

PREVENTION THROUGH PEOPLE WORK GROUP

From: Margot Brown, Work Group Chair
Subject: Work Group Recommendations on Vessel-VTS Communications
Date: March 13, 2008

Introduction

In response to the Cosco Busan oil spill incident, Governor Schwarzenegger directed a state investigation into the causes of and response to the oil spill. The directive outlined a number of issues to ensure “any action necessary to prevent this from ever happening again.” OSPR tasked the Harbor Safety Committee (HSC) of the San Francisco Bay Region to “analyze the navigational safety-related issues of the Governor’s directive and make appropriate recommendations regarding the prevention aspects of the incident.”

The HSC Work Groups addressed the issues raised in the Governor’s directives based on information available, noting that the National Transportation Safety Board (NTSB) report on the cause of the allision is not expected to be completed until autumn 2008, and the State Board of Pilot Commissioners Accusation (Case No. 07-01) of the pilot is scheduled for hearing before an Administrative Law Judge beginning September 2, 2008. Other investigations are focused on oil spill response efforts. In this context recommendations should be considered preliminary, as not all evidence is accessible. The HSC may revisit or address other policy implications as a result of additional investigative findings.

The Prevention Through People Work Group met January 8, February 7, February 28 and March 6, 2008, to address the issue of vessel communications, specifically “Should the Coast Guard Vessel Traffic Service (VTS) have expanded authority to direct vessel movements during inclement weather such as dense fog in San Francisco Bay?” Technical experts from the VTS participated in the Work Group’s efforts.

Should Coast Guard Vessel Traffic Service Authorities Be Expanded?

Vessel Traffic Service (VTS) History and Background

The purpose of a VTS is to serve as an extension of a vessel’s navigational bridge team, providing active monitoring and navigational information and advice for vessels in confined and busy waterways. The VTS monitors vessel movements, informs mariners of the movements of other vessels and potential hazards, recommends action when it sees a situation of which the mariner may not be aware, and directs the outcome of situations when necessary to prevent disasters.

Participation in the VTS System is mandated by law (33CFR161.16) for larger commercial vessels and passenger ferries. Transiting vessels make position reports to a vessel traffic center by radiotelephone and are in turn provided with accurate, complete, and timely navigational safety information. VTS San Francisco uses several land-based sensors including radar, the Automated Identification System (AIS), and closed circuit television sites, which send their signals to a central location where operators monitor and manage vessel traffic movement.

VTS San Francisco was the first Vessel Traffic Service System established by the Coast Guard in the United States through the Ports and Waterways Safety Act of 1972 (33 USC 1223). VTS San Francisco is responsible for the safety of vessel movements from the offshore approaches to San Francisco Bay and all navigable inland waterways to and including the inland Ports of Stockton and Sacramento. In 1995, Regulated Navigational Areas (RNAs) were established in the San Francisco Bay region, which were designed to improve navigation safety by organizing traffic flow patterns; reducing meeting, crossing, and overtaking situations in constricted channels; and by limiting vessel speeds.

Existing Authority Allowing VTS to Direct Vessel Movement

The Work Group reviewed provisions included in the Federal Ports and Waterways Safety Act of 1972 (33 USC 1223), which states:

“[The Coast Guard] may control vessel traffic in areas subject to the jurisdiction of the United States which the Secretary [of the Department of Homeland Security] determines to be hazardous, or under conditions of reduced visibility, adverse weather, vessel congestion, or other hazardous circumstances by:

- (A) Specifying times of entry, movement, or departure;
- (B) Establishing vessel traffic routing schemes;
- (C) Establishing vessel size, speed, draft limitations and vessel operating conditions; and
- (D) Restricting operation, in any hazardous area or under hazardous conditions, to vessels which have particular operating characteristics or capabilities which he considers necessary for safe operation under the circumstances.”

This authority is directly granted to the VTS in 33CFR161.11:

- “(a) A VTS may issue measures or directions to enhance navigation and vessel safety and to protect the marine environment, such as, but not limited to:
 - (1) Designating temporary reporting points and procedures;
 - (2) Imposing vessel operating requirements; or
 - (3) Establishing vessel traffic routing schemes.
- (b) During conditions of vessel congestion, restricted visibility, adverse weather, or other hazardous circumstances, a VTS may control, supervise, or otherwise manage traffic, by specifying times of entry, movement, or departure to, from, or within a VTS area.”

