

**1995 ANNUAL REVIEW
SAN FRANCISCO, SAN PABLO AND SUISUN BAYS
HARBOR SAFETY PLAN**

September 14, 1995

Pursuant to the
California Oil Spill and Prevention Act of 1990

Submitted by the
Harbor Safety Committee of the San Francisco Bay Region
c/o Marine Exchange of the San Francisco Bay Region
Fort Mason Center — Building B, Suite 325
San Francisco, California 94123-1380
Telephone: (415) 441-7988

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INTRODUCTION

The 1995 Annual Review is the third review of the Harbor Safety Plan, and covers the 1994-95 fiscal year period. The Harbor Safety Committee of the Bay Region reviewed and approved the 1995 Annual Review of the Harbor Safety Plan at its September 14, 1995 meeting. The original Harbor Safety Plan for San Francisco, San Pablo and Suisun Bays was adopted on August 13, 1992 and supplemented by the Harbor Safety Committee's letter of February 4, 1993 to the OSPR Administrator. SB 2040 mandates that the Harbor Safety Committee must annually review its previously adopted Harbor Safety Plan and recommendations and submit the annual review to the OSPR Administrator for comment. The Harbor Safety Plan for the San Francisco San Pablo and Suisun Bays is comprised of the original Harbor Safety Plan adopted in 1992, the Committee's response letter to the OSPR Administrator, and the Annual Reviews of 1993, 1994, and 1995. For ease of reference, these separate documents will be consolidated into one document.

MEMBERSHIP OF THE HARBOR SAFETY COMMITTEE OF THE SAN FRANCISCO BAY REGION

The following is a list as of September, 1995 of the 16 voting and 6 non-voting members of the Committee :

Port Authorities (4):

David Adams..... Port of Oakland
James Faber.....Port of Richmond
Alexander KrygsmanPort of Stockton
Charles Mitchell.....Port of San Francisco

Tanker Operators (2):

Maurice Croce.....Chevron Shipping Company
Dwight KoopsSeaRiver Maritime

Pilot Organization (1):

Captain Arthur J. ThomasSan Francisco Bar Pilots

Dry Cargo Vessel Operators (2):

John Gosling..... Matson Navigation
Michael Nerney.....Inchcape Shipping Services

Commercial Fishing or Pleasure Boat Operator (1):

Margot Brown.....National Boating Federation

Nonprofit Environmental Organization (1):

Marci Glazer.....Center for Marine Conservation

San Francisco Bay Conservation and Development Commission (1):

Joan LundstromBCDC

Labor (1):

Gunnar LundebergSailors Union of the Pacific

Barge Operators (1):

Ron Duckhorn.....Crowley Marine

Tug Operators (1):

Mary McMillan.....Westar Marine Services

Member at Large (1):

Roger Peters.....Marine Consultant

Non-Voting Members (6):

U.S. Coast Guard Captain Donald Montoro, Captain of the Port
U.S. Coast Guard VTS Commander Dennis Sobeck
U.S. Army Corps of Engineers Max Blodgett
U.S. Navy Robert Mattson
Benicia Industries Joseph Gaidick
Port of Redwood City Michael Giari

Organization of the Harbor Safety Committee of the San Francisco Bay Region

Chair: Captain Arthur J. Thomas
San Francisco Bar Pilots

1st Vice Chair: Joan Lundstrom
San Francisco Bay Conservation and
Development Commission (BCDC)

2nd Vice Chair: Roger Peters
Member at Large

Executive Secretary: Terry Hunter
Marine Exchange of the San Francisco Bay
Region

SUMMARY OF 1995 RECOMMENDATIONS

PORTS

- Amended as follows (changes are underlined):

The Harbor Safety Committee supports the efforts to increase funding to NOAA. In light of congressional initiatives that would reduce the NOAA's funding or dissolve the agency entirely by eliminating, privatizing or transferring its functions to other agencies, Harbor Safety Committee members and interested members of the public should continue to request federal and state funding for PORTS to insure system support after the demonstration period. The Committee urges that the OSPR Administrator support PORTS as a high priority and that OSPR continue to seek and allocate funds to maintain the system once it is installed.

The Committee further requests that NOAA expedite the update of tide and current data using the latest technology available and publish the water level and current atlases to replace the tidal current charts recalled because of inaccuracies.

HISTORY AND TYPES OF ACCIDENTS AND NEAR-ACCIDENTS

- The following definition of the term 'near-miss' was adopted:

"A reportable 'near-miss' situation is an incident in which a pilot, master or other person in charge of navigating a vessel, successfully takes action of a non routine nature to avoid a collision with another vessel, structure, or aid to navigation, or grounding of the vessel, or damage to the environment." The definition should be applied to larger vessels, as outlined in the Federal Register CFR, volume 59, No. 135, part 161.16.

VEHICULAR BRIDGE MANAGEMENT

- OSPR should request Caltrans and other bridge operators to install energy-absorbing fendering on bridges instead of wooden or plastic fendering.

- OSPR should request Caltrans, railroads and various counties owning bridges for advance notice of work which would temporarily or permanently reduce bridge clearances.

SMALL BOATS

- Place additional emphasis on recreational boater education and law enforcement on the waterways by:
 1. Putting additional emphasis on boater education through the State Boating and Waterways Outreach program;
 2. Targeting marinas, boat ramps, and boat rentals for educational materials;
 3. Utilizing the Coast Guard's "Sea Partners Program" and Coast Guard Auxiliary to disseminate boater safety materials to recreational boaters;
 4. Educating kayakers to promote safe navigation;
 5. Encouraging the public school system to include Boater Education in the curriculum; and
 6. Consideration should be give to providing funds specifically for increased law enforcement on the waterways.

TUG ESCORTS

- Over the past year, the Harbor Safety Committee has been working on revisions to the Interim Tug Escort Regulations and to the Permanent Tug Escort Guidelines. The Committee modified the Permanent Guidelines, based on two engineering studies by Glosten Associates, naval and extensive public testimony. OSPR will base Permanent Tug Escort Regulations on the Committee's recommendations. The regulations are anticipated to become effective by fall, 1996 or at the latest, January, 1997.

PILOTAGE

- To prevent unlicensed persons from performing pilotage, it is recommended that the California Harbors and Navigation Code be amended to increase the penalty for acting as a pilot while not holding a pilot license from the maximum penalty for a misdemeanor of \$1,000 to a maximum penalty of \$25,000.

SUBSTANDARD VESSEL INSPECTION

- Support the U.S. Coast Guard vessel inspection program of targeting substandard vessels in the Bay.

CHAPTER I. GEOGRAPHIC BOUNDARIES

There were no changes to this chapter.

CHAPTER II. GENERAL WEATHER, TIDE AND CURRENT, AND DEPTH CONDITIONS

STATUS OF PRIOR RECOMMENDATIONS:

Underkeel Clearances:

Because of the relatively shallow shipping lanes of the Bay, the Harbor Safety Committee in 1993 recommended that minimum underkeel clearances for tank vessels carrying oil as cargo be established for the areas east and west of the Golden Gate Bridge. Since that time, the Coast Guard proposed federal regulations to set minimum underkeel clearances within the geographic areas of the Harbor Safety Plan. In the process of drafting regulations for the Bay, the Coast Guard Captain of the Port requested comments from the Harbor Safety Committee.

As of this date, no definitive action has been developed by the Coast Guard. It is anticipated that a working group will be formed in the coming year to refine underkeel guidelines and to address the issues of enforcement and measuring underkeel clearance.

MAXIMUM SPEED:

Federal regulation 33 CFR Parts 162 and 165, which became effective May 3, 1995, limits vessel speed to 15 knots through the water for power driven vessels of 1600 or more gross tons within the main ship channels (Regulated Navigation Areas) of San Francisco Bay. This also applies to a tug with a tow of 1600 or more gross tons. The regulation implements the 1994 Harbor Safety Committee recommendation of setting a maximum speed limit on vessels to improve safe navigation within the congested areas of the Bay where the ability of a vessel to maneuver in the event of an emergency is severely constrained.

1. and 2. Weather Conditions. No change.

3. PORTS.

The National Oceanic and Atmospheric Administration's National Ocean Service (NOS) is developing the San Francisco Bay Demonstration Project to provide solutions essential to ensuring that the Bay Area's marine-based economic activities can continue to expand while the Bay's ecological resources are protected and managed. Through real-time data acquisition and distribution, NOS can advance navigational safety capabilities by combining physical oceanographic measurement and computer modeling capabilities. Also, Upper San Francisco Bay Partnership Program projects that are built around the Physical Oceanographic Real-Time System (PORTS) are the Current Pattern Analysis for Oil Spill Response Planning and Real-Time Environmental Monitoring in Upper San Francisco Bay. Through its Partnership Program, NOS has begun to implement a PORTS demonstration to acquire data, simulate the hydrodynamics, and disseminate information on the physical variables of San Francisco Bay. The objectives of the demonstration project are to:

1. Complete the installation of demonstration PORTS oceanographic and marine meteorological measurement sites and the computer hydrodynamic model.
2. Disseminate observations to the user community in real time.
3. Work with the user community to develop measures of effectiveness in order to validate PORTS requirements for navigation safety and environmental management.
4. Develop a PORTS full-scale operational implementation plan that includes the life-cycle development and operations management process.
5. Plan for system support after the demonstration period.

Pilots are now using information on a day-to-day basis from the PORTS system in relation to keel clearance and air draft considerations.

AMENDMENT TO RECOMMENDATION 3:

Amended as follows (changes are underlined):

The Harbor Safety Committee supports the efforts to increase funding to NOAA. In light of congressional initiatives that would reduce the NOAA's funding or dissolve the agency entirely by eliminating, privatizing or

transferring its functions to other agencies. Harbor Safety Committee members and interested members of the public should continue to request federal and state funding for PORTS to insure system support after the demonstration period. The Committee urges that the OSPR Administrator support PORTS as a high priority and that OSPR continue to seek and allocate funds to maintain the system once it is installed.

The Committee further requests that NOAA expedite the update of tide and current data using the latest technology available and publish the water level and current atlases to replace the tidal current charts recalled because of inaccuracies.

4. Operators Surveys. No change.

5. and 6. Surveys and Charts. The National Ocean Service (NOS) has designated the San Francisco Bay area as one of two primary regional demonstration projects for the agency in FY 1996 and 1997. A detailed description of NOAA's San Francisco Bay Project Plan can be obtained from the NOAA, Pier #1 Project Office, Fort Mason Center (Bldg. 201), San Francisco, CA 94123, phone (415) 556-0858. The San Francisco Bay project will provide ready access to NOAA data and technologies and will place particular emphasis on improving navigation safety and efficiency. The backbone of NOAA's approximately two-million dollar, two-year San Francisco Bay investment is the demonstration of the physical oceanographic real-time system (PORTS). In addition, by December, 1995, NOS will have its entire suite of 1,000 nautical charts digitally scanned and available from nautical chart agents in the form of raster chart images that can be easily loaded into electronic chart systems.

Digital vector data will also be needed to make many electronic chart systems operate most efficiently and in order for electronic chart systems to comply with IMO regulations. The San Francisco Bar Pilots, the Corps of Engineers and the commercial sector are working cooperatively with NOAA to develop digital vector data for bay area electronic chart systems. Corps of Engineers digital survey data will be rapidly incorporated into these digital chart displays routinely as digital Corps of Engineers surveys are completed. Electronic chart 'notice to mariners' updating experiments will be conducted in San Francisco Bay by NOAA in cooperation with the U.S. Coast Guard Research and Development Laboratory. Initial testing and evaluation of the nation's first hybrid raster/vector nautical charts is scheduled for San Francisco Bay during the demonstration project. Those elements of the nautical chart critical to navigation are currently being defined through use of questionnaires being circulated nationally and in the Bay Area to commercial ship operators.

In order to update the quality of the charted shoreline features and in response to the needs of the Bay Conservation and Development Commission, NOAA will be acquiring detailed aerial photogrammetric coverage of San Francisco Bay during the spring of 1996. These data will be used by both the commercial shipping industry for accurate and up-to-date shoreline for their charts and for coastal zone managers for their Geographic Information Systems. This detailed high resolution photography will be made readily available to all bay area organizations for their specific applications.

CHAPTER III. HARBOR CONDITIONS

STATUS OF PRIOR RECOMMENDATIONS:

7. **Underwater Rocks.** No further action was taken by the U.S. Army Corps of Engineers regarding the removal of Arch Rock, Harding or Shag Rocks near Alcatraz Island. The Harbor Safety Committee reiterates its previously adopted recommendation that: "Several areas, such as Harding, Arch and Shag Rocks, should be reduced to a minimum of 55 feet depth MLLW."

8. **Dredge Dog Leg at Buoy 'C'.** This recommendation was deleted in 1993.

CHAPTER IV. VESSEL TRAFFIC PATTERNS

For calendar year 1994, the Marine Exchange reported 3,502 total vessel arrivals in the Bay, which represented a one percent increase over the prior year. The total number of tanker arrivals, however, declined 9% from 1993 (see Appendix A). The number of interbay shifts of commercial vessels significantly declined from the prior year. Government vessel movements are not tracked by the Marine Exchange, but are tracked by the U.S. Coast Guard Vessel Traffic Service (VTS). VTS reported 2,901 governmental vessel movements, which was a 4% decline from 1993. As previously stated, a direct comparison cannot be made between the figures reported by the Marine Exchange and VTS because the former compiles a total figure for commercial vessel arrivals, while the VTS total for government vessels includes arrivals, inter-Bay movements and departures.

STATUS OF PRIOR RECOMMENDATIONS:

9. **Coast Guard/VTS Accident and Near Accident Reporting System.** During the past year the Reportable Events Subcommittee met several times (1) to clarify the

definition of 'near-misses', (2) to devise a system of voluntary reporting from pilots and ship masters of 'incidents' or 'near-misses', and (3) to establish a review team to periodically review the pertinence of information from the Coast Guard Marine Safety Office and VTS. The objective of the program is to identify, collect and correlate statistical data, including 'out-of the-ordinary' circumstances occurring in the Bay so that, by analysis, improvements to the safe management of the harbor may be recommended and implemented by the appropriate agency.

- (1) Definition of 'Near-Miss'. In 1992 the Harbor Safety Committee approved a recommendation that reporting of accidents and 'near-misses' should be standardized with other areas so that 'near-miss' data can be analyzed in a consistent manner and possible comparisons be made between areas [of the state]. The Reportable Events Subcommittee proposed a definition which became the basis for discussion at a special meeting with representatives of all five Harbor Safety Committees in California — Humboldt Bay, San Francisco Bay, Port Hueneme, Los Angeles/Long Beach and San Diego Bay and officials from the Coast Guard and OSPR. The statewide consensus was to adopt a definition adopted by the State of Washington. The following definition was subsequently adopted by the five Harbor Safety Committees:

"A reportable 'Near-Miss' Situation' is an incident in which a pilot, master, or other person in charge of navigating a vessel, successfully takes action of a nonroutine nature to avoid a collision with another vessel, structure, or aid to navigation, or grounding of the vessel, or damage to the environment."

The subcommittee further recommended that the San Francisco Bay 'near-miss' program should apply to all vessels of 1600 GRT or larger and recommended adoption by other California Harbor Safety Committees and the states of Washington and Oregon. The following language was adopted by the Harbor Safety Committee:

"The 'near-miss' reporting program should apply to all vessels subject to the Vessel Traffic Service (VTS) as defined in 33 CFR 161.16 which regulates the reporting requirements for vessels within a vessel traffic service area" (see Appendix B).

- (2) Establishing a Voluntary Reporting System. The subcommittee agreed that a voluntary system of reporting 'near-misses' should be created to encourage mariners to report out of the ordinary circumstances to the Coast Guard which

could serve as another set of 'eyes and ears' on the Bay. To that end the subcommittee drafted a reporting form which would preserve the anonymity of the person making a report. The report, approved by the Harbor Safety Committee, is based on a form used by the Federal Aviation Administration (see Appendix C). A person filling out a voluntary report would send the form to the U.S. Coast Guard Marine Safety Office, which would remove the portion of the form that contains the person's name once it was determined there was no need to contact that individual for further information. Voluntary reports would be reviewed monthly or quarterly as needed. If the reporting information was determined to be relevant, the data would be catalogued into the CASRISK information system. However, if the Coast Guard determined that the event should have been reported as an incident on form 2692, the Coast Guard would contact the individual and advise them the event is a reportable marine casualty.

To initiate the system, the voluntary report was included in the Vessel Traffic Service San Francisco, June, 1995, User's Manual. The Captain of the Port agreed to include the report form in the Marine Safety Office newsletter. In addition, the San Francisco Bar Pilots Association has made the report form available to its members. Other organizations are encouraged to distribute the form. Since the voluntary reporting program is just being established, no reports have been received as of this date.

- (3) Review of Accidents and 'Near-Miss' Information. A review team was created by the Captain of the Port composed of a representative of the Bar Pilots Association; the Executive Director, Board of Pilot Commissioners; the U.S. Coast Guard Captain of the Port; Vessel Traffic Service (VTS) San Francisco; and a representative of the Harbor Safety Committee who is a master mariner (not including a pilot). The primary functions of the review team are twofold. (1) the team would review reported incidents from Vessel Traffic Service (see Appendix D for 1994 'near-miss' incidents) and voluntary reports from pilots and other mariners such as ship and tug masters to determine if the incident was a 'near-miss'. Other possible sources might be bridge operators and marine terminal operators who have the opportunity to notice situations which, if corrected, could lead to recommendations which might prevent marine casualties. If the incident is considered a 'near-miss' as defined above, the information would be included in the Captain of the Port's risk analysis database. (2) The team would analyze the casualty and 'near-miss' data for incidents occurring within the San Francisco Bay area. The expected result of the review team's analysis would be the identification of areas of greater risk or

patterns of incidents occurring which could affect maritime safety. The data which the review team analyzed is generated from the CASRISK system, developed by the Coast Guard Marine Safety Office San Francisco and more fully described in the 1994 Harbor Safety Plan (see Appendix E for 1994 CASRISK data). The location of each incident or casualty is identified for the review team on computer generated charts so that areas with the highest frequency of incidents and casualties can be quickly seen.

To ensure continuity of the data for the review team, the Captain of the Port will manage the program since the Coast Guard has already developed the CASRISK system to track casualties and incidents (near-misses). The Captain of the Port intends to continue use of CASRISK as part of a continuing program of risk assessment and management. Under the Coast Guard's management, the review team intends to meet periodically to review 'near-miss' incident reports, and not less than once annually to analyze casualty and 'near-miss' information generated by the CASRISK system. If more detailed information is needed about a particular casualty, such reports can be provided by the Coast Guard Marine Safety Office Investigations Department. The results of the review team analysis would be provided directly to the Captain of the Port for use in developing improvements for safe navigation in the Bay in consultation with the Harbor Safety Committee.

The review team has met several times to analyze data to determine if there were patterns of events which indicate an area of greater risk. Based on looking at four years of current data, an area east of the Southern Pacific Railroad Bridge at Martinez at the Carquinez Strait was noted to be subject to shoaling. This information was directly passed on to the Corps of Engineers with a request for an updated survey. It was felt a new survey was especially critical this year because the heavy volume of runoff from the snow melt would be bringing greater than normal amounts of sediment into the Bay. This Corps of Engineers survey was completed in June, 1995.

ADDITIONAL RECOMMENDATION—DEFINITION OF 'NEAR-MISS'

The following definition was adopted by the Harbor Safety Committee:

"A reportable 'Near-Miss Situation' is an incident in which a pilot, master, or other person in charge of navigating a vessel, successfully takes action of a nonroutine nature to avoid a collision with another vessel, structure,

or aid to navigation, or grounding of the vessel, or damage to the environment."

10. Herring Fishermen. OSPR should support continued coordination of federal, state, municipal and representatives of fisherman prior to each herring fishing season.

11. Observation of Sailboat Races. No further action is necessary.

12. Observation of Boats from a Tanker. No further action is necessary.

13. Annual Racing Schedules. Consistent with prior reviews of the Harbor Safety Plan, no further action is necessary.

14. Optional Race Course Information. Consistent with prior reviews of the Harbor Safety Plan, no further action is necessary.

15. Rule 9 Infractions. Consistent with prior reviews of the Harbor Safety Plan, no further action is necessary (see Recommendation 17).

16. Contingency Routing. Caltrans has informed the Coast Guard that seismic retrofitting work will begin in the summer of 1996 on the following bridges: Bay Bridge, San Mateo-Hayward Bridge and Benicia-Martinez Bridge. The Coast Guard has begun coordinating with Caltrans during the project planning stage in order to minimize disruption to vessel traffic and to ensure safe passage in the waterways.

17. Educational Pamphlets. Pamphlets regarding boating and water safety are being distributed by the Department of Motor Vehicles with boat registration renewals.

18. Report on Rule 9 Violations. No change at this time.

19. Publicize Rule 9 Infractions. In 1994, the Office of Oil Spill Prevention and Response (OSPR) initiated an outreach program to coordinate the distribution of boating and waterway safety information to the public. This information is now being distributed by the Department of Motor Vehicles. OSPR program managers are currently reviewing all previous recommendations received from the Harbor Safety Committees in order to coordinate the boater education effort in the most effective manner. The educational effort should include the Pacific Inter-Club Yacht Association wording to address Rule 9 infractions in all club race instructions. The Yacht Racing Association should also add a Rule 9 requirement to all their race instructions that the act of interference will result in disqualification.

20. **Coast Guard Auxiliary Education Efforts.** A tanker operator (SeaRiver Maritime) is willing to permit members of the Coast Guard Auxiliary to observe navigation of a tanker, from the ship's perspective, during an in-bay transit. This might help to educate both safe boating course instructors and their students on the hazards of reckless operation of small boats in commercial traffic areas.

21. **Board Sailors.** Board sailors have improved their safety performance, however, they may need additional reminders. OSPR should contact the management of the Golden Gate National Recreation Area, National Park Service, to request that the sign at Crissy Field have more information about the dangers of board sailing in the main inbound and outbound shipping lanes by the Golden Gate Bridge. The present sign is inadequate.

CHAPTER V. VEHICULAR BRIDGE MANAGEMENT/SMALL BOATS

A. VEHICULAR BRIDGE MANAGEMENT:

The Bay/Delta area now has eleven racons on bridges, which represents the majority of racons placed on bridges in the United States. The racons are justified because the harbor has the highest number of foggy days in the nation where visibility is less than one-half mile together with a high volume of vessel traffic transiting under the bridges. To complete the system of racons on Bay/Delta bridges, the Rio Vista Bridge is scheduled to have a racon installed in 1996.

In order to improve the safety factor for tankers sailing through the narrow opening in the Southern Pacific Railroad Bridge at Benicia, the Coast Guard has undertaken several initiatives:

1. Established a Regulated Navigation Area at the bridge which prohibits deep-draft transits when visibility is less than one-half mile (with some exceptions).
2. Will install four white lights on the main channel piers to better identify the primary navigation channel. A six-month test will start this fall, and if successful, the bridge owner will install permanent lights.
3. Asked the railroad to change the working frequency of the bridge radiotelephone to VHF-FM Channel 14, to again be consistent with the VTS working frequency. The railroad has agreed and has applied for a change to its FCC license.

4. Investigated some recent bridge malfunctions and are discussing/evaluating some SPRR repair plans to improve bridge reliability.
5. Had Caltrans make modifications to the racon on the adjacent highway bridge which has improved the signal to downbound vessels.
6. Are investigating the obstructive character of the bridge under the Truman-Hobbs Act of 1940. If increasing bridge clearances will provide benefits to navigation greater than the costs of modifying the bridge, the Coast Guard will recommend the bridge be altered.

An updated inventory of vehicular bridges in the Bay area is in Appendix F.

As a result of reviewing the Harbor Safety Plan, the Committee adopted the following additional recommendations:

ADDITIONAL RECOMMENDATIONS—VEHICULAR BRIDGE MANAGEMENT:

- **Energy-Absorbing Fenders for Bridges.** OSPR should request Caltrans and other bridge operators such as the Golden Gate Bridge and Southern Pacific Railroad to install energy-absorbing fendering, instead of wooden or plastic fendering, on all area bridges when replacing damaged fenders and for all new construction.
- **Construction Changes in Bridge Clearances.** OSPR should request Caltrans, railroads and various counties owning bridges for advance notice of work which would temporarily or permanently reduce bridge clearances. Advance notice should be provided as far in advance as possible through the Local Notice to Mariners to assure that vessels are alerted to these hazards.

B. SMALL BOATS:

As previously described, thousands of recreational boaters are concentrated in the Bay area near narrow, heavily trafficked shipping lanes. Each year a number of reported and unreported 'near-misses' occur which might be prevented by small boats properly yielding the right-of-way to large vessels that cannot change course. In 1994, three 'near-miss' and collision situations were reported by VTS: an inbound tanker near the Golden Gate Bridge was forced to sound the danger signal and make speed and course changes to avoid a sailing vessel; a tanker bound for the Richmond Long Wharf collided with a sailing vessel; near Yellow Bluff a sailing

vessel collided with an inbound tanker. However, a fatal accident did occur last year when a fishing vessel collided with an inbound container ship just west of the Golden Gate Bridge. The fishing vessel sank and two lives were lost.

After reviewing information on licensing of small recreational boat operators, it was agreed that, at this time, emphasis on boater education and enforcement on the waterways would be a more effective approach to deal with unsafe operators rather than instituting the licensing of small boat operators.

ADDITIONAL RECOMMENDATIONS—SMALL BOATS:

- **Place Additional Emphasis on Recreational Boater Education and Law Enforcement on the Waterways as Follows:**
 1. OSPR should put additional emphasis on boater education and law enforcement on the waterways. This can be addressed by the Outreach Program, developed in 1994 and coordinated through the State Department of Boating and Waterways (Contact: Megan Standard, (916)322-1819)).
 2. Educational target areas should be identified such as marinas and boat ramps. Boat rental establishments, including personal water craft (jet skis), should also be targeted for an educational thrust, as inexperienced boaters in rental boats are a continuous source of problems.
 3. The Coast Guard's "Sea Partners Program", a marine environmental protection outreach initiative, should be utilized, in conjunction with the Coast Guard Auxiliary, to disseminate boater safety materials to recreational boaters in the Bay area.
 4. Kayakers should be approached in the same manner as board sailors were previously approached (see Recommendation 21) to promote safer navigation in the Bay. Kayakers have become a problem for vessel traffic due to reckless operation by some individuals.
 5. The public school system should be encouraged to include Boater Education in the curriculum.
 6. Consideration should be given to providing funds dedicated specifically for increased law enforcement on the waterways.

STATUS OF PRIOR RECOMMENDATIONS:

22. through 24. & 27. Caltrans Bridges. The PORTS system, currently being installed by NOAA, includes a system of electronic water level gauges located at area bridges, which will indicate the level of the tide at the measured points on a real time basis. Bridge level gauges are already in place at area bridges where needed. It was noted, however, that the bridge level gauges, which are simply numbered wooden boards affixed to a bridge and indicating the clearance between the water and the raised portion of the bridge, are of little use to larger vessels, as the gauges do not become visible before the vessels are committed to making their transit.

25. Golden Gate Bridge Racon. Installation of the racon was completed on April 11, 1995 by the Golden Gate Bridge District. Feedback is currently being solicited from vessels transiting the area to evaluate the unit. Recreational boaters have indicated, however, that fog signals should be retained in their present configuration as an aid to smaller vessels not equipped with radar.

26. Bay Bridge Racons. No further action is necessary.

CHAPTER VI. AIDS TO NAVIGATION

A. NAVIGATION MARKS:

The Coast Guard installed a racon on the Harding Rock buoy on June 28, 1994. This was an important enhancement of the Aids to Navigation system as it improved the marking of Harding Rock in low visibility situations. The Coast Guard is planning to relocate several buoys to mark a channel improvement project in Oakland Harbor. Two aid to navigation lights will be established to mark a turning basin in the inner harbor. Plans to install a buoy on the eastern side of the Alcatraz Shoal are pending the receipt and review of hydrographic survey information on existing depths to determine the best location for the buoy.

As a result of the tragic accident on Big Bayou Canot in the southern United States, where a barge caused a railroad bridge to collapse, the Federal Department of Transportation directed the Coast Guard to inspect bridge navigation lights and fendering systems on all bridges that commercial vessels can reach. In the San Francisco Bay/Delta, 106 bridges were inspected. Almost two-thirds had some discrepancy, primarily minor navigation light outages. Almost all discrepancies have been corrected. The remaining discrepancy affecting tankers or tank barges is

the fender deterioration on the east bay portion of the Bay Bridge, the repair of which is scheduled for 1996.

B. SAN FRANCISCO VESSEL TRAFFIC SERVICE:

Regulated Navigational Areas. Effective May 3, 1995, the Coast Guard established Regulated Navigation Areas in the San Francisco VTS area to reduce vessel congestion where maneuvering room is limited. The Regulated Navigation Areas (RNAs) apply to the waters of the Golden Gate, Central Bay, Lower Bay, San Pablo Bay and Carquinez Strait. The RNAs will organize traffic flow patterns; reduce meeting, crossing, and overtaking situations between large vessels in constricted channels and limit vessel speed (see Appendix G).

VTS Training. The San Francisco Bar Pilots and the Coast Guard have continued a joint program in which pilots stand watches at the Vessel Traffic Service (VTS) Operations Center and VTS personnel take advantage of the Bar Pilot's "Shipride" Program which was established when VTS began. Coast Guard personnel may also visit the Bar Pilot Office for training and familiarization with pilot procedures. The goal is to improve traffic management procedures so as to enhance navigational safety in the Bay.

STATUS OF PRIOR RECOMMENDATIONS:

28. Scope of Coverage

- a) On October 13, 1994, 33 CFR 161 was amended to incorporate standard national vessel traffic management rules applicable to all VTSs. No further action is necessary.
- b) On October 13, 1994, 33 CFR 161 was amended to make participation in the Vessel Movement Reporting System (VMRS) mandatory for certain classes of vessels. VMRS participation is required for VMRS users defined as a vessel, or an owner, operator, charter, master, or person directing the movement of a vessel required to participate in a VMRS. VMRS participation is required for:
 - (a) power-driven vessels of 40 meters (approximately 131 feet) or more in length, while navigating;
 - (b) every towing vessel of 8 meters (approximately 26 feet) or more in length, while navigating; or
 - (c) every vessel certificated to carry 50 or more passengers for hire, when engaged in trade.Also subject to the provisions of this section are VTS users. A VTS user is a vessel, or an owner, operator, charterer, master, or person directing the movement of a vessel that

is: (a) subject to the Vessel Bridge-to-Bridge Radiotelephone Act; or (b) required to participate in a VMRS within a VTS area (VMRS User). Military vessels have been directed to participate in the VTS by the Senior Officer Present Afloat (SOPA), San Francisco. No further action is necessary.

- c) Provisions of International Rule 10 have been incorporated in the Regulated Navigation Areas (RNAs) that the Coast Guard is establishing within the San Francisco Bay Region. No further action is necessary.
- d) New radars are being installed at Point San Pablo and Mare Island which will provide radar coverage in San Pablo Bay and the Carquinez Strait. Additionally, closed-circuit television cameras are being installed at Mare Island and the Ozol Pier. The cameras will provide coverage of San Pablo Bay and the Carquinez Strait to the Southern Pacific Railroad Bridge. There are no plans to extend coverage beyond the Southern Pacific Railroad Bridge. Plans to install CCTV cameras on the Golden Gate Bridge have been dropped. No further action is necessary.

29. Changes in VTS Operations and Requirements

- a) On August 15, 1995, VTS San Francisco shifted its working frequency to Channel 14 for VTS ship to shore communications. Channel 13 continues to be monitored and used for ship to ship communications. No further action is necessary.
- b) No change.
- c) Coast Guard plans for upgrading VTS equipment remain unchanged. Construction is underway and scheduled for completion in early 1996.

CHAPTER VII. COMMUNICATIONS

STATUS OF PRIOR RECOMMENDATIONS:

30. VTS Channel

As described in Recommendation 29, the VTS operating channel was changed to Channel 14 VHF-FM on August 15, 1994. The decision to change to Channel 14 was based on recommendations made by the Quality Action Team (QAT) consisting of persons from various maritime organizations within the San Francisco Bay Area.

The change has significantly reduced the amount of radio traffic on Channel 13. No further action is necessary.

31. Backup Power Systems. No further action is necessary.

CHAPTER VIII. TUG ESCORTS

Background. In 1990, Senate Bill 2040 established Harbor Safety Committees in California representing various maritime interests including tanker operators, tug boat companies, port authorities, labor, the recreational community and environmental concerns. It further mandated that tug escorting was beneficial for tanker operations. The legislation directed expeditious development of escorting regulations. To that end, the Harbor Safety Committee (HSC) created a Tug Escort Subcommittee (TES) to prepare guidelines that would be promulgated into emergency state regulation. Interim guidelines and regulation were established in the winter of 1992.

