

FERRY OPERATIONS WORK GROUP

To: Harbor Safety Committee
From: Pat Murphy, Work Group Chair
Re: Guidelines for Ferries Navigating in Reduced Visibility and Extreme Weather
Date: February 12, 2009

Background

Navigating the San Francisco Bay Region during periods of reduced visibility requires mariners to exercise additional caution and vigilance. The safe speed of ferry operations in reduced visibility is based on a number of factors as described in the Rules of the Road (COLREGS) including maneuverability, draft, vessel congestion, manning, and radar capabilities. Passenger ferries are highly maneuverable with short stopping distances and have a shallow draft which enables operation outside of shipping channels. Ferries in the San Francisco Bay Area also follow fixed routes as prescribed in the HSC Ferry Routing Protocol, which adds predictability and reduces the risk of collision. A safe speed for a ferry vessel can be quite different from a deep draft ship or tug and barge along the same route. In addition to Rules of the Road and USCG regulatory requirements, each Ferry operator has developed specific safety procedures.

Ferry Operations Work Group

The Bay Area's three commute ferry companies/agencies agreed to work with the Harbor Safety Committee, Coast Guard Vessel Traffic Service (VTS), the Water Transit Authority and stakeholder parties to develop a protocol safe for ferry navigation in the San Francisco and San Pablo Bays.

The Ferry Operations Work Group conducted a two-year process to develop an approach and maneuvering scheme in the vicinity of the congested San Francisco Ferry Building, as well as a routing protocol in the Central Bay to decrease the risk of collision for commute ferries. The Work Group agreed to protocols and referred them to the Harbor Safety Committee, which adopted the Work Group findings and recommendations in May 2008.

Ferry Traffic Routing Protocol

The Ferry Traffic Routing Protocol consists of planned routes and communications procedures for improving ferry navigation safety. When ferries follow routes, the Closest Point of Approach (CPAs) with other ferries is greatest at points where speeds are typically greatest. The adopted routes cross at predetermined locations at nearly right angles, enabling ferries to predict crossing situations and plan ahead.

Within an approximately ½-mile zone around the San Francisco Ferry Building, the protocol calls for port-to-port meeting and heightened radio communications. For inbound Ferry Building ferries, the protocol requires planning far enough in advance to avoid getting within approximately ½ nautical mile from the Ferry Building if another ferry is still at the inbounder's dock.

This reduces crowding around the Ferry Building. With ferry routes charted on nautical charts, other types of vessels can more easily predict the locations of ferries and steer clear. The Ferry Traffic Routing Protocol supports aggressive use of electronic nautical charts (ENCs) with intergraded Automatic Identification System (AIS). When all ferries consistently update their AIS data and follow routes, the protocol will ultimately lead to reduced VTS-ferry communications.

More recently, S.F. Bay Area ferry operators have participated in the Ferry Operations Work Group to develop common best maritime practices for operation in inclement weather.

San Francisco Bay Area Ferry Operation in Inclement Weather

Microclimates

As described in the Harbor Safety Plan, localized microclimates can alter visibility along an entire route or a portion of a route. During summer, channel fog is prevalent in the central San Francisco Bay with outer areas clear. In winter months Tule fog can be wide spread, dense in the morning with clearing later in the day.

Safety Practices

The Master of a ferry is the person in charge of the vessel, responsible for the safety of the passengers and crew at all times, and has the authority to decide if it is safe to get underway or to proceed.

In reduced visibility and inclement weather conditions, the following practices are followed:

- A go or no-go decision to get underway is made by the vessel Master or the company Operation Manager, based on conditions along the entire route, using all available information including the experience of the master and operations manager.
- Look-outs: the vessel Master assigns crewmembers for look-out duty based on the existing or anticipated conditions; the applicable regulations are found in the Navigation Rules and Regulations, Rule 5 Look-out (text attached).
- Safe speed: the vessel is required to proceed at a speed appropriate to the prevailing circumstances and conditions, which include state of visibility and the manageability of the vessel with special reference to stopping distance and turning ability. Other factors include participation in fixed ferry routes, wind advisories issued by NOAA, sea state, traffic density, and applicable Navigation Rules and Regulations (see attached verbiage from Rule 6 Safe Speed).
- Equipment: each Ferry is required to have at minimum one radar; commuter ferry vessels generally have two operational radars onboard; the vessel Master is required to have a radar observer license endorsement. Global Positioning Satellite, Automatic Identification System and Electronic Charting navigation systems are also installed and used to assist navigation.