In reviewing this information, the PTP Work Group concluded the Captain of the Port has the authority to regulate all ship movements, which includes whether ships can or cannot proceed.

The Work Group further noted that the Coast Guard VTS is not equivalent to Air Traffic Control. Under normal conditions, VTS is advisory in nature, differing in its function from an air traffic control system in which air traffic controllers regularly direct the movement of aircraft with specific directional and speed commands. Furthermore, unlike an air traffic control system, not all vessels (e.g., recreational boaters, fishing vessels, personal watercraft, etc.) are required to check in with VTS. Only in cases of extreme circumstances will VTS direct vessels in a general outcome, such as avoiding a specific hazard of which the vessel may not be aware.

VTS Efforts in Response to the COSCO BUSAN Incident

In addition, the Work Group asked the Coast Guard what steps are being taken to improve internal processes. In response to the Cosco Busan incident, VTS conducted an extensive analysis, taking the following steps to enhance their prevention efforts:

1. VTS is modifying its operating and training processes to encourage more proactive prevention through concise communications, to better prepare operators to switch from the lower modes of traffic management (advising) to the more assertive directional modes (recommending/directing) when the need arises.
2. VTS is also developing a re-qualification program to ensure continuity of training of its veteran operators.
3. VTS will staff an additional operator position when fog limits visibility to less than 0.5 nautical miles, and will adjust their display scale for better anomalous traffic recognition.
4. Finally, the Coast Guard, San Francisco Bar Pilots and the Harbor Safety Committee are working together in the prevention process and developing recommendations to:
 - Identify high risk or “Critical Maneuvering Areas” in the Bay that require modified procedures with respect to low visibility precautions.
 - Define inclement weather and the operational procedures that accompany those periods of reduced visibility.
 - Assemble mitigating “best practices and standards” for operations during these periods.

Could VTS Directions to the COSCO BUSAN Have Prevented the Accident?

The Work Group concluded, based on known facts of the incident at the time of their discussions, that it is unlikely VTS direction could have prevented the allision, given the inertia of the 900-foot vessel and the limited time period when it became apparent that the vessel was off course, and the time of impact.

Prevention Through People Work Group Recommendations to the Harbor Safety Committee:

1. The Work Group concludes that adequate Coast Guard authority to regulate shipping and control vessel movements already exists in current law under the Federal Ports and Waterways Safety Act of 1972 (33 USC 1223) and 33CFR161.11; therefore, no additional authority is recommended. Further, the best skills for maneuvering a vessel originate from onboard the vessel itself, not from the VTS.

On rare occasions VTS will direct the movement or actions of a participant. Direction would be given in cases when the VTS observes obvious violations of regulations or an obvious and immediately dangerous condition of which the participant is not or does not seem to be aware. VTS directions will normally be in the form of a general objective such as staying out of a certain area or coming no closer than a certain distance from a vessel or object, thus allowing the pilot or operator to maneuver the vessel as necessary to comply with the direction.

There are several reasons for this:

- The ultimate responsibility for safe navigation lies with the vessel master, as per 33 Code of Federal Regulations (CFR)161.1 and internationally accepted practice under International Regulations for Prevention of Collisions at Sea (72 ColREGS).
- VTS operators cannot know the specific handling characteristics of the vessels they may be directing and the dynamics on the bridge of the vessel.
- VTS operators will not have information about hazards undetected by VTS sensors such as smaller pleasure craft, swimmers, debris, etc.
- VTS Operators will not have the instantaneous knowledge of the many forces (wind, current, tidal current conditions, etc.) acting on the vessel, as would the vessel's master or pilot.

2. The Work Group supports the current efforts of the San Francisco Bar Pilots, the Harbor Safety Committee (which includes a broad spectrum of the maritime community) and the Coast Guard to clarify procedures for operating vessels during restricted visibility, including the safest possible speed to maneuver.

Note: these protocols will be reviewed by the Harbor Safety Committee through the Navigation Work Group and the Ferry Operations Work Group as part of the recommendations to the Governor.