In the spring of 1993, the Harbor Safety Committee adopted a revised set of permanent guidelines to supersede the emergency regulations. During the State's administrative process, OSPR chose to reject the permanent guidelines on the basis of their lack of rationale and scientific basis. In order to meet these concerns, the Harbor Safety Committee instructed the subcommittee to rewrite the guidelines maintaining very visible public participation, close working relationships with OSPR and developing a science-based standard for the regulation.

The subcommittee began the process of preparing a scientific study through use of a consultant. Based on State funding concerns and time limitations, industry volunteered to engage a consultant in conjunction with an industry-based Technical Advisory Group and the Tug Escort Subcommittee acting as a policy board. Glosten Associates was hired to prepare a professional study focusing on the specifics of tug escorting on San Francisco Bay. Additionally, the State funded a peer reviewer, Michael M. Bernitsas of the University of Michigan, to review the consultant's work and to mitigate concern regarding bias. Their reports were completed in the winter of 1994.

The Glosten study had adopted a dual-failure standard, that is the simultaneous loss of both propulsion and steering, as the basis for measuring the force (tanker demands) required to recover from the tanker machinery failure and remain within the tactical area of performance. Further, the tactical area was based on the ninety-fifth percentile of success in stopping the tanker within the available reach and

transfer. After review of the enabling scope of work and industry concerns regarding the likelihood of a dual failure and the attendant tanker demands, the dual standard was thought to be unreasonable. The subcommittee set up various working groups to review failure probability, waterway characteristics, commercial and navigational safety implications of demand standards and requested that Glosten calculate demands based on single failures.

These efforts resulted in a second Glosten Study and reports on failure probability and waterway specific characteristics. The subcommittee reviewed these reports and adopted a single failure standard for the development of matching criteria.

The Tug Escort Subcommittee subsequently reviewed and adopted a series of issues that are contained in a report titled Summary of Issues and Recommendations for Amendments to the Tank Vessel Escort Regulations.

The Harbor Safety Committee on August 10, 1995 reviewed and adopted the Tug Escort Subcommittee report subject to the clarification that the subcommittee's adoption of the default matching matrix was adopted on a three to one split vote. The Harbor Safety Committee subsequently reviewed and adopted the Summary of Issues having amended sections relating to clarification of guidelines and OSPR oversight for use of in lieu default matching matrix procedures, an additional breaking force tier for vessels in excess of 180 thousand tons, clarification of the applicability of speed limits, escort tug standby requirements for Zones 3 and 5, escort tug casualty reports, and relief of line-haul tugs. The Harbor Safety Committee approved the Summary of Issues on a vote of twelve to one.

SCHEDULE FOR ADOPTION OF REGULATIONS:

The following table lays out the expected events and schedule that will lead to permanent regulations:

9/95 - 10/95	OSPR drafts regulations
11/95	HSC/TES reviews regulations
12/95 - 1/96	Public comment period; public hearing
2/96 - 3/96	OSPR (HSC/TES) responds to public comment
4/96	If changes are required, a 15-day comment period is needed; if not, OSPR comments for the record

5/96-6/96	Compilation of the rulemaking file
7/96	Office of Administrative Law review
8/96	Secretary of State review and adoption

The existing interim regulations expire in December, 1996.

RELATIONSHIP WITH THE U.S. COAST GUARD AND OTHER TUG ESCORT INITIATIVES:

The TES has made every effort to ensure future compatibility with any Coast Guard regulations that may come into effect. The Coast Guard system is based on similar performance standards adapted for Puget and Prince William Sounds. It allows each operator to develop vessel-specific escort plans in lieu of a default matching matrix; no conflict is expected. To provide liaison with the Coast Guard, the Captain of the Port was seated on the TES. The TES, HSC and OSPR have also met and participated with the Coast Guard consultant (ASTM) regarding federal regulation, is mindful of their Notice of Pending Rulemaking scheduled for Spring of 1996, and has encouraged the development of a Coast Guard Bay Area Traffic Model.

The TES has also reviewed and supports a Massachusetts Institute of Technology risk analysis study aimed at quantifying the wide range of risks that effect tanker safety and proposed the use of San Francisco Bay as a beta-test site.

Findings. The TES and its specific work groups have met over thirty times in the last year and have made findings stated below:

- Based on not finding evidence from U.S. Coast Guard and Board of Pilot Commission data of a dual-failure incident, the TES has chosen a single-failure standard on which to base the matching of tankers and tugs.
- Tanker braking demand was determined to exceed tanker steering demand within a 10-knot speed limit at time of failure.
- The TES proposed that a default matching matrix table based on braking demand be adopted to provide direction to tankers calling San Francisco Bay.
- Tanker and tug operators are expected to comply with the regulations yet they are also required to maintain a reasonable expectation of success and act accordingly.

- Tanker braking demands measured in kips (1,000 lbs.) at slack water in Zones 1 and 2 are roughly equivalent to the bollard pull values in existing regulation but expressed in astern bollard pull. With assisting currents and for Zones 4 and 6, higher demands are realized.
- A geographic system of six zones for tug escorting with attendant requirements was found to be the best way to identify waterway specific requirements.
- Subject to OSPR approval, tanker operators should be authorized to model their respective fleets to meet commercial demands and individual vessel characteristics.
- Use of braking force as measured in static bollard pull tends to denigrate the combined steering/stopping abilities of enhanced tug boats. Therefore, subject to OSPR approval, tug boat operators should be authorized to model their respective fleets to utilize individual tug characteristics.
- Additional requirements and clarifications were identified for crews, tankers, the Clearing House, tugs, barges and zones.

SUMMARY OF RECOMMENDATIONS FOR AMENDMENTS TO TUG ESCORT REGULATIONS:

Matching Tugs and Tankers. The matching matrix is designed for use by tankers that are not specifically modeled for repeated transits. The matrix has two demand tables, one for the main portions of San Francisco Bay and one with higher demands for Carquinez Straits. Demands are shown for slack water as well as two and four knot assisting currents. Braking forces are defined as astern bollard pull for conventional tugs and ahead bollard pull for tractor tugs. No more than a maximum number of three tugs may be used. In the event of an emergency, tankers are exempted from escort rules. The selection of preferred or recommended maneuvers will remain the discretion of the pilot, tank vessel master and escort vessel operator; waterway-specific navigation tactics are not presented. Speed limits for untethered operations are 10 knots in the Bay and 8 knots on the Strait. Tethering is not required. However, tethered operations may be adopted by tanker operators or tug companies after specific evaluation as approved by OSPR.

Six Zones. The existing system of six zones is maintained with no escorting requirements for Zones 3 and 5. Tug standby at Zone 3 and 5 is now required. Expansion of Zone 1 to the pilot station was not adopted.

Tug Boats. Tug availability for service and on-station status is now required. Station-keeping distance has been reduced. Tug casualties have to be reported to the Clearing House. Equipment standards have been increased. Use of inspection systems and schedules such as those of the American Waterways Organization have been allowed. Record keeping is now required. Bollard pull testing has been further refined and measuring free running speed has been dropped. Line-haul tug definition for barge transits has been clarified. Tug seaworthiness requirements for Zone 1 have been improved and are subject to a phasing program. Specific modeling of tugs has been allowed. Bollard pull may now be certificated by any authorized classification society. Periodic tug certification schedules have been included.

Crew Certification. Crew certification standards have been clarified and company programs will be allowed. OSPR will approve training programs. The number of crewmen on a tug has been clarified at three. Training programs have been defined and emergency drills are not required.

Barges. Crew transfers are not required when certain mechanical devices are used. Source of crewmen for barges is from the line haul tug. Fully-redundant tugs in conjunction with double hull barges will not be exempted from regulation. Additional equipment requirements have been named.

Tankers. Tankers are required to check in with the Clearing House prior to their movement. Unregulated tankers are required to check in even though they will not be subject to escorting. Pre-escort conferences are required. The adequacy of bits on tankers for the uses for which they are intended will be required. Written plans will take the form of check lists. Double-hull tankers with bow thrusters and fully redundant steering and propulsion machinery are exempt from escorting. Shifting within an anchorage will not require an escort.

Clearing House. Verification of matching will be a responsibility of the Clearing House. The Clearing House is expressly authorized to assess and collect charges for its services.

CONCLUSIONS:

Tug escorting is one of many tactics available to masters and pilots in bringing a mechanically disabled tanker to a safe status. The added capabilities of these escort regulations are meant to supplement the many options available, such as use of anchors, "zigzagging" and voluntary soft-bottom groundings. Time has not permitted the full-scale sea trial testing of all maneuvers. However, an

adequate full-scale testing program was conducted to verify and calibrate the computer model in the simulation of hundreds of maneuvers which are deemed to be adequate to provide enhanced safety on San Francisco Bay.

RECOMMENDATIONS:

1. Support amendments to Tug Escort (Tank Vessel) regulations adopted by the Harbor Safety Committee on August 10, 1995 and seek OSPR promulgation into regulation on an expeditious basis. See Appendix J, "Proposed Amendments to Tug Escort Regulations," for details.
2. Further review of waterway-specific navigational maneuvers and their possible adoption by the Harbor Safety Committee and the Office of Oil Spill Prevention and Response should be assigned to a technical piloting committee.
3. Support MIT's study "Formulation of a Model for Ship Transit Risk" and seek the use of San Francisco Bay as a beta-test site.

CHAPTER IX. PILOTAGE

The Committee reviewed training requirements, disciplinary procedures and procedures for assigning pilots to ships, making no further recommendations in this regard.

ADDITIONAL RECOMMENDATION:

- Amend Harbors and Navigation Code

The Pilotage Subcommittee reviewed federal and state pilotage licensing. To prevent unlicensed persons from performing pilotage, it is recommended that legislative language in the California Harbors and Navigation Code be strengthened, by increasing the penalty for acting as a pilot while not holding a pilot license, from the maximum penalty for a misdemeanor of \$1,000 to a specified maximum penalty of \$25,000, as follows:

"(A) Every person who does not hold a license as pilot or as an inland pilot issued pursuant to this division, and who pilots any vessel into or out of any harbor or port of the bays of San Francisco, San Pablo, and Suisun, or who acts as a pilot for ship movements or special operations upon the waters of those bays, is guilty of a misdemeanor.

“(B) If a vessel refuses or neglects to take and employ a pilot, the vessel, its master, owner operator, charterer, cosignee or agent shall: (1) Forfeit and pay to a pilot suing for same a sum equal to the pilotage of the vessel, recoverable by an action in the courts of this state or the pilot may pursue his remedy by filing an action in admiralty in a United States Court, either in personam or in rem, to enforce the lien given him on the vessel, as the pilot may see fit and proper to do; (2) Be liable to pay a civil penalty of up to twenty-five thousand dollars, which penalty shall be payable to the general fund of the State of California; and (3) Be liable to the pilot for all costs and attorney fees incurred.”

STATUS OF PRIOR RECOMMENDATIONS:

Shipping Company Employees Who Serve As Pilots. As of this date, no amendment to the California Harbors and Navigation Code has been proposed to require that shipping company employees eligible to pilot vessels in the Bay area must hold a Master's license with pilotage endorsement and have made at least 20 trips as pilot trainee or observer on vessels over the routes to be piloted within a specified period of time. The Committee continues to urge the OSPR Administrator to take action on this recommendation.

Require Pilots on Board Vessels Towing Barges Over 5,000 Long Tons. The Harbor Safety Committee recommended that the Coast Guard amend its regulations so that tugs towing 5,000 to 10,000 long tons of oil be required to have a pilot in order to ensure local knowledge of the Bay. As of this date, no amendment to 46 C.F.R. 15.812 has been proposed.

CHAPTER X. PROJECT FUNDING

The status of funding various recommendations in this and previous Harbor Safety Plans is more fully described in each chapter under Status of Prior Recommendations.

CHAPTER XI. COMPETITIVE ASPECTS OF THE HARBOR SAFETY PLAN

The economic impact of previous Harbor Safety Plan recommendations is more fully described in the 1993 Annual Review. However, the cost of tug escorts can now more accurately be stated because tug escorts have been used on the Bay for over a year.

A. ECONOMIC IMPACTS:

The 1994 Harbor Safety Plan update estimated the annual cost to regulated ship and barge owners for tug escorts in San Francisco Bay was \$13,830,000. This was based on approximately 230 ships and 47 barges per month being required to use this service at an average estimated rate per escort of \$4,500 per ship and \$2,500 per barge.

Actual figures provided by the Marine Exchange show that only 148 regulated ships and 47 barges per month were required to use the tug escort services in 1994. Based on the same average cost per assist used in 1994, the average annual cost to ship and barge owners for tug escorts in San Francisco Bay as required by the Harbor Safety Plan would now fall to \$9,400,000.

B. DIFFERENCES IN RESTRICTIONS FROM PORT TO PORT:

See discussion in 1993 Harbor Safety Plan Annual Review.

CHAPTER XII. PLAN IMPLEMENTATION AND ENFORCEMENT

OSPR provided the following report on the enforcement of tug escort regulations for calendar year 1994:

Last year's tug escort summary covered from the inception of the regulations, May 1993 through April 1994. Since the first quarter of 1994 was covered in the last report there will be some overlap, specifically the two notification violations reported in January, 1994.

Enforcement personnel from the Office of Oil Spill Prevention and Response (OSPR) investigated seven suspected tug escort violations during the 1994 calendar year. Four of the incidents involved the escort tug making the notification to the "Clearing House" (Marine Exchange) rather than the tank vessel making the notification. This is a technical violation and some clarification of the regulations is necessary to address these incidents.

The remaining three incidents break down as follows:

- one tank vessel failed to present itself to the Clearing House, Section 851.7(b), an administrative civil penalty will be sought;

- one tank vessel failed to meet minimum crew standards required under Section 851.8(b)(2), a written letter of warning was issued to the Master;
- one tank vessel was investigated for proceeding without an escort, Section 851.7(a), the vessel was escorted, they just made their arrangements late, no violation was noted.

Administrative civil penalty regulations are being put in place and the OSPR is proceeding through this process to adjudicate the pending cases from the inception of the tug escort regulations.

XIII. SUBSTANDARD VESSEL INSPECTION PROGRAM

The Coast Guard implemented a revised vessel boarding program May 1, 1994 designed to identify and eliminate substandard ships from U.S. waters. The program pursues this goal by systematically targeting the relative risk of vessels and increasing the boarding frequency on high risk (potentially substandard) vessels. Each vessel's relative risk is determined through the use of a matrix which factors the vessel's flag, owner, operator, classification society, vessel particulars, and violation history. The program also aligns Coast Guard efforts with international initiatives through reliance upon a two-tiered boarding process where the greatest effort, and most detailed examinations, are reserved for substandard vessels. On July 1, the local Marine Safety Office reallocated resources to maximize the effectiveness of its boarding teams by combining marine inspection and port safety expertise. Marine inspectors now are present at boardings on all high priority vessels.

During the last seven months of 1994, the local Marine Safety Office conducted 359 boardings (28.7%) on the 1,251 foreign vessel arrivals at the ports of San Francisco Bay. Of those vessels boarded during that period, 17 were determined to be substandard and the Coast Guard detained those vessels under the intervention provisions of the International Convention for the Safety of Life at Sea (SOLAS). In comparison, there were only 3 SOLAS interventions in the entire previous year. Through the course of this program, however, the condition of all vessels visiting our ports has generally improved and the occurrence of SOLAS interventions has declined significantly. The Captain of the Port has reported vessel boardings to the Harbor Safety Committee on a monthly basis.

RECOMMENDATION:

- Support the U.S. Coast Guard vessel inspection program of targeting substandard vessels in the Bay area.



Comparative Vessel Movement Totals

	1993	1994	Change
Total vessel arrivals	3,484	3,502	1%
Total vessel interbay shifts	2,260	1,978	-12%
Total tanker arrivals	1,113	1,017	-9%
Total tanker interbay shifts	1,641	1,175	-28%

Harbor Safety Committee of the San
Francisco Bay Region Clearing House

Fort Mason Center, Bldg. B, Suite 325
San Francisco, CA 94123-1380

Total tanker arrivals for 1994 in the San Francisco Bay Region

04-Apr-95

Vessel	Flag	Length	Deadweight	Number of Arrivals
AFRICAN EXPRESS	SV	140	9,287	1
AKEBONO MARU	JA	181	45,100	1
ALDEN W. CLAUSEN	LI	179	35,587	4
ALKYONIS	GR	170	29,900	1
ARBAT	LI	183	47,083	1
ARCADIA	GR	219	62,654	3
ARCO ALASKA	AM	290	188,436	16
ARCO ANCHORAGE	AM	269	120,266	7
ARCO CALIFORNIA	AM	290	188,067	13
ARCO FAIRBANKS	AM	269	120,319	5
ARCO JUNEAU	AM	269	120,266	8
ARCO PRUDHOE BAY	AM	247	70,215	25
ARCO SAG RIVER	AM	247	70,215	23
ARCO TEXAS	AM	274	89,950	10
ATIGUN PASS	AM	276	152,405	8
BALTIMORE TRADER	AM	244	58,813	16
BLUE RIDGE	AM	201	42,268	23
BOW LION	NO	171	38,700	1
BREGEN	MA	243	67,980	2
BROOKS RANGE	AM	276	176,404	14
BT ALASKA	AM	290	188,099	5
BUM DONG	KO	136	17,303	3
BUM IK	KO	115	7,305	2
BUM JU	KO	136	17,248	4
CABO SAN VICENTE	CH	235	64,896	1

Vessel	Flag	Length	Deadweight	Number of Arrivals
CARLA A.HILLS	LI	179	35,597	6
CATHAY SPIRIT	LI	243	83,338	1
CENTAURUS MAR	LI	224	61,762	3
CHAMPION	NX	165	25,200	1
CHESAPEAKE	AM	224	50,826	1
CHESTNUT HILL	AM	273	92,760	2
CHEVRON ARIZONA	AM	198	39,836	1
CHEVRON ATLANTIC	BS	269	149,748	3
CHEVRON CALIFORNIA	AM	247	71,339	19
CHEVRON COLORADO	AM	198	39,842	19
CHEVRON LOUISIANA	AM	199	39,795	8
CHEVRON MISSISSIPPI	AM	247	71,336	13
CHEVRON OREGON	AM	198	39,847	23
CHEVRON PACIFIC	LI	179	35,596	5
CHEVRON WASHINGTON	AM	199	39,795	43
CHIBA SPIRIT	BS	203	60,875	3
COAST RANGE	AM	201	40,631	31
CONQUESTVENTURE L.	GR	170	31,766	1
CRYSTAL RIVER	PA	181	45,720	1
DA QING 91	RC	225	62,005	2
DA QING 92	RC	225	68,600	1
DELAWARE TRADER	AM	201	50,860	19
DEMETRA	GR	228	61,361	2
DENALI	AM		188,099	4
DYNAMIC EXPRESS	PA	171	42,253	1
FAITH IV	SG	228	63,765	2
FORMOSA FIVE	LI	175	35,672	1
FORMOSA FOUR	LI	175	35,672	2

Vessel	Flag	Length	Deadweight	Number of Arrivals
FORMOSA ONE	LI	177	31,378	4
FORMOSA THREE	LI	175	29,870	2
FORMOSA TWO	LI	177	31,316	1
FREJA SCANDIC	NX	124	10,951	1
FRONTIER SPIRIT	LI	245	106,668	1
FUJI BRAVES	PA	124	10,732	1
FUJIGAWA	PA	149	16,980	3
GARNET RIVER	PA	172	45,696	1
GEORGE H.WEYERHAEUSER	BS	179	35,597	1
GOLDEN GATE	AM	223	63,141	52
GOLDEN GATE SUN	SG	232	82,542	1
GUS W.DARNELL	AM	187	29,500	8
HAMAKAZE	PA	150	16,595	6
HASTULA	DU		46,824	1
HATAKAZE	PA	150	16,554	1
HAWAIIAN PRINCE	PA	247	97,078	2
HESNES	MA	243	68,157	1
HIGHSEAS	LI	178	45,000	2
HIGHTIDE	LI	178	45,092	1
HYDRA MAR	PA	228	60,906	2
IVER GEMINI	SV	179	28,840	1
IVER KATANA	LI	151	16,982	4
IVER SPLENDOR	PI	174	29,820	2
J. DENNIS BONNEY	LI	275	155,103	1
JO CEDAR	DU	182	36,733	1
JOHN YOUNG	LI	275	155,548	3
KAMOGAWA	PA	149	17,712	2
KENAI	AM	265	125,089	1

Vessel	Flag	Length	Deadweight	Number of Arrivals
KENNETH E.HILL	BS	232	81,273	1
KENNETH T.DERR	BS	179	35,587	4
KEYSTONE CANYON	AM	276	176,162	9
KISOGAWA	PA	140	16,733	4
LA ESPERANZA	PA	132	13,946	2
LADY SOVEREIGN	LI	170	24,220	3
LEYTE SPIRIT	BS	245	97,300	4
LION OF CALIFORNIA	AM	157	16,451	3
LONDON ENTERPRISE	BR	218	62,278	2
LONDON PRIDE	BR	269	149,686	2
LONDON SPIRIT	BR	219	62,094	11
LONDON VICTORY	BR	218	62,155	9
LUNAMAR II	PA	229	57,692	4
MAASSTAD	DU		38,039	1
MARINE CHEMIST	AM	205	36,526	7
MATSUKAZE	PA	150	16,682	1
MAURO D'ALELIO	IT	175	37,182	1
MAYON SPIRIT	BS	245	98,507	4
MELODIA	SG	172	41,450	1
MINAS LIBRA	PA	172	40,200	1
MINUSINSK	RU	116	5,863	2
MOPA DANIEL	BS	110	9,093	1
MORMACSTAR	AM	210	39,861	1
MORMACSUN	AM	210	39,861	1
NAMSAN SPIRIT	LI	244	104,986	3
NEPTUNE LIBRA	SG	172	40,141	1
NILE RIVER	SV	235	64,818	1
NORDIC FREEDOM	NX	229	69,118	1

Vessel	Flag	Length	Deadweight	Number of Arrivals
OLIVIA MAERSK	DX	183	50,600	1
OMI DYNACHEM	AM	192	50,857	6
OMI HUDSON	AM	192	50,851	3
OMI LEADER	AM	192	37,803	1
OMI WILLAMETTE	AM	201	37,853	2
ONZO SPIRIT	BS	245	100,020	1
OVERSEAS BOSTON	AM	261	123,692	7
OVERSEAS CHICAGO	AM	273	92,091	1
OVERSEAS NEW ORLEANS	AM	201	43,643	1
OVERSEAS WASHINGTON	AM	273	91,967	1
PACIFIC SPIRIT	LI	244	104,984	1
PACIFIC WAVE	PA	232	96,099	2
PALM MONARCH	LI	230	60,961	2
PALMSTAR CHERRY	BS	245	100,024	3
PALMSTAR LOTUS	BS	245	100,314	1
PALMSTAR ORCHID	BS	245	100,047	1
PALMSTAR ROSE	BS	234	100,202	2
PALMSTAR THISTLE	BS	245	100,047	7
PANAM CARIBE	PA	108	6,653	1
PEGASUS ERRE	IT	229	65,549	3
PETROBULK RUNNER	LI	167	29,998	1
PIONEER SPIRIT	LI	244	104,987	1
POLYANKA	CY	183	47,070	1
POTOMAC TRADER	AM	201	50,860	1
PRESIDENT	PA	217	60,960	1
PRESNYA	CY	183	47,083	2
PRINCE WILLIAM SOUND	AM	268	123,936	2
RESPECT	SG	176	40,374	1

Vessel	Flag	Length	Deadweight	Number of Arrivals
RIVERHEAD SPIRIT	AM	201	38,359	9
S/R BATON ROUGE	AM	247	75,783	3
S/R BAYTOWN	AM	238	57,720	5
S/R BENICIA	AM	276	149,900	14
S/R GALVESTON	AM	168	26,923	1
S/R LONG BEACH	AM	301	211,469	13
S/R NORTH SLOPE	AM	276	149,900	12
S/R PHILADELPHIA	AM	247	76,192	3
S/R SAN FRANCISCO	AM	247	76,813	5
SAKURA	JA	156	21,398	2
SAMAR SPIRIT	BS	245	97,300	4
SAMUEL GINN	AM	274	156,835	2
SAMUEL H. ARMACOST	BS	180	35,607	5
SANKO PHOENIX	LI	232	96,088	1
SANKO PIONEER	LI	242	96,144	2
SCOTLAND	BS	204	39,931	1
SEA BRAVES	LI	158	22,755	2
SEAFALCON	BR	247	97,114	1
SEALIFT ANTARCTIC	AM	179	27,660	13
SEALIFT ARCTIC	AM	179	27,648	5
SEALIFT CHINA SEA	AM	179	27,648	11
SEALIFT INDIAN OCEAN	AM	179	27,648	11
SEAMASTER	LI	242	101,134	2
SEBAROK SPIRIT	LI	247	95,649	1
SEANG SPIRIT	BS	247	95,649	2
SETOKAZE	BS	151	18,566	5
SHILLA SPIRIT	LI	244	105,000	1
SHIOKAZE	PA	151	16,982	6

Vessel	Flag	Length	Deadweight	Number of Arrivals
SIERRA MADRE	AM	200	40,631	31
SINBAD	BS	185	47,168	1
ST.MICHAELIS	GE	183	45,574	1
STAR MASSACHUSETTS	AM	184	26,547	23
STAR RHODE ISLAND	AM	184	26,547	20
STOLT CONDOR	LI	177	36,613	1
STOLT EXCELLENCE	LI	177	30,992	1
STOLT GUARDIAN	LI	175	39,726	2
STOLT JADE	LI	177	35,076	1
STOLT LLANDAFF	PA	171	25,060	1
STOLT LOYALTY	LI	177	31,459	1
STOLT VESTLAND	LI	175	29,999	1
SUN ARONIA	PA	246	87,797	1
SUN CRYSTAL	MA	113	9,064	1
TAGASAN	PA	243	92,715	1
TAMAGAWA	PA	123	12,681	2
TASMAN SPIRIT	LI	237	87,584	2
TAVI	FI	161	19,999	17
TEAM ERVIKEN	BS	183	33,730	1
TEAM HADA	SG	186	45,831	1
TEAM TROMA	NO	184	42,010	1
TEEKAY SPIRIT	BS	245	100,336	1
TENHIRO	PA	107	6,733	1
THOMPSON PASS	AM	276	173,619	10
TONEGAWA	PA	149	16,715	1
TONSINA	AM	265	124,751	4
TORM THYRA	DA	184	50,600	1
TOYOKAZE	PA	161	19,917	1

Vessel	Flag	Length	Deadweight	Number of Arrivals
TRADE RESOLVE	PA	226	59,925	1
TRADER	LI	156	22,305	1
TRINIDAD	BS	185	42,664	1
ULSAN SPIRIT	LI	244	105,000	3
ULYANOVSK	CY	171	29,990	1
VANCOUVER SPIRIT	BS	244	10,500	2
VELOPOULA	GR	228	66,895	1
VICTORIA SPIRIT	BS	244	103,153	2
WILLIAM E.CRAIN	LI	275	155,150	2
WILLIAM E.MUSSMAN	LI	232	81,273	4
YAMATO SPIRIT	LI	246	86,915	1
YODOGAWA	PA	155	24,090	1

956

with this part or any other applicable law or regulation (e.g., the International Regulations for Prevention of Collisions at Sea, 1972 (72 COLREGS) or the Inland Navigation Rules) or of the neglect of any precaution which may be required by the ordinary practice of seamen, or by the special circumstances of the case.

§ 161.2 Definitions.

For the purposes of this part: **Cooperative Vessel Traffic Services (CVTS)** means the system of vessel traffic management established and jointly operated by the United States and Canada within adjoining waters. In addition, CVTS facilitates traffic movement and anchorages, avoids jurisdictional disputes, and renders assistance in emergencies in adjoining United States and Canadian waters.

Hazardous Vessel Operating Condition means any condition related to a vessel's ability to safely navigate or maneuver, and includes, but is not limited to:

- (1) The absence or malfunction of vessel operating equipment, such as propulsion machinery, steering gear, radar system, gyrocompass, depth sounding device, automatic radar plotting aid (ARPA), radiotelephone, automated dependent surveillance equipment, navigational lighting, sound signaling devices or similar equipment.
- (2) Any condition on board the vessel likely to impair navigation, such as lack of current nautical charts and publications, personnel shortage, or similar condition.
- (3) Vessel characteristics that affect or restrict maneuverability, such as cargo arrangement, trim, loaded condition, underkeel clearance, speed, or similar characteristics.

Precautionary Area means a routing measure comprising an area within defined limits where vessels must navigate with particular caution and within which the direction of traffic may be recommended.

Towing Vessel means any commercial vessel engaged in towing another vessel astern, alongside, or by pushing ahead.

Vessel Movement Reporting System (VMRS) is a system used to manage and track vessel movements within a VTS area. This is accomplished by a vessel providing information under established procedures as set forth in this part, or as directed by the VTS.

Vessel Movement Reporting System (VMRS) User means a vessel, or an owner, operator, charterer, master, or person directing the movement of a vessel, that is required to participate in a VMRS within a VTS area. VMRS participation is required for:

- (1) Every power-driven vessel of 40 meters (approximately 131 feet) or more in length, while navigating;
- (2) Every towing vessel of 8 meters (approximately 26 feet) or more in length, while navigating; or
- (3) Every vessel certificated to carry 50 or more passengers for hire, when engaged in trade.

Vessel Traffic Center (VTC) means the shore-based facility that operates the vessel traffic services for the Vessel Traffic Service area or sector within such an area.

Vessel Traffic Services (VTS) means a service implemented by the United States Coast Guard designed to improve the safety and efficiency of vessel traffic and to protect the environment. The VTS has the capability to interact with marine traffic and respond to traffic situations developing in the VTS area.

Vessel Traffic Service Area or VTS Area means the geographical area encompassing a specific VTS area of service. This area of service may be subdivided into sectors for the purpose of allocating responsibility to individual Vessel Traffic Centers or to identify different operating requirements.

Note: Although regulatory jurisdiction is limited to the navigable waters of the United States, certain vessels will be encouraged or may be required, as a condition of port entry, to report beyond this area to facilitate traffic management within the VTS area.

VTS Special Area means a waterway within a VTS area in which special operating requirements apply.

VTS User means a vessel, or an owner, operator, charterer, master, or person directing the movement of a vessel, that is:

- (a) Subject to the Vessel Bridge-to-Bridge Radiotelephone Act; or
- (b) Required to participate in a VMRS within a VTS area (VMRS User).

VTS User's Manual means the manual established and distributed by the VTS to provide the mariner with a description of the services offered and rules in force for that VTS. Additionally, the manual may include chartlets showing the area and sector boundaries, general navigational information about the area, and procedures, radio frequencies, reporting provisions and other information which may assist the mariner while in the VTS area.

§ 161.3 Applicability.

The provisions of this subpart shall apply to each VTS User and may also apply to any vessel while underway or at anchor on the navigable waters of the United States within a VTS area, to the extent the VTS considers necessary.

§ 161.4 Requirement to carry the rules.
Each VTS User shall carry on board and maintain for ready reference a copy of these rules.

Note: These rules are contained in the applicable U.S. Coast Pilot, the VTS User's Manual which may be obtained by contacting the appropriate VTS, and periodically published in the Local Notice to Mariners. The VTS User's Manual and the World VTS Guide, an International Maritime Organization (IMO) recognized publication, contain additional information which may assist the prudent mariner while in the appropriate VTS area.

§ 161.5 Deviations from the rules.

(a) Requests to deviate from any provision in this part, either for an extended period of time or if anticipated before the start of a transit, must be submitted in writing to the appropriate District Commander. Upon receipt of the written request, the District Commander may authorize a deviation if it is determined that such a deviation provides a level of safety equivalent to that provided by the required measure or is a maneuver considered necessary for safe navigation under the circumstances. An application for an authorized deviation must state the need and fully describe the proposed alternative to the required measure.

(b) Requests to deviate from any provision in this part due to circumstances that develop during a transit or immediately preceding a transit, may be made verbally to the appropriate VTS Commanding Officer. Requests to deviate shall be made as far in advance as practicable. Upon receipt of the request, the VTS Commanding Officer may authorize a deviation if it is determined that, based on vessel handling characteristics, traffic density, radar contacts, environmental conditions and other relevant information, such a deviation provides a level of safety equivalent to that provided by the required measure or is a maneuver considered necessary for safe navigation under the circumstances.

Services, VTS Measures, and Operating Requirements

§ 161.10 Services.

