounters with the **Deep Scattering Layer (DSL)**, ambient noise, or, on rare occasions, submarine earthquakes. While each appears real enough at the time of its occurrence, a knowledge of the events that normally accompany these incidents may prevent erroneous data from becoming a charted feature.

The DSL is found in most parts of the world. It consists of a concentration of marine life which descends from near the surface at sunrise to an approximate depth of 200 fathoms during the day. It returns near the surface at sunset. Although at times the DSL may be so concentrated that it will completely mask the bottom, usually the bottom return can be identified at its normal depth at the same time the DSL is being recorded.

Ambient noise or interference from other sources can cause erroneous data. This interference may come from equipment on board the ship, from another transducer being operated close by, or from waterborne noise. Most of these returns can be readily identified on the echo sounder records and should cause no major problems. However, on occasion they may be so strong and consistent as to appear as the true bottom.

Finally, a volcanic disturbance beneath the ship or in the immediate vicinity may give erroneous indications of a shoal. The experience has at times been described as similar to running aground or striking a submerged object. Regardless of whether the feature is an actual shoal or a submarine eruption, the positions, date/time, and other information should be promptly reported to NGA.

3108. Doubtful Hydrographic Data

Navigators are requested to assist in confirming and charting actual shoals and the removal from the charts of doubtful data which was erroneously reported.

The classification or confidence level assigned to doubtful hydrographic data is indicated by the following standard abbreviations:

Abbreviation	*Meaning*
Rep (date)	Reported (year)
E.D.	Existence Doubtful
P.A.	Position Approximate
P.D.	Position Doubtful

Many of these reported features are sufficiently deep that a ship can safely navigate across the area. Confirmation of the existence of the feature will result in proper charting. On the other hand, properly collected and annotated sounding reports of the area may enable cartographers to accumulate sufficient evidence to justify the removal of the erroneous sounding from the database.

3109. Preparation of Sounding Reports

The procedures for preparing sounding reports have been designed to minimize the efforts of the shipboard observers, yet provide essential information. Submission of plotted sounding tracks is not required. Annotated echograms and navigation logs are preferred. The procedure for collecting sounding reports is for the ship to operate a recording echo sounder while transiting an area where soundings are desired. Fixes and course changes are recorded in the log, and the event marker is used to note these events on the echogram. Both the log and echogram can then be sent to NGA whenever convenient. From this data, the track will be reconstructed and the soundings keyed to logged times.

The following annotations or information should be clearly written on the echogram to ensure maximum use of the recorded depths:

1. **Ship's name**—At the beginning and end of each roll or portion of the echogram.
2. **Date**—Date, noted as local or UT, on each roll or portion of a roll.
3. **Time**—The echogram should be annotated at the beginning of the sounding run, regularly thereafter (hourly is best), at every scale change, and at all breaks in the echogram record. Accuracy of these time marks is critical for correlation with ship's position.
4. **Time Zone—**Universal Time (UT) should be used if possible. In the event local zone times are used, annotate echogram whenever clocks are reset and identify zone time in use. It is most important that the echogram and navigation log use the same time basis.
5. **Phase or scale changes**—If echosounder does not indicate scale setting on echogram automatically, clearly label all depth phase (or depth scale) changes and the exact time they occur. Annotate the upper and lower limits of the echogram if necessary.

Figure 3109a and Figure 3109b illustrate the data necessary to reconstruct a sounding track. If ship operations dictate that only periodic single ping soundings can be obtained, the depths may be recorded in the Remarks column. Cartographers always prefer an annotated echogram over single soundings. The navigation log is vital to the reconstruction of a sounding track. Without the position information from the log, the echogram is virtually useless.

The data received from these reports is digitized and becomes part of the digital bathymetric data library of NGA, from which new charts are compiled. Even in areas where numerous soundings already exist, sounding reports allow valuable cross-checking to verify existing data and more accurately portray the sea floor. Keep in mind that many soundings seen on currently issued charts, and in the sounding database used to make digital charts, were taken when navigation was still largely an art. Soundings accurate to modern GPS standards are helpful to our Naval forces and particularly to the submarine fleet, and are also useful to geologists, geophysicists, and other scientific disciplines.

A report of oceanic soundings should contain:

1. All pertinent information about the ship, sounding system, transducer, etc.
2. A detailed Navigation Log
3. The echo sounding trace, properly annotated

Each page of the report should be clearly marked with the ship's name and date, so that it can be identified if it becomes separated. Mail the report to:

MARITIME SAFETY OFFICE
MAIL STOP N64-SFH
NATIONAL GEOSPATIAL-INTELLIGENCE AGENCY
7500 GEOINT DRIVE
SPRINGFIELD, VA 22150-7500
(or email: navsafety@nga.mil)

MARINE DATA REPORTS

3110. Marine Information Reports

Marine Information Reports are reports of items of navigational interest such as the following:

- Discrepancies in published information
- Changes in aids to navigation
- Electronic navigation reports
- Satellite navigation reports

