MINUTES
HARBOR SAFETY COMMITTE
of the San Francisco Bay region
9:45 a.m., Thursday, January 9, 1992
Board Room, Port of Oakland, 530 Water Street, Oakland, CA

1. Vice-Chair, Ann Nothoff, called meeting to order and presided in the absence of the Chair, A. Thomas. The following committee members or their alternates were in attendance: Dave Adams, Port of Oakland; Margo Brown, National Boating Federation; Morris Croce, Chevron Shipping Company; James Faber, Port of Richmond; John Gosling, Matson Navigation Company; Mike Goebel (alternate for Dwight Koops), Exxon Shipping Company; Alexander Krygsman, Port of Stockton; Albert Groh (alternate for Gunnar Lundeberg), International Order of Masters, Mates and Pilots; James Macaulay, Harbor Tug and Barge Company; James Mes, Transmarine Navigation; Mary McMillan, Westar Marine Services; Roger Peters, Port of Oakland; Thomas Rose, U. S. Navy Pilots; Carl Bowler (alternate for Arthur Thomas), San Francisco Bar Pilots; William Travis (alternate for David Jenkins), San Francisco Bay Conservation and Development Commission; alternate (non-voting) port member, Joseph Gaidsick, Benicia Industries; and federal government (non-voting) member, J. MacDonald, U. S. Coast Guard.

2. A. Nothoff welcomed the committee members and those from the public.

3. The minutes of the previous meeting having been distributed by the Secretariat by mail, the Chair asked for deletions, additions or changes. A. Krygsman noted that on the last page, item 14, the Corps of Engineers' representative to address LTMS is Project Director, Tom Wakeman, not Tom Wiggman. He also noted that on the third page, item 12, "J. Farless noted that placement of the bridge will impact dredging of a 5' channel to Sacramento/Stockton" should read a "35' channel". It was moved, seconded and passed to accept the minutes as corrected.

4. TIDES AND CURRENTS. The Chair introduced H. Henry R. Frey, Chief, Coastal and Estuarine Oceanography Branch, Office of Ocean and Earth Sciences, National Oceanic and Atmospheric Administration, U. S. Department of Commerce, Rockville, Maryland. H. Frey manages three NOAA programs: Coastal Ocean Circulation Program, Tide and Current Prediction Program and PORTS Program.

5. H. Frey noted that the purpose of his presentation was to review the status of the present tidal current predictions and tidal current charts, to describe recent approaches to measurement and computer modeling, and to introduce the members of the committee to PORTS, a Physical Oceographic Real Time System. He used a series of slides to make his presentation and copies of a majority of those slides are made a part of these minutes.

NOAA made the decision in late October to withdraw its publication of the Tidal Current Charts for San Francisco Bay and to advise mariners "to exercise caution and discretion in the use of the tidal current predictions" when navigating the area. NOAA memoranda to this effect are made a part of these minutes. After his presentation to the Tides and Currents Sub-Committee of the Harbor Safety Committee of the Marine Exchange of the San Francisco Bay Region, members of that sub-committee reported back to this committee and H. Frey was invited to address this committee.

In 1984, a decision was made by a political appointee to withdraw the data gathering NOAA ship MACARTHUR from service on the West Coast, to surplus the measurement equipment and to discontinue personnel activities related to tidal current chart activities. In 1985 a second decision was made to withdraw the NOAA ship FERREL from measurement service on the East Coast and to surplus that measurement equipment and redirect personnel. In effect, this left no system in place for gathering updated data for revision of the tidal and current information reported for either U. S. coast. This resulted in budgets of $2 million less for the West Coast project beginning in 1984 and $1.5 million less for the East Coast beginning in 1985; a 70% reduction in resources.

The last revision to the San Francisco Bay Charts was made in 1954 and was based on data collected between 1923 and 1954 using a pole and stopwatch or crude current meter. Readings were taken for one to eight days; the present standard is thirty days. In reviewing the reliability and validity of the "Tidal Current Charts - San Francisco Bay", comparisons were made with "Tidal Current Tables for 1991". The National Ocean Service determined that a variance between the two information systems of 0.5 knots or greater was unacceptable. The results of this review appear on several of the slide sheets offered by H. Frey. In essence, the deviations are significant and unacceptable for four of eight stations, flood tide, and six of eight stations, ebb tide. Hence the decision to withdraw the charts from official circulation. The basic problem resulted from the primitive equipment used to take early readings and the lack of more recent data.