To enhance navigation and vessel safety, and to protect the marine environment, a VTS may issue advisories, or respond to vessel requests for information on reported conditions within the VTS area, such as:

- (a) Hazardous conditions or circumstances;
- (b) Vessel congestion;
- (c) Traffic density;
- (d) Environmental conditions;

TABLE 161.12(b)—VESSEL TRAFFIC SERVICES (VTS) CALL SIGNS, DESIGNATED FREQUENCIES, AND MONITORING AREAS—Continued

Vessel traffic services call sign	Designated frequency ¹ (channel designation)	Monitoring area
	156.250 MHz (Ch. 5A) —	The navigable waters of the Strait of Juan de Fuca east of 124°40'W, excluding the waters in the central portion of the Strait of Juan de Fuca north and east of Race Rocks; the navigable waters of the Strait of Georgia east of 122°52'W; the San Juan Island Archipelago, Rosano Strait, Bellingham Bay, Admiralty Inlet north of a line connecting Marrowstone Point and Lagoon Point and all waters east of Whidbey Island north of a line drawn due east from the southernmost tip of Possession Point on Whidbey Island to the shoreline.
Tofino Traffic ⁶	156.725 MHz (Ch. 74) —	The waters west of 124°40'W, within 50 nautical miles of the coast of Vancouver Island including the waters north of 48°N., and east of 127°W.
Vancouver Traffic	156.550 MHz (Ch. 11) —	The navigable waters of the Strait of Georgia west of 122°52'W., the navigable waters of the central Strait of Juan de Fuca north and east of Race Rocks, including the Gulf Island Archipelago, Boundary Pass and Haro Strait.
Prince William Sound ⁴ Valdez Traffic	156.550 MHz (Ch. 13) —	The navigable waters south of 61°05'N., east of 147°20'W., north of 60°N., and west of 146°30'W.; and, all navigable waters in Port Valdez.
Louisville ⁶ Louisville Traffic	156.650 MHz (Ch. 13) —	The navigable waters of the Ohio River between McAlpine Locks (Mile 606) and Twelve Mile Island (Mile 593), only when the McAlpine upper pool gauge is at approximately 13.0 feet or above.

Notes:

¹In the event of a communication failure either by the vessel traffic center or the vessel or radio congestion on a designated VTS frequency, communications may be established on an alternate VTS frequency. The bridge-to-bridge navigational frequency, 156.650 MHz (Channel 13), is monitored in each VTS area; and it may be used as an alternate frequency, however, only to the extent that doing so provides a level of safety beyond that provided by other means.

²Designated frequency monitoring is required within U.S. navigable waters. In areas which are outside the U.S. navigable waters, designated frequency monitoring is voluntary. However, prospective VTS Users are encouraged to monitor the designated frequency.

³A Cooperative Vessel Traffic Service was established by the United States and Canada within adjoining waters. The appropriate vessel traffic center administers the rules issued by both nations; however, it will enforce only its own set of rules within its jurisdiction.

⁴Seattle Traffic may direct a vessel to monitor the other primary VTS frequency 156.250 MHz or 156.700 MHz (Channel 5A or 14) depending on traffic density, weather conditions, or other safety factors, rather than strictly adhering to the designated frequency required for each monitoring area as defined above. This does not require a vessel to monitor both primary frequencies.

⁵A portion of Tofino Sector's monitoring area extends beyond the defined CVTS area. Designated frequency monitoring is voluntary in these portions outside of VTS jurisdiction, however, prospective VTS Users are encouraged to monitor the designated frequency.

⁶The bridge-to-bridge navigational frequency, 156.650 MHz (Channel 13), is used in these VTSs because the level of radiotelephone transmissions does not warrant a designated VTS frequency. The listening watch required by §26.05 of this chapter is not limited to the monitoring area.

(c) As soon as is practicable, a VTS User shall notify the VTS of any of the following:

- (1) A marine casualty as defined in 46 CFR 4.05-1;
- (2) Involvement in the ramming of a fixed or floating object;
- (3) A pollution incident as defined in § 151.15 of this chapter;
- (4) A defect or discrepancy in an aid to navigation;
- (5) A hazardous condition as defined in § 160.263 of this chapter;
- (6) Improper operation of vessel equipment required by Part 164 of this chapter;
- (7) A situation involving hazardous materials for which a report is required by 49 CFR 176.48; and
- (8) A hazardous vessel operating condition as defined in § 161.2.

§ 161.13 VTS Special Area Operating Requirements.

The following operating requirements apply within a VTS Special Area:

- (4) A VTS User shall, if towing asters, do so with as short a hawser as safety and good seamanship permits.

(b) A VMRS User shall: (1) Not enter or get underway in the area without prior approval of the VTS;

(2) Not enter a VTS Special Area if a hazardous vessel operating condition or circumstance exists;

(3) Not meet, cross, or overtake any other VMRS User in the area without prior approval of the VTS; and

(a) Before meeting, crossing, or overtaking any other VMRS User in the area, communicate on the designated vessel bridge-to-bridge radiotelephone frequency, intended navigation movements, and any other information necessary in order to make safe passing arrangements. This requirement does not relieve a vessel of any duty prescribed by the International Regulations for Prevention of Collisions at Sea, 1972 (72 COLREGS) or the Inland Navigation Rules.

Subpart B—Vessel Movement Reporting System

§ 161.15 Purpose and intent.

(a) A Vessel Movement Reporting System (VMRS) is a system used to manage and track vessel movements

within a VTS area. This is accomplished by requiring that vessels provide information under established procedures as set forth in this part, or as directed by the VTS.

(b) To avoid imposing an undue reporting burden or unduly congesting radiotelephone frequencies, reports shall be limited to information which is essential to achieve the objectives of the VMRS. These reports are consolidated into four reports (sailing plan, position, sailing plan deviation and final).

§ 161.16 Applicability.

The provisions of this subpart shall apply to the following VMRS Users:

- (a) Every power-driven vessel of 40 meters (approximately 131 feet) or more in length, while navigating;
- (b) Every towing vessel of 8 meters (approximately 26 feet) or more in length, while navigating; or
- (c) Every vessel certificated to carry 50 or more passengers for hire, when engaged in trade.

§ 161.17 Definitions.

As used in this subpart: *Published* means available in a widely-distributed

PLEASE FILL IN APPROPRIATE SPACES AND CHECK ALL ITEMS WHICH APPLY TO THIS EVENT
NARRATIVE DESCRIPTION OF EVENT / SITUATION

Keeping in mind the topics shown below, discuss those which you think are relevant and anything else you think is important. Include what you believe really caused the problem, and what can be done to prevent a recurrence, or correct the situation. (CONTINUE ON ADDITIONAL PAPER AS NEEDED)

Type of event: _____

Date of occurrence: _____ Local time: _____

Chain of Events		Human Performance Considerations	
-How the problem arose	-How it was discovered	-Perceptions, judgments, decisions	-Actions or inactions
-Contributing factors	-Corrective actions	-Factors affecting the quality of human performance	

Fold here

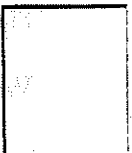
VOLUNTARY MARITIME SAFETY REPORTING SYSTEM

The U.S. Coast Guard Marine Safety Office, Harbor Safety Committee and San Francisco Bar Pilots have developed a Maritime Safety Reporting System to identify problems in the Bay Area navigation system which require correction. Your assistance in informing us about such problems is essential to the success of the program. Please fill out this form as completely as possible, fold it and send it directly to us. It is anticipated that additional pages may be necessary to adequately describe a situation.

The information you provide on the identity strip will be used only if the review panel (USCG officers, master mariners & pilots) determines that it is necessary to contact you for further information. The IDENTITY STRIP WILL BE RETURNED DIRECTLY TO YOU. The return of the identity strip assures your anonymity.

Fold here

Marine Exchange
 Fort Mason Center
 Building B, Suite 325
 San Francisco, CA 94123



U.S. Coast Guard Marine Safety Office
 C.G. Island, Building 14
 Alameda, CA 94501

Attn: Near Miss Coordinator

Reporter

- Pilot
 Master
 Officer/Crew
 VTS watch
 Other _____

Sea Service

total: _____ yrs
 last year: _____ mo.
 size of vessel: _____ grt

License/Certificates

lic: _____
 tonnage: _____
 radar: _____
 issue: _____

DESCRIBE OWN OR FIRST SHIP IN OCCURRENCE

Name: _____ Homeport: _____ Registry: _____
 Type: Dry cargo Container Bulker Tug Ferry Public Vessel Fishing
 Tanker-loaded Tanker-ballast Private-power Private-sail Other _____
 Length: _____ Draft fwd: _____ Air Draft: _____ Agent: _____
 Beam: _____ Draft aft: _____ Tonnage: _____ grt _____ net
 Propulsion: engine type _____ Horsepower: _____
 propeller type _____ direction of rotation L/R Thruster: _____
 Speed @ dead slow ahead _____, slow ahead _____, half ahead _____, full ahead _____
 Other speed comments: _____

*Fold here***DESCRIBE OTHER OR 2ND SHIP IN OCCURRENCE**

Name: _____ Homeport: _____ Registry: _____
 Color: _____ Approx. size: _____
 Type: Dry cargo Container Tanker Bulker Tug Ferry Public Vessel
 Fishing Private-power Private-sail Other: _____
 Length: _____ Description: _____

Environmental Factors

- Clear
 Rain
 Fog
 Other (specify) _____

Time

- Daylight
 Twilight
 Night

Visibility

- Good
 Fair
 Poor

Air Temp: _____ (F)

Wind Sp./Dir. _____

Current Sp./Dir. _____

Distance: _____ miles.

Navigation Information

- Moored/docked Drifting
 Anchored Making way

Course: _____

Speed: _____

Position: _____*Fold here*

Identification Strip: Please fill in all blanks. This section will be returned to you promptly.

NO RECORD WILL BE KEPT OF YOUR IDENTITY

Telephone numbers where we may reach you for further details of this occurrence:

(Home) () - _____ Hours: _____

(Work) () - _____ Hours: _____

Name: _____

Type of event: _____

Address: _____

Date of Occurrence: _____

Local time: _____

Except for reports of vessel accidents and criminal activities - which are not included in the Voluntary Maritime Safety Reporting System and should not be reported with this form - all identities contained in this report will be removed to assure complete reporter anonymity

Appendix D

VESSEL ACCIDENTS AND NEAR MISSES

Compiled by U.S.C.G. VTS San Francisco

The attached is a list of vessel accidents and near misses reported to, or observed by, Coast Guard Vessel Traffic Service San Francisco during calendar year 1994. The list is not necessarily complete since it does not contain unreported incidents which occurred beyond VTS's surveillance area.

The term "collision" refers to moving vessels which collide. The term "ramming" refers to a moving vessel that collides with a stationary vessel (e.g., moored or anchored) or structure (e.g., pier or bridge).

VESSEL ACCIDENTS

GROUNDINGS:

Merchant Ships: 4
Other: 0

ENGINE FAILURES:

Merchant Ships: 4
Other: 2

STEERING CASUALTIES:

Merchant Ships: 2
Other: 2

GROUNDINGS:

01/12/94: While transiting San Pablo Bay downbound for anchorage nine the tanker PRESIDENT ran aground south of San Pablo Bay Channel Light 5. Tugs were used to free the vessel. There was no reported damage to the vessel.

01/12/94: While transiting Pinole Shoal Channel downbound for anchorage nine the tanker GEORGE H. WEYERHAUSER ran aground between markers 10 & 12. The vessel was freed and continued its transit to anchorage nine. There was no reported damage to the vessel.

03/27/94: While upbound for Pittsburg the bulk carrier DELTA PRIDE ran aground near Martinez. The vessel had also suffered an engine failure. Engine power was restored and the vessel was freed quickly. It continued the transit to Pittsburg with a tug escort. There was no reported damage to the vessel.

08/05/94: While downbound the bulk carrier VIENNA WOOD ran aground just north of the Souther Pacific Railroad bridge. The vessel was freed with tug assistance and proceeded to anchorage nine. There was no reported damage to the vessel.

ENGINE FAILURES:

01/16/94: While inbound in the vicinity of Mile Rocks the bulk carrier NATIONAL HONOR twice lost engine power. Power was quickly restored in both cases. The vessel continued its transit to pier 80 with two tugs escorting.

07/31/94: While approaching the pilot area inbound the bulk carrier BALTIMAR APOLLO lost engine power. A SF bar pilot went aboard and soon reported that the vessel had ahead propulsion, but not astern. The vessel was permitted to transit to anchorage nine with two tugs escorting.

08/23/94: While in the process of anchoring in anchorage seven the bulk carrier HUA TONG HAI lost power and started drifting out

of the anchorage to the west. The pilot dropped the anchor and called for a tug. Power was soon restored and the vessel re-anchored within the anchorage.

09/03/94: While approaching the AAA Shipyard the USNS CAPE ORLANDO lost engine power. The vessel was taken in flat tow by the escort tugs and moored at the shipyard.

11/22/94: While inbound in the eastbound lane southwest of Alcatraz Island the container ship PRESIDENT JACKSON suffered engine control problems. The vessel may have lost propulsion if it slowed. After making two circles around the central bay the vessel corrected the problem and proceeded to Oakland berth 61.

12/19/94: While upbound approaching the Oakland Bay bridge the LASH vessel AMERICAN KESTREL lost engine power. The vessel was turned south and returned to anchorage fourteen with tugs escorting it.

STEERING CASUALTIES:

03/07/94: While in the vicinity of Fort Mason the sailing vessel WIND AND WAVE lost steering in the eastbound traffic lane. The vessel was able to correct the steering problem then anchored near the Presidio before returning to Sausalito.

08/16/94: While inbound at the pilot area the tanker CHEVRON PACIFIC suffered a steering casualty. The vessel switched to an alternate steering unit and proceeded to Richmond Long Wharf with a tug escort.

08/18/94: While outbound approaching the Golden Gate bridge the container ship SEALAND RELIANCE suffered a steering casualty. The vessel anchored between Mile Rocks and the Main Ship Channel north of the outbound lane. With a tug standing by the vessel affected repairs before continuing to sea.

08/31/94: While inbound approaching Mile Rocks the Coast Guard Cutter BOUTWELL suffered a steering casualty. The casualty was soon corrected and the vessel continue to anchorage seven.

Type "A" INCIDENTS: Near collisions/collisions between commercial vessels.

None reported.

Type "B" INCIDENTS: Near collisions/collisions between commercial vessels and fishing vessels or pleasure craft.

01/18/94: An inbound container ship collided with a fishing vessel just west of the Golden Gate Bridge. The fishing vessel sank and two lives were lost.

01/29/94: An outbound fishing vessel near Lime Point passed closely astern of an outbound tanker and ahead of the tanker's escort tug. The escort tug was forced to reverse engines and sounded the danger signal. The tanker also sounded the danger signal.

06/08/94: An inbound tanker near the Golden Gate Bridge was forced to sound the danger signal and make speed and course changes to avoid a sailing vessel steering towards it.

10/02/94: A tanker in the vicinity of the North Channel ALPHA buoy bound for the Richmond Long Wharf collided with a sailing vessel. The two persons aboard the sailing vessel went overboard and were recovered uninjured. There were no reports of vessel damage.

10/23/94: A sailing vessel in the vicinity of Yellow Bluff collided with an inbound tanker. The sailing vessel's mast was damaged. There was no report of damage to the tanker.

Casualty Risk (CASRISK) Reports

Appendix E

Below are reports generated from the CASRISK data base. The criteria was to generate reports for collisions, groundings(accidental), allisions, and loss of vessel control. The area covered was San Francisco Bay only and the data is broken down by year.

COLLISIONS

	1990	1991	1992	1993	1994
Tankships (Tankers)	01/03*	00/02*	01/00*	01/02*	00/01*
Freight Ships	00/07*	00/01*	03/00*	00/05*	02/00*

GROUNDINGS (Accidental)

	1990	1991	1992	1993	1994
Tankships (Tankers)	02/00*	02/00*	00/01*	01/00*	03/00*
Freight Ships	00/04*	03/01*	03/01*	01/00*	02/00*

ALLISIONS

	1990	1991	1992	1993	1994
Tankships (Tankers)	00/00*	01/01*	01/00*	02/00*	01/00*
Freight Ships	01/00*	01/00*	00/00*	00/00*	04/01*
Tow	04/01*	02/00*	03/00*	03/00*	02/00*
Passenger	00/00*	00/00*	00/00*	01/00*	01/00*

LOSS OF VESSEL CONTROL

	1990	1991	1992	1993	1994
Tankships (Tankers)	03	04	03	07	02
Freight Ships	05	14	03	02	08

= "ACTUAL"/"INCIDENTS"

THE UNIVERSITY OF CHICAGO

NAME	ADDRESS	CITY	STATE	ZIP	PHONE
ALBERT EINSTEIN	195 RIVINGTON ST	ALBANY	NY	12206	518 486 1234
MARY FERRELL	100 N WASHINGTON	ALBANY	NY	12206	518 486 5678
JOHN EDGAR HOOVER	400 MICHIGAN	ANN ARBOR	MI	48106	313 763 1234
ROBERT H. ROSEN	375 UNIVERSITY	ANN ARBOR	MI	48106	313 763 5678
ALBERT EINSTEIN	195 RIVINGTON ST	ALBANY	NY	12206	518 486 1234
MARY FERRELL	100 N WASHINGTON	ALBANY	NY	12206	518 486 5678
JOHN EDGAR HOOVER	400 MICHIGAN	ANN ARBOR	MI	48106	313 763 1234
ROBERT H. ROSEN	375 UNIVERSITY	ANN ARBOR	MI	48106	313 763 5678

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MARY FERRELL	100 N WASHINGTON	ALBANY	NY	12206	518 486 5678
JOHN EDGAR HOOVER	400 MICHIGAN	ANN ARBOR	MI	48106	313 763 1234
ROBERT H. ROSEN	375 UNIVERSITY	ANN ARBOR	MI	48106	313 763 5678

CASRISK Codes and Definitions Guide

As CASRISK data is entered using category codes, use this guide to translate a printed CASRISK report.

Service: Gives type of vessel involved in incident

COM- COMMERCIAL	PNTK- PUBLIC TANK SHIP/BARGE
FISH- FISHING VESSEL	POTH- PUBLIC VESSEL, UNCLASSIFIED
FRTB- FREIGHT BARGE	REC- RECREATIONAL VESSEL
FRTS- FREIGHT SHIP	RES- RESEARCH VESSEL
INDS- INDUSTRIAL VESSEL	SCOL- SCHOOL SHIP
TOW- TUGBOAT/TOWBOAT	TNKB- TANK BARGE
OR- OIL RECOVERY VESSEL	TNKB- TANK BARGE "OD"
OSV- OFFSHORE SUPPLY VSL	TNKB- TANK BARGE "OI"
OTEC- OTEC	TNKS- TANKSHIP
PASS- PASSENGER	MODU- MOBILE OFFSHORE DRILL UNIT
PASB- PASSENGER BARGE	UNC- UNCLASSIFIED VESSEL
PFRT- PUBLIC FREIGHT	

LOCATION: Gives location of incident using MSIS letter codes. There are many letter codes for specific areas. For the purpose of the San Francisco area the following are the most frequently used codes. For other codes it will be necessary to look them up.

PIBS- SAN FRANCISCO BAY
XXXNW- NAVIGABLE WATERS, NO OTHER CATEGORY
XXX- NON WATERBODY
PIRSA- SACRAMENTO RIVER
PCN- NORTH PACIFIC, COASTAL
PON- NORTH PACIFIC OCEAN
FXX- NOT SPECIFIED, FOREIGN

RESULT, AND PRIMARY AND SECONDARY REASON CODES: For each type of incident there is a two letter "result" code, again using the MSIS code. For each type of result there is list of primary reason and secondary reason codes. These reason codes further define the "result", and may not reflect the exact cause of the event, but assist in determining what happened. It is important to note that choosing these categories is reflected by many factors and investigators interpretation; therefore incident that may appear similar could have different codes assigned.

* NOTE THE FOLLOWING CODES ARE ALSO VALID AS PRIMARY AND SECONDARY CODES FOR MANY OF THE REASON (INCIDENT) CODES:

EF- EQUIPMENT FAILURE
HF- HUMAN FAILURE
HM- HAZARDOUS MATERIAL
WX- WEATHER

* **FOR NEAR MISS INCIDENTS:** A NEAR MISS INCIDENT IS CLASSIFIED BY GIVING A RESULT CODE, A PRIMARY CODE AND THE CODE XXX AS THE SECONDARY CODE. IF AN EVENT HAS XXX AS THE SECONDARY CODE IT WAS A NEAR MISS, THE EVENT ALMOST HAPPENED, BUT DID NOT.

**RESULT CODE
(type of event)**

VALID PRIMARY CODES VALID SECONDARY CODES

AL- ALLISION

CRO- CROSSING
MTG- MEETING
OVT- OVERTAKING
HF- HUMAN FACTORS
EF- EQUIP. FAILURE
WX- WEATHER

FUL- FUL
NEC- NO OTHER CATEGORY
NO- NO CONTROL
OVC- OTHER VESSEL CONTROL
PRC- PARTIAL
XXX- NEAR MISS

AB-
ABANDONMENT

FOR- FORCED
PRE- PRECAUTIONARY

PAR- PARTIAL
TOT- TOTAL
NEC- NO OTHER CATEGORY

CA- CAPSIZE

SUD- SUDDEN
PRG- PROGRESSIVE
HF- HUMAN FACTORS
EF- EQUIP FAILURE
WX- WEATHER

CSH- CARGO SHIFT
DEL- DECK LOADING
DWC- DECK WATER CAPTURE
IFL- INTERNAL FLOODING
NEC- NO OTHER CATEGORY
OVR- OVERRIDDEN
OSW- OVERWHELMED WIND/SEA
TRI- TRIPPED
VWM- VESSEL MODIFICATIONS

CO- COLLISION

CRO- CROSSING
MTG- MEETING
OVT- OVERTAKING
EF- EQUIP FAILURE
HF- HUMAN FACTORS
WX- WEATHER

FUL- FULL CONTROL
NEC- NO OTHER CATEGORY
NOC- NO CONTROL
OVC- OTHER VSL CONTROL
PRC- PARTIAL CONTROL
XXX- NEAR MISS

EI- EXPLOSION
INCINERATION

INI- INITIAL
SEC- SECONDARY
EF- EQUIP FAILURE

AFT- AFT AREA
BOW- BOW
CSP- CARGO SPACES
FWD- FORWARD AREA
LIV- LIVING SPACES
MID- MIDBODY
MUL- MULTIPLE AREAS
NAV- NAVIGATION SPACES
NEC- NO OTHER CATEGORY
STE- STERN

EP- EXPLOSION
PRESSURE
VESSEL

INI- INITIAL
SEC- SECONDARY

HEA- HEAT
MEC- MECHANICAL
NEC- NO OTHER CATEGORY
SLF- SELF REACTIVE

RESULT CODE (type of event)	VALID PRIMARY CODES	VALID SECONDARY CODES
FI- FIRE	BRO- BURNED OUT CTR- CONTROLLED EXT- EXTINGUISHED INI- INITIAL UNC- UNCONTROLLED	AFT- AFT AREA BOW- BOW CSP- CARGO SPACES FWD- FORWARD AREA LIV- LIVING SPACES MID- MIDBODY MUL- MULTIPLE AREAS NAV- NAVIGATION SPACES NEC- NO OTHER CATEGORY STE- STERN
FL- FLOODING	DEW- DEWATERED CTR- CONTROLLED PRG- PROGRESSIVE INI- INITIAL UNC- UNCONTROLLED EF- EQUIP. FAILURE WX- WEATHER	AFT- AFT AREA BOW- BOW CSP- CARGO SPACES FWD- FORWARD AREA LIV- LIVING SPACES MID- MIDBODY MUL- MULTIPLE AREAS NAV- NAVIGATION SPACES NEC- NO OTHER CATEGORY STE- STERN
GA- GROUNDING ACCIDENTAL	INC- IN CHANNEL OOC- OUT OF CHANEL EF- EQUIP FAILURE HF- HUMAN FACTORS WX- WEATHER	FUL- FULL CONTROL NEC- NO OTHER CATEGORY NOC- NO CONTROL OVC- OTHER VESSEL CONTROL PRC- PARTIAL CONTROL XXX- NEAR MISS
GA- GROUNDING INTENTIONAL	INC- IN CHANNEL OOC- OUT OF CHANNEL HF- HUMAN FACTORS	FUL- FULL CONTROL NEC- NO OTHER CATEGORY NOC- NO CONTROL OVC- OTHER VESSEL CONTROL PRC- PARTIAL CONTROL
LE- LOSS OF ELECTRICAL POWER	AUX- AUXILIARY EMG- EMERGENCY	PAR- PARTIAL RES- RESTORED TOT- TOTAL NEC- NO OTHER CATEGORY
LV- LOSS OF VESSEL CONTROL	PRP- PROPULSION PRS- PROP/STEER STE- STEERING	PAR- PARTIAL RES- RESTORED TOT- TOTAL NEC- NO OTHER CATEGORY
SI- SINKING	PRG- PROGRESSIVE SUD- SUDDEN	XXX- NEAR MISS EF- EQUIP FAILURE

RESULT CODE VALID PRIMARY CODES VALID SECONDARY CODES

(type of event)
SF- STRUCTURAL
FAILURE

CL1- CLASS ONE
CL2- CLASS TWO
CL3- CLASS THREE
STR- STRUCT DAMAGE

DEC- DECK
FRA- FRAME
HUL- HULL
KEL- KEEL
LNG- LONGITUDINAL
WTB- WATERTIGHT BULKHEAD

LV- LIVING SPACES
MD- MIDDY
MUL- MULTIPLE AREA
NAV- NAVIGATION SPACES
NEC- NO OTHER CATEGORY

AFT- AFT AREA
BOW- BOW
CSP- CARGO SPACES
FWD- FORWARD AREA
LV- LIVING SPACES
MD- MIDDY
MUL- MULTIPLE AREA
NAV- NAVIGATION SPACES
NEC- NO OTHER CATEGORY
STR- STRA

FUL- FULL CONTROL
NEC- NO OTHER CATEGORY
NOU- NO CONTROL
OVC- OTHER VESSEL CONTROL
PRC- PARTIAL CONTROL
XY- HEAD MISC

FA- FALL DOWN
FAC- FALL OVER
FAL- FALL IN
FAT- FALL ON

WAT- WATER
WAT- WATER
WAT- WATER

PAR- PARTIAL
PER- PER
TOL- TOL

XY- HEAD MISC
ZZ- BOW FALL

DEW- DEWATER
DIA- DIA
PRG- PROGRESSIVE
INI- INITI
UNC- UNCONTROLLED
EQ- EQUIP FAILURE
WV- WATERTIGHT

INC- IN CHANNEL
OOC- OUT OF CHANNEL
EQ- EQUIP FAILURE
WAT- WATERTIGHT

WV- WATERTIGHT

WAT- WATER

PAR- PARTIAL
PER- PER
TOL- TOL

XY- HEAD MISC
ZZ- BOW FALL

GA- GROUNDING
ACCIDENTA

WV- WATERTIGHT

WAT- WATER

PAR- PARTIAL
PER- PER
TOL- TOL

XY- HEAD MISC
ZZ- BOW FALL

1/25/95

Marine Casualty Report from: 01/01/94 to 12/31/94

SearchCriteria :

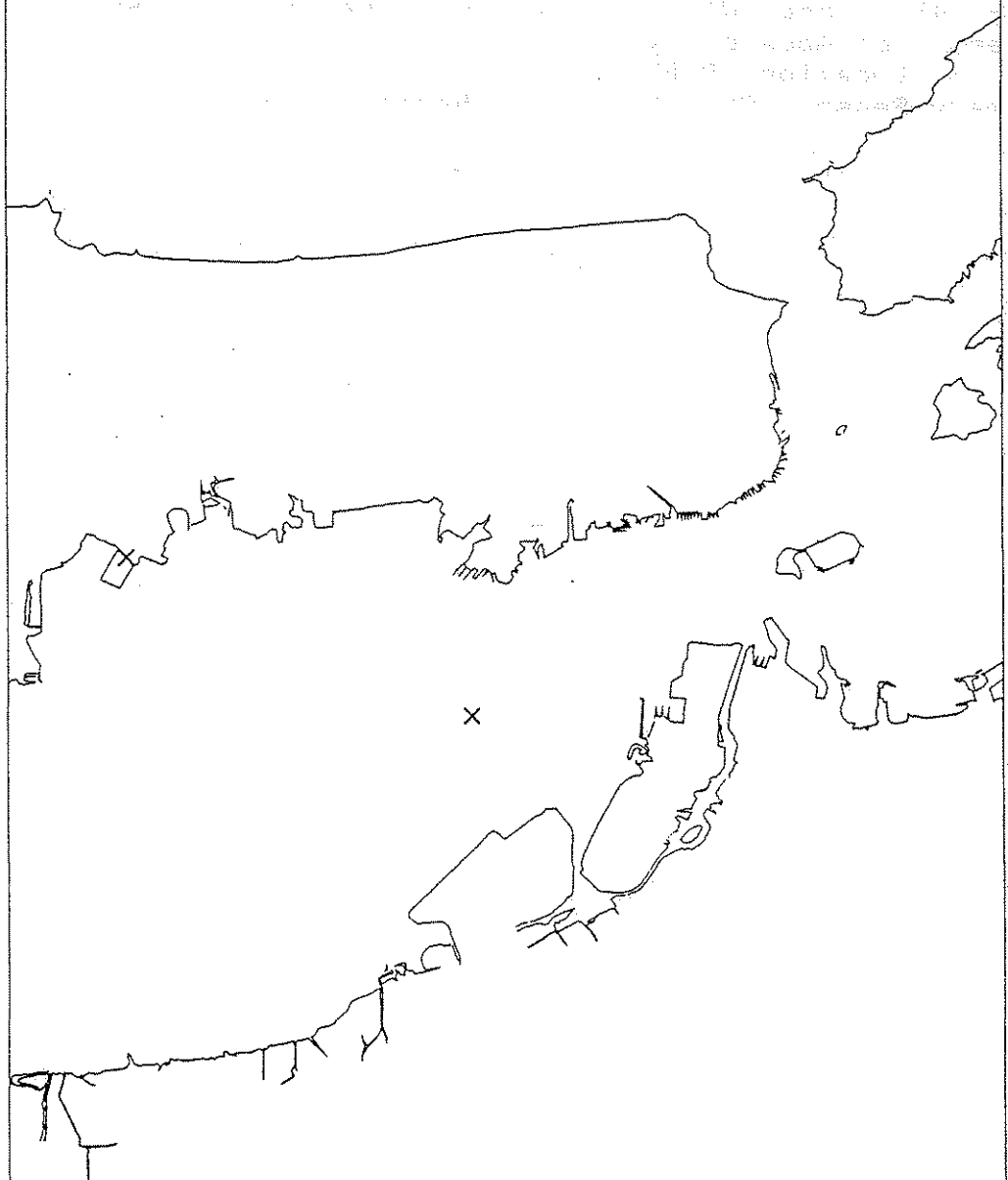
Result
Service
Location

LOSS OF VESSEL CONTROL

Rec. No: 00655 Date: 03/10/94 Case Number (MC, MV, etc): MC94009005
Flag: US Lat: N37-37.0 Long: W122-22.0 Vessel Name: SEA RIVER GALVESTON
Over 1600GT?: yes Pilot Aboard?: no
Service: TNKS Location: PIBS
Result: LV Primary Reason: PRF Secondary Reason: PAR

Rec. No: 00629 Date: 04/28/94 Case Number (MC, MV, etc): MC94011695
Flag: US Lat: N37-43.1 Long: W122-18.0 Vessel Name: ATIGUN PASS
Over 1600GT?: yes Pilot Aboard?: yes
Service: TNKS Location: PIBS
Result: LV Primary Reason: STE Secondary Reason: EF*

UNITED STATES AIR FORCE
OFFICE OF THE SECRETARY
WASHINGTON, D.C. 20330
ATTENTION: AIR FORCE SECRETARY
MAIL ROOM
MAIL STOP 3000
WASHINGTON, D.C. 20330



TNKS LV 1994 :SFBAY.VU

01/25/95

Airline Casualty Report from: 01/01/94 to 12/31/94

SearchCriteria :

Result:
Service
Location

LOSS OF VESSEL CONTROL

Rec. No: 00607 Date: 01/25/94 Case Number (MC, MV, etc): MC94003940
Flag: GR Lat: N37-47.8 Long: W122-17.5 Vessel Name: TOPAZ
Over 1600GT?: yes Pilot Aboard?: yes
Service: FRTS Location: FIBS
Result: LV Primary Reason: PRP Secondary Reason: HF*

Rec. No: 00621 Date: 04/01/94 Case Number (MC, MV, etc): MC94007017
Flag: LI Lat: N37-46.5 Long: W122-37.8 Vessel Name: GOLD BOND TRAILBLAZER
Over 1600GT?: yes Pilot Aboard?: yes
Service: FRTS Location: FIBS
Result: LV Primary Reason: PRP Secondary Reason: EF*

Rec. No: 00638 Date: 06/13/94 Case Number (MC, MV, etc): MC94012426
Flag: LI Lat: N37-48.0 Long: W122-16.0 Vessel Name: KEN SUN
Over 1600GT?: yes Pilot Aboard?: yes
Service: FRTS Location: FIBS
Result: LV Primary Reason: PRP Secondary Reason: TOT