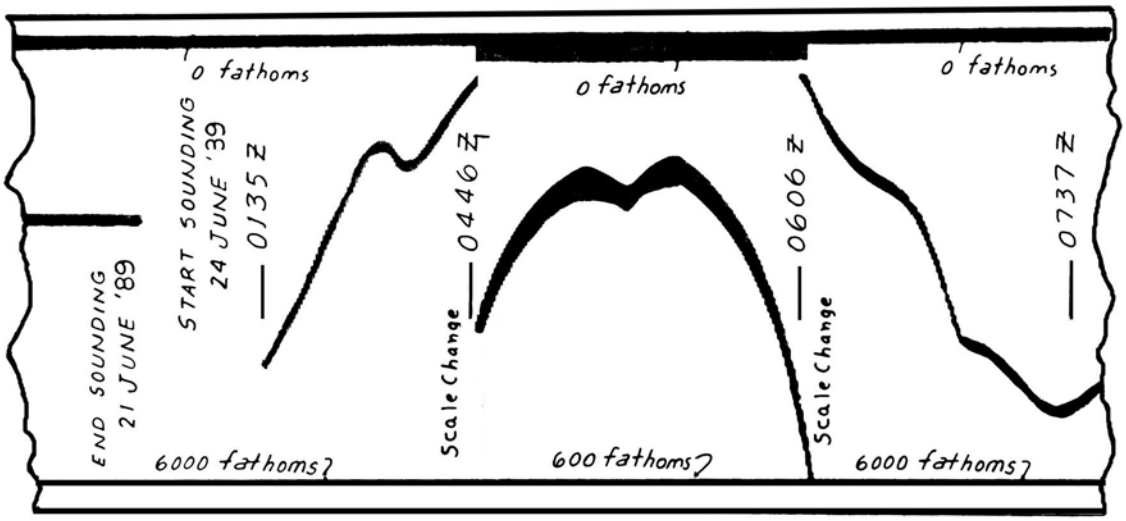

Figure 3109a. Annotated echo sounding record.

NAVIGATION LOG							REMARKS
DATE	TIME (GMT)	LAT.	LONG.	NAV. FIX	COURSE	SPEED	
11/2/83	0221	29°41'N	124°10'E	LORAN	093°	12.3	
	0340				097°	12.3	CHANGE COURSE
	0400	29°40'N	124°35'E	NOON FIX	097°	12.3	
	0728	29°35'N	125°22'E	LORAN	097°	12.3	
	0810				VARIOUS	8.2	REDUCE SPEED – MANUVERING TO AVOID FISHING BOATS
	0826	29°34'N	125°35.5E	LORAN	097°	12.3	RESUME COURSE AND SPEED
	1011	29°32'N	125°56'E	EVENING STARS	097°	12.3	
	1620	29°23'N	127°22'E	LORAN	102°	12.4	CHANGE COURSE
	2230	29°06.2N	128°48.5E	RADAR STAR	102°	12.5	
	2305				102°	10.1	REDUCE SPEED

Figure 3109b. Typical navigation log for hydrographic reporting.

- Radar navigation reports
- Magnetic disturbances

Any information believed to be useful to charting authorities or other mariners should be reported. Depending on the type of report, certain information is absolutely critical for a correct evaluation. The following general suggestions are offered to assist in reporting information that will be of maximum value:

- The geographical position included in the report may be used to correct charts. Accordingly, it should be fixed by the most exact method available, and more than one if possible.
- If geographical coordinates are used to report position, they should be as exact as circumstances permit. Reference should be made to paper charts by number, edition number, and edition date.
- The report should state the method used to fix the position and an estimate of fix accuracy.
- When reporting a position within sight of charted objects, the position may be expressed as bearings and ranges from them. Bearings should preferably be reported as true and expressed in degrees.
- Always report the limiting bearings from the ship toward the light when describing the sectors in which a light is either visible or obscured. Although this is just the reverse of the form used to locate objects, it is the standard method used on NGA nautical charts and in light lists.
- A report prepared by one person should, if possible, be checked by another.

In most cases marine information can be adequately reported on one of the various forms provided or posted on the internet by NGA or NOAA. It may be more convenient

to annotate information (such as uncharted or erroneously charted shoals, buildings, or geological features) directly on the affected chart and send it to NGA. Appropriate supporting information should also be provided. NGA forwards reports as necessary to NOAA, NAVOCEANO, or U.S. Coast Guard.

Reports by letter or e-mail are just as acceptable as those prepared on regular forms. A letter report will often allow more flexibility in reporting details, conclusions, or recommendations concerning the observation. When reporting on the regular forms, use additional sheets if necessary to complete the details of an observation.

Reports are required concerning any errors in information published on nautical charts or in nautical publications. The reports should be as accurate and complete as possible. This will result in corrections to the information, including the issuance of a *Notice to Mariners* when appropriate.

Report all changes, defects, establishment or discontinuance of navigational aids and the source of the information. Check your report against the *List of Lights*, *Pub. 117, Radio Navigational Aids*, and the largest scale chart of the area. If a new, uncharted light has been established, report the light and its characteristics in a format similar to that carried in light lists. For changes and defects, report only elements that differ with light lists. If it is a lighted aid, identify by number. Defective aids to navigation in U.S. waters should be reported immediately to the Commander of the local Coast Guard District.