H. Frey stated that there is a proven need to resurvey San Francisco Bay. The project would involve three elements: circulation measurements, a computer model of hydrodynamics and determination of where PORTS equipment (measurement devices) should be installed. Such a survey would result in several informational products: circulation data and a survey report; revised and updated prediction tables; model generated circulation aids; the availability of real time data and "nowcasts", short term forecasts (2 - 6 hours); and informational articles and reports.

The new measurement technology employs a sonar current meter (an acoustic Doppler current profiler), with no moving parts to be affected in the way the more primitive devices were, removing the errors caused when the equipment moves on moorings while taking readings. Acoustic pulses are produced by the meter. When these signals bounce off particles in the water, they return to the meter and are processed by an onboard computer. This data, along with that from wind meters and air acoustic water level gauges, can be used in a data dissemination system which can be accessed from touch-tone phones, and to produce computer models, which, in turn, become a Tide and Current Atlas. The new technology factors in salinity, density, effects of the sun and moon and meteorological conditions (wind, rain, etc.).

This system is in place in only one area, Tampa Bay, Florida. H. Frey demonstrated the call-in feature of the system by placing a speaker phone call to the PORTS system in St. Petersburg to retrieve data. The system averages 60 calls per day. Local users use 900 numbers at $2 per call to get this information. The ownership of the Tampa Bay PORTS system is now being transferred from NOAA to the State of Florida. Because each port has different hydrodynamic, meteorological, and navigational characteristics, the system must be designed and developed for each individual area. The Tampa Bay Oceanography Project began in May, 1988, and PORTS was in place September, 1991. The data available to users is never older than six minutes. The system has made data available at three crucial sites in the Tampa Bay area.

The benefits of more accurate real time current and water level data have both economical and environmental ramifications. With more accurate data, shippers can often

carry more product. The information generated can be used to speed up oil spill clean-up efforts, for search and rescue efforts and can be employed in environmental management. When this information is readily avail-

able to users (by touch tone phone) marine safety is undoubtedly improved. With computer models, factors like increased river run-off or reservoir supply reduction can be factored into predictions.

The Coast Guard has responded to NOAA with buoy support in Florida and NOAA has received a letter from Admiral Gilbert offering the same support if there is a West Coast project.

Meters cost $75,00 each without the hardware and labor to place them. San Francisco Bay would require five meters. The entrance to the Golden Gate would require a kilobertz system. With this system readings can be taken in the ship channel to give actual readings as opposed to the more primitive equipment with moorings that had to be placed at the sides of the channel, out of the way of traffic. Profiles of currents along section of the bay or channels can be developed from readings taken by a catamaran system, where a downward looking profiler is towed behind the boat. The new gauge/tube measuring device takes a measurement of the water level every second for three minutes and has no mechanical parts to malfunction.

6.The Chair thanked H. Frey for his presentation and opened the floor for questions or comments.

7.H. Frey was asked if he was familiar with the Meller-Blumberg model. H. Frey noted that H. Ralph Chang is doing work in this area and NOAA is aware of his work.

8.H. Frey was asked if sedimentation covering the measurement units would be a problem. He responded that it would not interfere with readings as long as there was no biological fouling

9.W. Travis asked what it would take to put tides and current charts together, in time and money. H. Frey answered that a rigorous survey (15 months) would have to be conducted with modeling to begin before the survey so the survey would be more cost effective and scientifically significant. It would then take six months to complete and validate the data collected and then an atlas could be generated. Total time from start to production of an atlas would be two to three years. Tampa is now at the point that they have a "pamphlet of predictions". NOAA is only able to plan tidal and current charts because personnel have been redirected. While the new personnel are more up-to-date and qualified than staff was in earlier years, they don't have the resources to do the work.

10.W. Travis asked if he understood that the $2 million cost would include a survey and model but would not include the real time system. H. Frey replied that this is correct. The cost of a real time system is completely dependent on the particular requirements of an area. In Tampa the cost was $1.4 million for the real time system. In the San Francisco

11.George Armstrong, California State Department of Boating and Waterways, asked if there is a personal computer program that could be used to create tidal current tables with the correction factors. The response was no.

12.M. Goebel asked if the actual currents are weaker or stronger than predictions. H. Frey stated that the pilots have reported that the currents at the Golden Gate and Carquinez Straits have been under predicted. C. Bowler noted that there is stratification as noticed with the Corps of Engineers studies.