Rec. No: 00648 Date: 06/16/94 Case Number (MC, MV, etc): MC94014878
Flag: US Lat: N37-52.9 Long: W122-24.0 Vessel Name: SEALAND NAVIGATOR
Over 1600GT?: yes Pilot Aboard?: no
Service: FRTS Location: FIBS
Result: LV Primary Reason: EF* Secondary Reason: EF*

Rec. No: 00652 Date: 08/18/94 Case Number (MC, MV, etc): MC94017266
Flag: US Lat: N37-49.8 Long: W122-27.7 Vessel Name: SEALAND RELIANCE
Over 1600GT?: yes Pilot Aboard?: yes
Service: FRTS Location: FIBS
Result: LV Primary Reason: STE Secondary Reason: EF*

Rec. No: 00657 Date: 08/23/94 Case Number (MC, MV, etc): MC94019426
Flag: CH Lat: N37-50.0 Long: W122-22.1 Vessel Name: HUA TONG HAI
Over 1600GT?: yes Pilot Aboard?: yes
Service: FRTS Location: FIBS
Result: LV Primary Reason: PRP Secondary Reason: RES

Rec. No: 00649 Date: 09/03/94 Case Number (MC, MV, etc): MC94018612
Flag: US Lat: N37-43.1 Long: W122-21.4 Vessel Name: CAPE ORLANDO
Over 1600GT?: yes Pilot Aboard?: yes
Service: FRTS Location: FIBS
Result: LV Primary Reason: PRP Secondary Reason: PAR

1/25/95

Airline Casualty Report from: 01/01/94 to 12/31/94

Search Criteria :

Result

Service

Location

LOSS OF VESSEL CONTROL

Acc. No: 00662 Date: 09/15/94 Case Number (MC, MV, etc): MC94019696

Flag: US Lat: N37-43.0 Long: W122-18.0 Vessel Name: PRESIDENT F.D. ROOSEVELT

Over 1600GT?: yes Pilot Aboard?: no

Service: FRTS Location: PIBS

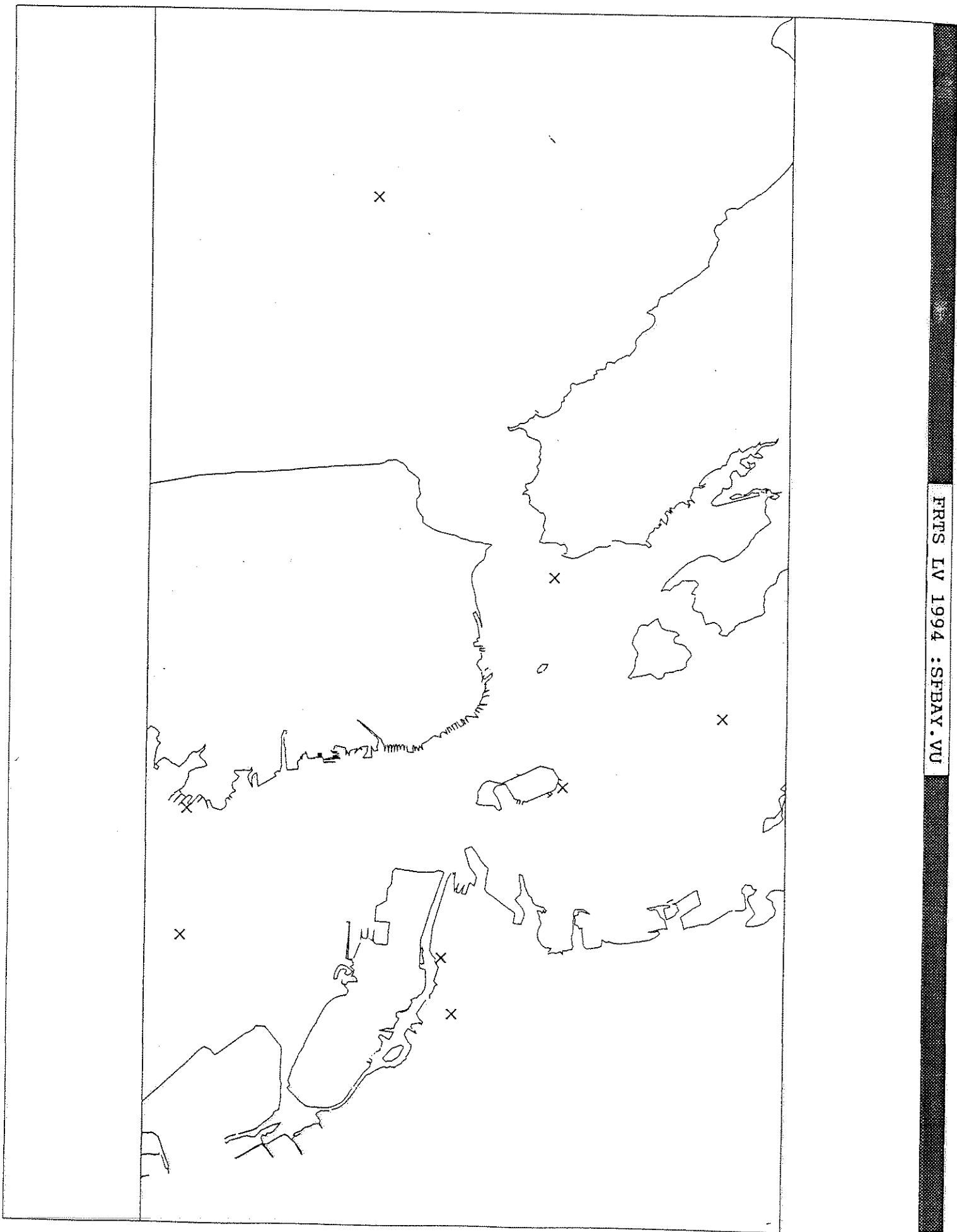
Result: LV Primary Reason: EF* Secondary Reason: EF*

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FRTS LV 1994 : SFBAY.VU



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01/25/95

Marine Casualty Report from: 01/01/94 to 12/31/94

SearchCriteria :

Result

Service

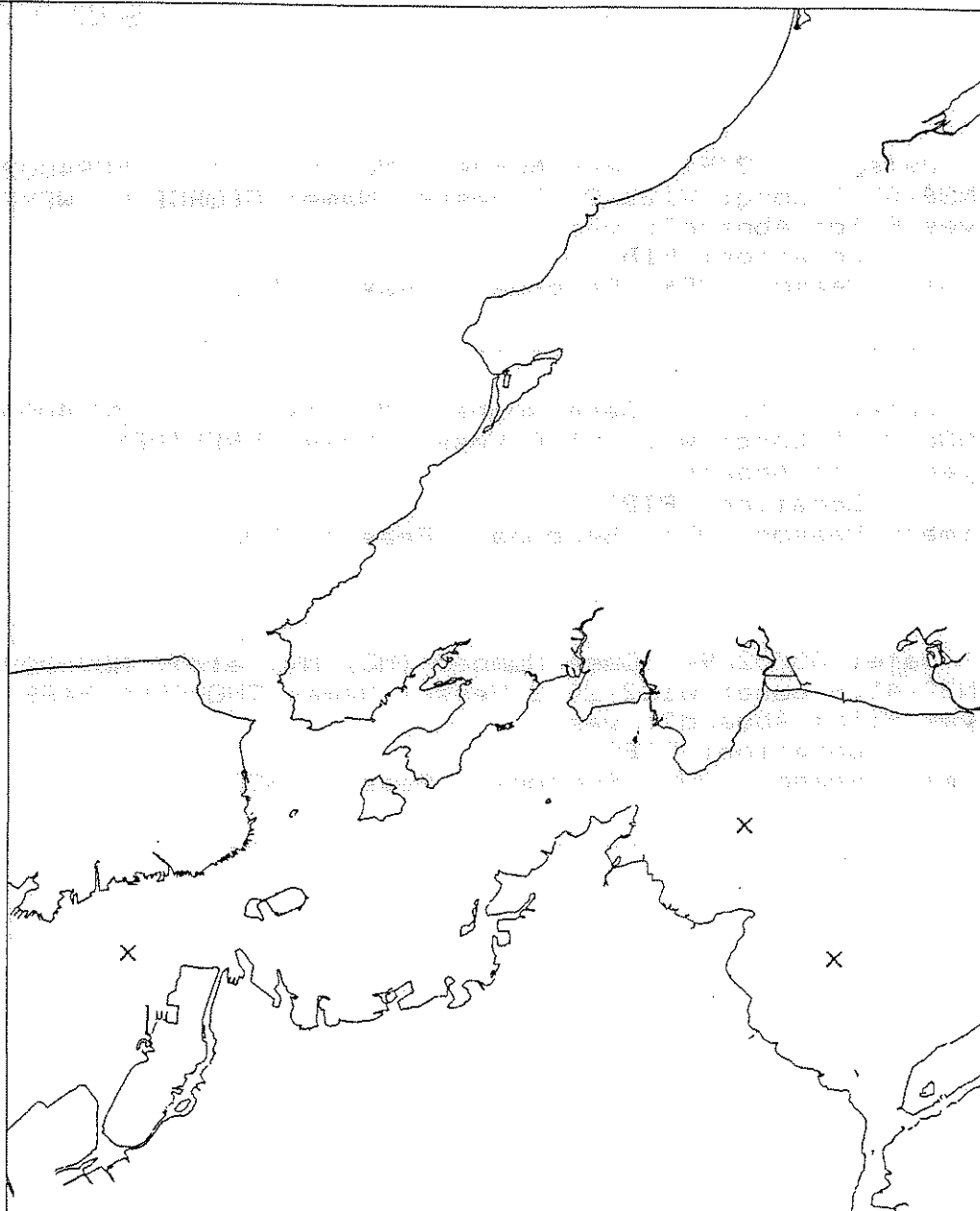
Location

GROUNDINGS

Rec. No: 00601 Date: 01/12/94 Case Number (MC, MV, etc): MC94002129
Flag: BF Lat: N38-02.7 Long: W122-20.3 Vessel Name: GEORGE H. WEYERHAUSER
Over 1600GT?: yes Pilot Aboard?: yes
Service: TNKS Location: PIBS
Result: GA Primary Reason: HF* Secondary Reason: FUL

Rec. No: 00602 Date: 01/12/94 Case Number (MC, MV, etc): MC94000842
Flag: FN Lat: N38-00.5 Long: W122-25.0 Vessel Name: PRESIDENT
Over 1600GT?: yes Pilot Aboard?: yes
Service: TNKS Location: PIBS
Result: GA Primary Reason: HF* Secondary Reason: FUL

Rec. No: 00631 Date: 05/02/94 Case Number (MC, MV, etc): MC94009826
Flag: US Lat: N37-45.6 Long: W122-20.3 Vessel Name: THOMPSON PASS
Over 1600GT?: yes Pilot Aboard?: yes
Service: TNKS Location: PIBS
Result: GA Primary Reason: OOC Secondary Reason: NOC



TNKS GA 1994 : SFBAY . VU

01/25/95

Marine Casualty Report from: 01/01/94 to 12/31/94

SearchCriteria :

Result

Service

Location

GROUNDINGS

Rec. No: 00642 Date: 07/19/94 Case Number (MC, MV, etc): MC94015528

Flag: LI Lat: N38-01.0 Long: W121-48.5 Vessel Name: MELVIN H. BAKER

Over 1600GT?: yes Pilot Aboard?: no

Service: FRTS Location: PIBS

Result: GA Primary Reason: ODC Secondary Reason: NEC

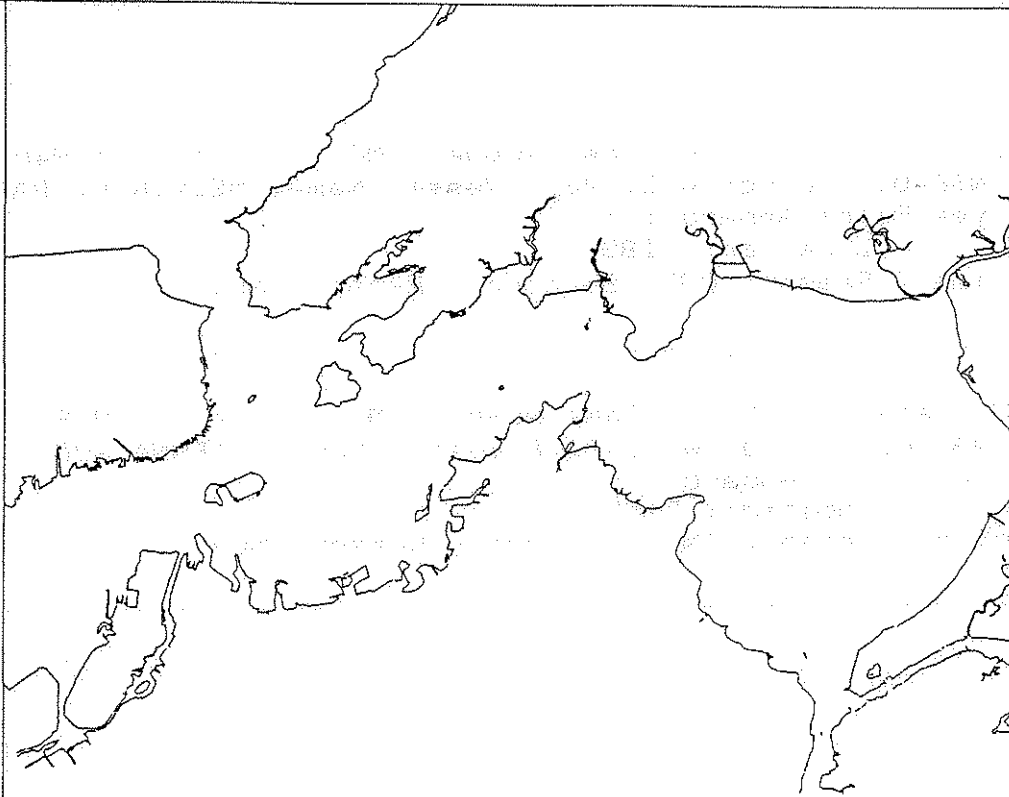
Rec. No: 00688 Date: 08/05/94 Case Number (MC, MV, etc): MC94016301

Flag: VC Lat: N38-02.5 Long: W122-06.8 Vessel Name: VIENNA WOOD

Over 1600GT?: yes Pilot Aboard?: yes

Service: FRTS Location: PIBS

Result: GA Primary Reason: INC Secondary Reason: NDC



FRTS GA 1994 :SFBAY.VU

01/25/95

Marine Casualty Report from: 01/01/94 to 12/31/94

SearchCriteria :

Result

Service

Location

COLLISION

Rec. No: 00537 Date: 01/29/94 Case Number (MC, MV, etc): VTS 94-007

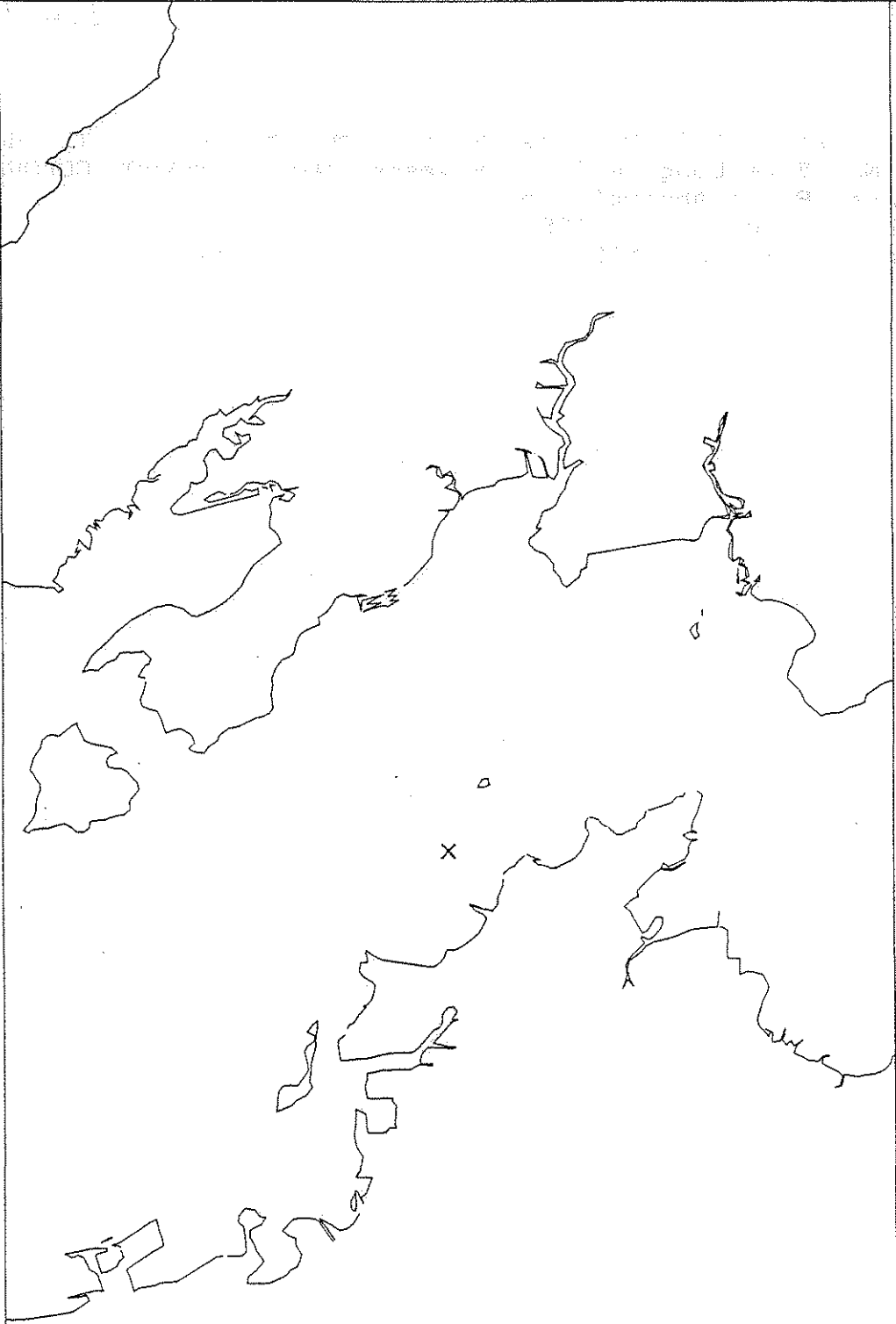
Flag: XX Lat: N37-55.4 Long: W122-24.8 Vessel Name: CHEVRON COLORADO

Over 1600GT?: yes Pilot Aboard?: yes

Service: TNKS Location: PIRS

Result: CU Primary Reason: MTG Secondary Reason: XXX

by: (16) 1001 30 4444



TNKS CO 1994 : SFBAY.VU

01/25/95

Marine Casualty Report from: 01/01/94 to 12/31/94

SearchCriteria :

Result

COLLISION

Service

Location

Rec. No: 00630 Date: 04/30/94 Case Number (MC, MV, etc): MC94008959

Flag: KO Lat: N37-47.5 Long: W122-17.5 Vessel Name: CHOYANG GLORY

Over 1600GT?: yes Pilot Aboard?: yes

Service: FRTS Location: PIBS

Result: CO Primary Reason: HF* Secondary Reason: FUL

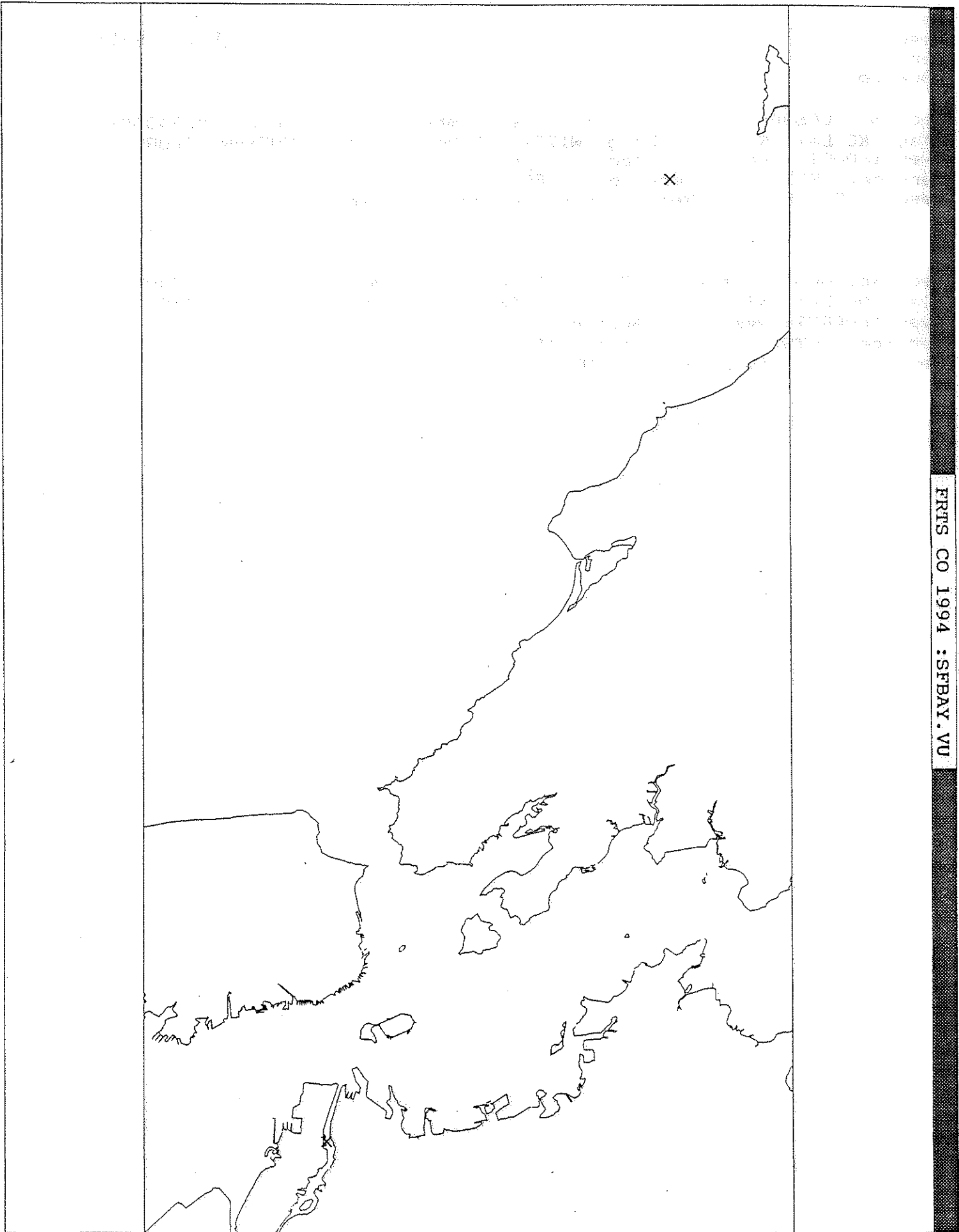
Rec. No: 00671 Date: 08/21/94 Case Number (MC, MV, etc): MC94017420

Flag: NH Lat: N37-57.0 Long: W122-56.0 Vessel Name: ORION DIAMOND /

Over 1600GT?: yes Pilot Aboard?: yes

Service: FRTS Location: PIBS

Result: CO Primary Reason: HF* Secondary Reason: HF*



FRTS CO 1994 : SFBAY . VU

01/25/95

Marine Casualty Report from: 01/01/94 to 12/31/94

SearchCriteria :

Result

Service

Location

ALLISION

Rec. No: 00635 Date: 05/18/94 Case Number (MC, MV, etc): MC94009941

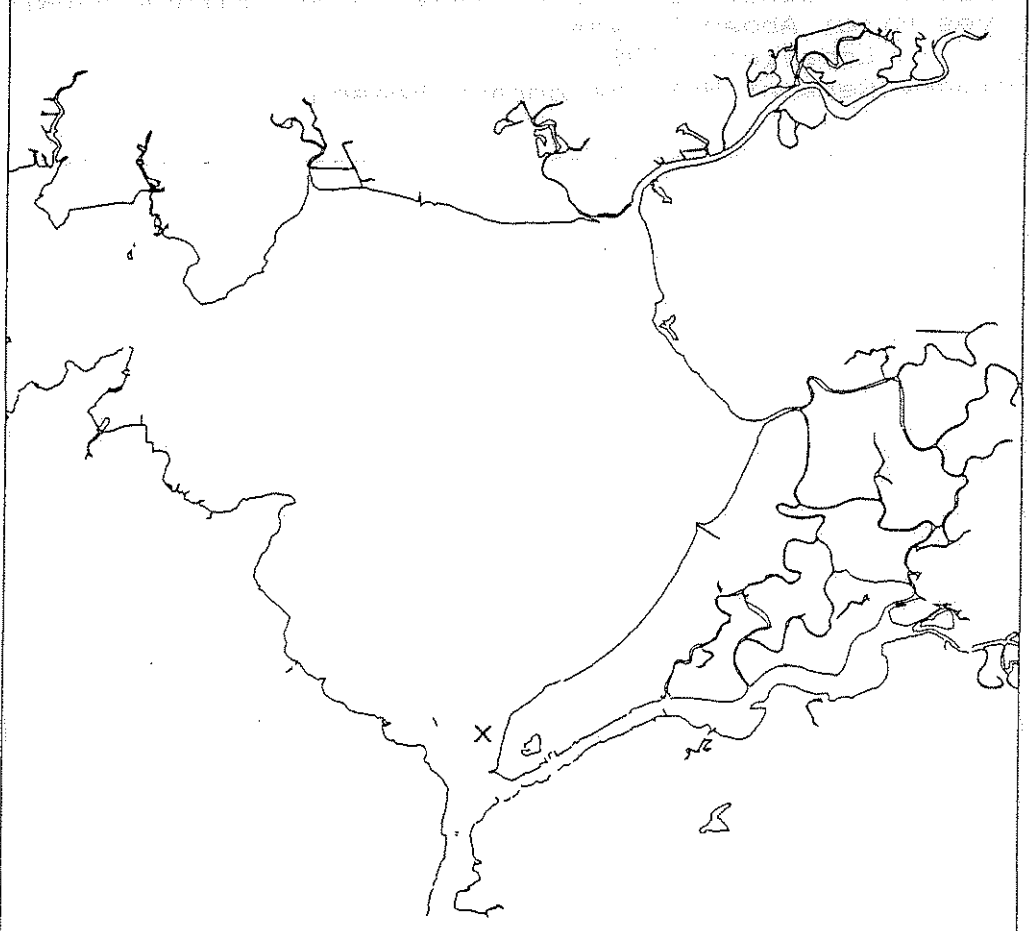
Flag: US Lat: N38-04.1 Long: W122-16.0 Vessel Name: SIERRA MADRE

Over 1600GT?: yes Pilot Aboard?: yes

Service: TNKS Location: PIBS

Result: AL Primary Reason: HF* Secondary Reason: FUL

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TNKS AL 1994 : SFBAY . VU

01/25/95

Marine Casualty Report from: 01/01/94 to 12/31/94

SearchCriteria :

Result

Service

Location

ALLISION

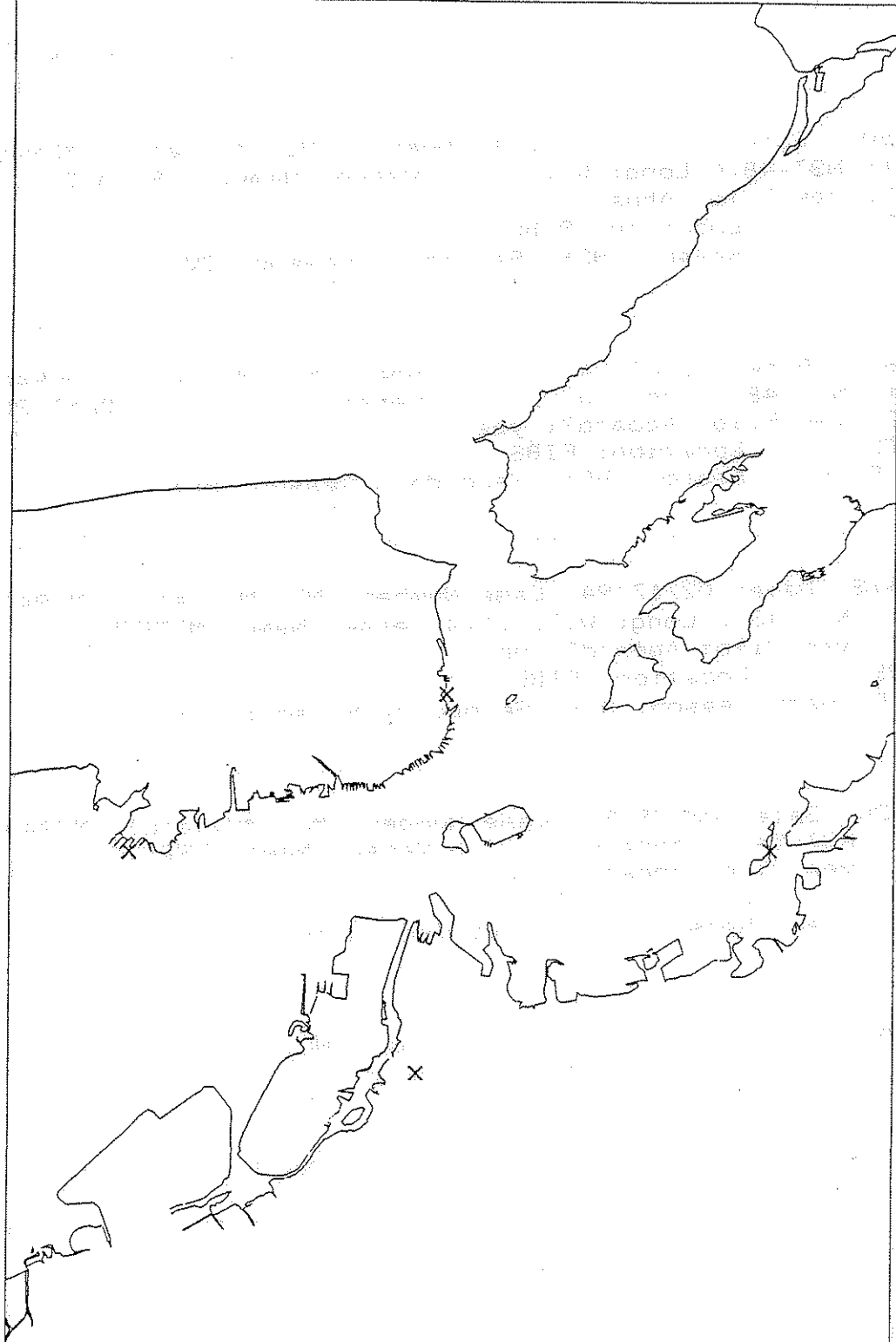
Rec. No: 00600 Date: 01/12/94 Case Number (MC, MV, etc): MC94002264
Flag: US Lat: N37-48.0 Long: W122-16.0 Vessel Name: S.S. AIDE
Over 1600GT?: yes Pilot Aboard?: no
Service: FRTS Location: PIBS
Result: AL Primary Reason: HF* Secondary Reason: OVC

Rec. No: 00610 Date: 02/02/94 Case Number (MC, MV, etc): MC94002672
Flag: US Lat: N37-48.0 Long: W122-16.0 Vessel Name: PRESIDENT POLK
Over 1600GT?: yes Pilot Aboard?: yes
Service: FRTS Location: PIBS
Result: AL Primary Reason: HF* Secondary Reason: HF*

Rec. No: 00613 Date: 02/17/94 Case Number (MC, MV, etc): MC94006197
Flag: US Lat: N37-43.1 Long: W122-21.4 Vessel Name: METEOR
Over 1600GT?: yes Pilot Aboard?: no
Service: FRTS Location: PIBS
Result: AL Primary Reason: WX* Secondary Reason: WX*

Rec. No: 00620 Date: 03/28/94 Case Number (MC, MV, etc): MC94007532
Flag: BF Lat: N37-54.0 Long: W122-21.6 Vessel Name: PRESIDIO
Over 1600GT?: yes Pilot Aboard?: yes
Service: FRTS Location: PIBS
Result: AL Primary Reason: HF* Secondary Reason: HF*

Rec. No: 00636 Date: 05/26/94 Case Number (MC, MV, etc): MC94010477
Flag: JA Lat: N37-40.5 Long: W122-25.4 Vessel Name: CENTURY LEADER NO.2
Over 1600GT?: yes Pilot Aboard?: yes
Service: FRTS Location: PIBS
Result: AL Primary Reason: HF* Secondary Reason: XXX



FRTS AL 1994 : SFBAY.VU

01/25/95

Marine Casualty Report from: 01/01/94 to 12/31/94

SearchCriteria :