A Marine Information Report and Suggestion Sheet template, along with instructions, is found in each weekly *US Notice to Mariners*.

3111. Electronic Navigation System Reports

Reports on electronic navigation anomalies or any unusual reception while using the electronic navigation systems are desired.

Information should include:

- Type of system
- Type of antenna
- Nature and description of the reception
- Date and time
- Position of ship
- Manufacturer and model of receiver

3112. Radar Navigation Reports

Reports of any unusual reception or anomalous propagation by radar systems caused by atmospheric conditions are especially desirable. Comments concerning the use of radar in piloting, with the locations and description of good radar targets, are particularly needed. Reports should include:

- Type of radar, frequency, antenna height and type.
- Manufacturer and model of the radar
- Date, time and duration of observed anomaly
- Position
- Weather and sea conditions

Radar reception problems caused by atmospheric parameters are contained in four groups. In addition to the previously listed data, reports should include the following specific data for each group:

1. Unexplained echoes—Description of echo, apparent velocity and direction relative to the observer, and range
2. Unusual clutter—Extent and Sector
3. Extended detection ranges—Surface or airborne target, and whether point or distributed target, such as a coastline or landmass
4. Reduced detection ranges—Surface or airborne target, and whether point or distributed target, such as a coastline or landmass

3113. Magnetic Disturbances

Magnetic anomalies, the result of a variety of causes, exist in many parts of the world. NGA maintains a record of such magnetic disturbances and whenever possible attempts to find an explanation. A better understanding of this phenomenon can result in more detailed charts which will be of greater value to the mariner.

The report of a magnetic disturbance should be as specific as possible. For instance: “Compass quickly swung 190° to 170°, remained offset for approximately 3 minutes and slowly returned.” Include position, ship’s course, speed, date, and time.

Whenever the readings of the standard magnetic compass are unusual, an azimuth check should be made as soon as possible and this information included in a report to NGA.

PORT INFORMATION REPORTS

3114. Importance of Port Information Reports

Port Information Reports provide essential information obtained during port visits which can be used to update and improve coastal, approach, and harbor charts as well as nautical publications including *Sailing Directions*, *Coast Pilots*, and *Fleet Guides*. Engineering drawings, hydrographic surveys and port plans showing new construction affecting charts and publications are especially valuable.

Items involving navigation safety should be reported by message or e-mail. Items which are not of immediate urgency, as well as additional supporting information may be submitted by the *Sailing Directions* Information and Suggestion Sheet found in the front of each volume of *Sailing Directions*, or the *Notice to Mariners* Marine Information Report and Suggestion Sheet found in the back of each *Notice to Mariners*. Reports by letter are completely acceptable and may permit more reporting flexibility.

Reports regarding U.S. waters and the U.S. Coast Pilot may be submitted through the NOAA Nautical Inquiry and Comment System link provided in Figure 3114.

Figure 3114. Link to NOAA Nautical Inquiry and Comment System. https://ocsdata.ncd.noaa.gov/idrs/inquiry.aspx

In some cases it may be more convenient and more effective to annotate information directly on a chart and mail it to NGA. As an example, new construction, such as new port facilities, pier or breakwater modifications, etc., may be drawn on a chart in cases where a written report would be inadequate.

Specific reporting requirements exist for U.S. Navy ships visiting foreign ports. These reports are primarily intended to provide information for use in updating the Navy Port Directories. A copy of the navigation information resulting from port visits should be provided directly to NGA by including NGA Maritime Safety Office, Springfield, VA as an INFO addressee on messages containing hydrographic information.

3115. What to Report

Coastal features and landmarks are almost constantly changing. What may at one time have been a major landmark may now be obscured by new construction, destroyed, or changed by the elements. *Sailing Directions (Enroute)* and *Coast Pilots* utilize a large number of photographs and line sketches. Digital images, particularly a series of overlapping views showing the coastline, landmarks, and harbor entrances are very useful.

When taking images for inclusion in NGA nautical publication, please use the highest resolution possible and send the image(s) with description of the feature and the exact Lat./Long. where the image was taken to: navsafety@nga.mil or to NOAA, for U.S. waters, through the link found in Figure 3114. There is also a desire for video of actual approaches to entrances to ports and harbors. See additional discussion on this topic below under "Images."

The following questions are suggested as a guide in preparing reports on coastal areas that are not included or that differ from the *Sailing Directions* and *Coast Pilots*.

Approach

1. What is the first landfall sighted?
2. Describe the value of soundings, GPS, radar and other positioning systems in making a landfall and approaching the coast. Are depths, curves, and coastal dangers accurately charted?
3. Are prominent points, headlands, landmarks, and aids to navigation adequately described in *Sailing Directions* and *Coast Pilots*? Are they accurately charted?
4. Do land hazes, fog or local showers often obscure the prominent features of the coast?
5. Do discolored water and debris extend offshore? How far? Were tidal currents or rips experienced along the coasts or in approaches to rivers or bays?
6. Are any features of special value as radar targets?