13.M. Goebel asked if there are errors in tidal height predictions. H. Frey replied that there is not much horizontal variation in short distances.

14.M. Goebel asked if, with the current predictions off, then aren't the high tide predictions off? H. Frey responded that the NOAA data is on strength of current, not water level.

15.J. Macaulay questioned what NOAA is doing about this problem since NOAA is the federal agency responsible. H. Frey answered that NOAA is enabled under Title 33 to provide tide and current tables and is clearly responsible. The code of federal regulations requires ships of 600 gross tons and larger and certain self-propelled vessels to carry NOAA tides and current data. However, NOAA is not required by any law to provide charts, although that has been the tradition and it has come to be expected. There are 200 estuaries to be covered. Each year H. Frey plans what needs to be done, but each year there is not enough money to do everything on his list. The roadblocks to funding come from the U. S. Department of Commerce and the National Ocean Service.

16.M. Goebel asked how Tampa got funding for a real time system. H. Frey responded that the users, ports, pilots, U. S. Coast Guard, local agencies and environmental groups worked together in approaching the state legislature to get $2.5

funded into NOAA and they participated in cost sharing with personnel salaries and computer resources.

17.M. Goebel asked if the pilings installed to protect the bridge in Tampa impacted shipping channel traffic. H. Frey responded that the pilings protection caused a potential hazard from cross channel currents.

18.J. MacDonald asked how the real time system is maintained in Tampa now. H. Frey stated that it is being maintained by NOAA until May when a funding consortium will take over with the support of Coast Guard buoy tenders ($42,000); total maintenance cost approximately $125,000 annually.

19.J. MacDonald asked if there were no maintenance, could the project produce a product. H. Frey stated that maintenance must be determined up front to include quality control.

20.A. Nothoff questioned the disclaimer at the beginning of the St. Petersburg recording. H. Frey stated that the disclaimer would come off before the ownership of the system gets transferred to the state and when the quality of the information can be guaranteed. The disclaimer is a requirement of NOAA's attorneys.

21.A question from the floor addressed where mariners could go for date if the 1991 Tidal Current Tables have been withdrawn. H. Frey noted that the charts were withdrawn, not the tables. CMDR. Dolan, U. S. Coast Guard, reported that a Notice to Mariners had urged that mariners use caution at the Golden Gate and Carquinez.

22.W. Travis asked if NOAA is saying that the only problems with predictions are where there are predictions. H. Frey responded that predictions are made at locations where long time survey data for tidal constituents was gathered (primary stations). Conversion factors are then used to get prediction for other areas (table 2 stations).

23.W. Travis asked if the bulk data came from two stations and everything else from them. H. Frey referred back to the cautionary notice.

24.J. Macaulay stated his belief that it would be worth $75,000 per unit to get new data. H. Frey responded that units must be towed and calibrated at an approximate cost of $5,000, plus personnel; reconnaissance would be required and wind data, etc. would be needed, entailing the use of more than one kind of meter. If the user community wanted to do so, several instruments could be placed over a year, the results could be compiled and they could call it a day.

25.W. Travis asked if this would result in the same atlas as that derived from the 12 to 15 month plan discussed earlier. H. Frey said that this would result in improved predictions at the Golden Gate, but without measuring freshets and wind stresses, etc., NOAA could not generate an atlas.

26.J. Macaulay asked if this simpler and less costly process would result in removal of the cautionary notice. C. Bowler stated that improved data at the Golden Gate and Carquinez would not effect the validity of table 2 stations. H. Frey agreed that accurate predictions for table 2 stations could not be done this way.

27.A question from the floor: "Would better NOAA information and predictions improve safety on the bay?" H. Frey responded that at a recent international conference in Germany on this subject a great deal of information was exchanged and there was agreement that this type of information was critical. Korea intends to develop a PORTS system at Pusan and Seoul and New York Harbor authorities have shown considerable interest as a result of several groundings. He further stated that the technology is available; we have the computers and the modeling and metering technology to produce accurate real time predictions.

28.W. Travis asked if this committee could assume that H. Frey would not be offended if this group addressed the legislature by letter on this subject. H. Frey replied that he is not easily offended. W. Travis asked if it would be helpful. H. Frey responded that he is not allowed to answer that question. C. Bowler noted that he has a copy of the Tampa Bay resolution. A. Nothoff asked if C. Bowler would be the appropriate person to draft a resolution for this committee. C. Bowler responded that he would defer that question to Chairman, A. Thomas.