Result

Service

Location

Rec. No: 00674 Date: 05/24/94 Case Number (MC, MV, etc): MC94010517

Flag: US Lat: N37-54.0 Long: W122-25.3 Vessel Name: INVADER

Over 1600GT?: no Pilot Aboard?: no

Service: TOW Location: PIBS

Result: AL Primary Reason: HF* Secondary Reason: FUL

Rec. No: 00682 Date: 06/16/94 Case Number (MC, MV, etc): MC94014265

Flag: US Lat: N38-08.0 Long: W122-17.0 Vessel Name: TUG ELLEN

Over 1600GT?: no Pilot Aboard?: no

Service: TOW Location: PIBS

Result: AL Primary Reason: HF* Secondary Reason: DVC

01/25/95

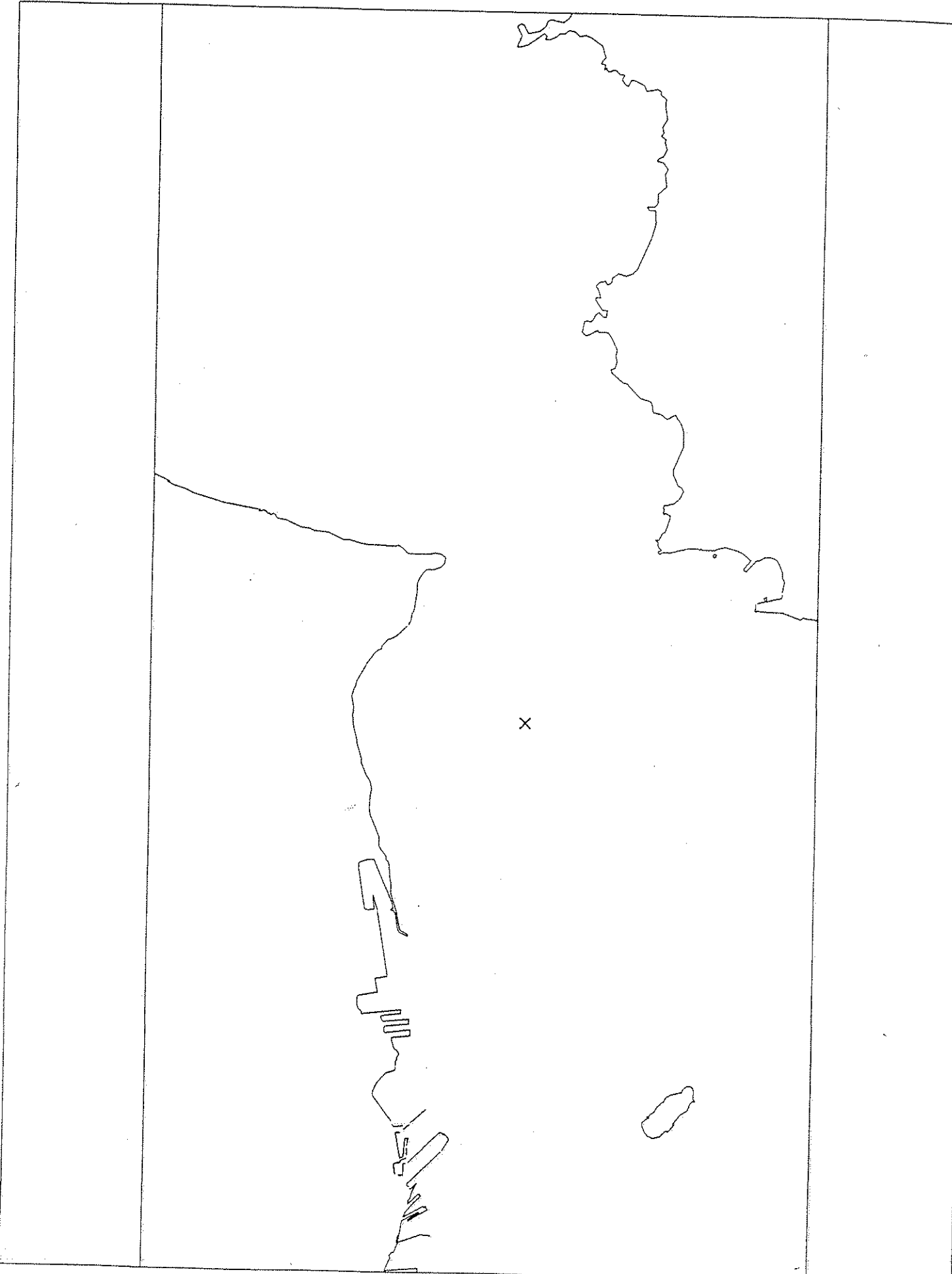
Marine Casualty Report from: 01/01/94 to 12/31/94

SearchCriteria :
Result
Service
Location

ALLISION

Rec. No: 00670 Date: 05/24/94 Case Number (MC, MV, etc): MC94010383
Flag: US Lat: N37-49.0 Long: W122-27.6 Vessel Name: GOLDEN GATE
Over 1600CT?: no Pilot Aboard?: no
Service: PASS Location: PIBS
Result: AL Primary Reason: MTG Secondary Reason: HF*

PASS AL 1994 : SFBAY . VU



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VEHICULAR BRIDGE INVENTORY: BRIDGE CLEARANCES

D. Bridge Clearances (in feet)

Area/Bridge	Type	Clearance:	Horiz.	Vert. (MHW)
<u>San Francisco Bay</u>				
Golden Gate	Suspension		4,028	232
North Tower				213
South Tower				211
<u>San Francisco-Oakland Bay Bridge</u>				
Piers A - B	Suspension		2,229	174/217
Piers B - C	Suspension		1,072	218/221
Piers C - D	Suspension		1,079	220/218
Piers D - E	Suspension		2,210	218/175
Piers G - H	Truss		1,330	184/184
<u>San Mateo-Hayward</u>				
	Fixed		660	135
<u>Richmond-San Rafael</u>				
Main Channel	Fixed		1,000	185
East Span	Fixed		465	118
<u>Oakland Inner Harbor Tidal Canal</u>				
Park Street	Bascule		241	15
Fruitvale Ave (RR)	Vertical Lift		200	13/135
Fruitvale Ave	Bascule		95	15
High Street	Bascule		244	16
<u>Channel Street (S.F.)</u>				
Third Street	Bascule		103	01
Fourth	Bascule		74	00
<u>Islais Creek (S.F.)</u>				
Third Street	Bascule		97	05
<u>Carquinez Strait</u>				
Carquinez Bridge	2 Fixed Bridges		998	
North Span	Upstream Bridge			146 (South Pier)
South Span	Downstream Bridge			134 (South Pier)
<u>Benicia-Martinez</u>				
	Fixed		440	135
<u>Southern Pacific RR</u>				
	Lift Bridge		291	70/135
<u>San Joaquin River</u>				
Antioch Bridge	Fixed		400	138

Sacramento River

Rio Vista (Rt 12)

Lift Bridge

270

144

A complete list of bridges encountered by oceangoing and small vessels may be found in Appendix J.

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VEHICULAR BRIDGE INVENTORY

VEHICULAR BRIDGE MANAGEMENT

BRIDGES ENCOUNTERED BY OCEAN GOING VESSELS

<u>BRIDGE NAME and LOCATION</u>	<u>TYPE</u>	<u>CLEARANCES</u>		<u>REMARKS</u>
		<u>Horiz/Vert</u>	<u>MLLW-MHW</u>	
1. Golden Gate Bridge, San Francisco Bay	SUS	4028 / 238-232		
2. San Francisco-Oakland San Francisco Bay, Westerly Reach	SUS			1
Span A-B, Pier A		2229 / 180-174		
Pier B		2229 / 223-217		
Span B-C, Pier B		1072 / 224-218		
Pier C		1072 / 227-221		
Span C-D, Pier C		1079 / 226-220		
Pier D		1079 / 224-218		
Span D-E, Pier D		2210 / 224-218		
Pier E		2210 / 181-175		
Span E-YB Isl, Pier E	F	870 / 176-170		
3. RICHMOND-SAN RAFAEL San Francisco Bay	F			
Main Channel, Center Span		1000 / 190-185		
Left and Right Span		480 / 173-168		
East Channel, Center Span		465 / 123-118		
4. CARQUINEZ Carquinez Strait, Vallejo	F			2
Upstream Bridge:				
South (left) Span, South Pier		998 / 141-135		
South (left) Span, North Pier		998 / 151-145		
North (right) Span, South Pier		1000 / 152-146		
North (right) Span, North Pier		1000 / 157-151		
Downstream Bridge:				
South (left) Span, South Pier		1030 / 140-134		
South (left) Span, North Pier		1030 / 150-144		
North (right) Span, South Pier		1030 / 153-147		
North (right) Span, North Pier		1030 / 150-152		
5. MARTINEZ, Highway Bridge Martinez/Benicia	F	440 / 141-135		
6. MARTINEZ, SP RR Martinez/Benicia, Raised	VL	291 / 140-135		3
Lowered		291 / 75-70		
7. ANTIOCH Antioch, CA - San Joaquin River	F	400 / 142-138		

8. RIO VISTA VL 4
 Rio Vista, CA - Sacramento River
 Raised position 270 / 149-144
 Lowered position 270 / 22-18

9. San Mateo-Hayward Bridge F 660 / 142-135

REMARKS:

1. Easterly Reach spans of the SE Oakland Bay Bridge are not generally used by large commercial vessels.
2. Both the North and South Spans of the Carquinez Bridge are equipped with Racons, marking the center of the channels.
3. The Martinez/Benicia Southern Pacific RR Bridge is manned at all times. It requires approximately 30 minutes notice for opening. Communications are effected via VHF radio (Ch. 13, 16). It is anticipated that VHF Ch. 14 will replace VHF Ch. 16 in 1996. Emergency communications can be effected by telephone (415/228-5943). Delays in opening may be encountered if a train is transiting the bridge or in case of power outage. (Starting the Emergency Generator to operate the Bridge may require approximately 15 minutes.)
4. In October, 1995, the USCG will install white pier lights on the Martinez/Benicia SPRR Bridge on a six-month test basis. If the lights are considered an asset to navigation, the USCG will require SPRR to permanently install and maintain the lights.
5. The Rio Vista Bridge is manned at all times and opens on request. Communications can be effected via VHF radio (Ch. 13, 16). Emergency communications can be effected by telephone (707/374-2134).

NOTE: For regulations regarding the operations of California Drawbridges, see the USCG California Drawbridge Regulations, published in 1986, with attached errata sheet dated 6/8/95.

TYPE OF BRIDGES LEGEND

- SUS: Suspension
- VL: Vertical Lift
- F: Fixed

VEHICULAR BRIDGE MANAGEMENT

BRIDGES ENCOUNTERED BY PLEASURE AND SMALL COMMERCIAL VESSELS

<u>BRIDGE NAME and LOCATION</u>	<u>TYPE</u>	<u>CLEARANCES</u>		<u>REMARKS</u>
		<u>Horiz/Vert</u>	<u>MLLW-MHW</u>	
1. Jersey Isl. Dutch Slough Two Higher Spans (north) Contra Costa County, CA	F	17 / 19-15		
2. Bethel Isl. Contra Costa County, CA	F	36 / 19-15		
3. Skagg Isl. Napa Slough, Vallejo, CA	F	65 / 24-19		
4. Blackpoint, Petaluma R (CANRR) ¹	SW	110 / 14-7		
5. Blackpoint SR 37 Petaluma River	F	140 / 76-70		
6. Haystack Landing Petaluma R (CANRR)	SW ²	54 / 10-4		
7. US 101, (Twin) Petaluma River	F	100 / 76-70		
8. Richardson Bay, US 101 Sausalito, CA	F	56 / 45-39		
9. San Francisco-Oakland Bay Bridge Easterly Reach	F			
Span G-H, Pier G		1330 / 190-184		
Pier H		1330 / 190-184		
Span H-I, Pier H		436 / 189-183		
Pier I		436 / 184-178		
Span I-J, Pier I		445 / 184-178		
Pier J		445 / 177-171		
Span J-K, Pier J		441 / 176-170		
Pier K		441 / 171-165		
Span K-L, Pier K		441 / 171-165		
Pier L		441 / 161-155		
Span L-M, Pier L		441 / 161-155		
Pier M		441 / 147-141		
Span M-N, Pier M		445 / 147-141		
Pier N		445 / 133-127		
10. Dumbarton Bridge San Mateo, CA	F	332 / 92-85		

11. State Route 92 San Mateo Slough	F	40 / 19-15	
12. State Route 92 San Mateo Slough	F	87 / 22-18	
13. Hillsdale Blvd. Foster City	F	48 / 20-15	Behind dike system, San Mateo
14. Sonoma Creek, SR37 Vallejo, CA	F	60 / 30-24	Slough non- navigable

NOTES:

- Listed above are fixed bridges with a vertical clearance at MHW of 15 feet or more. (Two Petaluma R. Bridges are added for mariner information.)
- For bridges with less vertical clearance, see USCG publication COMDTPUB P16590.4, Bridges Over the Navigable Waters of the U.S., Pacific Coast.

¹ California Northern RR Bridge normally stands open for navigation 1/2 mile downstream (south) of SR37.
² California Northern RR Bridge normally stands open for navigation at 250' downstream of US101.

Bay Region by organizing traffic flow patterns; reducing meeting, crossing, and overtaking situations between large vessels in constricted channels; and limiting vessel speed. This rulemaking will also remove existing regulatory language relating to the Pinole Shoal Channel which will be incorporated into the RNA.

EFFECTIVE DATE: This rule is effective on May 3, 1995.

FOR FURTHER INFORMATION CONTACT: Commander Dennis Sobek, Commanding Officer, Vessel Traffic Service San Francisco, San Francisco; telephone (415) 556-2950.

SUPPLEMENTARY INFORMATION:

Drafting Information

The principal persons involved in drafting this document are Commander Dennis Sobek, Project Manager, Vessel Traffic Service San Francisco, and Lieutenant Commander C. M. Juckniess, Project Counsel, Eleventh Coast Guard District Legal Office.

Regulatory History

On December 12, 1994, the Coast Guard published a notice of proposed rulemaking for these regulations in the Federal Register (59 FR 63947). The comment period ended February 10, 1995. The Coast Guard received four letters commenting on the proposal. A public hearing was not requested and no hearing was held.

Background and Purpose

In 1972, the Coast Guard, with input from various members of the San Francisco Bay maritime community, established voluntary vessel traffic routing measures for the San Francisco Bay region that consisted of traffic lanes in the Golden Gate and the Central Bay extending to Pinole Shoal Channel; separation zones; a precautionary area east of Alcatraz Island; and an Oakland Harbor Limited Traffic Area.

Compliance with these routing measures was voluntary and intended for use by vessels 300 gross tons or greater.

In 1991, the precautionary area east of Alcatraz Island was expanded to include the water area between the San Francisco waterfront and Treasure Island, replacing the traffic lanes in that area. A deep water route was established north of Harding Rock.

In 1993, the Coast Guard, with input from the Harbor Safety Committee of the San Francisco Bay Region, modified the voluntary traffic routing measures to better conform to International Maritime Organization (IMO) traffic routing standards. The 1993 modification added

DEPARTMENT OF TRANSPORTATION

Coast Guard

33 CFR Parts 162 and 165

[CGD11-94-007]

RIN 2115-AE84

Regulated Navigation Area; San Francisco Bay Region, CA

AGENCY: Coast Guard, DOT.

ACTION: Final rule.

SUMMARY: The Coast Guard is establishing regulated navigation areas (RNAs) within the San Francisco Bay Region in the waters of the Golden Gate, Central Bay, Lower Bay, San Pablo Bay and Carquinez Strait. This action is necessary due to vessel congestion in areas where maneuvering room is limited. These RNAs will increase navigation safety in the San Francisco

all

a Golden Gate precautionary area, a deep water traffic lane separation zone north of Harding Rock and an expanded Central Bay precautionary area. It eliminated the traffic lanes in the North Ship Channel and San Pablo Strait.

The presence of numerous recreational boats, windsurfers, and commercial fishing boats that transit the proposed RNAs poses a navigational hazard for vessels of 1600 or more gross tons which are constrained by their draft and maneuvering capabilities. By limiting or requiring the use of established traffic lanes, this rule will relieve congestion and promote safer transiting of the RNAs by vessels with restricted maneuverability. The rule makes the present voluntary traffic measures mandatory and requires vessels 1600 gross tons or more, or tugs with a tow of 1600 gross tons or more, to follow traffic measures similar to those currently used on a voluntary basis. The regulation also defines precautionary areas and establishes overtaking, meeting, crossing and speed restrictions for certain vessels transiting specific channels within the RNAs.

The RNAs, which lie within the San Francisco VTS area (33 CFR 161.50), are as follows: San Francisco Bay RNA, North Ship Channel RNA, San Pablo Strait Channel RNA, Pinole Shoal Channel RNA, Southern Pacific Railroad Bridge RNA, Southampton Shoal/Richmond Harbor RNA, and Oakland Harbor RNA.

General requirements for all RNAs. The depth of the water and geography of the San Francisco Bay Region, and the density of vessel traffic, which includes numerous ferries and recreational boats, severely constrain the ability of a vessel to maneuver in the event of an emergency. This regulation limits the maximum speed within the RNAs to 15 knots through the water for vessels 1600 gross tons or greater, or a tug with a tow of 1600 gross tons or greater, and requires those vessels to operate their engine(s) in a control mode and on fuel that will allow for an immediate response to any engine order, ahead or astern, including stopping its engine(s) for an extended period of time. Limiting vessel speeds to 15 knots or less through the water within the prescribed RNAs will reduce the risk of serious maritime accidents.

There may be situations where vessels would be unable to safely comply with the requirements of this regulation. In such cases, the Captain of the Port, or the Commanding Officer, VTS San Francisco, acting as a representative of the Captain of the Port, may allow a vessel to deviate from this regulation.

The RNAs defined in this rule are each considered to constitute a narrow channel or fairway. Therefore, Rule 9 of the Inland Navigation Rules (INRs) (33 U.S.C. 2009), in conjunction with the provisions of the associated INRs, is specifically made applicable within the defined RNAs and will be enforced.

Specific requirements for individual proposed RNAs. The geographic descriptions and proposed requirements specific to each RNA are as follows:

San Francisco Bay RNA. The San Francisco Bay RNA consists of the water area in the Golden Gate east of the COLREGS Demarcation Line (33 CFR 80.1142), the Central Bay including Raccoon Strait, and the existing charted precautionary area east of Alcatraz Island.

Because of the large number of vessels entering and departing San Francisco Bay, traffic lanes are established in the Golden Gate and the Central Bay to separate opposing traffic and reduce vessel congestion. The lanes are located where voluntary traffic lanes previously existed. Use of these lanes and adherence to the indicated direction of travel is required for vessels of 1600 or more gross tons, or tugs with a tow of 1600 or more gross tons, and recommended for all other vessels.

Due to the presence of shoals and rocks in the Central Bay, the Central Bay Two-way Deep Water Traffic Lane (DWTL), located north of Harding Rock, provides the best water depth safety margin for inbound vessels with a draft of 45 feet or greater, and for outbound vessels with a draft of 28 feet or greater. These deep draft vessels are required to use the DWTL. It is recommended that all other vessels use the Central Bay Traffic Lanes so that vessel traffic in the DWTL is kept to a minimum.

The DWTL is sufficiently narrow that meeting, crossing, and overtaking restrictions are necessary to reduce the likelihood of collision. The regulation provides that a power-driven vessel of 1600 or more gross tons, or a tug with a tow of 1600 or more gross tons, shall not enter the DWTL when another power-driven vessel of 1600 or more gross tons, or tug with a tow of 1600 or more gross tons, is navigating therein when either vessel is carrying certain dangerous cargo (as defined in 33 CFR 160.203), or bulk petroleum products, or is a tank vessel in ballast, if such entry could result in meeting, crossing, or overtaking the other vessel.

Since vessels are converging or crossing in such a manner that one-way traffic flow patterns, although desired, cannot be established, two precautionary areas are established in this RNA. They are: (1) the Golden Gate

Precautionary Area, which encompasses the waters around the Golden Gate Bridge between the Golden Gate and the Central Traffic Lanes; and (2) the Central Bay Precautionary Area, which encompasses the large portion of the Central Bay and part of the Lower Bay. It is recommended that all vessels navigating in these precautionary areas be aware of the joining traffic lanes and DWTL so as to anticipate the movements of other vessels.

North Ship Channel RNA and San Pablo Strait Channel RNA. The North Ship Channel and San Pablo Strait Channel consist of the existing charted channels and delineate the only areas where the depths of water are sufficient to allow the safe transit of vessels of 1600 or more gross tons, or a tug with a tow of 1600 or more gross tons. The existence of strong tidal currents in these channels severely restrict the ability of vessels of 1600 or more gross tons, or a tug with a tow of 1600 or more gross tons, to safely maneuver to avoid smaller vessels. These conditions create the need to apply the general regulations to these areas. Implementation of special regulations in these RNAs would have only a minimal impact on safety and is not justified at this time.

Pinole Shoal Channel RNA. The Pinole Shoal Channel RNA is a constricted waterway the use of which is currently restricted to vessels with a draft greater than 20 feet, or towboats with tows drawing more than 20 feet, as set forth in 33 CFR 162.205(a). Because of the narrow width of the channel and the draft of vessels using the channel, further meeting, crossing, and overtaking restrictions are necessary to reduce the likelihood of collision. This regulation provides that a power-driven vessel of 1600 or more gross tons, or a tug with a tow of 1600 or more gross tons, shall not enter the Pinole Shoal Channel RNA, which extends from approximately Light 7 to Light 13 of the Pinole Shoal Channel, when another power-driven vessel of 1600 or more gross tons, or tug with a tow of 1600 or more gross tons, is navigating therein and when either vessel is carrying certain dangerous cargo (as defined in 33 CFR 160.203) or bulk petroleum products, or is a tank vessel in ballast, if such entry would result in meeting, crossing, or overtaking the other vessel.

Southern Pacific Railroad Bridge RNA. The Southern Pacific Railroad Bridge RNA consists of a small circular area, 200 yards in radius, centered on the middle of the channel under the Southern Pacific Railroad Bridge. The limited horizontal clearance results in a greater chance of vessel allisions with

the bridge. This risk of allision is significantly increased when poor visibility conditions exist. The regulation precludes a power-driven vessel of 1600 or more gross tons, or a tug with a tow of 1600 or more gross tons, from transiting the Southern Pacific Railroad Bridge RNA when visibility is less than 1000 yards.

Southampton Shoal/Richmond Harbor RNA. Southampton Shoal/Richmond Harbor RNA encompasses Southampton Shoal Channel, the Richmond Long Wharf Maneuvering Area, the Richmond Harbor Entrance Channel and Point Potrero Reach. These are dredged channels and areas within which maneuvering room is severely limited. Close-quarters situations between deep-draft vessels in these channels need to be eliminated to reduce the risk of groundings and collisions.

In addition, the Southampton Shoal Channel is transited by a high number of laden tank vessels and vessels carrying certain dangerous cargo (as defined in 33 CFR 160.203), or bulk petroleum. Because of the potential for loss of life or serious environmental consequences in a collision involving one or more of these vessels, control of traffic flow is necessary. The Richmond Long Wharf Maneuvering Area between the Richmond Harbor Entrance Channel and Southampton Shoal Channel, often has vessels operating at low speeds where maneuverability is restricted. The regulation precludes vessels of 1600 or more gross tons, or tugs with a tow of 1600 or more gross tons, from entering the RNA if meeting, crossing, or overtaking another vessel of 1600 or more gross tons, or a tug with a tow of 1600 or more gross tons, could result.

Oakland Harbor RNA. The Oakland Harbor RNA encompasses the Oakland Bar Channel, Oakland Outer Harbor Entrance, Middle Harbor and Inner Harbor Entrance Channels. The charted Limited Traffic Area (LTA), which recommends that vessels of 300 or more gross tons transit one at a time to avoid crossing or meeting situations, is replaced by the Oakland Harbor RNA. The northern boundary of the Oakland Harbor RNA differs slightly from the LTA in that it follows the northern boundary of the Oakland Bar and Outer Harbor Entrance channels and extends to the "E" tower of the San Francisco-Oakland Bay Bridge. This regulation restricts vessels of 1600 or more gross tons, or tugs with a tow of 1600 or more gross tons, from entering the RNA if meeting, crossing, or overtaking another vessel of 1600 or more gross tons, or a tug with a tow of 1600 or more gross tons, could result.

Paragraph (e)(2) of this rulemaking substantially duplicates those regulations currently enumerated in 33 CFR 162.205(a). Paragraph (a) of 33 CFR 162.205 is removed, the section heading revised, and the remaining paragraphs of 33 CFR 162.205 redesignated as paragraphs (a) through (c).

Discussion of Comments and Changes

Four respondents to the NPRM provided comments on the proposed regulations. This section discusses the comments received as well as the Coast Guard's responses and changes to the rule.

One respondent encouraged the Coast Guard to adopt a maximum speed throughout the RNAs lower than the proposed 15 knots through the water. The commenter felt a 10 knot maximum, or an upper limit in that range, would better achieve the safety improvements being sought through this rulemaking. Specifically, the commenter proposed that at 15 knots, certain vessels may find it impossible to operate their engines such that an immediate response to any engine order could be effected without delay; whereas, at a speed in the range of 10 knots there should be no problem in meeting this additional rule requirement. The Coast Guard encourages vessels to travel at a speed which maximizes safety, as long as vessels do not exceed 15 knots through the water. The concerns of the respondent are adequately addressed by subparagraph (d)(2) of this section in that if it were not possible to ensure an immediate response to any engine order at 15 knots, then the vessel would be required to reduce speed until immediate response is possible. The Coast Guard feels that a maximum limit of less than 15 knots, imposed regardless of conditions and other circumstances, would be unnecessarily restrictive.

Two respondents provided comments regarding vessel movements through the Central Bay traffic lanes. Three issues were raised: (1) A respondent sought confirmation that the Deep Water Traffic Lane (DWTL) is available for the use of inbound vessels at the option of the master, pilot, or person directing the movement of vessel if there is not opposing traffic. This understanding is correct. Due to the presence of shoals and rocks in the Central Bay, the DWTL provides the best water depth safety margin for inbound vessels with a draft of 45 feet or greater, and for outbound vessels with a draft of 28 feet or greater. These deep draft vessels are required to use the DWTL. Inbound vessels with drafts less than 45 feet and outbound vessels with drafts less than 28 feet are

not precluded from using the DWTL; however, it is recommended that these vessels with lesser drafts use the appropriate Central Bay Traffic Lane and proceed in the general direction of traffic flow for that lane so that vessel traffic in the DWTL is kept to a minimum. (2) A respondent recommended that vessels of a draft of twenty-four feet or greater be allowed to use the Deep Water Traffic Lane (DWTL) when outbound. The respondent stated that negative tides of over one and a half feet reduce the underkeel clearance to an unsafe level for vessels of a draft of more than twenty-four feet navigating over Shag and Arch Rocks. Selection of the appropriate Central Bay traffic lane is dependent upon the height of the tide, among other factors. Although the RNA is written with the intent of requiring use of the DWTL by inbound vessels of greater than 45 feet draft and outbound vessels of greater than 28 feet draft, vessels of lesser draft are not precluded from using the DWTL. The Coast Guard has considered the depth clearances available in the Central Bay traffic lanes and has determined that the 28-foot draft threshold for mandatory use of the DWTL while westbound provides an adequate margin of safety. (3) A respondent sought confirmation that under special circumstances, *i.e.*, safety-related reasons, inbound vessels could transit the outbound traffic lane north of Alcatraz Island with proper meeting arrangements and notification to Vessel Traffic Service San Francisco. This understanding is correct in that deviations from both this section and the National Vessel Traffic Services Regulation (59 FR 36316, July 15, 1994) may be authorized provided the requested deviation is based on vessel handling characteristics, traffic density, radar contacts, environmental conditions, or other relevant conditions, and that such a deviation provides a level of safety equivalent to that provided by the required measure or is a maneuver considered necessary for safe navigation under the circumstances.

A respondent expressed concern at being unable to safely comply with the Southern Pacific Railroad Bridge RNA's restriction against low-visibility transit when transiting from east to west, due to lack of suitable anchorages immediately to the east of the RNA. A vessel transiting from west to east can comply with the regulation as proposed because a vessel is capable of anchoring immediately west of the bridge if visibility is less than 1000 yards. However, when transiting east to west, the nearest suitable anchorage site is

located approximately 14 miles from the bridge. Based on this distance and the limitations on maneuverability experienced in the westbound approach to the RNA, the Coast Guard has modified the regulation to reflect procedures to be followed when transiting from east to west. Under this modified procedure, the decision to not proceed will be made in time to permit anchoring until visibility improves.

A respondent suggested meeting, crossing, and overtaking should be allowed in the Richmond Long Wharf Maneuvering Area within the Southampton Shoal/Richmond Harbor RNA by vessels of 1600 or more gross tons or tugs with a tow of 1600 or more gross tons. Vessels currently meet, cross, and overtake in the Richmond Long Wharf Maneuvering Area to avoid doing so in Southampton Shoal Channel, Richmond Harbor Entrance Channel, and Point Potrero Reach; the commenter contends that safety would be reduced if meeting, crossing, and overtaking was restricted in the RNA, due to the consequent increase in vessel conflicts in other areas of the San Francisco Bay. By including the Richmond Long Wharf Maneuvering area as part of the no meeting, crossing, and overtaking zone within this RNA, the Coast Guard feels the potential for an oil spill or other marine casualty is significantly reduced in this area within which maneuvering room is severely limited. The Coast Guard does not feel that any degradation in vessel safety would result from requiring vessel meeting, crossing, and overtaking situations to take place outside this RNA, because impacted vessels bound for the Richmond Long Wharf or Richmond Inner Harbor currently coordinate their movements and if necessary slow their transit speed to avoid meeting in Southampton Shoal Channel, Richmond Entrance Channel, and Point Potrero Reach without any impact on vessel safety. The disadvantage connected with any delays that may be experienced by vessels transiting this RNA would be far outweighed by the advantage of gains in maritime safety.

A final commenter requested exemption from the requirements of the RNAs to cover the operations of a specified vessel. Other than registering a general endorsement of the rulemaking, that comment did not discuss or make recommendations regarding the NPRM; therefore, the request will be answered via separate correspondence.

Regulatory Evaluation

This regulation is not a significant regulatory action under Section 3(f) of

Executive Order 12866 and does not require an assessment of potential costs and benefits under Section 6(a)(3) of that Order. It has been exempted from review by the Office of Management and Budget under that Order. It is not significant under the regulatory policies and procedures of the Department of Transportation (DOT) (44 FR 11040; February 26, 1979). The Coast Guard expects the economic impact of this rule to be so minimal that a full Regulatory Evaluation under paragraph 10(e) of the Department of Transportation regulatory policies and procedures is unnecessary. At this time, covered vessels voluntarily comply with the majority of the procedures and restrictions contained in these regulations, and rarely if ever experience delays due to the high degree of coordination provided by the VTS. Formally mandating that mariners follow these previously voluntary requirements will not have more than a minimal impact on any party.

Small Entities

Under the Regulatory Flexibility Act (5 U.S.C. 601 *et seq.*), the Coast Guard must consider whether this rulemaking would have significant economic impact on a substantial number of small entities. "Small entities" include independently owned and operated small businesses that are not dominant in their field and that otherwise qualify as "small business concerns" under section 3 of the Small Business Act (15 U.S.C. 632). The Coast Guard expects the economic impact of the regulation to be minimal on all entities since it makes mandatory the existing voluntary practices. Because it expects the impact of this rule to be minimal, the Coast Guard certifies under 5 U.S.C. 605(b) that this rule will not have a significant economic impact on a substantial number of small entities.

Collection of Information

This rulemaking contains no collection of information requirements under the Paperwork Reduction Act (44 U.S.C. 3501 *et seq.*).

Federalism

The Coast Guard has analyzed this rule in accordance with the principles and criteria contained in Executive Order 12612 and has determined that this rule does not have sufficient federalism implications to warrant the preparation of a Federalism Assessment.

Environmental Assessment

The Coast Guard considered the environmental impact of this rulemaking and concluded that, under section 2.B.2. of Commandant

Instruction M16475.1B, this rule is categorically excluded from further environmental documentation. A Categorical Exclusion Determination statement has been prepared and placed in the rulemaking docket.

A Consistency Determination under the Coastal Zone Management Act (14 U.S.C. 1451, *et seq.*), has been prepared and placed in the rulemaking docket.

List of Subjects

33 CFR Part 162

Navigation (water), Waterways.

33 CFR Part 165

Harbors, Marine safety, Navigation (water), Reporting and recordkeeping requirements, Security measures, Waterways.

Regulations

In consideration of the foregoing, the Coast Guard is amending parts 162 and 165 of title 33, Code of Federal Regulations, as follows:

PART 162—[AMENDED]

1. The authority citation for part 162 continues to read as follows:

Authority: 33 U.S.C. 1231; 49 CFR 1.46.