Tides and Currents

1. Are the published tide and current tables accurate?
2. Does the tide have any special effect such as river bore? Is there a local phenomenon, such as double high or low water or interrupted rise and fall?
3. Was any special information on tides obtained from local sources?
4. What is the set and drift of tidal currents along coasts, around headlands, among islands, in coastal indentations?
5. Are tidal currents reversing or rotary? If rotary, do they rotate in a clockwise or counterclockwise direction?
6. Do subsurface currents affect the maneuvering of surface craft? If so, describe.
7. Are there any countercurrents, eddies, overfalls, or tide rips in the area? If so, where?

River and Harbor Entrances

1. What is the depth of water over the bar, and is it subject to change? Was a particular stage of tide necessary to permit crossing the bar?
2. What is the least depth in the channel leading from sea to berth?
3. If the channel is dredged, when and to what depth and width? Is the channel subject to silting?
4. What is the maximum draft, length and width of a vessel that can enter port?
5. If soundings were taken, what was the stage of tide? If the depth information was received from other sources, what were they?
6. What was the date and time of water depth observations?

Hills, Mountains, and Peaks

1. Are hills and mountains conical, flat-topped, or of any particular shape?
2. At what range are they visible in clear weather?
3. Are they snowcapped throughout the year?
4. Are they cloud covered at any particular time?
5. Are the summits and peaks adequately charted? Can accurate distances and/or bearings be obtained by sextant, pelorus, or radar?
6. What is the quality of the radar return?

Pilotage

1. Where is the signal station located?
2. Where does the pilot board the vessel? Are special arrangements necessary before a pilot boards?
3. Is pilotage compulsory? Is it advisable?
4. Will a pilot direct a ship in at night, during foul weather, or during periods of low visibility?
5. Where does the pilot boat usually lie?
6. Does the pilot boat change station during foul weather?
7. Describe the radiotelephone communication facilities available at the pilot station or pilot boat. What is the call sign, frequency, and the language spoken?

General

1. What cautionary advice, additional data, and information on outstanding features should be given to a mariner entering the area for the first time?
2. At any time did a question or need for clarification arise while using NGA, NOAA, or U.S. Coast Guard products?
3. Were charted land contours useful while navigating using radar? Indicate the charts and their edition numbers.
4. Would it be useful to have radar targets or topographic features that aid in identification or position plotting described or portrayed in the *Sailing Directions* and *Coast Pilots*?

Images

Images of features or aids to navigation described in nautical publication are desirable. These may include annotations by the photographer. Additional information (or metadata) should accompany images sent to NGA, to include the camera position by bearing and distance from a charted object (or feature) if possible, name of the vessel, the date, time of exposure, height of eye (camera) and stage of tide. All features of navigational value should be clearly and accurately identified. Bearings and distances (from the vessel) of uncharted features identified in the image should be included. Images may be sent electronically via e-mail or transfered to CD/DVD's and sent via snail mail if file sizes warrant.

Port Regulations and Restrictions

Sailing Directions (Planning Guides) are concerned with pratique, pilotage, signals, pertinent regulations, warning areas, and navigational aids. The following questions are suggested as a guide to the requested data.

1. Is this a port of entry for overseas vessels?
2. If not a port of entry, where must a vessel go for customs entry and pratique?
3. Where do customs, immigration, and health officials board?
4. What are the normal working hours of officials?
5. Will the officials board vessels after working hours? Are there overtime charges for after-hour services?
6. If the officials board a vessel underway, do they remain on board until the vessel is berthed?
7. Were there delays? If so, give details.
8. Were there any restrictions placed on the vessel?
9. Was a copy of the Port Regulations received from the local officials?
10. What verbal instructions were received from the local officials?
11. What preparations prior to arrival would expedite formalities?
12. Are there any unwritten requirements peculiar to the port?
13. What are the speed regulations?
14. What are the dangerous cargo regulations?
15. What are the flammable cargo and fueling regulations?
16. Are there special restrictions on blowing tubes, pumping bilges, oil pollution, fire warps, etc.?
17. Are the restricted and anchorage areas correctly shown on charts, and described in the *Sailing Directions* and *Coast Pilots*?
18. What is the reason for the restricted areas: gunnery, aircraft operating, waste disposal, etc.?
19. Are there specific hours of restrictions, or are local blanket notices issued?
20. Is it permissible to pass through, but not anchor in, restricted areas?
21. Do fishing boats, stakes, nets, etc., restrict navigation?
22. What are the heights of overhead cables, bridges, and pipelines?
23. What are the locations of submarine cables, their landing points, and markers?
24. Are there ferry crossings or other areas of heavy local traffic?
25. What is the maximum draft, length, and breadth of a vessel that can enter?

Port Installations

Much of the port information which appears in the *Sailing Directions* and *Coast Pilots* is derived from visit reports and port brochures submitted by mariners. Comments

and recommendations on entering ports are needed so that corrections to these publications can be made.

If extra copies of local port plans, diagrams, regulations, brochures, photographs, etc. can be obtained, send them to NGA or to NOAA for U.S. waters through the NOAA Nautical Inquiry and Comments System via the link found in Figure 3114. It is not essential that port information be printed in English. Local pilots, customs officials, company agents, etc., are usually good information sources.