29.M. Goebel asked if Tampa had problems with their two stations before implementing PORTS. H. Frey answered that they had and initially NOAA had gone in for two months to study meteorological conditions.

30.J. Mes asked if there is a national plan to implement PORTS. H. Frey stated that the three levels above him are pro-PORTS and a permanent inclusion in the budget of funds to develop PORTS nationwide. With their support a request was forwarded to the head of the National Ocean Service for $2 million per year and a staff of eight. It came back reduced to $1 million dollars and no staff. When this amended request went to the Department of Commerce it was rejected as benefiting local interests with the notation that it should be addressed by port authorities.

31.J. Gosling asked if it could be a 50/50 coop program. H. Frey said that legislation would allow this.

32.D. Adams asked if anyone else has expressed interest in PORTS. H. Frey replied that they have been contacted by New York, New Jersey, Houston and Anchorage. New York and New Jersey are very interested because of the number of groundings they are experiencing.

33.A gentleman from the floor, identifying himself as a member of the yachting community, stated that in order to win races, yachtsmen need the type of data being discussed. Satellite pictures have been used to correlate with predictions. He offered to make this information available. H. Frey stated that he would be glad to

see this information, noting that one of the members of the task group in Tampa was president of the Florida Council of Yacht Clubs and they have been using data from the Tampa PORTS in tournaments.

34.A. Nothoff asked if it was the pleasure of the committee to hear a motion for action. M. Geobel stated that at a minimum the two primary stations should be corrected. J. Gosling added that this committee's recommendations should include getting better data from NOAA. M. Goebel asked Roger Dunstan, Office of Oil Spill Prevention and Response, if this committee could go to Sacramento. R. Dunstan replied that this committee could act unilaterally and the administrator could also push. C. Bowler noted that Assemblywoman Nancy Pelosi has expressed interest in the project, although he cannot speak for her. W. Travis added that N. Pelosi sits on the sub-committee that oversees NOAA's budget. He emphasized the critical and crucial nature of having accurate data and questioned the possibility that if it is as hard as it sounds to get funding, perhaps the committee should work with the administrator and the California legislators, noting that California has the eighth largest federal delegation. D. Adams stated that if one attempts to enter the bay without accurate information on the force and timing of high and low tides, the situation is very serious. C. Bowler stated that this is a shallow water bay and will remain so; safe and efficient movement of ships requires information on tides and currents from the Golden Gate to Sacramento and Stockton. He stated his belief that the PORTS system would be valuable for ship movement and pollution response and control.

35.Tina Frank of Senator Seymor's office has met with J. MacDonald of the U. S. Coast Guard. Senator Seymor sees the need for an initial study and has "talked to Washington". He wants to see what happens in connection with this committee and is happy to work with N. Pelosi in the House.

36.J. MacDonald stated that, if not for safety considerations, the PORTS system should be looked at in terms of containment and control of spills. We are selling ourselves short if measurements are only taken at two stations. An initial study will corroborate what the pilots and industry believe about the need for better data and then we can move ahead. If Houston, which is a straight line ditch, is looking to PORTS to safely move deeper draft vessels, then Sacramento and Stockton should also do so. He reiterated that his primary concern in not economics but spill response. H. Frey recommended six locations in an initial study, at a cost $50,000, followed by a full 15 months study. D. Adams added that the presence of military bases in this area should add to establish the need for the most accurate system of prediction.

37.W. Travis made a motion that "a resolution be drafted to get $2 million in the NOAA budget to do a full study." The motion was seconded by T. Rose.

38.A. Nothoff asked C. Bowler if he would chair a committee to adapt the Tampa resolution for California and target the Office of Oil Spill Prevention and Response to call on the administrator for his support. W. Travis stated his opinion that rather than have a sub-committee, the draft resolution could be presented to the full committee. M. Brown suggested that the draft go to committee members prior to the next meeting in February to give them time to consider it.

39.J. Mes asked if the Coast Guard has feedback on how the Tampa PORTS system is working. J. MacDonald responded that he doesn't have that information, but he will get it. J. Mes suggested that the pilots in Tampa be contacted as well.