2. Section 162.205 is amended by removing paragraph (a), by redesignating paragraphs (b) through (d) as paragraphs (a) through (c), and by revising the section heading to read as follows: "Suisun Bay, San Joaquin River, Sacramento River, and connecting waters, CA."

PART 165—[AMENDED]

3. The authority citation for part 165 continues to read as follows:

Authority: 33 U.S.C. 1231; 50 U.S.C. 191; 33 CFR 1.05-1(g), 6.04-1, 6.04-6 and 160.5; 49 CFR 1.46.

4. A new § 165.1114 is added to read as follows:

§ 165.1114 San Francisco Bay Region, California—regulated navigation area.

(a) *Applicability.* This section applies to all vessels unless otherwise specified.

(b) *Deviations.* The Captain of the Port, San Francisco Bay, or the Commanding Officer, Vessel Traffic Service San Francisco, as a representative of the Captain of the Port, may authorize a deviation from the requirements of this regulation when it is deemed necessary in the interests of safety.

(c) *Regulated Navigation Areas.*—(1) San Francisco Bay RNA. (i) The following is a regulated navigation area—The waters bounded by a line connecting the following coordinates, beginning at:

37 27°47'18" N, 122°30'22" W; thence to 37°48'55" N, 122°31'41" W; thence along the shoreline to

37°50'38" N, 122°28'37" W; thence to 37°50'59" N, 122°28'00" W; thence to 37°51'45" N, 122°27'28" W; thence to 37°52'58" N, 122°26'06" W; thence to 37°51'53" N, 122°24'58" W; thence to 37°51'53" N, 122°24'00" W; thence to 37°51'40" N, 122°23'48" W; thence to

37 27°49'22" N, 122°23'48" W; thence to 37°48'20" N, 122°22'12" W; thence to 37°47'02" N, 122°21'33" W; thence to 37°47'02" N, 122°23'04" W; thence along the shoreline to the point of beginning.

Datum: NAD 83

(ii) The San Francisco Bay RNA consists of the following defined sub-areas:

(A) *Golden Gate Traffic Lanes*.—(1) *Westbound traffic lane*: Bounded by the Golden Gate precautionary area and the COLREGS Demarcation Line (33 CFR 80.1142), between the separation zone and a line connecting the following coordinates:

37°48'30" N, 122°31'22" W; thence to 37°49'03" N, 122°29'52" W.

Datum: NAD 83

(2) *Eastbound traffic lane*: Bounded by the COLREGS Demarcation Line (33 CFR 80.1142) and the Golden Gate precautionary area, between the separation zone and a line connecting the following coordinates:

37°47'50" N, 122°30'48" W; thence to 37°48'30" N, 122°29'29" W.

Datum: NAD 83

(3) *Golden Gate Separation Zone*: The area 75 yards each side of a line connecting the following coordinates: 37°48'08" N, 122°31'05" W; thence to 37°48'46" N, 122°29'40" W.

Datum: NAD 83

(B) *Golden Gate Precautionary Area*: An area bounded by a line connecting the following coordinates beginning at: 37°48'30" N, 122°29'29" W; thence to 37°48'52" N, 122°28'41" W; thence to 37°48'52" N, 122°27'49" W; thence to 37°49'36" N, 122°27'46" W; thence to 37°49'55" N, 122°28'09" W; thence to 37°49'28" N, 122°28'45" W; thence to 37°49'03" N, 122°29'52" W; thence returning to the point of beginning.

Datum: NAD 83

(C) *Central Bay Traffic Lanes*.—(1) *Westbound traffic lane*: Bounded by the Central Bay precautionary area and the Golden Gate precautionary area, between the Central Bay and the Deep Water Traffic Lane separation zones.

(2) *Eastbound traffic lane*: Bounded by the Golden Gate precautionary area and the Central Bay precautionary area, between the Central Bay Separation Zone and a line connecting the following coordinates, beginning at: 37°48'41" N, 122°25'17" W; thence to 37°48'50" N, 122°26'14" W; thence to 37°48'52" N, 122°27'49" W.

Datum: NAD 83

(3) *Deep Water (two-way) Traffic Lane*: Bounded by the Central Bay precautionary area and the Golden Gate precautionary area, between the Deep Water Traffic Lane and a line connecting the following coordinates, beginning at:

37°49'55" N, 122°28'09" W; thence to 37°50'36" N, 122°27'12" W; thence to 37°50'47" N, 122°26'26" W.

Datum: NAD 83

(D) *Central Bay Separation Zone*: The area 75 yards each side of a line connecting the following coordinates, beginning at:

37°49'17" N, 122°27'47" W; thence to 37°49'35" N, 122°25'25" W.

Datum: NAD 83

(E) *Deep Water Traffic Lane Separation Zone*: The area 75 yards each side of a line connecting the following coordinates, beginning at: 37°49'36" N, 122°27'46" W; thence to 37°50'22" N, 122°26'49" W; thence to 37°50'25" N, 122°26'22" W.

Datum: NAD 83

(F) *Central Bay Precautionary Area*: An area bounded by a line connecting the following coordinates, beginning at:

37°48'41" N, 122°25'17" W; thence to 37°49'32" N, 122°25'13" W; thence to 37°50'25" N, 122°26'22" W; thence to 37°50'47" N, 122°26'26" W; thence to 37°51'04" N, 122°24'58" W; thence to 37°51'53" N, 122°24'58" W; thence to 37°51'53" N, 122°24'00" W; thence to 37°51'40" N, 122°23'48" W; thence to 37°49'22" N, 122°23'48" W; thence to 37°48'20" N, 122°22'12" W; thence to 37°47'02" N, 122°21'33" W; thence to ~~37°47'02" N, 122°23'04" W~~; thence to 37°47'02" N, 122°23'04" W; thence returning along the shoreline to the point of beginning.

Datum: NAD 83

(2) *North Ship Channel RNA*: The following is a regulated navigation area—The waters bounded by a line connecting the following coordinates, beginning at:

37°51'53" N, 122°24'58" W; thence to 37°54'15" N, 122°27'27" W; thence to 37°56'06" N, 122°26'49" W; thence to

37°56'06" N, 122°26'34" W; thence to 37°54'48" N, 122°26'42" W; thence to 37°54'02" N, 122°26'10" W; thence to 37°51'53" N, 122°24'00" W; thence to returning to the point of beginning.

Datum: NAD 83

(3) *San Pablo Strait Channel RNA*: The following is a regulated navigation area—The waters bounded by a line connecting the following coordinates, beginning at:

37°56'06" N, 122°26'49" W; thence to 37°57'26" N, 122°27'21" W; thence to 38°00'48" N, 122°24'45" W; thence to 38°01'54" N, 122°22'24" W; thence to 38°01'44" N, 122°22'18" W; thence to 37°57'37" N, 122°26'23" W; thence to 37°56'06" N, 122°26'34" W; thence returning to the point of beginning.

Datum: NAD 83

(4) *Pinole Shoal Channel RNA*: The following is a regulated navigation area—The waters bounded by a line connecting the following coordinates, beginning at:

38°01'54" N, 122°22'25" W; thence to 38°03'13" N, 122°19'50" W; thence to 38°03'23" N, 122°18'31" W; thence to 38°03'23" N, 122°18'29" W; thence to 38°03'05" N, 122°19'28" W; thence to 38°01'44" N, 122°22'18" W; thence returning to the point of beginning.

Datum: NAD 83

(5) *Southern Pacific Railroad Bridge RNA*: The following is a regulated navigation area—The water area contained within a circle with a radius of 200 yards, centered on 38°02'18" N, 122°07'17" W.

Datum: NAD 83

(6) *Southampton Shoal Channel/Richmond Harbor RNA*: The following, consisting of two distinct areas, is a regulated navigation area—

(i) The waters bounded by a line connecting the following coordinates, beginning at:

37°54'17" N, 122°22'00" W; thence to 37°54'08" N, 122°22'00" W; thence to 37°54'15" N, 122°23'12" W; thence to 37°54'30" N, 122°23'09" W; thence along the shoreline to the point of beginning.

Datum: NAD 83

(ii) The waters bounded by a line connecting the following coordinates, beginning at:

37°54'28" N, 122°23'36" W; thence to 37°54'20" N, 122°23'38" W; thence to 37°54'23" N, 122°24'02" W; thence to 37°54'57" N, 122°24'51" W; thence to 37°55'05" N, 122°25'02" W; thence to 37°54'57" N, 122°25'22" W; thence to

37°54'00" N, 122°25'13" W; thence to 37°53'59" N, 122°25'22" W; thence to 37°55'30" N, 122°25'35" W; thence to 37°55'40" N, 122°25'10" W; thence to 37°54'54" N, 122°24'30" W; thence to 37°54'30" N, 122°24'00" W; thence returning to the point of beginning.

Datum: NAD 83

(7) *Oakland Harbor RNA*. The following is a regulated navigation area—The waters bounded by a line connecting the following coordinates, beginning at:

37°48'40" N, 122°19'58" W; thence to 37°48'50" N, 122°20'02" W; thence to 37°48'20" N, 122°21'00" W; thence to 37°48'15" N, 122°21'30" W; thence to 37°48'20" N, 122°21'12" W; thence to 37°48'26" N, 122°21'45" W; thence to 37°47'55" N, 122°21'26" W; thence to 37°48'03" N, 122°21'00" W; thence to 37°47'48" N, 122°19'46" W; thence to 37°47'55" N, 122°19'43" W; thence returning along the shoreline to the point of the beginning.

Datum: NAD 83

(d) *General Regulations*. (1) A power-driven vessel of 1600 or more gross tons, or a tug with a tow of 1600 or more gross tons, navigating within the RNAs defined in paragraph (c) of this section, shall not exceed a speed of 15 knots through the water.

(2) A power-driven vessel of 1600 or more gross tons, or a tug with a tow of 1600 or more gross tons, navigating within the RNAs defined in paragraph (c) of this section, shall have its engine(s) ready for immediate maneuver and shall operate its engine(s) in a control mode and on fuel that will allow for an immediate response to any engine order, ahead or astern, including stopping its engine(s) for an extended period of time.

(3) The master, pilot or person directing the movement of a vessel within the RNAs defined in paragraph (c) of this regulation shall comply with Rule 9 of the Inland Navigation Rules (INRs) (33 U.S.C. 2009) in conjunction with the provisions of the associated INRs.

(e) *Specific Regulations*.—(1) *San Francisco Bay RNA*: (i) A vessel shall navigate with particular caution in a precautionary area, or in areas near the terminations of traffic lanes or channels, as described in this regulation.

(ii) A power-driven vessel of 1600 or more gross tons, or a tug with a tow of 1600 or more gross tons, shall:

(A) use the appropriate traffic lane and proceed in the general direction of traffic flow for that lane;

(B) use the Central Bay Deep Water Traffic Lane if eastbound with a draft of

45 feet or greater or westbound with a draft of 28 feet or greater;

(C) not enter the Central Bay Deep Water Traffic Lane when another power-driven vessel of 1600 or more gross tons or tug with a tow of 1600 or more gross tons is navigating therein when either vessel is:

(1) carrying certain dangerous cargoes (as denoted in section 160.203 of this subchapter);

(2) carrying bulk petroleum products; or

(3) a tank vessel in ballast if such entry would result in meeting, crossing, or overtaking the other vessel.

(D) normally join or leave a traffic lane at the termination of the lane, but when joining or leaving from either side, shall do so at as small an angle to the general direction of traffic flow as practicable;

(E) so far as practicable keep clear of the Central Bay Separation Zone and the Deep Water Lane Separation Zone;

(F) not cross a traffic lane separation zone unless crossing, joining, or leaving a traffic lane.

(2) *Pinole Shoal Channel RNA*: (i) The use of Pinole Shoal Channel RNA is reserved for navigation of vessels with a draft greater than 20 feet or tugs with tows drawing more than 20 feet. Vessels drawing less than 20 feet are not permitted within this RNA and are prohibited from crossing it at any point.

(ii) A power-driven vessel of 1600 or more gross tons or a tug with a tow of 1600 or more gross tons shall not enter Pinole Shoal Channel RNA when another power-driven vessel of 1600 or more gross tons or tug with a tow of 1600 or more gross tons is navigating therein when either vessel is:

(A) carrying certain dangerous cargoes (as denoted in section 160.203 of this subchapter);

(B) carrying bulk petroleum products; or

(C) a tank vessel in ballast if such entry would result in meeting, crossing, or overtaking the other vessel.

(iii) Vessels permitted to use this channel shall proceed at a reasonable speed so as not to endanger other vessels or interfere with any work which may become necessary in maintaining, surveying, or buoying the channel, and they shall not anchor in the channel except in case of a deviation authorized under paragraph (b) of this section.

(iv) This paragraph shall not be construed as prohibiting any necessary use of the channel by any public vessels while engaged in official duties, or in emergencies by pilot boats.

(3) *Southern Pacific Railroad Bridge (RNA)*: (i) When visibility is less than

1000 yards within the Southern Pacific Railroad Bridge RNA, a power-driven vessel of 1600 or more gross tons, or a tug with a tow of 1600 or more gross tons:

(A) When eastbound, shall not transit through the RNA.

(B) When westbound:

(1) During periods of reduced visibility and immediately prior to passing New York Point, the master, pilot, or person directing the movement of a vessel shall obtain a report of visibility conditions within the RNA.

(2) If visibility within the RNA is less than 1000 yards, the vessel shall not transit the RNA. Vessels prevented from transiting due to low visibility shall not proceed past Mallard Island until visibility improves to greater than 1000 yards within the RNA.

(3) If a transit between New York Point and the Southern Pacific Railroad Bridge has commenced, and the visibility subsequently should become less than 1000 yards, the master, pilot, or person directing the movement of a vessel shall comply with paragraph (b) of this section and may proceed, taking all further appropriate actions in the interest of safety.

(ii) Visibility is considered to be 1000 yards or greater when both the following geographical points can be seen from the Southern Pacific Railroad Bridge:

(A) The Port of Benecia Pier, and

(B) The Shell Martinez Pier.

(4) *Southampton Shoal/Richmond Harbor RNA*: A power-driven vessel of 1600 or more gross tons, or a tug with a tow of 1600 or more gross tons, shall not enter Southampton Shoal/Richmond Harbor RNA when another power-driven vessel of 1600 or more gross tons, or a tug with a tow of 1600 or more gross tons, is navigating therein, if such entry would result in meeting, crossing, or overtaking the other vessel.

(5) *Oakland Harbor RNA*: A power-driven vessel of 1600 or more gross tons or a tug with a tow of 1600 or more gross tons shall not enter the Oakland Harbor RNA when another power-driven vessel of 1600 or more gross tons, or a tug with a tow of 1600 or more gross tons, is navigating therein, if such entry would result in meeting, crossing, or overtaking the other vessel.

R.A. Appelbaum,

Rear Admiral, U.S. Coast Guard, Commander, Eleventh Coast Guard District.

[FR Doc. 95-8124 Filed 3-31-95; 8:45 am]

BILLING CODE 4910-14-M

BOLLARD PULL TEST RESULTS

(as of 2/13/95)

American Navigation Co. (510) 234-8847

	Forward	Astern	Speed	Prop
Avenger	67,430	48,585	12.42	2
Expeditor	53,910	37,413	12.76	2
Marauder	90,725	56,168	13.12	2
Predator	90,668	60,315	13.49	2
Renegade	62,623	52,245	12.74	1
Titan	66,433	57,588	11.55	2

Bay and Delta Towing (800) 339-5811

	Forward	Astern	Speed	Prop	
Delta Billie	101,363	99,835	13.09	2	TR
Delta Carrie	45,590	36,453	13.44	1	
Delta Cathryn	62,956	43,354	12.92	1	
Delta Deanna	87,270	91,013	11.57	2	TR
Delta Jessica	81,453	21,293	12.69	1	
Delta Linda	64,908	47,262	13.49	2	
Delta Lindsay	69,340	44,223	12.9	1	

Chevron Shipping Co. (510) 242-2336

	Forward	Astern	Speed	Prop
Chevron Richmond	106,193	66,366	11.70	2
Standard 4	34,103	21,575	10.35	2

Crowley Maritime Corp. (415) 546-2600

	Forward	Astern	Speed	Prop
Cavalier	149,675	117,608	14.2	2
Gladiator	140,763	97,140	14.06	2
Goliah	86,673	53,714	11.7	2
Guardian	121,008	88,220	14.08	2
Hunter	142,496	108,130	14.76	2
Invader	148,285	97,063	14.25	2
Lassen	26,355	19,465	10.91	2
Pt. Thompson	47,115	44,828	10.56	2
San Joaquin River	27,990	19,618	11.24	2
Saturn	68,950	48,406	12.42	2
Sea Cloud	102,580	67,731	13.41	2
Sea Duke	46,458	28,020	11.98	1

Sea Horse	100,236	60,518	12.97	2
Sea King	104,918	67,558	14.11	2
Sea Lark	33,500	17,003	11.62	1
Sea Lion	57,760	41,240	13.73	1
Sea Scout	45,858	25,320	11.62	1
Sea Venture	238,273	129,225	13.16	2
Sea Wolf	55,125	32,993	13.78	1
Spartan	71,636	46,824	12.40	2

**Foss SeaRiver (707) 745-4747
or (415) 433-3677**

	Forward	Astern	Speed	Prop	
Andrew Foss	133,404	54,896	12	2	TR
Brynn Foss	76,683	68,885	11.94	2	TR
SeaRiver California	212,960	130,905	13.24	2	
SeaRiver Carquinez	105,670	66,098	11.88	2	
SeaRiver Golden State	214,583	128,343	13.39	2	

Marine Tug and Barge (415) 236-5880

	Forward	Astern	Speed	Prop
Marin Sky	15,095	11,470	7.84	2
Marin Sunshine	37,283	26,680	11.24	2
Marin Twilight	21,873	17,703	9.56	2

Oscar Niemeth Towing Inc. (510) 893-0231

	Forward	Astern	Speed	Prop
American Eagle	98,968	57,058	12.12	2
Sea Eagle	39,305	23,943	11.2	2
Silver Eagle	88,990	71,285	12.29	2

Sanders Towboat Services Inc. (707) 745-4340

	Forward	Astern	Speed	Prop
Delaware	88,173	42,255	12.27	1
Gail S.	29,858	16,463	10.42	1
Mary D.	79,618	38,990	12.76	1
Shad W. Sanders	20,765	12,833	11.13	1
Vigilant	118,705	76,768	12.34	2

Seaway Transportation Co. (510) 521-3283

	Forward	Astern	Speed	Prop
Southern Cross	45,015	23,950	11.82	1

TR - Tractor Tug

Southampton Towing Co. (707) 421-8845

	Forward	Astern	Speed	Prop
Invader	28,385	20,065	11.88	1
Colusa	11,980	10,455	9.65	2

Westar Marine Services (415) 495-3191

	Forward	Astern	Speed	Prop
Bearcat	19,980	15,368	10.82	2
Betty L	20,760	16,588	9.4	2
Orion	68,283	44,500	12.49	2
Panther	19,013	8,893	10.26	1
Taurus	32,190	17,481	11.13	1
Warrior	18,980	11,780	9.94	1

Financial Statement - Income Statement

Revenue	10,000	10,000	10,000
Expenses	(2,000)	(2,000)	(2,000)

Financial Statement - Balance Sheet

Assets	10,000	10,000	10,000
Liabilities	(2,000)	(2,000)	(2,000)
Equity	8,000	8,000	8,000

San Francisco Bay Clearinghouse Report For 1994 through December

San Francisco Bay Region Totals

Tanker arrivals to San Francisco Bay	1,017
Tank ship movements & escorted barge movements	4,004
Tank ship movements	3,443
Escorted tank ship movements	1,771
Escorted barge movements	561
Unregulated tank ship movements	1,672

Percentages above are percent of total tank ship movements & escorted barge movements for each item.

Movements by Zone	Zone 1	%	Zone 2	%	Zone 4	%	Zone 6	%	Total	%
Total movements (all tank ships & escorted barges)	2,330		3,788		2		1,874		7,994	
Unregulated tank ships	912	39.14%	1,572	41.50%	2	0.00%	659	35.17%	3,145	39.34%
Escorted movements	1,418	60.86%	2,216	58.50%	0	0.00%	1,215	64.83%	4,849	60.66%
Escorted tank ships	1,136	48.76%	1,736	45.83%	0	0.00%	847	45.20%	3,719	46.52%
Escorted barges	282	12.10%	480	12.67%	0	0.00%	368	19.64%	1,130	14.14%

Notes:

- The only barges recorded are escorted barges.
- Information is only noted for zones where escorts are required.
- All percentages are percent of total movements for the zone. Unregulated tank ships & escorted movements equal 100% of zone movements.
- Escorted tank ships & escorted barges equals escorted movements for the zone.
- Every movement is counted in each zone transited during the movement.
- Unregulated tank ships are vessels which did not check in with the Clearinghouse. These vessels are presumed to have less than 5,000 LT of regulated cargo or unregulated cargo on board.

2025 RELEASE UNDER E.O. 14176

San Francisco Bay Clearinghouse Report For November 1994

Sealift Tankers

San Francisco Bay Region Totals

Sealift tanker arrivals to San Francisco Bay	10
Tank ship movements & escorted barge movements	10
Tank ship movements	10
Escorted tank ship movements	0
Escorted barge movements	0
Unregulated tank ship movements	10

Percentages above are percent of total tank ship movements & escorted barge movements for each item.

Movements by Zone	Zone 1	%	Zone 2	%	Zone 4	%	Zone 6	%	Total	%
Total movements (all tank ships & escorted barges)	8	100.00%	10	100.00%	2	100.00%	4	100.00%	24	100.00%
Unregulated tank ships	8	100.00%	10	100.00%	2	100.00%	4	100.00%	24	100.00%
Escorted movements	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Escorted tank ships	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Escorted barges	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%

Notes:

1. The only barges recorded are escorted barges.
2. Information is only noted for zones where escorts are required.
3. All percentages are percent of total movements for the zone. Unregulated tank ships & escorted movements equal 100% of zone movements.
4. Escorted tank ships & escorted barges equals escorted movements for the zone.
5. Every movement is counted in each zone transited during the movement.
6. Unregulated tank ships are vessels which did not check in with the Clearinghouse. These vessels are presumed to have less than 5,000 LT of regulated cargo or unregulated cargo on board.

San Francisco Bay Clearinghouse Report For December 1994

Sealift Tankers

San Francisco Bay Region Totals

Sealift tanker arrivals to San Francisco Bay	8
Tank ship movements & escorted barge movements	8
Tank ship movements	8
Escorted tank ship movements	1 12.50%
Escorted barge movements	0 0.00%
Unregulated tank ship movements	7 87.50%

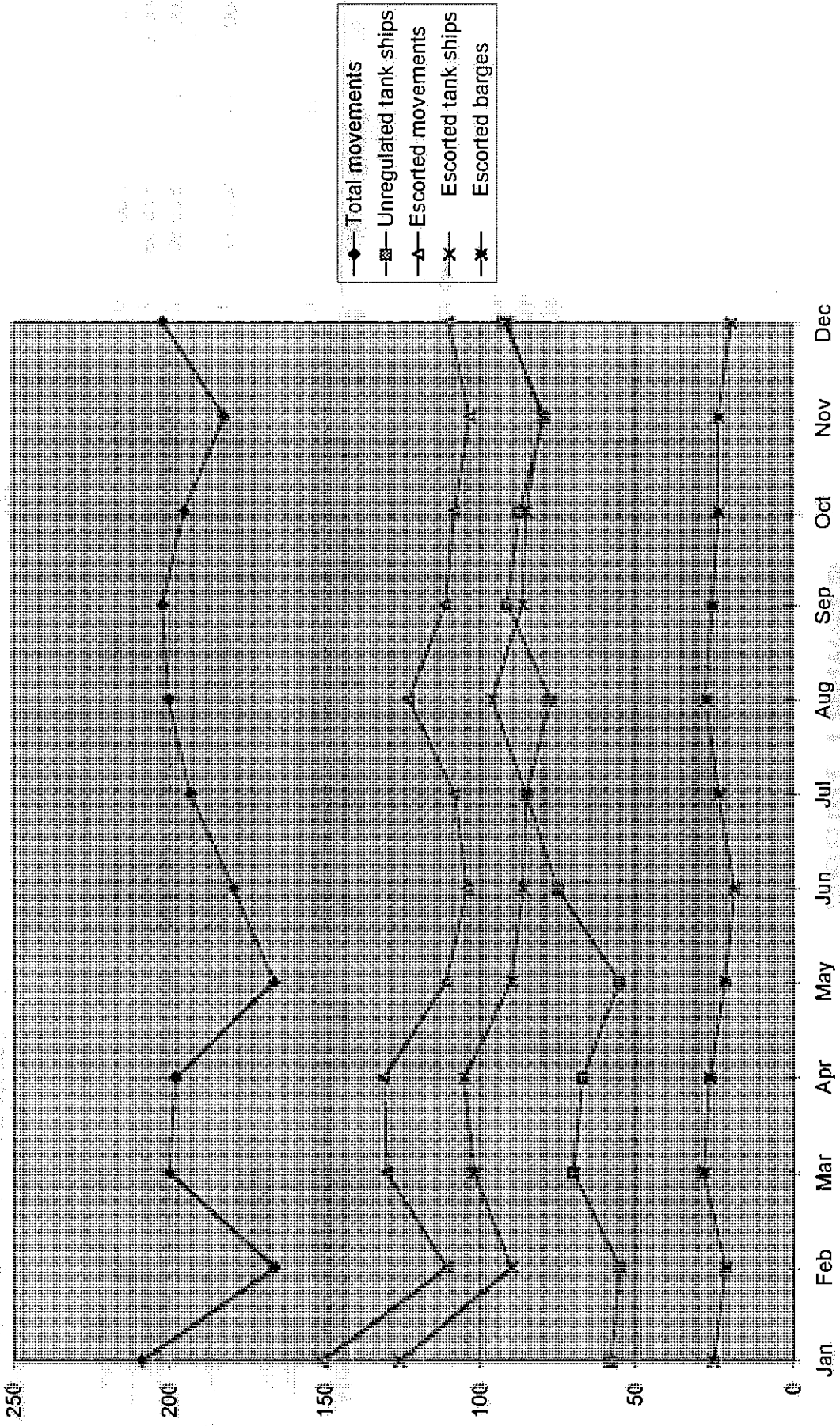
Percentages above are percent of total tank ship movements & escorted barge movements for each item.

Movements by Zone	Zone 1	%	Zone 2	%	Zone 4	%	Zone 6	%	Total	%
Total movements (all tank ships & escorted barges)	5		8		0		3		16	
Unregulated tank ships	4	80.00%	7	87.50%	0	0.00%	1	33.33%	12	75.00%
Escorted movements	1	20.00%	1	12.50%	0	0.00%	2	66.67%	4	25.00%
Escorted tank ships	1	20.00%	1	12.50%	0	0.00%	2	66.67%	4	25.00%
Escorted barges	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%

Notes:

1. The only barges recorded are escorted barges.
2. Information is only noted for zones where escorts are required.
3. All percentages are percent of total movements for the zone. Unregulated tank ships & escorted movements equal 100% of zone movements.
4. Escorted tank ships & escorted barges equals escorted movements for the zone.
5. Every movement is counted in each zone transited during the movement.
6. Unregulated tank ships are vessels which did not check in with the Clearinghouse. These vessels are presumed to have less than 5,000 LT of regulated cargo or unregulated cargo on board.

Zone 1 Totals for 1994



200 150 100 50 0

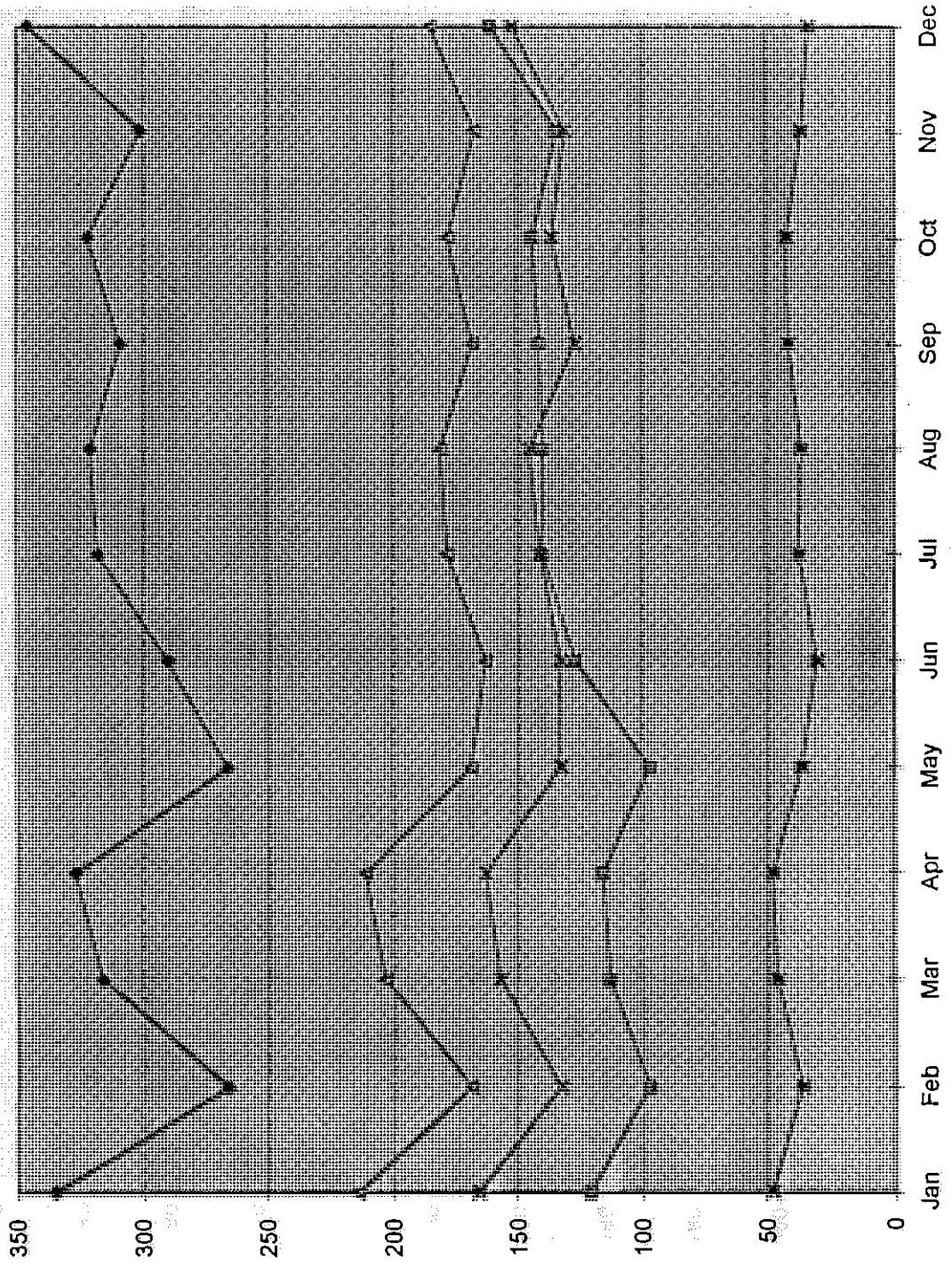
Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec

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200 150 100 50 0

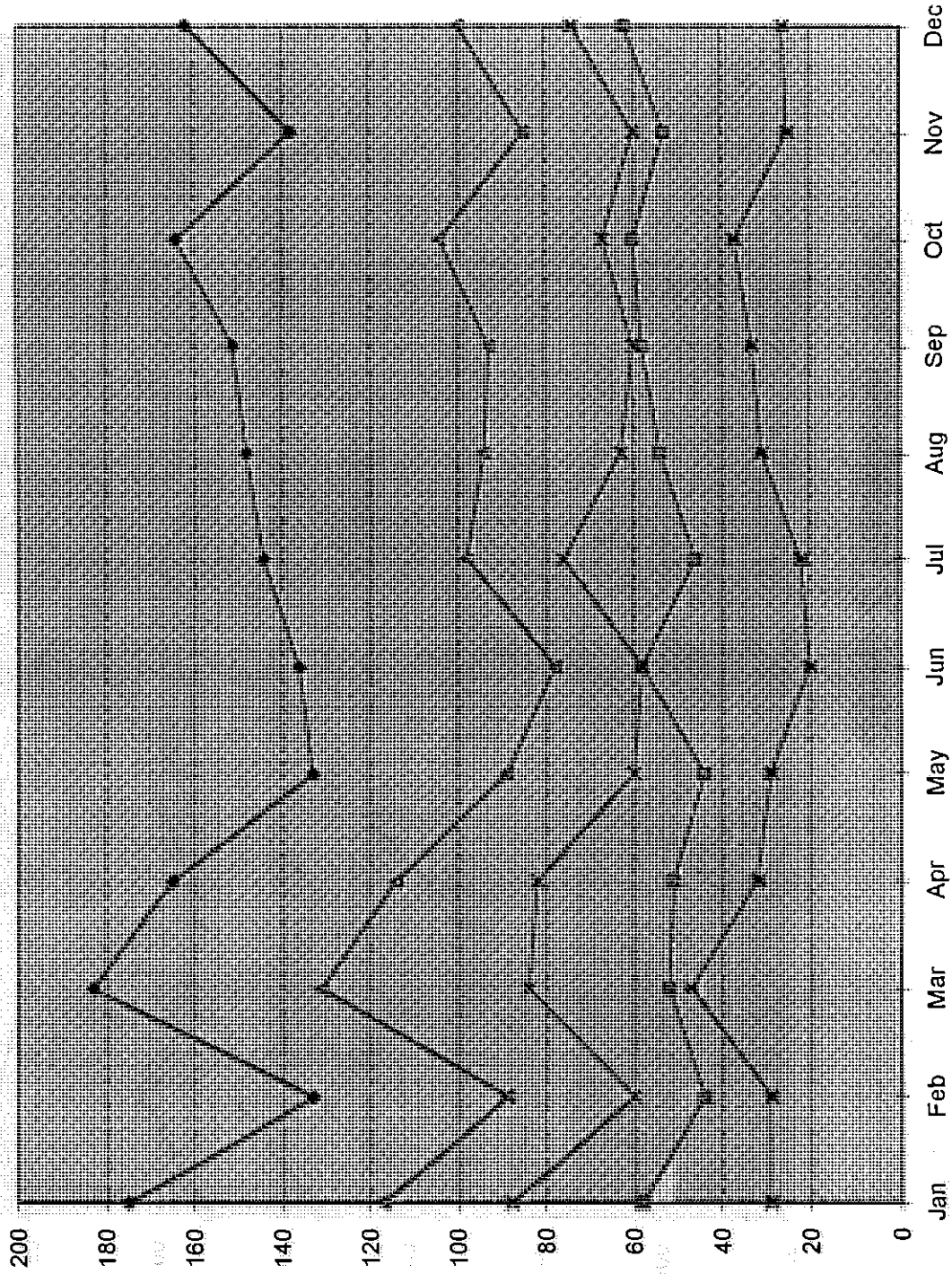
Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec

Zone 2 Totals for 1994



- ◆ Total movements
- Unregulated tank ships
- ▲ Escorted tank ships
- ✕ Escorted tank ships
- * Escorted barges

Zone 6 Totals for 1994



- ◆ Total movements
- Unregulated tank ships
- ▲ Escorted tank ships
- × Escorted tank barges
- * Escorted tank ships

August 21, 1995

**SUMMARY OF THE ISSUES AND RECOMMENDATIONS
FOR AMENDMENTS TO THE TANK VESSEL ESCORT REGULATIONS**

Following are the issues that have been reviewed and analyzed by the Tug Escort Subcommittee (TES) in the process of establishing recommendations for the revision of the current Tank Vessel Escort regulations. After each issue listed, the reason for the specific recommendation is stated and explained. The issues are organized (generally) by subject area.