In conditions of high wind and waves:

- Go/no-go decision is made by the vessel Master or the company Operation Manager, based on conditions along the entire route, using all available information including the experience of the master and operations manager. Factors to be considered include size of the vessel, direction of the winds and seas, orientation of departure and arrival piers to prevailing conditions, and limitations of ferries to travel at slower speeds.
- Passenger safety: Captain can maneuver the vessel to minimize wave effects. Crew duties include rough weather announcements and passenger safety management.

High Speed Ferry Operations (over 30 Knots)

U.S. Coast Guard Navigation and Vessel Inspection Circulars (NAVIC) 5-01 and 5-01 Change 1 provide specific guidance for high speed passenger vessels and include approved vessel operation manuals, training programs and risk assessment tools (matrix).

- Vessel equipment: operators have exceeded minimum requirements for navigation electronics including dual radar, Global Position Satellite and electronic charting with Automatic Identification System overlay.
- Manning/Training: Vessels traveling at high speed are required to have a minimum of two qualified watch-standers during normal operations. Vessel operators have developed approved training programs for high speed navigation in compliance with NAVIC 5-01 and 5-01 Change 1.

U.S. Coast Guard Authority to Regulate Vessel Speed

The Federal Ports and Waterways Safety Act of 1972 (33USC1223) grants authority to the Coast Guard to further regulate vessel speed, and specifically 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 number of means, including establishing vessel traffic routing schemes and by establishing vessel size, speed, draft limitations and vessel operating conditions.

Under 33 Code of Federal Regulations (CFR) 161.11, the Coast Guard may, through the Vessel Traffic System (VTS), issue measures or directions to enhance navigation and vessel safety and to protect the marine environment, including establishing vessel traffic routing schemes.

International Regulations for Prevention of Collisions at Sea (COLREGS)

Maritime practices accepted worldwide are codified under the International Regulations for Prevention of Collisions at Sea (COLREGS), which address look-outs, safe transit speed, risk of collision, and conduct of vessels in restricted visibility.

Rule 5, Look-outs, states that “Every vessel shall at all times maintain a proper look-out by sight and hearing as well as by all available means appropriate in the prevailing circumstances and conditions so as to make a full appraisal of the situation and of the risk of collision.”

Rule 6 states, in part, that, “Every vessel shall at all times proceed at a safe speed so that the vessel can take proper and effective action to avoid collision and be stopped within distance appropriate to the prevailing circumstances and conditions.” Rule 6 continues, stating that factors to be taken into account in determining a safe speed include, but are not limited to, the state of visibility and the manageability of the vessel with special reference to stopping distance and turning ability in the prevailing conditions.

Rule 7 addresses risk of collision, and states, in part, that, “Every vessel shall use all available means appropriate to the prevailing circumstances and conditions to determine if risk of collision exists. If there is any doubt such risk shall be deemed to exist.”

Rule 19, Conduct of Vessels in Restricted Visibility, states, in part, that, “Every vessel shall proceed at a safe speed adapted to the prevailing circumstances and conditions of restricted visibility [and] every vessel shall have due regard to the prevailing circumstances and conditions of restricted visibility when complying with the Rules....”

Ferry Operations Work Group Recommendations to Harbor Safety Committee

1. The Work Group recommends that the “Guidelines for Ferries Navigating in Reduced Visibility and Extreme Weather” be added to the San Francisco Harbor Safety Plan.
2. The Work Group recommends the Harbor Safety Committee review the “Guidelines for Ferries Navigating in Reduced Visibility and Extreme Weather” within one year of adoption.