The following list may be used as a check-off list when submitting a letter report:

General

1. Name of the port
2. Date of observation and report
3. Name and type of vessel
4. Gross tonnage
5. Length (overall)
6. Breadth (extreme)
7. Draft (fore and aft)
8. Name of captain and observer
9. U.S. mailing address for acknowledgment

Tugs and Locks

1. Are tugs available or obligatory? What is their power?
2. If there are locks, what is the maximum size and draft of a vessel that can be locked through?

Cargo Handling Facilities

1. What are the capacities of the largest stationary, mobile, and floating cranes available? How was this information obtained?
2. What are the capacities, types, and number of lighters and barges available?
3. Is special cargo handling equipment available (e.g. grain elevators, coal and ore loaders, fruit or sugar conveyors, etc.)?
4. If cargo is handled from anchorage, what methods are used? Where is the cargo loaded? Are storage facilities available there?

Supplies

1. Are fuel oils, diesel oils, and lubricating oils available? If so, in what quantity?

Berths

1. What are the dimensions of the pier, wharf, or basin used?
2. What are the depths alongside? How were they obtained?
3. Describe berth or berths for working containers or roll-on/roll-off cargo.
4. Does the port have berth for working deep draft tankers? If so, describe.
5. Are both dry and refrigerated storage available?
6. Are any unusual methods used when docking? Are special precautions necessary at berth?

Medical, Consular, and Other Services

1. Is there a hospital or the services of a doctor and dentist available?
2. Is there a United States consulate? Where is it located? If none, where is the nearest?

Anchorages

1. What are the limits of the anchorage areas?
2. In what areas is anchoring prohibited?
3. What is the depth, character of the bottom, types of holding ground, and swinging room available?
4. What are the effects of weather, sea, swell, tides, and currents on the anchorages?
5. Where is the special quarantine anchorage?
6. Are there any unusual anchoring restrictions?

Repairs and Salvage

1. What are the capacities of drydocks and marine railways, if available?
2. What repair facilities are available? Are there repair facilities for electrical and electronic equipment?
3. Are divers and diving gear available?
4. Are there salvage tugs available? What is the size and operating radius?
5. Are any special services (e.g. compass compensation or degaussing) available?

MISCELLANEOUS HYDROGRAPHIC REPORTS

3116. Ocean Current Reports

The set and drift of ocean currents are of great concern to the navigator. Only with the correct current information can the shortest and most efficient voyages be planned. As with all forces of nature, most currents vary considerably with time at a given location.

The general surface currents along the principal trade routes of the world are well known. However, in other less traveled areas the current has not been well defined because of a lack of information. Detailed current reports from these areas are especially valuable.

An urgent need exists for more inshore current reports along all coasts of the world because data is scarce. Furthermore, information from deep draft ships is needed as this type of vessel is significantly influenced by the deeper layer of surface currents.

The CURRENT REPORT form, NAVOCEANO 3141/6, is designed to facilitate passing information to NAVOCEANO so that all mariners may benefit. The form is self-explanatory and can be used for ocean or coastal current information. Reports by the navigator will contribute significantly to accurate current information for nautical charts, current atlases, *Pilot Charts*, *Sailing Directions* and other special charts and publications.

3117. Route Reports

Route Reports enable NGA, through its *Sailing Directions (Planning Guides)*, to make recommendations for ocean passages based upon the actual experience of mariners. Of particular importance are reports of routes used by very large ships and from any ship in regions where, from experience and familiarity with local conditions, mariners have devised routes that differ from the "preferred track." In addition, because of the many and varied local conditions which must be taken into account, coastal route information is urgently needed for updating both *Sailing Directions* and *Coast Pilots*.

A Route Report should include a comprehensive summary of the voyage with reference to currents, dangers, weather, and the draft of the vessel. If possible, each report should answer the following questions and should include any other data that may be considered pertinent to the particular route. All information should be given in sufficient detail to assure accurate conclusions and appropriate recommendations. Some questions to be answered are:

1. Why was the route selected?
2. Were anticipated conditions met during the voyage?

AMVER

3118. The Automated Mutual-Assistance Vessel Rescue System (AMVER)

The purpose of ship reporting systems is to monitor vessels' positions at sea so that a response to any high-seas emergency can be coordinated among those nearest and best able to help. It is important that complete information be made available to search and rescue (SAR) coordinators immediately so that the right type of assistance can be sent to the scene with the least possible delay.

Figure 3118. AMVER burgee.

For example, a medical emergency at sea might require a doctor; a ship reporting system can find the nearest vessel with a doctor aboard. A sinking craft might require a vessel to rescue the crew, and perhaps another to provide a lee. A ship reporting system allows SAR coordinators to quickly assemble the required assets to complete the rescue.

The International Convention for the Safety of Life at Sea (SOLAS) obligates the master of any vessel who becomes aware of a distress incident to proceed to the emergency and assist until other aid is at hand or until released by the distressed vessel. Other international treaties and conventions impose the same requirement.