A. MATCHING TUGS TO TANKERS:

A1. ISSUE: What is the appropriate method of matching escort tugs to tank vessels?

RECOMMENDATION: Adopt Table 1, Page 8, Glosten Single Failure Study (shown below) as a default matching matrix for regulated tankers. A tanker that uses the default matrix will be restricted to a speed limit of 10 knots, untethered, in Zones 1 and 2, and 8 knots, untethered, in Zones 4 and 6.

Alternative compliance for tugs: In lieu of the default matching matrix, tug operators may propose an alternate method for measuring the braking force of any tug (in kips). Such alternate method must demonstrate that the tug can provide a higher braking force (in kips) than simple bollard pull would indicate. The kips so measured, shall be compared to the figures in the default matrix. The higher kip shall be used and the tug boat with the lower bollard pull (but higher braking force) may escort a larger tanker than the default matrix would otherwise allow. This alternative measurement must be conducted from a starting point of 10 knots, and must be conducted by a naval architect or licensed engineer approved by OSPR. The tug operator shall submit the alternative measurement analysis for approval by the Administrator of the Office of Oil Spill Prevention and Response (OSPR). OSPR will establish by regulation a process by which the Clearing House can verify that a regulated tank vessel is correctly matched to the escort vessel under the approved alternative plan. For the purposes of generating formulas or models to calculate an alternative "Braking Force" for a given Escort Vessel, the owner/operator shall verify that the:

- o Escort Vessel is not required to exceed the limits of her stability to generate the forces, and in no instance buries her deck edge.

- o Escort Vessel operates all her equipment within the recommended manufacturer's guidelines, at or below all safe working load recommendations.
- o Current bollard pull values, as registered with the Clearing House, are utilized where appropriate in any formulas or models.
- o Unless demonstrated otherwise by full scale testing, all machinery shall be assumed to operate at or below performance levels published by the manufacturer.
- o Any known condition that would impair the Escort Vessel's ability to perform is included in the calculation.

Alternative compliance for tankers: Tanker operators may model their respective fleets relative to the steering and braking demands of their vessels. These demands may then be used to match tugs to tankers in lieu of the default table. The alternate model must demonstrate that the tanker can complete a safe transit within the 95th percentile of constraint as was used in developing the default matching matrix. The tanker operator shall submit the fleet model plan, prepared by a naval architect or licensed engineer, for approval by the Administrator of Oil Spill Prevention and Response (OSPR). OSPR will establish by regulation a process by which the Clearing House can verify that the tank vessel is correctly matched to the escort vessel under the approved fleet plan.

TABLE I

BRAKING FORCE REQUIRED FOR STOPPING FROM 5 KTS. THROUGH WATER						
	20 knot wind					
	Zones 1 and 2			Zones 4 and 6		
Assisting Current	slack	2 knot	4 knot	slack	2 knot	4 knot
Initial Speed through water (knots)	5	5	5	5	5	5
Initial Speed over ground (knots)	5	7	9	5	7	9
Final Speed through water (knots)	0	-2	-4	0	-2	-4
Displacement (1,000* LT)	Braking Force (kips*)					
0 to <20	20	30	40	40	70	110
20 to < 30	20	40	60	50	90	160
30 to < 40	30	50	70	60	120	210
40 to < 50	30	60	90	70	150	250
50 to < 60	40	70	110	100	190	320
60 to < 80	50	90	140	120	250	420
80 to < 100	60	110	180	150	300	520
100 to < 120	70	130	210	180	370	650
120 to < 140	80	150	240	210	430	760
140 to < 160	90	190	310	240	490	860
160 to < 180	100	210	350	260	550	970
180 to < 190						

NOTES: * A "kip" is defined as 1,000 pounds of force.

Braking force capability can be obtained as follows:

For Conventional Tugs: Braking Force = Astern Bollard Pull (at zero speed)

For Tractor Tugs: Braking Force = Ahead Bollard Pull (at zero speed)

REASON: In April 1995, the TES established the Failure Probability Group. This group was asked to identify the expected rate of occurrence of mechanical failures on board tankers that could reasonably be expected to benefit from a tug escort program. The purpose of this study was to establish an acceptable level of risk and to assist in determining the assumptions that should be used by the Glosten Associates in their analysis of tanker demand given the confines of the waterways of the San Francisco Bay.

The study by Glosten was initially predicated on a "dual-failure" scenario, that is, a simultaneous failure of the tanker's steering and propulsion systems. That basic assumption was later changed, however, to a single-failure scenario based, in part, on the findings of the Failure Probability Group.

The Group defined failures as those potentially benefiting from a tug escort program, that is to say, the failures had to occur while underway in a domestic harbor/inland waterway environment and had to be of a duration of at least one minute.

The Group reviewed the existing data bases and documents and made the following major findings:

A. Coast Guard Marine Safety Information System (Worldwide):

1. Analysis was made of casualties in U.S. waters and U.S. flag vessels in other waters required to notify the Coast Guard from 1991-1994. In a population of some 100,000 voyages, fifty-two resulted from steering or propulsion failures.
2. The database did not prove helpful in identifying targeted failures since it identified only the primary cause of each casualty and therefore could not differentiate single from dual failure. In addition, the database could not quantify the duration of an incident.
3. Case-by-case analysis of Exxon/SeaRiver's nineteen incidents identified only one failure that may have exceeded a one minute duration. This analysis strongly suggests that use of the raw data would not provide meaningful scientific statistical results.
4. In 1994 there were twenty-one incidents compared to 23,695 vessel arrivals. This suggests a raw data incidence of failure of .09%. If the Exxon sensitivity evaluation holds true for the entire incident population, incidence would be .005% resulting in a potentially tug-escort-benefited event occurring once every twenty-two years on San Francisco Bay.

B. U.S. Coast Guard Contacts (U.S. Vessel Arrivals):

1. In 1994, the Coast Guard identified 23,695 arrivals in the United States and 958 in San Francisco Bay. The Marine Exchange confirms that the San Francisco arrivals closely match their records.

C. San Francisco Bar Pilot Commission Pilotage Incident Investigations (SF Bay):

1. The purpose of this data base is identify potential pilot error. Data is deemed to represent a "snapshot" of the type of mechanical failures which have occurred for the full range of deep-draft, commercial vessels.
2. Eighteen incidents were caused by steering or engine problems. None of the steering or engine failures occurred on tankers.

D. U. S. Coast Guard CASRISK Data and Casualty Analysis (SF Bay):

1. Tanker propulsion or steering failures occurred sixteen times during the five-year period. Fifteen were partial system failures or of short duration. One incident would qualify as potentially being benefited by a tug escort program.
2. None of the incidents qualified as a "loss of control" that resulted in an allision, collision or grounding. None of the incidents involved a dual failure.
3. Review of Marine Exchange data, the source of deep-draft, commercial information for the years 1990-1994, shows a total of 5,086 tanker arrivals. One potentially tug-benefited event suggests a failure incidence of .02%, which is about once every five years.

Based on a review of the data provided, the TES adopted two conclusions at its meeting of May 25, 1995.

- (1) A more formal "failure probability analysis" of the raw data was not recommended.
- (2) From the review of the data as provided, using a single failure demand standard was appropriate.

The principle reason for this decision (2) was the compelling fact that none of the incidents in any of the databases was the result of a simultaneous dual-failure of the tanker's steering and propulsion systems. The subcommittee did not feel it could justify tug requirements based on a failure of such low probability.

In April 1995, the TES requested an additional study of single failure demands. Glosten prepared a second study that was accomplished in two phases. The first phase ran ninety-six simulations varying three tanker sizes, two drafts, four speeds, with tugs tethered and untethered. The second phase created a generalized matrix for the matching of tugs to tankers.

The single-failure study assumed that the pilot-preferred maneuver in the event of an incident would be a combination of steering and retarding actions. In order to model this condition, the simulated maneuver for a steering failure was stopping the tanker within the allowable reach-transfer area; for a propulsion failure, using the escort and the tanker's rudder to steer the tanker to five knots within the allowable transfer and then stopping the tanker within the allowable reach-transfer area. Zone 5 was not factored into the reach-transfer calculations.

The navigational assumptions, including the assumption that a propulsion failure could be steered from 10 knots to 5 knots, were deemed to be reasonable by participating pilots. Concern in the Group arose regarding assigning a specific navigational tactic (steering then braking) and ascribing operating characteristics (tug at stern) to the model, as well as use of "average braking capability" as a proxy for "average steering capability." It was noted, however, that this analysis is not a listing of tactical solutions, it is a method of developing the necessary measured forces to control a disabled tanker. It was further noted that the tactical solutions must remain the responsibility of the master, pilot and escort vessel operator.

Regarding Zones: the results showed that Zone 1 and 2 present similar characteristics, Zone 6 presents maximum tanker demand, and Zones 3 and 4 are respectively similar to Zones 5 and 6.

Further review of the Single-Failure Study assumptions found that all of the single-failure assumptions were identical to the dual-failure assumptions in the initial study, except:

- A. Governing Failure: The governing failure is defined as that failure (either steering or propulsion) which requires the most force to correct. The assumption being that if the force applied is adequate to address the governing failure, then it will also be adequate to address the other, less demanding, failure. The results of the study showed that up to a speed of 10 knots, the governing failure would be a failure of the ship's propulsion.
- B. Tug Adequacy: Tug adequacy to steer the disabled tanker through the waterway until it reaches a speed of 5 knots has not been verified. Individual tankers vary significantly regarding their steering and course-holding capabilities.

Use of a single-failure standard and the simulation maneuver "steering then braking," changes the reliance on an "average braking demand" and substitutes "braking force" which is measured at 5 knots or less and is, therefore, related to static bollard pull. Use of braking force does not recognize the indirect capability of tractor tugs at speeds from 10 knots to 5 knots.

The results of the study found that the single-failure demands with a 10 knot speed limit in slack water is roughly equivalent in terms of kips to existing regulation after changing ahead bollard pull for astern bollard pull for conventional tugs.

On July 13, 1995, the TES adopted Table 1, page 8, of the Glosten Single Failure Study as the default matching matrix for tankers with escort tugs. Correspondingly, speed limits were adopted for those tankers using the default table. The decision to accept the matrix generated by the second Glosten study was based in large part on the greater probability of occurrence of a single failure versus a dual failure, and the knowledge that the braking demands of a tanker exceed steering demands at lower speeds. Basing the matrix on braking demand means the matching criteria is established from the more difficult of the two maneuvers. In addition, it should be noted that in the event of such a casualty the tanker would most probably drop both anchors, a factor not included in the calculation of braking forces making the matching matrix all the more conservative.

The Harbor Safety Committee at its meeting of August 10, 1995 amended the TES proposed amendments to provide for OSPR oversight of the alternative measurement analysis of both tugs and tankers, added guidelines for calculating and alternative breaking force, clarified references to the Coast Guard Information System (Worldwide) data base, expanded the default matching matrix for vessels in excess of 180 thousand tons of displacement and made the matrix easier to read.

A2. ISSUE: Shall the regulations allow the Administrator of OSPR to grant waivers to otherwise regulated vessels?

RECOMMENDATION: The Administrator shall not be allowed to waive the requirements of the tug escort program except as provided by the stated exemptions (Alternative Compliance options) to the default matrix. The exemptions were approved by the subcommittee at a meeting held on 7/13/95. The decision to preclude further waivers for the Administrator was decided at a meeting of the TES held on 7/17/95.

REASON: The TES determined that the exemptions to the default matrix adequately address the need to foster improved capabilities on escort vessels, and increased safety through industry initiative by allowing some latitude in complying with the tug requirements while maintaining the integrity of the escort program. Broader exemption authority did not seem to be in the best interest of harbor safety, did not appear necessary

to further OSPR effectiveness and, it was felt, would not pass the public scrutiny these regulations will receive in the rulemaking process.

A3. ISSUE: Should speed limits be established for tanker and barge traffic in the Bay?

RECOMMENDATION: The regulations should be amended to require speed limits with the following provisions:

- (a) No tank vessel, except for safety related reasons or as provided for in part A3 (d), shall proceed at a speed in excess of 10 knots through the water in Zones 1, 2, 3, and 5 nor more than 8 knots through the water in Zones 4 and 6.
- (b) Tank vessels shall proceed at a safe speed which shall not exceed the speed at which their escort vessel(s) can render assistance. Safe speed will also take into consideration environmental factors including, but not limited to, depth of water, visibility, wind conditions, and tidal current. Proximity of traffic and other vessels at anchor shall also be considered.
- (c) Tank vessels shall in any case have their engines ready for immediate maneuver and shall not operate in any control modes or with fuels that prevent an immediate response to an engine order.
- (d) Tanker operators shall be exempt from the speed limits if they model their respective fleets relating to steering and braking demands and use these demands in lieu of the default table to demonstrate that the tanker can complete a safe transit within the 95th percentile of constraints from which the default matching matrix was developed. Speed limits of 8 and 10 knots in part A3 (a) refer to vessels conforming to the default matching matrix. Vessels that have been modeled are exempt from the 8 and 10 knot speed limit and are limited by the speed from fleet modeling as represented to OSPR and the Clearing House.

REASON: The issue of speed was discussed at the TES workshop on 2/21/95. The discussion centered on the problem of safety both in terms of preventing accidents that may be caused by excessive speed, as well as the problem that entails if a specific speed is mandated in all cases regardless of conditions. Too slow a speed can also be a danger. Language was proposed to allow the master or pilot considerable latitude in setting the speed in order to accommodate a number of navigational considerations. It was felt that the master or pilot was in the best position to judge the speed necessary to navigate safely. In addition, work done as part of the Glosten Study was predicated on a 10 knot speed limit. The model used by the study presumed that a tanker would be traveling at a maximum of 10 knots, and would slow itself to 5 knots in an emergency. At 5 knots the tug escort would then work to stop the tanker altogether.

Specific modeling of tanker steering and propulsion characteristics allows for innovation and development of improved and safer tankers. At the same time, it provides for commercial considerations of industry utilizing the same safety standards that form the basis of the default matrix. The TES adopted this matter at its meeting of July 13, 1995.

The Harbor Safety Committee at its meeting of August 10, 1995 amended TES recommended amendments to clarify speed limits by zone and relating to default matching matrix speed limits versus modeled vessels.

A4. ISSUE: Should the regulations require a minimum and/or maximum number of tugs during an escort?

RECOMMENDATION: No minimum number of tugs should be established, however, a maximum of three tugs should be required. This recommendation was approved by the TES at a workshop held on 2/21/95.

REASON: Some ports have required a minimum of two tugs in their escort program, however, there are some tank vessels operating in the Bay area that would only need one tug during an escort transit. Commenters at the TES meeting felt that the regulations should allow the option to use one tug if that tug has sufficient braking capability.

Correspondingly, the pilots commented that dealing with more than three tugs at a time can become a safety problem. Based on this concern, the pilots recommended limiting the total number of tugs that can be used to satisfy the braking requirements to three.

Subsequent discussion raised the concern that there may be very large ships that call in San Francisco that might need more than three tugs to meet the stopping requirements. This is acknowledged, however, the three tug limit as a routine operation seemed to address the greater safety issue.

A5. ISSUE: Should the regulations require that tankers be tethered to escort tugs?

RECOMMENDATION: No.

REASON: Requiring the tethering of tankers may create navigational safety problems in certain circumstances, specifically in bad weather and sea conditions. However, tethering does reduce the response time in providing benefit of the escort. The braking forces calculated in the default matching matrix allow for control of the tanker in untethered conditions at speeds of 10 knots in Zones 1 and 2 and for 8 knots in Zones 4 and 6. Utilization of the responsiveness values of tethering is provided for in the discussion of

speed limits (Issue A5) and is discussed there. This recommendation was adopted by the TES at a meeting held on July 13, 1995.

A6. ISSUE: In the event of an emergency, current regulations allow the master or pilot of a regulated vessel to override tug escort regulations. Should the definition of an emergency situation, as stated in regulation Section 851.4 (c), be expanded?

RECOMMENDATION: Yes, change the regulation as follows (changes underlined):

(c) For purposes of this section, an emergency is defined as any of, but not limited to, the following:

- (1) imminent and immediate danger to the vessel, its cargo, or its crew;
- (2) imminent and immediate danger to a marine terminal, service or escort vessel;
- (3) imminent and immediate danger to a vessel in the proximity of the escorted vessel; or
- (4) any emergency declared by the Captain of the Port.

This recommendation was approved by the TES at a workshop on 2/23/95 and further discussed at a workshop on 3/1/95.

REASON: The San Francisco Bar Pilots Association recommended that the definition of an emergency be broadened. This new language will take into account the possibility of assisting a nearby vessel in an emergency situation to protect a tanker, and to allow discretion to respond to a variety of emergency situations other than those listed.

A7. ISSUE: Shall waterway-specific navigational measures, for example one way traffic areas, vessel and bridge management standards, the use of intentional grounding, and specified use of anchors be adopted?

RECOMMENDATIONS: No. A subsequent technical piloting subcommittee should determine if these measures should be incorporated into the Harbor Safety Plan and/or into regulation at a later time.

REASON: On July 13, 1995, the TES determined that these matters were beyond the scope of their review.

A8. ISSUE: Should tankers be required to file a tug escort plan?

RECOMMENDATION: The regulations should specify that the Tug and Tanker owner/operators shall be responsible for ensuring that they comply with the regulations in a manner that would assure a reasonable level of success. Both parties shall take the steps necessary to assure that their vessels are prepared and able to perform their tasks as required in a manner that will provide the level of protection intended by these regulations.

An escort plan shall be developed which documents this process. Such plan may be in a checklist format and shall include, but not be limited to: intended routes, intended transit speeds, a communication plan, condition of the tanker (such as the displacement, number and responsibilities of crew, performance characteristics of the steering and propulsion systems), escort vessel selection, escort vessel deployment and intended response actions (taking into account available bits and chocks, available pushing surfaces, line type and size, and tides and currents). This recommendation was approved by the TES at a meeting held on 7/17/95.

REASON: The proposed change would put participants on notice that they are expected to think through the escort process and plan for proper use of a tug in an emergency situation, not just hire the requisite number of tugs. The escort plan provides OSPR, among others, the tool necessary to determine that the needed planning has been done. These changes are intended to guarantee a minimum level of compliance and provide participants with a fair playing field. It was felt that without such language the more conscientious parties would be penalized with the higher cost of prudent observance of the regulations.

A9. ISSUE: How will state tug escort vessel regulations be consistent with proposed federal (U.S. Coast Guard) regulations for tug escorts in San Francisco Bay?

RECOMMENDATION: A goal of the TES is to work closely with the Coast Guard to achieve consistency between state and federal regulations. In keeping with this goal, the Coast Guard was represented on the TES and participated in the development of these recommendations. In addition, the Administrator of OSPR and the OSPR liaison to the HSC have joined the ASTM in working toward the development of national tug escorting standards. The recommendations presented by the TES are to a large degree reflective of tug requirements implemented by industry in response to Coast Guard regulations for Puget Sound and Prince William Sound. Specifically, the requirement to have a tug escort plan, and using a single-failure scenario as the basis for the default matrix.

A10. ISSUE: Shall the TES support MIT's "Formulation of a Model for Ship Transit Risk"?

RECOMMENDATION: Yes, support the MIT study on formulation of a model for ship transit risk and advocate the use of the Bay Area as a beta-test site. This can be accomplished through an update to the Harbor Safety Plan. This recommendation was adopted at the TES meeting of May 25, 1995.

REASON: This is a proposed, multi-year study. The purpose of the study is to quantify the various risks of failure. The Coast Guard and NOAA/NOS will use this information to prioritize expenditures. It will be useful to the Harbor Safety Committee to understand the context of propulsion and steering failures among other risks, such as; human failure, inadequate navigational aids, deepening submerged rocks, communications procedures, vessel traffic systems, uncharted shoals, and inaccurate tide and current information.

B. ESCORT ZONES:

B1. ISSUE: Shall the geographical configuration of the Tug Escort Zones be redefined?

RECOMMENDATION: No.

REASON: The Tug Escort Subcommittee established a working group, the Waterways Group, and asked that they review the existing escort zones to determine if any changes were appropriate. The Group was asked to define and identify each "waterway" (zone) and to catalog and analyze the navigational risks of each waterway, eg, rocks, bridges, channel widths, soft bottoms and currents. The Waterways Group reported the following at a meeting of the TES held on July 12, 1995.

Three options were identified for defining the navigable waterways of the San Francisco Bay, as follows:

A. The six zone system currently in existing regulation. This system uses a matrix system to match tankers and tugs for each zone, and establishes various tug escort requirements:

Zone 1: Stand-by area and escorting zone, the same as Zone 2, with additional requirements to assure the seaworthiness of the escort tugs used outside the Gate.

Zone 2, 4 and 6: Escorting required.

Zone 3, 5: No escorting required.

B. **A two zone system** which uses the same tanker-tug matrix matching system for each zone:

Zone 1: Same as Zone 2, except additional seaworthy requirements for escort tugs

Zone 2, 3, 4, 5, and 6: Escorting required.

C. **A two zone system based on Glosten's dual-failure standard.**

Zone 1: Roughly equivalent to the existing system including Zones 1 and 2 except the area is shortened to Buoy R12.

Zone 2: Roughly equivalent to the existing system including Zones 5 and 6 except the area is enlarged to Buoy R12.

Existing Zones 3 and 4 were not included in the initial Glosten study which used a dual-failure scenario because there is no tanker traffic in these areas.

Zoning systems "B" and "C" were discarded. Option "B" was rejected because it did not account for the different tanker demands within the geographic area inside the Golden Gate Bridge. Option "C" was abandoned because it had been associated with tanker demands necessitated by dual failures, a standard that has been revised by the Tug Escort Subcommittee.

Zoning system "A", the existing system, was used by Glosten in determining tanker demands for a single-failure standard. In this option, Zones 3 and 5 remain "no escort" zones. The Zone 5 reach and transfer limitations have been removed from the restraint demands of the Glosten analysis. Results of the second Glosten study show that different navigational tactics, thus different tanker demands, are necessary in Zone 6. It therefore seemed logical to continue to use a zoning system that differentiates geography as laid out in zoning system "A". Since Zones 3 and 4 do not enjoy tanker traffic and have not been technically studied, yet have geographic similarities to Zones 5 and 6 respectively, the rules and matrices for Zones 5 and 6 should be respectively applied to Zones 3 and 4.

At its meeting of July 13, 1995, the Tug Escort Subcommittee adopted the recommendation of the Waterways Group to continue to use the six existing Escort Zones, and their attendant escorting requirements as defined by the Glosten study.

B2. ISSUE: Shall escort tugs be required to standby as the escorted tank vessels traverse Zones 3 and 5?

RECOMMENDATION: Yes. The regulations should specify that the escort tugs should standby in Zones 2 or 6 as the tank vessel transits Zone 5, and shall standby in Zones 2 or 4 as the tank vessel transits Zone 3. Escort Vessels may attend tanker transits through Zones 3 and 5 in lieu of standing by. This recommendation was approved by the Tug Escort Subcommittee during meetings held in June, July and August of 1994 and was further clarified regarding standing by or attending at the Harbor Safety Committee meeting of August 10, 1995.

REASON: Zone 5 is bracketed by escort zones 2 and 6, while Zone 3 sits between escort zones 2 and 4. In both cases, this proposed change to the tug requirements would ensure that a tank vessel will have a tug escort available upon completing its transit through an unregulated zone. Should a tug escort be delayed in getting on-station in preparation for an escort, the initial tug escort would have enough time to respond to the tank vessel in transit and to complete the escort in the subsequent regulated zone. This change will provide an added degree of safety and allows for the contingency that a tug may be delayed or breakdown.

B3. ISSUE: Shall the escort requirements for Zone 1 be revised?

RECOMMENDATION: No change to regulation Section 851.5(a)(1)(A).

REASON: The issue of extending Zone 1 to the Pilot Station has been discussed extensively by the Harbor Safety Committee and the public. It was felt that because the configuration of the bottom in this area is sand and mud, a vessel going aground would be in minor danger of rupturing. Also, help in towing a vessel is quickly available from the tug escort standing by in Zone 1 near the Golden Gate Bridge. The existing delineation of Zone 1 was used in establishing the tanker-tug matching formula in the Glosten study (phase 2).

B4. ISSUE: Shall the escort requirements for Zone 5 be revised?

RECOMMENDATION: No change to regulation Section 851.5(a)(1)(E).

REASON: Zone 5 was declared a "no escort" zone because the channel is narrow and the bottom is composed of sand and mud. Vessels running aground in this zone are in minimal danger of rupturing. Help in towing the vessel is readily available from the tug escorts standing by in either Zone 2 or Zone 6.

C. ESCORT TUGS:

C1. ISSUE: Shall Escort Tugs be required to notify the Clearing House when they have arrived on-station for the escort?

RECOMMENDATION: Yes. Following is the proposed change to the language at section 851.9. This change was approved by the Tug Escort Subcommittee during meetings held in June, July and August of 1994.

“Escort tugs shall report to the Clearing House the name of the tug and the name of vessel to be escorted, and shall confirm when the escort tug is at the following location:

- (a) For inbound movements, when passing Alcatraz and when on station;
- (b) For in-bay movements, when on-station at the tank vessel prior to beginning the transit;
- (c) For outbound movements, when on-station at the tank vessel prior to beginning the transit.

REASON: The Clearing House is charged with monitoring compliance with the tug escort regulations. This new requirement would give the Clearing House sufficient time to verify that the escort tug is properly matched to the regulated vessel, that is, to match the braking force of the escort tug with the displacement of the tank vessel.

The locations for reporting to the Clearing House were chosen based on allowing sufficient time for the Clearing House to verify the match between the escort tug and the tank vessel. In practice, this verification has taken five to ten minutes. For in-bay or outbound movements, prior to the tank vessel leaving the anchorage or terminal is recommended. For inbound movements, reporting to the Clearing House when passing Alcatraz and when on-station has been the practice. This regulation would confirm and systematize this existing procedure.

In a February 17, 1994 workshop on tug escort regulations, members of the shipping industry commented that a ship, in order to comply with escort regulations, might delay entering the traffic pattern or alter its speed if its tug escort was delayed. It is noteworthy that during the first year of tug escorting, this has been adopted as a voluntary practice.

C2. ISSUE: Shall regulated vessels be required to notify the Clearing House that escort tugs are on station?

RECOMMENDATION: No change proposed.

REASON: Pilots at the February 17, 1994 workshop on tug escort regulations indicated they were too busy with other operational matters to be required to make this additional notification. The consensus was that notification of the Clearing House by the escort tug (as provided above) was sufficient.

C3. ISSUE: What should be the maximum distance between the tank vessel and the escort vessel?

RECOMMENDATION: The regulations should require that tugs remain no further than 1000 feet ahead or aside, or 500 feet astern of the vessel being escorted. This recommendation was approved by the TES at a workshop conducted on 2/23/95.

REASON: Pilots and tug operators recommended the proposed distances to facilitate expeditious response during an emergency maneuver. The distances are based in part on the figures used by the Glosten study, and in part on the practical experience and operational knowledge of the maritime community.

C4. ISSUE: Should the master of the escort vessel be required to report steering, propulsion, or equipment casualties to the Clearing House and tank vessel master (or pilot)?

RECOMMENDATION: Amend the regulations to require that the master of the escort vessel immediately notify the tank vessel master or pilot of any casualty that occurs during the escort transit. In addition, the tug owner, operator or agent must file a written casualty report to the Clearing House within 72 hours of occurrence. The Clearing House would be required to maintain a database of these reports. This recommendation was approved by the TES at a workshop held on 2/23/95. The Harbor Safety Committee at its meeting of August 10, 1995 amended the TES amendment to delete immediate notification of the Clearing House requirements.

REASON: This requirement was recommended by the Pilot's working group. It was asserted that such reporting is necessary to apprise the tank vessel operator and pilot of any impending problems so that adjustments can be made in a timely manner. Providing the information to the Clearing House is necessary to track and remedy equipment failures and related problems. The data base maintained by the Clearing House would simply be an extension of the information that the Clearing House already maintains on the tugs in the Bay area.

There was some question regarding a possible redundancy between this requirement and an existing Coast Guard reporting requirement. The Coast Guard, however, only requires

that vessels report casualties to the Coast Guard. There is no comparable federal requirement for reporting the casualty to the tank vessel operator.

As part of this requirement, a definition of 'casualty' must also be established. The TES recommended that the definition specify that the reportable casualties would only be those that involve steering, propulsion and/or equipment failures.

C5. ISSUE: Should there be minimum equipment standards for escort vessels?

RECOMMENDATION: Amend the regulations to include minimum equipment standards for escort vessels. Use language submitted at the TES workshop held on 2/23/95 as modified in discussion at the TES workshop held on 3/9/95, as follows:

- (1) A line-throw gun for use in the escort area west of the Golden Gate Bridge;
- (2) 300 feet of tag line;
- (3) Power line-handling equipment fore and aft for rapid, mechanically assisted deployment of lines. The primary winch shall be in the position best suited for the design of the particular tug in escort service;
- (4) Tow line with a "safe working load" that is 2.5 times the certified bollard pull rating of the escort vessel;
- (5) A quick release device to be used when an escort vessel is in a tethered mode;
- (6) One working radar;
- (7) Fendering as follows:
 - (A) appropriate to absorb impact in skin-to-skin operations;
 - (B) located at both the bow and stern to act as pivot points when pulling away from the tank vessel;
 - (C) sufficient to assure that there are no exposed corners, large holes or metal parts which could inflict damage on the escorted vessel; and
 - (D) sufficient surface area to minimize sliding when working at an angle to the tank vessel.

REASON: The pilots, tug operators and a local mariners organization proposed the language for this recommendation. The proposal was initiated to assure that all tugs being used for escort operations can provide a similar level of service, and can operate safely and effectively in response to an emergency situation.

C6. ISSUE: Should there be an annual inspection of escort vessels to assess compliance with crew and equipment requirements?

RECOMMENDATION: Amend the regulations to require that the state develop procedures for annual inspection of tug equipment, and annual verification of crew training for escort operations. These requirements could be met by tug operator's self-inspection of equipment, and adequate documentation of crew training, subject to unannounced spot checks by state personnel. The TES approved this recommendation at a workshop held on 2/23/95.