40.M. Goebel noted that, in reference to dangerous cargoes, Tampa has no refineries and carries only clean cargo, whereas here the danger is significant. H. Frey added that sulfur and ammonia are moved in the Tampa area. He further stated that he received an inquiry from Barbara Boxer in May, 1990. He responded with information and noted the cost at $2 million; there has been no further activity from her office.

41.M. Goebel asked if SB 2040 authorizes the state to allocate money for research and development in this area. R. Dunstan responded that there is a possibility. M. Goebel added that perhaps the committee should also address funding on a state level. M. Brown suggested requesting a state allocation of $150,000 to do something immediately, with funding in thirty days. A. Nothoff asked if this expenditure of $150,000 would result in a significant improvement in the situation. H. Frey stated that it would take $50,000 not $150,000 for a quality assurance mini-survey; taking two months to gather data and then time to analyze the information. This would result in an objective evaluation of the accuracy of current data and support the need.

42.W. Travis amended his motion to include "that the state be approached to fund an initial study within thirty days as an emergency measure."

43.M. Goebel asked H. Frey what it would take to replace with withdrawn tidal current charts. H. Frey responded, $2 million to produce an atlas. A. Nothoff added that it would then take an additional $2 million for the PORTS system. J. Macaulay stated that the $50,000 initial study would verify the need for concern. H. Frey added that it would verify or deny that need. J. Macaulay stated that this verification would be necessary in order to get support to proceed with the project. T. Rose re-seconded the amended motion. The committee voted unanimously and the motion passed.

44.CALTRANS BRIDGE PLACEMENT. M. Goebel reported on the Martinez- Benicia Bridge System Project. Chapter 7 of the proposal on Marine Operations went out to all considered to be interested parties; he brought ten copies for anyone who wants one. CalTrans has narrowed its consideration to four locations for placement, two on the east side of the existing bridge and two on the west side. A picture was circulated to the committee members and the floor to demonstrate the current status. The comment period has been extended to February 28; he believes the committee should wait and respond after seeing CalTrans' risk analysis report. Most Benicia residents oppose placement that would restrict tanker movement. The Bridge Sub-Committee should conduct a review and report back to the full committee for action. W. Travis asked if M. Goebel will draft a report; M. Goebel responded that it would come from the sub-committee.

45.Tosco, Exxon and Amorco (Martinez side) oppose restriction on their operations. CalTrans has addressed the concept of moving facilities up the straits. J. Mes asked what the result was. M. Goebel stated that it would be $35 - 50 million less expensive to place the new bridge on the west side because of the ability to tie-in to the existing toll plaza. But there are not too many options in connection with moving facilities and a western placement would require significant monetary incentives to move. R. Peters asked if there are any reasons, other than financial, for placement on the west side. M. Goebel responded that he couldn't find any. J. Mes added that Shell is on the west side and has raised no objections to eastern placement. Rohm-Pellon Chemical is the only facility that would be impacted. J. Mes asked about the Suisun Reserve Fleet. Wayne Til, U. S. Army Corps of Engineers, answered from the floor that MARAD would not like the new bridge on the east side. T. Rose stated that the Navy is in favor of the east side. J. MacDonald added that the main ship channel is on the south side. A. Nothoff asked about the impact on wetlands. M. Goebel responded that 26 acres would be impacted on the Martinez side, which would be replaced by CalTrans. Since this is a three-phase project which includes multi-lane freeways, there may be other wetland areas impacted but he has tried to focus on Marine Operations and this committee's task. He reiterated his opinion that this committee should wait for the result of the risk analysis report.

46.M. Goebel asked if there was any further input. W. Til responded that a new bridge between the two existing bridges was rejected by CalTrans because of the complicated nature of the engineering required to do pier pilings between the two bridges in place. M. Goebel added that pilings may affect currents and impact traffic, as was experienced in Tampa and noted earlier in this meeting. J. Gaidsick recommended that committee members input to the Bridge Sub-Committee. M. Goebel said that there

will be a Bridge Sub-Committee meeting eight days before the next full committee meeting scheduled for the second Thursday in February; the deadline for comments will be February 5.

47.TERMINALS AND FACILITIES SUB-COMMITTEE. D. Adams reported that the sub-committee has not met for some time and has no report. He would like to meet with the sub-committee members after this meeting adjourns. Because of his heavy work schedule, D. Adams introduced his alternate Andrew Clark-Clough.