By maintaining a database of information as to the particulars of each participating vessel, and monitoring their positions as their voyages proceed, the AMVER coordinator can quickly ascertain which vessels are closest and best able to respond to any maritime distress incident. They can also release vessels that might feel obligated to respond from their legal obligation to do so, allowing them to proceed on their way without incurring liability for not responding. International agreements ensure that no costs are incurred by a participating vessel.

Several ship reporting systems are in operation throughout the world. The particulars of each system are given in publications of the International Maritime Organization (IMO). Masters of vessels making offshore passages are requested to always participate these systems when in the areas covered by them. The only worldwide system in operation is the U.S. Coast Guard's AMVER system.

AMVER is an international maritime mutual assistance program that coordinates search and rescue efforts around the world. It is voluntary, free of charge, and endorsed by the International Maritime Organization (IMO). Merchant ships of all nations are encouraged to file a sailing plan, periodic position reports, and a final report at the end of each voyage, to the AMVER Center located in the U.S. Coast Guard Operations Systems Center in Martinsburg, WV. Reports can be sent via e-mail, Inmarsat-C, AMVER/SEAS "compressed message" format, Sat-C format, HF radiotelex, HF radio or telefax message. Most reports can be sent at little or no cost to the ship.

Data from these reports is protected as "commercial proprietary" business information, and is released by U.S. Coast Guard only to recognized national SAR authorities and only for the purposes of SAR in an actual distress. Information concerning the predicted location and SAR characteristics of each vessel is available upon request to recognized SAR agencies of

any nation or to vessels needing assistance. Predicted locations are disclosed only for reasons related to marine safety.

The AMVER computer uses a dead reckoning system to predict the positions of participating ships at any time during their voyage. Benefits to participating vessels and companies include:

- Improved chances of timely assistance in an emergency.
- Reduced number of calls for ships not favorably located.
- Reduced lost time for vessels responding.
- Added safety for crews in the event of an overdue vessel.

AMVER participants can also act as the eyes and ears of SAR authorities to verify the authenticity of reports, reducing the strain on SAR personnel and facilities. AMVER is designed to compliment computer and communications technologies, including the Global Maritime Distress Safety System (GMDSS) that provides distress alerting and GPS positioning systems. These technologies can reduce or entirely eliminate the search aspect of search and rescue (since the precise location of the distress can be known), allowing SAR authorities to concentrate immediately on the response.

The AMVER Sailing Plan provides information on the port of departure, destination, course, speed, navigational method, waypoints, communications capabilities, and the presence of onboard medical personnel. The database contains information on the ship's official name and registry, call sign, type of ship, tonnage, propulsion, maximum speed, and ownership. Changes in any of this data should be reported to AMVER at the earliest opportunity.

AMVER participants bound for U.S. ports enjoy an additional benefit: AMVER messages which include the necessary information are considered to meet the requirements of 33 CFR 161 (Notice of Arrival).

3119. The AMVER Communications Network

The following methods are recommended for ships to transmit information to AMVER:

1. **Electronic mail** (e-mail) via the Internet: The AMVER internet e-mail address is amvermsg@amver.com. If a ship already has an inexpensive means of sending e-mail to an internet address, this is the preferred method. The land-based portion of an e-mail message is free, but there may be a charge for any ship-to-shore portion. Reports should be sent in the body of the message, not as attachments.

2. **AMVER/SEAS Compressed Message via Inmarsat-C via Telenor**. AMVER address: National Oceanic and Atmospheric Administration (NOAA) Phone number entered in the ADDRESSBOOK. [For information, please see the instruction sheet for your brand of International Mobile Satellite Organization (INMARSAT)-C transceiver.]

- Ships must be equipped with INMARSAT Standard C transceiver with floppy drive and capability to transmit a binary file [ship's GMDSS INMARSAT-C transceiver can be used].
- Ships must have an IBM-compatible computer (which is not part of the ship's GMDSS system), and it must meet the following minimum requirements:

— hard drive
— 286 MHz or better processor
— VGA graphics
— an interface between the computer and the INMARSAT transceiver
— AMVER/SEAS software - free via NOAA at http://www.aoml.noaa.gov/phod/goos/seas/amver-seas_software.php

Ships that meet the system requirements may send combined AMVER/Weather observation messages *Free of Charge* via Telenor Land Earth Stations at:

001 Atlantic Ocean Region-West (AOR-W)-Southbury
101 Atlantic Ocean Region East (AOR-E)-Southbury
201 Pacific Ocean Region (POR)-Santa Paula
321 Indian Ocean Region (IOR)-Assaguel

3. **HF Radiotelex Service** - As March 31, 2012 the Coast Guard discontinued all ship/Shore/ship SITOR services except for marine information broadcasts.

4. **HF Radio** at no cost via Coast Guard contractual agreements with the following companies:

- Mobile Marine Radio (WLO)
- Mobile (WCL)
- Marina Del Rey (KNN)
- Seattle (KLB)

5. **Telex**: AMVER Address (0) (230) 127594 AMVERNYK.

AMVER reports may be filed via telex using either satellite (code 43) or HF radio. Ships must pay the tariffs for satellite communications. Telex is a preferred method when less costly methods are not available.