REASON: The Harbor Safety Committee had previously recommended annual inspections of tugs to assure compliance with various requirements. In addition, the TES felt that periodic, unannounced spot checks by the state should also be required. These inspections are intended to limit the possibility that sub-standard tugs are used for escort operations.

At a meeting in May of 1995, the GGTA recommended that the AWO "Responsible Carrier Program" provide the standard for these escort vessel inspections. At the meeting of 5-25-95 the TES was reticent to accept this recommendation without further review. The consensus of the TES was that OSPR should make the determinations regarding standards. Subsequent to that meeting, the TES received a letter dated 6-12-95 from Gail Skarich, Sanders Towboat Company and GGTA to report on a conversation with the VP of the Pacific Division, AWO, and to provide the language used by the State of Washington to address this issue. Washington recognizes the AWO "Responsible Carrier Program". The Chair suggested the record reflect that this information is available and point OSPR in that direction.

C7. ISSUE: (1) Should escort vessel owners be required to establish and maintain records of crew training in order to document compliance. (2) Should escort vessel operators maintain a log of each escort transit?

RECOMMENDATION: (1) The regulations should require that escort vessel owners maintain a log of every escort transit. The log should record, at a minimum, the sequence of events, the assigned crew, any casualties that occur, and any drills that are conducted. Similar logs maintained for other agencies would satisfy this requirement. (2) The tug

owner/operator must maintain documentation of crew qualifications in a manner similar to comparable documentation required by the Coast Guard.

The TES approved these two recommendations at a public workshop held on 2/23/95.

REASON: An escort log will provide valuable information both in terms of the efficacy of escort requirements, and in the case of an incident. Such logs are already being maintained by most tug operators. This requirement would assure that all tug companies are operating in a similar manner. Requiring documentation of crew capabilities, training and qualifications is intended to limit the possibility that tug companies are using crew not adequately prepared for escort operations.

C8. ISSUE: What measurement methodology should be used when establishing the power or force that a given tug is capable of exerting in the control of a tanker?

RECOMMENDATION: Change the regulations to require that the 'Braking Force' of a tug will be the determining factor when assessing the tugs ability to control a tanker of a given size or displacement when using the default matrix.

Braking force for a conventional tug will be measured as astern bollard pull. Braking force for a tractor tug will be measured as ahead bollard pull. However, in lieu of the default matching matrix, if there is a way to measure the braking force of any tug (in kips) such that the result will show a higher kip than is listed in the standard bollard pull table, it shall be allowed that the tug boat with lower bollard pull may escort a larger tanker than the bollard pull table would otherwise allow. This alternative measurement must be conducted from a starting point of 10 knots, and must be conducted by a naval architect or licensed engineer approved by OSPR.

It is the intent of this requirement that the bollard pull shall be based on actual measurements, rather than forces determined by using a mathematical model. In addition, the safety of the crew and the stability of the tug shall always be assured during any bollard pull measurement.

REASON: Basing an escorting matching matrix on a single failure standard recognizes the ability of the still-operating tanker system, steering or propulsion, to aid the disabled tanker to a safe, stopped status. In the case of a steering failure, the tanker's engine and the escort tug are able to stop the tanker within a 95th percentile reach-transfer area. With a propulsion failure, the escort tug and the tanker's rudder can maneuver to a speed of five knots within the allowable transfer and then stop the tanker from that point within a 95th percentile reach-transfer area. The forces necessary to accomplish these navigational tactics are ahead bollard pull for tractor tugs and astern bollard pull for conventional tugs. These forces are termed braking forces.

In the interest of encouraging development and enhancements of escort tugs, an alternative to the basic matching matrix would be allowed. Specific modeling of tugs which takes advantage of the added capability during the 10 knot to 5 knot steering maneuver during a propulsion failure provides incentive to improve the capability of escort tugs.

The Tug Escort Subcommittee adopted these provisions at its meeting of July 13, 1995.

C9. ISSUE: How should the 'Braking Force' of an escort vessel be measured, verified and reported?

RECOMMENDATION: At the May 25, 1995, TES meeting, the TES adopted the following: An escort vessel that is specifically designed to operate with a line off the stern at relatively high speed in escort situations, such as a tractor tug, may substitute the 'ahead' bollard pull for the 'astern' bollard pull. At its July 13, 1995 meeting, the TES adopted a matching formula that is predicated on the braking force of an escort tug. Such force is measured by the "ahead" bollard pull of a tractor tug, and the "astern" bollard pull of a conventional tug. These measurements will continue to be verified and reported as in current regulations.

REASON: The bollard pull will continue to be the basis for determining the capability of the escort vessel. This is consistent with the adopted matching matrix which establishes the force necessary to control a disabled tanker within the 95th percentile of success. However, current regulations require testing both the astern and ahead bollard pull of all escort vessels. Astern measurements are not considered necessary for tractor tugs which have different capabilities and operating characteristics from conventional tugs. Suggested language was submitted by the Golden Gate Towboat Association which includes representatives of the companies having tractor tugs in the Bay. The issue was extensively discussed during public testimony at the 3/9/95 TES workshop. Tractor tug owners testified that current regulations for bollard pull testing do not recognize and therefore discourage the use of tractor tugs.

Additionally, it was decided that it would no longer be necessary to test the tug's "running speed". The bollard pull measurement is the calculation used for matching tugs and tankers. Since running speed is not part of the matching formula, its measurement was determined to be superfluous.

C10. ISSUE: Should the procedure for bollard pull testing be standardized to be consistent with procedures used in other ports in California.

RECOMMENDATION: Amend the regulations to allow for certification of bollard pull testing by the ABS (American Bureau of Shipping) or another member of the IACS (International Association of Classification Societies). This test would not necessarily have to be conducted in San Francisco. A test conducted elsewhere that meets ABS standards would be acceptable. This recommendation was approved by the TES at a workshop held on 2/23/95. The Harbor Safety Committee at its meeting of August 10, 1995 chose not to amend this recommendation but noted that the Clearing House should continue to set rules and coordinate with OSPR and other ports.

REASON: This issue was raised by tug owners who have tugs that operate in San Francisco as well as other California ports. Their concern was the cost of multiple testing of each tug's bollard pull capability. In particular, they were concerned about the differences between the San Francisco requirements and those in Los Angeles. The recommended change would provide consistency in the testing and measurement requirements in California.

C11. ISSUE: Shall the bollard pull of escort tugs be recertified on a regular basis?

RECOMMENDATION: Yes. Proposed Amendment to the Regulations.

The escort vessel must have its bollard pull recertified with the Clearing House every three years from the date of initial certification or sooner if conditions substantially degrade the vessel's bollard pull.

REASON: The regulations are silent as to recertification of bollard pull. The bollard pull of a tug may change due to a number of factors such as differing maintenance standards. A tug may be at peak performance for the bollard pull test and subsequently change enough to not qualify for the original matching category. Testing should be kept current to maintain valid matching of an escort vessel to a tanker. Testing every three years would be considered a reasonable length of time in which the bollard pull of a tug would most likely vary.

C12. ISSUE: Should the tug's bollard pull be re-measured if *improvements* are made to its abilities?

RECOMMENDATION: No, the regulations should not be changed to require recertification if a tug's capability improves. This recommendation was approved by the TES at a meeting held on 2/23/95.

REASON: At the February 23, 1995 TES workshop, participants discussed whether to expand the proposed requirement for recertification to include retesting when significant enhancements are made to an escort vessel. The TES concluded that, because the operator

of an escort vessel would voluntarily apply for recertification if the escort vessel qualified for an increased level of escort work, no action should be taken to require this.

C13. ISSUE: Should a 'line-haul' tug involved in regulated barge transit be allowed to become the escort vessel? If so, what definition should be used to distinguish the line-haul from the escort tug?

RECOMMENDATION: (1) Prohibit the 'line-haul' tug which provides the power to push or tow a barge from becoming the escort vessel for that barge unless it is properly and physically relieved of its duties as the primary towing vessel. The TES at the February 23, 1995 meeting approved this recommendation and further discussed the language at its 3/1/95 meeting. (2) Define the line haul tug as a 'Towing Vessel' which means the (line haul) tug that provides the primary power to push or pull a regulated barge." The Harbor Safety Committee at its meeting August 10, 1995 amended the recommendation of the TES to provide for provide for proper and physical exchange of line haul and escort tugs since it is a normal and reasonable commercial practice.

REASON: The tug that pushes or tows a barge is not required to meet bollard pull requirements in its role as a 'line-haul' tug. This tug is not positioned to run alongside the barge to act in case of an emergency. The intent of the proposed requirement is to preclude a tug which is uncertified as an escort tug from switching during a transit to the role of an escort tug. The definition establishes that the towing vessel is the line haul tug.

C14. ISSUE: Shall escort vessels which transit westward of the Golden Gate Bridge be required to have specific seagoing capabilities?

RECOMMENDATION: Require that all escort vessels which operate westward of the Golden Gate Bridge must demonstrate that they are seaworthy by providing a "Stability Letter" for coastwise service from a marine architect or engineer. Tugs that do not have such a letter can continue to operate until their next scheduled dry-docking or for 3 years, whichever is less, if they can show that they are able to meet the general stability requirements. To show that the vessel is seaworthy, pending the receipt of the "Stability Letter", a tug must provide verification from a recognized survey agency that the vessel has been inspected and is deemed to be sound.

The TES adopted this recommendation at the February 23, 1995 meeting, further discussed the language at its meeting held on March 1, 1995, and modified the recommendation at the meeting of July 17, 1995.

REASON: The intent of the requirement is to ensure that escort tugs operating in rougher waters west of the Golden Gate Bridge are stable and seaworthy. Initially, the

TES required all such escort vessels to comply with Federal and Coast Guard regulations, however, the Coast Guard only certifies the seaworthiness of vessels which are 150 gross tons and above. Many tugs operating in the Bay are under 150 gross tons. In order that all tugs be covered by these requirements the TES adopted the broader language requiring a marine architect to certify stability and seaworthiness.

The issue of allowing a phase-in period was addressed because of comments from tug operators. Their concern was the cost of hauling the vessel out of the water for the assessment necessary to acquire a "Stability Letter". Such haul-out can cost upwards of \$50,000. Since all tugs must be placed in dry-dock for inspection every 2 to 3 years, it was decided to allow a phase-in period that would coincide with this requisite inspection.

C15. ISSUE: Shall additional classification societies be authorized to certify escort tugs?

RECOMMENDATION: Yes, amend regulation Section 851.6 as follows;

The Clearing House shall be responsible for performing the following duties:

- (1) measure and record the static bollard pull, both either ahead and or astern as appropriate, of each escort vessel that will be used to comply with this subchapter, and engage the American Bureau of Shipping or any member in good standing in the International Association of Classification Societies to certify the measurements made under this subsection.

REASON: Certification of bollard pull should not be restricted to one source such as the American Bureau of Shipping. Other certification societies offer the same services. Allowing competitive prices for this service, rather than specifying a sole source, will make costs more reasonable for industry without impacting the effectiveness of the requirement.

C16. ISSUE: Emergency drills for escort vessels.

RECOMMENDATION: There will be no drill requirement for tugs in the proposed guidelines. This recommendation was discussed and passed unanimously by the TES at a meeting held on 6/16/95.

REASON: The issue discussed was whether to require periodic drills and, if so, should the regulations include specifics regarding the mechanics and frequency of such drills. The participants at the meeting suggested that the term 'drill' is too broad - just what is an emergency drill for an escort? In addition, subsequent discussion led to a consensus that a tug cannot conduct emergency drills with a tanker without entailing substantial costs and

disrupting traffic flow in the Bay. The costs appeared to outweigh the benefits for all involved.

D. TUG CREWS:

D1. ISSUE: Shall both the tug escort operator (master) and deck hands be certified? If so, what is the scope of the training and education program?

RECOMMENDATION: Yes, amend regulation Section 851.8(b) as follows:

To qualify for certification as the master or deck hand on an escort vessel, an applicant must do the following:

- a) possess a current and valid U.S. Coast Guard Merchant Mariner's Document (Z-card);
- b) show proof of at least 120 (8 hour) days of service aboard towing vessels, at least 30 days of which must have been spent in the San Francisco Bay;
- c) successfully complete an approved education program which covers the following topics:
 - 1) basic tugboat seamanship;
 - 2) line handling skills;
 - 3) communication systems;
 - 4) emergency response to the loss of steering or propulsion on an escorted tank vessel or the escort vessel itself.
- d) In addition to the requirements of subparagraphs (a), (b), and (c), certification as the master of an escort vessel also requires that the applicant do the following:
 - 1) possess a U.S. Coast Guard license appropriate to the escort vessel in service; and
 - 2) show proof of an additional 30 (8 hour) days service aboard a towing vessel in the San Francisco Bay area (for a total of 60 of the requisite 120 days of service).

- 3) successfully complete an approved education program which covers basic seamanship, and knowledge of local waters.
- e) Individuals may be considered to have satisfied certain educational requirements without attending an education program, if they meet the following criteria:
- 1) an individual with a U.S Coast Guard rating of Able Seaman Special (OSV) or greater is considered to have met the educational requirements in subsection 851.8(b)(1)(C) 1 and 2;
 - 2) an individual with any Coast Guard license appropriate for the escort vessel in service is considered to have met the educational requirements in subsections 851.8(b)(1)(C) 1, 3 and 4.

REASON: (a) The tug escort master should fulfill essentially the same educational requirements as outlined for deck hands. Requiring the same education will enhance the safety of the tug escort program. (b) The suggested requirement for training in basic fire-fighting skills and knowledge of oil spill prevention and response legislation was deleted because the basic mission of the tug escorting a ship is to effect the ship's course in case of an emergency. The tug escort mission does not include responding to an oil spill or a fire. (c) The TES had initially suggested educational requirements for tug deck hands that included "basic deck seamanship" and "local knowledge". These requirements were later deleted. "Basic deck seamanship" was determined to be a generic term that applies to duties on board a ship not a tug. "Basic tug boat seamanship" requires a higher level of training. The "local knowledge" requirement was determined to be necessary only for the Captain of the tug. The duties of the deckhands are totally unrelated to knowledge of local waters. This change was approved unanimously at a meeting of the TES held on 6/16/95.

D2. ISSUE: Shall OSPR be authorized to certify company tug escort crew certification programs as meeting the proposed educational requirements?

RECOMMENDATION: Yes, amend regulation Section 851.8(3). This change was approved by the Tug Escort Subcommittee during meetings held in June, July and August of 1994.

"The Administrator shall certify the education programs for tug escort masters and deck hands. The Office shall establish and maintain a list of approved education programs and approved company education programs for tug escort masters and deck hands."

REASON: After discussion, it was determined that the Office of Oil Spill Prevention and Response in the Department of Fish and Game would be the most appropriate agency to certify tug escort personnel training. This proposed regulation directs the Department to

develop a list of approved education programs which may include company education programs which are already established and would meet the requirements of the tug escort program.

D3. ISSUE: Shall the regulations require four crewmen aboard a tug escort vessel?

RECOMMENDATION: Change the regulations to specify that a tug escort's crew must include an operator, two deckhands and a fourth person who shall be able to resolve mechanical difficulties aboard an escort vessel in the event of an emergency. The recommendation was approved by the TES at a meeting held on 6/16/95.

REASON: The present regulation specifies that escort crews "shall have a minimum of two certified deck hands". The proposed tug escort regulations provide for a master, two line handling deckhands and a fourth person. The fourth crewman is required in order to ensure that two crew members are available at all times on deck to handle a tow line during an emergency, one person is available to monitor the engines in case of emergency, and another to drive the tug. The issue was discussed at length at a meeting of the TES on 6/16/95. The questions were principally concerned with the designation and qualification of the fourth crew member. GGTA has recommended that the fourth person be an engineer with some specified qualifications. The GGTA's main concern is safety and they feel that a safe escort requires an engineer on board. Industry representatives on the contrary felt that tugs are being built now such that an engineer may not be needed.

TES felt that a fourth person was needed to carry out additional duties in the event of an emergency. The question is whether this fourth person should be designated an engineer. If the fourth person is only on board as a form of insurance to provide two, ready line-handlers, then designating that person as an engineer is not necessary.

GGTA felt, however, that without specifying that the 4th person will be an engineer, there's no need for an additional warm body on the boat. If the duties of the fourth person are not proscribed, the more reputable tug companies will go with the intent of the regulations while others will go with the letter. In which case, the fourth person may simply be a cook or some other type of crew without line-handling experience.

Industry was concerned that the move to require an engineer was an attempt to reduce competition among tug companies. It was suggested that TES members attend an escort in order to better understand the requirements of the workload aboard an escort vessel.

OSPR suggested that any proposed language should simply require that the escort vessel be adequately manned to perform the escort function, leaving the determination of necessary crewing in the hands of the operators. This would allow for such things as future advances in technology.

TES noted that existing language implied the presence of an engineer, but did not require one. The subcommittee felt that in any event the regulations should require a minimum crew of 2 line handling deckhands and an operator, and the Chair stated that it is the intent of the TES to have a fourth person.

D4. ISSUE: Should a maximum number of hours that pilots, tug operators and crews be allowed to work when engaged in an escort be set by regulation?

RECOMMENDATION: Change the regulations to require that working hours for escort vessel crew members shall be limited to 15 hours in a 24-hour period, and no more than 36 hours during any 72-hour period. This recommendation was approved by the TES at a workshop on 2/23/95 and further discussed at a workshop on 3/1/95.

REASON: Long hours on duty can lead to fatigue which impairs judgment and quick response actions. OPA '90 (federal regulations) sets the maximum number of hours that a licensed individual or seaman can work on a tanker, but does not establish maximum hours for crews working on an escort vessel or for the tanker pilot. In relation to pilots, Rear Admiral Henn, then-Chief, Marine Safety Division of the Coast Guard interpreted in a letter dated June 22, 1992 that pilots are subject to OPA '90 restrictions because they possess a federal pilot's license. The Harbor Safety Committee will separately pursue with the State Board of Pilot Commissioners whether state pilots are covered by federal regulation because pilots must hold a federal license.

E. TANKERS:

E1. ISSUE: Should 'deadweight tonnage' or 'displacement' be used as the unit of measure for assessing which tank vessels shall be regulated?

RECOMMENDATION: Change the regulations to specify that 'displacement' will be used as the unit of measure for assessing which vessels shall be regulated. This recommendation was approved by the TES at a workshop held on 2/21/95. The recommended terminology was part of a broader recommendation for matching tugs to tankers. The matching criteria was established in the San Francisco Bay Tanker Escort Study, prepared by Glostien Associates.

REASON: The TES commissioned a study of the San Francisco Bay that included the parameters that must be used to match tugs to the tank vessels they will escort. This matching criteria used the tank vessel's displacement when assessing the demand the tank vessel places on the tug to slow or stop the tank vessel in an emergency. Displacement

changes with the volume of cargo on board, and so was considered to be the more accurate measure of demand for any given transit. This change in terminology was necessary to provide consistency with other changes that had been recommended by the TES.

E2. ISSUE: Shall the regulated vessel's arrival and/or movement be reported to the Clearing House by the Ships Master or by the Pilot?

RECOMMENDATION: The pilot shall be responsible for reporting the arrival and movement of the escorted vessel to the Clearing House. This change was approved by the Tug Escort Subcommittee during meetings held in June, July and August of 1994.

Proposed Amendment to Regulation Section 851.7(b).

No more than one hour prior to entering or transiting the marine waters of San Francisco, San Pablo or Suisun Bays, the pilot or, if no pilot is on board, the master of a tank vessel shall present itself by reporting its name, official number and position to the Clearing House.

REASON: (a) The regulations are presently unclear as to which individual is to present a tank vessel to the Clearing House - the master or the pilot. This is particularly important because foreign flag vessels that call occasionally in the Bay may be unfamiliar with tug escort regulations. Knowledge of local regulations will become even more important because of a projected increase in the numbers of foreign registry ships that will call in the Bay due to an increased dependence on imported oil and market factors. The pilot is the individual most familiar with local conditions and local regulations and can more quickly check in with the Clearing House. (b) Setting a maximum length of time for the pilot to notify the Clearing House will enable the Clearing House to have timely information as to the position of the tank vessel. Some ships have notified the Clearing House as much as four hours ahead of the transit. In such cases, the Clearing House has no accurate information as to the time the tank vessel will be underway with an escort tug. (c) As part of this amendment, it is also proposed that the requirement to report the official number of a tank vessel be deleted, as the Clearing House has indicated that it has no need of the number for identifying a vessel.

E3. ISSUE: Shall currently unregulated tank vessels be required to check-in with the Clearing House?

RECOMMENDATION: Yes, Amend regulation Section 851.7(b). This change was approved by the Tug Escort Subcommittee during meetings held in June, July and August of 1994.

"No more than one hour prior to entering or transiting the marine waters of the San Francisco, San Pablo or Suisun Bays, the pilot or if no pilot is on board the master of a tank vessel shall present itself by reporting its name [delete "official number"; see 851.7(b) above] and position to the Clearing House, and

(1) tank vessels carrying 5,000 or more long tons of oil shall report "Escort Required"; and

(2) tank vessels carrying less than 5,000 long tons of oil shall report as "No Escort Required."

This change will also modify the definition of "Tank Vessel" and the Applicability section as follows:

851.3 Definitions:

"Tank Vessel" means any barge or tanker, as defined in this section, that is capable of carrying 5,000 or more long tons of oil. This definition includes any barge or tanker having a double hull as certified by the U. S. Coast Guard.

851.4(a) Applicability:

This subchapter shall apply to tankers or barges all tank vessels carrying over 5,000 long tons of oil in bulk when underway on waters identified as designated escort areas as outlined in Section 851.5 in San Francisco, San Pablo and Suisun Bays, as follows:

(1) Tank Vessels carrying 5,000 or more long tons of oil shall be required to comply with all the requirements in this subchapter.

(2) Tank Vessels carrying less than 5,000 long tons of oil shall only be required to comply with the reporting requirements as stated in subsection 851.7(b)."

REASON: Only vessels carrying more than 5,000 long tons of oil as cargo are currently required to report to the Clearing House. The Clearing House has frequently been asked about the status of particular vessels, but has been unable to respond. OSPR then must take additional, time-consuming steps to determine the status of a tank vessel. Requiring all tank vessels to declare cargo status will eliminate the time consuming follow-up calls and enable the Clearing House to speedily respond to inquiries.

E4. ISSUE: Shall regulated tankers be required to hold a pre-escort conference with the escort vessel(s)?

RECOMMENDATION: Yes, amend regulation Section 851.7. This change was approved by the Tug Escort Subcommittee during meetings held in June, July and August of 1994.

“Before commencing an escort transit the pilot or, if no pilot is on-board, the master of the escorted vessel shall initiate communications with the escort tug(s). During this pre-escort communication, all parties shall plan and discuss particulars of the escort transit. At a minimum, the following topics shall be addressed: the intended route, destination, speed, the relative positioning of the escort tug(s), the manner in which an emergency towline connection would be made, radio communications, and anticipated weather and tidal conditions.”

An 'escort transit' means that portion of the tank vessel's voyage through waters where an escort vessel is required.

REASON: There was a significant discussion at the February 17, 1994 workshop on this matter. Tug operators emphasized that a structured format of communication is necessary prior to commencement of the escort between the escorted vessel and its Escort Tug(s). A consistent, structured format insures that essential information is passed between the vessels in order to eliminate mis-communication which can result in accidents. It is particularly vital to establish where the escort tug is to be stationed relative to the tank vessel and the speed of the tank vessel relative to the tug escort before the escort movement begins. When tug escorting was first established on the Bay, a tug escort hit a tank vessel because of mis-communication. This regulation would require a systematic “check-off” procedure of vital information.

E5. ISSUE: Should regulations proscribe the type and location of a tank vessel's bitts and chocks which are to hold an emergency line from an escort vessel?

RECOMMENDATION: Require that: "Deck chocks and bitts on tank vessels shall be of sufficient size and number to accommodate anticipated braking strength of the escort tug(s)". The TES adopted this recommendation at its May 25, 1995 meeting, having previously discussed the issue at the March 9, 1995 TES meeting.

REASON: There have been incidents in the Bay where chocks have been pulled off ships during a tug escort. For an emergency tow to be successful, the bitts and chocks on a tank vessel must be sufficiently strong to enable the escort vessel(s) to exert sufficient force to influence the speed and direction of the tank vessel in a short time-frame. The TES concluded that regulations were needed which would require a sufficient number and size of deck chocks and bitts, but not specify their location and number.

E6. ISSUE: Should there be an exemption for double-hulled tankers with fully redundant steering and propulsion systems?

RECOMMENDATION: Change the regulations to provide an exemption for tankers that have all three of the following characteristics; double hulls, fully redundant steering and propulsion systems, and bow thrusters. This recommendation was accepted by a unanimous vote of the TES at a workshop held on 2/23/95.

REASON: This exemption was recommended by the pilot's working group and had been considered previously by the Harbor Safety Committee. Establishing this exemption will make the regulations for the San Francisco consistent with tug regulations promulgated by the federal government under OPA '90. In addition, an exemption such as this provides an incentive for the tanker community to improve technology. Such new technology may, in fact, provide greater protection from oil spills than a tank vessel escort.

E7. ISSUE: Should an escort vessel(s) be required if a tanker or barge only shifts position within an anchorage?

RECOMMENDATION: Amend the regulations as follows:

"Tank vessels limiting their movements to the confines of an anchorage shall be exempt from tug escort requirements providing that tug assist vessels, as determined necessary by the pilot, will be available during shifting." This recommendation was approved by the TES at the February 23, 1995 workshop.

REASON: Pilots, tug and tanker operators agreed that an inter-anchorage shift can safely be made with an assist tug and does not require an escort tug. The slower speeds used during the shifting mode significantly reduces the need for an escort standing by. The consensus was that this exemption should only apply to maneuvers within a designated anchorage. An industry member noted that using an assist tug, rather than an escort tug, is currently the accepted practice on the Bay.

F. BARGES:

F1. ISSUE: What tug should provide crew for a barge, and shall alternate methods be allowed in lieu of such barge crew transfers?

RECOMMENDATION: Amend regulations Section 851.9(f) as follows:

A barge shall have sufficient and qualified line-handling capable deck hands standing by available to receive lines from each escort vessel. Said deck hands shall be made available from the line-haul tug. In the interest of crew safety, when entering or leaving Zone 2, crew transfers may be made in the vicinity of Alcatraz Island. When the barge is fitted with an emergency tow wire or comparable, adequate mechanical device, or the escort tug is made fast to the barge, crew transfers shall not be required."

This change was approved by the Tug Escort Subcommittee during meetings held in June, July and August of 1994, and later amended at TES meetings held on 5/25/95 and 6/16/95.

REASON: During public meetings, barge operators commented that placing a crew member on board the barge can be unsafe. Options should be allowed to tether the tug escort to the barge or to have in place an emergency tow wire which can quickly be made fast to the barge. Such mechanical alternatives are presently available.

The initial proposal was later modified to require that any additional crew that were put aboard the barge should come from the line-haul rather than the escort tug. This change was made as a result of input from tug operators who noted that the original proposal put the onus on the tug escort to provide crew to work a barge that is rightfully the responsibility of the tug pulling (or pushing) the barge. The TES agreed that in the event that additional crew is needed for the regulated barge, it should come from the tug that is towing the barge.

F2. ISSUE: Exemption for 'fully redundant' barges

RECOMMENDATION: Do not include barges in the "fully redundant" exemption for tank vessels. This recommendation was discussed and passed unanimously by the TES at a meeting held on 6/16/95.

REASON: The issue is whether the exemption for tankers with double hulls and a fully redundant steering and propulsion system should also apply to barges. The TES and commenters at the meeting felt that the exemption should not apply to barges because the tug-barge connection is made with a tow line or tow wire and is comprised of two elements. This configuration does not present the same level of safety as would be found on a tank vessel. Even if the two units are fully redundant in themselves, the combination of the two units presents very different dynamics that redundant systems would not address in an emergency situation.

F3. ISSUE: Should there be additional requirements for regulated barges during a transit?

RECOMMENDATION: The TES at the May 25, 1995 meeting adopted the following. This issue was also discussed at the March 9, 1995 workshop.

Additional Requirements for Barges During an Escort Transit:

- A. The towing vessel shall be a twin screw tug.
- B. Escorted barges shall not exceed 8 knots through the water.
- C. Tug escorts for regulated barges shall be capable of providing a total astern static bollard pull in pounds equal to not less than the regulated barge's displacement tonnage."

REASON: The Golden Gate Towboat Association recommended specifying additional requirements for regulated barges to reflect that barges have substantially different handling characteristics from regulated tankers.

The Association felt that as an added safety measure, the towing vessel (line haul tug) should be twin screw. Tow boat representatives stated that it is normal practice in the Bay to use a twin screw tug because it is considered unsafe to use a single screw tug, due to the need for redundancy.

Tow boat representatives also stated that a loaded barge cannot be controlled at a speed in excess of 8 knots, therefore a maximum speed of eight knots is recommended. Most barges currently transit the bay at a maximum speed of six to seven knots. The speed limit will allow an escort tug to clutch-in quickly in response to an emergency.

A different matching formula is also recommended because barges have a draft of less than twenty feet, and the reach and transfer areas are greater than tankers. Barges draw less water so they slow down faster than tankers. The recommendation for a different matching formula will not make any changes in practice on the Bay.

G. CLEARING HOUSE:

- G1. **ISSUE:** Should the Clearing House verify the matching of the escort vessel(s) to the regulated vessel prior to an escort?

RECOMMENDATION: Include in the regulations a requirement that the Clearing House "...record the tank vessel's reported displacement prior to arrival or movement, and determine if the tank vessel is correctly matched to the escort vessel(s)."

The TES approved this recommendation on February 23, 1995 and further reviewed the language at the March 1, 1995 workshop.

REASON: The TES determined that a process needs to be established to verify that the regulated vessel is correctly matched to its escort vessel(s) as provided in the regulations. The interim tug escort regulations require that tank vessels must notify the Clearing House of arrival and movement prior to entering a regulated escort zone. When the notification occurs, the Clearing House will now have the added responsibility of checking the match of the escort vessel(s) to the tank vessel to monitor compliance. As provided by existing regulation, the Clearing House would report any violations to OSPR and the Harbor Safety Committee.

G2. ISSUE: Shall the regulations clearly indicate that the Clearing House has the authority to assess and collect a fee for their activities relative to the implementation of the tug requirements.

RECOMMENDATION: Adopt language to address the authority of the Clearing House to assess and collect fees, and in addition, specify that regulated vessels must pay those fees. These recommendations were adopted by the TES in a meeting held on 7/17/95.

REASON: Although there is statutory authority for the Clearing House to collect fees, the TES felt it would be appropriate to restate that authority in the regulations. Doing so places all requirements of the program into one, widely distributed document. In addition, it was felt that, though implied, it would be beneficial to also state that the regulated community is obligated to pay the fee assessed. The purpose for this change is one of clarity.

POLLUTION STATISTICS

FOR PERIOD 01JUN94-31MAY95

	MSO
1.) Total reported/investigated pollution incidents within MSO SF BAY AOR:	<u>561</u>
a.) Cases Investigated/Reported:	
Civil Penalty Action	<u>119</u>
Spill/No civil penalty/Potential	<u>366</u>
No Spill	<u>142</u>
EPA zone reports	<u>34</u>
2.) Discharges of Oil from:	
Deep Draft Vessels	<u>19</u>
Oil Transfer Facilities	<u>42</u>
Military Vessels/Facilities	<u>28</u>
3.) Federalized Cleanups	<u>18</u>
4.) Hazardous Material Releases	<u>41</u>

POLLUTION STATISTICS FOR JUNE 1, 1994 TO MAY 31, 1995

A	B	C	D	E	F	G	H	I	J	K
Month	Incidents	Deep Draft	Facility	Military	Haz-Mat	Clean-Up	Civil Penalty	No Source	No Spill	EPA
1 June 1994	35	1	2	2	2	1	7	26	0	2
2 July 1994	52	3	1	0	3	1	14	12	23	3
3 August 1994	60	0	7	2	4	0	15	29	13	3
4 September 1994	73	7	2	2	3	1	9	43	18	3
5 October 1994	48	2	2	2	2	3	7	27	13	1
6 November 1994	67	3	4	3	3	5	13	34	19	1
7 December 1994	54	0	6	5	3	0	6	40	8	0
8 January 1995	75	0	5	6	8	2	12	46	8	9
9 February 1995	47	0	5	2	7	1	8	32	5	2
10 March 1995	72	1	5	0	4	3	13	36	16	7
11 April 1995	35	1	2	3	1	0	9	16	8	2
12 May 1995	43	1	1	1	1	1	6	25	11	1
13										
14										
15 Totals	661	19	42	28	41	18	119	366	142	34

Source: U.S. Coast Guard, Marine Safety Office, San Francisco Bay

STATISTICS
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DATE
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