48.TUG ESCORT SUB-COMMITTEE. R. Peters reported that the committee has held several open and executive sessions. They will meet in executive session on a weekly basis from this time on and are working to develop a consensus on recommendations to present to the full committee. They need additional technical information and will meet with the pilots, the Coast Guard and industry to complete their research. The sub-committee will propose guidelines at the full committee meeting in February. M. Goebel asked if they would present draft recommendations at that meeting. R. Peters responded that the sub-committee will put the recommendations in a package and put them out in advance of the February meeting so that the members will have time to review them.

49.A. Nothoff asked if the planned meetings are open to committee members. R. Peters responded that they are executive sessions and that the sub-committee will invite those whose input they need to complete their work and prepare draft recommendations. The sessions are intended for the three sworn members, but they will entertain other interest.

50.PLAN SUB-COMMITTEE. A. Nothoff proposed that, before the next full meeting, a draft format of the plan be given to all sub-committees to show what is needed from them. R. Dunstan stated that CMA will furnish support to the committee in drafting the plan, supplying a research assistant, etc. This should be resolved by the next meeting.

51.W. Travis asked if there are legal problems with unnoticed executive sessions. T. Hunter responded that his understanding of the Brown Act is that there must be some public meeting, no matter how short, prior to an executive session. R. Dunstan stated that Ed Willis, Office of Oil Spill Prevention and Response, had told the committee in an earlier meeting that he saw no problem with executive sessions. A. Nothoff noted that at that time the committee had agreed. T. Hunter asked what happens if a committee decides on Monday to hold an executive session on Wednesday. J. Macaulay added that sub-committees must have flexibility to meet and get work done. A. Nothoff expressed the opinion that, even if meetings were noticed, the sub-committee members would not be inundated. T. Hunter disagreed, stating that because of the nature of the concerns of this particular sub-committee, meetings will always draw a big turn-out. All meetings to date have been attended by 30 - 50 people. R. Dunstan stated that this policy is up to the committee, legally sub-committees can meet in executive session. W. Travis stated his concern that there be closed meetings when there is public concern. T. Hunter responded that it is his understanding that this sub-committee has held meetings and has received considerable input. R. Peters concurred. W. Travis asked if what is developed in the scheduled executive sessions will be brought back to the public meetings of the full committee. A. Krygsman said he thinks that if the draft recommendations go out for comment and then are made public before this committee, closed sessions are okay. M. Brown suggested calling the draft a "tentative draft". T. Hunter added that there have been at least two public forums and the issues will be addressed in public meetings of the Plan Sub-Committee as well as before the full committee. D. Adams stated that, in the case of the Port Commission he sits on, any time a quorum meets the meeting must be public. R. Dunstan will submit the question to the attorney. A. Nothoff suggested that the sub-committee could meet with an audience but without taking comment.

52.UNFINISHED BUSINESS. A. Nothoff noted that there has been a spill in the bay since the last meeting and asked if it would be possible to get a regular report from the Captain of the Port. M. Goebel moved that "if

anything significant has happened in the previous thirty days, the committee receive a mini-briefing." J. Macaulay seconded the motion. J. MacDonald reported that there were four incidents in the previous week; a small spill at Texaco facility, a small spill off a Chevron vessel, a small spill in the Carquinez Straits and a potential 12,000 gallon spill which was neutralized in a Martinez parking lot and a storm drain. The Desert Storm munitions vessel AUSTRAL RAINBOW, carrying 4200 pounds of insensitive munitions will be at Anchorage 14. The unloading project will involve seven vessels moving with barges or four pre-positioned vessels. J. MacDonald introduced Carl Young, U. S. Coast Guard Marine Safety Office, who has been tasked to conduct a Waterways Management Study to find risk areas on the bay. D. Adams asked if the response to the spills was sufficient. J. MacDonald stated that the biggest problem is recognition. In one case, a monitor detected a problem and shut down but it was night time and the spill went undetected until a flight over the ship in daylight. A second was at a dock and was undetected for a period of time. D. Adams stated that the Port of Oakland had a potential spill and personnel were unable to get a response from any of several agencies alerted. J. MacDonald asked if any of these agencies were federal. D. Adams responded yes. J. MacDonald sited the reduced holiday and vacation staffing as a possible problem.

The next meeting of the full committee will be on February 13, 1992, in the Port of San Francisco Board Room in the Ferry Building at 9:30 a.m.

Meeting adjourned at 12:15.

Respectfully submitted,

Terry Hunter

Executive Secretary