6. **Telefax**: Telefacsimile (telefax) phone number to the USCG Operations Systems Center (OSC) in Martinsburg, West Virginia: (01) (304) 264-2505.

In the event other communication media are unavailable or inaccessible, AMVER reports may be faxed directly to the AMVER computer center. However, this is the least desirable method of communication since it involves m anual input of information to the computer verses electronic processing. Please Note: Do not fax reports to the AMVER Maritime Relations Office (AMR) in New York since it is not staffed 24 hours a day, seven days a week, and relay and processing of reports is delayed pending normal Monday-Friday business hours.

3120. AMVER Participation

Instructions guiding participation in the AMVER System are available online from the **AMVER website**. The AMVER User's Manual is published in Chinese, Dutch, and

English. This manual is available online (at no cost) via the website and link provided in Figure 3120.

To enroll in AMVER, a ship must first complete a SAR Questionnaire (SAR-Q). Participation involves filing four types of reports:

1. Sailing Plan
2. Position Report
3. Deviation Report
4. Final Report

The **Sailing Plan** is sent before leaving port, and indicates the departure time and date, destination, route and waypoints, speed, and navigational method.

The **Position Report** is sent after the first 24 hours to confirm departure as planned and conformance with the reported Sailing Plan. An additional report is requested every 48 hours to verify the DR plot being kept in the AMVER computer.

A **Deviation Report** should be sent whenever a change of route is made, or a change to course or speed due to weather, heavy seas, casualty, or any other action that would render the computerized DR inaccurate.

A **Final Report** should be sent at the destination port. The system then removes the vessel from the DR plot and logs the total time the ship was participating.

Vessels that travel certain routes on a recurring basis may be automatically tracked for successive voyages as long as delays in regular departures are reported. The system may also be used to track vessels sailing under special circumstances such as tall ships, large ocean tows, research vessel operations, factory fishing vessels, etc. At any given time nearly 3,000 vessels worldwide are being plotted by AMVER, and the number of persons rescued as a direct result of AMVER operations is in the hundreds each year.

Figure 3120. AMVER Ship Reporting System Manual. http://www.amver.com

3121. SAR Manuals

SAR operational procedures are contained in the International Aeronautical and Maritime Search and Rescue (IAMSAR) Manual, a three volume set published jointly by the IMO and the ICAO. Volume III of this manual is required aboard SOLAS vessels.

The **United States National Search and Rescue Supplement (NSS)** to the IAMSAR manual provides guidance to all federal forces, military and civilian, that support civil search and rescue operations. The NSS is available online

Figure 3121. U.S. National Search and Rescue Supplement to the IAMSAR. https://community.apan.org/wg/jtf-sar/m/mediagallery/162963

3122. AMVER Reporting Requirements

The U.S. Maritime Administration (MARAD) regulations state that certain U.S. flag vessels and foreign flag "War Risk" vessels must report and regularly update their voyages to the AMVER Center. This reporting is required of the following: (a) U.S. flag vessels of 1,000 tons or greater, operating in foreign commerce; (b) foreign flag vessels of 1,000 gross tons or greater, for which an Interim War Risk Insurance Binder has been issued under the provisions of Title XII, Merchant Marine Act, 1936.

3123. The Surface Picture (SURPIC)

When a maritime distress is reported to SAR authorities, the AMVER computer is queried to produce a Surface Picture (SURPIC) in the vicinity of the distress. Several different types of SURPIC are available, and they can be generated for any specified time. The SURPIC output is a text file containing the names of all vessels meeting the criteria requested, plus a subset of the information recorded in the database about each vessel. See Figure 3123. A graphic display can be brought up for the Rescue Coordination Center (RCC) to use, and the data can be sent immediately to other SAR authorities worldwide. The information provided by the SURPIC includes the position of all vessels in the requested area, their courses, speeds, estimated time to reach the scene of the distress, and the amount of deviation from its course required for each vessel if it were to divert. RCC staff can then direct the best-placed, best-equipped vessel to respond.

Four types of SURPIC can be generated:

A **Radius SURPIC** may be requested for any radius from 50 to 500 miles. A sample request might read:

"REQUEST 062100Z RADIUS SURPIC OF DOCTORSHIPS WITHIN 800 MILES OF 43.6N 030.2W FOR MEDICAL EVALUATION M/V SEVEN SEAS."

The **Rectangular SURPIC** is obtained by specifying the date, time, and two latitudes and two longitudes. As with the Radius SURPIC, the controller can limit the types of ships to be listed. There is no maximum or minimum size limitation on a Rectangular SURPIC.

A sample Area SURPIC request is as follows:

"REQUEST 151300Z AREA SURPIC OF WESTBOUND SHIPS FROM 43N TO 31N LATITUDE AND FROM 130W TO 150W LONGITUDE FOR SHIP DISTRESS M/V EVENING SUN LOCATION 37N, 140W."

The **Snapshot** or **Trackline SURPIC** is obtained by specifying the date and time, two points (P1 and P2), whether the trackline should be rhumb line or great circle, what the half-width (D) coverage should be (in nautical miles), and whether all ships are desired or only those meeting certain parameters (e.g. doctor on board).

Name	*Call sign*	*Position*	*Course*	*Speed*	*SAR data*	*Destination and ETA*	
CHILE MARU CPA 258 DEG. 012 MI. 032000Z	JAYU	26.2 N 179.9E	C294	12.5K	H 1 6 R T X Z	KOBE	11
WILYAMA CPA 152 DEG. 092 MI. 032000Z	LKBD	24.8N 179.1W	C106	14.0K	H X R T V X Z	BALBOA	21
PRES CLEVELAND CPA 265 WILL PASS WITHIN 10 MI. 040430Z	WITM	25.5N 177.0W	C284	19.3K	H 2 4 R D T X Z S	YKHAMA	08
AENEAS CPA 265 DEG. 175 MI. 03200Z	GMRT	25.9N 176.9E	C285	16.0K	H 8 R N V X Z	YKHAMA	10

Figure 3123. Radius SURPIC text file as received by a rescue center.

A Snapshot Trackline SURPIC request might look like:

"REQUEST 310100Z GREAT CIRCLE TRACKLINE SURPIC OF ALL SHIPS WITHIN 50 MILES OF A LINE FROM 20.1N 150.2W TO 21.5N 158.0W FOR AIRCRAFT PRECAUTION."

A **Moving Point SURPIC** is defined by the starting and ending points of a vessel's trackline, the estimated departure time of the vessel, and the varying time of the SURPIC. This SURPIC is useful when a vessel is overdue at her destination. If the vessel's trackline can be accurately estimated, a SURPIC can generated for increments of time along the trackline, and a list can be generated of ships that might have sighted the missing ship.

3124. Uses of AMVER Information

After evaluating the circumstances of a reported distress, The RCC can select the best available vessel to divert to the scene. In many cases a participating ship will be asked only to change course for a few hours or take a slightly different route to their destination, in order to provide a lookout in a certain area. RCC coordinators strive to use participating ships efficiently, and release them as soon as possible.

An example of the use of a Radius SURPIC is depicted in Figure 3124. In this situation rescue authorities believe that a ship in distress, or her survivors, might be found in the rectangular area. The RCC requests a SURPIC of all eastbound ships within 100 miles of a position well west of the rectangular area. With this list, the RCC staff prepares a modified route for each of four ships which will comprise a "search team" to cover the entire area, while adding only a few miles to each ship's route. Messages to each ship specify the exact route to follow and what to look for enroute.

Each ship contacted may be asked to sail a rhumb line between two specified points, one at the beginning of the search area and one at the end. By carefully assigning ships to areas of needed coverage, very little time need be lost from the sailing schedule of each cooperating ship. Those ships joining the search would report their positions every few hours to the RCC, together with weather data and any significant sightings. In order to achieve saturation coverage, a westbound SURPIC at the eastern end of the search area would also be used.

The Trackline SURPIC is most commonly used as a precautionary measure for aircraft. Occasionally a plane loses one or more of its engines. A Trackline SURPIC, provided from the point of difficulty to the destination, provides the pilot with the added assurance of 1) knowing positions of vessels beneath him/her and 2) that these ships were alerted. While the chance of an airliner experiencing such an emergency is extremely remote, SURPICs have been used successfully to save the lives of pilots of general aviation aircraft on oceanic flights.

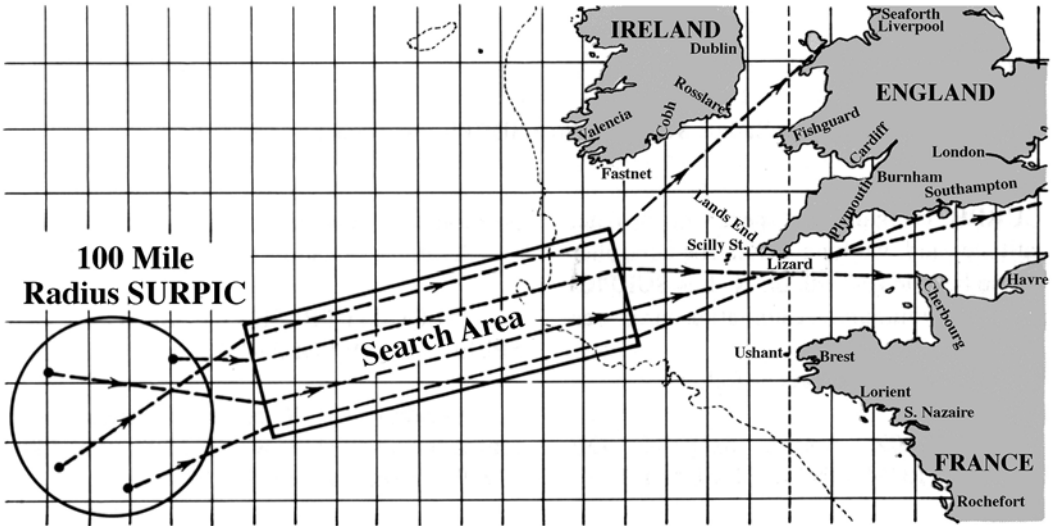

Figure 3124. Example of the use of a radius SURPIC to locate ships to search a rectangular area.