### Fleet Management Ltd.



January 15, 2009

Honorable Mark V. Rosenker, Chairman National Transportation Safety Board 490 L'Enfant Plaza, S.W. Washington, D.C. 20594-2000

Re: The Allision of the *Cosco Busan* with the San Francisco–Oakland Bay Bridge – November 7, 2007

Dear Chairman Rosenker and Honorable NTSB Board Members:

In response to the Board's invitation to submit proposed conclusions and safety recommendations with respect to the above-referenced accident, we take this opportunity to provide you with some of Fleet Management Ltd.'s ("Fleet") suggested conclusions and proposed safety recommendations.

It is our belief that the *Cosco Busan*'s allision with the San Francisco–Oakland Bay Bridge was the result of several related causes, some of which are systemic and others which are more temporal. Many of the systemic causes of this accident have been the subject of past NTSB Reports and Recommendations. Therefore, we believe that the *Cosco Busan* allision should be considered by the NTSB within the context of the Board's prior Recommendations in the maritime field. We have provided copies of the relevant NTSB Recommendations dating back to 1974 as part of our submittal and have cited to this history within Fleet's suggested conclusions and recommendations. While other factors and several parties played a role in the accident, continued indifference to the NTSB's previous Recommendations is at the root of the systemic causes of the *Cosco Busan* allision.

We hope that the recommendations that will soon be forthcoming from the NTSB in this matter will be followed with diligence and dispatch so that the progression of accidents from the  $African\ Neptune$  in 1972, to the  $Star\ Princess$  in 1995, the Staten Island ferry in 2003, and now the  $Cosco\ Busan$  in 2007, will not continue into the future.

Respectfully submitted,

Capt. (Aga) Nagarajan M.S.

Party Representative Fleet Management Ltd.

/jaj

Enclosures

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Re: The Allision of the Cosco Busan with the San Francisco–Oakland Bay Bridge – November 7, 2007

cc: Honorable Robert Sumwalt Honorable Deborah A. P. Hersman Honorable Kathryn O'Leary Higgins Honorable Steven R. Chealander Mr. Tom Roth-Roffy, Group Chairman



### FLEET MANAGEMENT LTD.'S

SUBMITTAL OF PROPOSED CONCLUSIONS AND RECOMMENDATIONS
TO THE NATIONAL TRANSPORTATION SAFETY BOARD
FOLLOWING COSCO BUSAN ALLISION WITH
THE SAN FRANCISCO – OAKLAND BAY BRIDGE
SUPPORT TOWER D

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### **PROBABLE CAUSE ANALYSIS**

1. The *Cosco Busan* was under the control of a compulsory pilot at the time of the accident. This fact cannot be overstated and should not be under appreciated. While the master of a vessel is generally accountable to the Flag State and the shipowner with respect to the safety of the vessel, the crew and cargo, it is the compulsory pilot that gives the navigational commands to the crew and who is accountable to Port State's interest for maritime safety, including environmental protection. Yet, there is a mistaken perception or myth that a compulsory pilot is aboard a vessel in an "advisory capacity." The reality is that U.S. pilots are relied upon by foreign crew members for their expertise in navigating in U.S. ports, their experience and knowledge of the local requirements and policies, as well as their judgment regarding the safety of proceeding under the prevailing weather conditions. It is because of their special expertise and their responsibility to the port that U.S. law makes the pilot's participation in the navigation of the ship "compulsory."

In this case the pilot<sup>2</sup> and the Pilots Association<sup>3</sup> disregarded the local Harbor Safety Plan<sup>4</sup> by scheduling and going forward with the departure of the *Cosco Busan* from its berth when visibility was less than 0.5 nautical miles. The San Francisco Harbor Safety Plan states that "vessels within the Bay at a dock or safe anchorage should not commence movement if visibility is less than 0.5 nautical miles throughout the intended route." Moreover, the U.S Coast Guard Captain of the Port has the authority to prohibit movement of vessels within the Bay during adverse weather

<sup>&</sup>lt;sup>1</sup> See generally, Master/Pilot Relationship, The Role of the Pilot in Risk Management by Captain George Quick, Vice President of the Pilot Membership of the International Organization of Master's Mates & Pilots. (www.impahq.org/technology/article\_1228231036.pdf)

<sup>&</sup>lt;sup>2</sup> According to the Board of Pilot Commissioners, a pilot "commands ships to steer them into and out of harbors, estuaries, straits, and sounds, and on rivers, lakes and bays: Directs course and speed of ship on basis of specialized knowledge of local winds, weather, tides, and current. Orders worker at helm to steer ship, and navigates ship to avoid reefs, outlying shoals, and other hazards to shipping, utilizing aids to navigation such as lighthouses and buoys. Signals tug boat captains to berth and unberth ship. Must be licensed by U.S. Coast Guard with limitations indicating class and tonnage of vessels for which license is valid and route and waters that may be piloted." (*See* Job definition for "Pilot" as described by Board of Pilot Commissioners for the Bays of San Francisco, Capt. P. Maloney, on January 21, 2005.)

<sup>&</sup>lt;sup>3</sup> The San Francisco Bar Pilots' roots go back to when California was under the flag of Mexico and is one of the oldest private organizations in California. Vessels visiting San Francisco Bay required individuals with local knowledge of the water, shoals, currents, tides and winds to safely pilot these ships across the bar and into the bay. Section 1100 of the Harbors and Navigation Code provides that Pilotage is required to ensure the safety of persons, vessels, and property of San Francisco and the surrounding areas. Section 1101(e) provides that: "A program of pilot regulation and licensing is necessary in order to ascertain and guarantee the qualifications, <u>fitness</u>, and <u>reliability</u> of qualified personnel who can provide safe pilotage of vessels entering and using Monterey Bay and the Bays of San Francisco, San Pablo, and Suisun." (*Emphasis added*.)

<sup>&</sup>lt;sup>4</sup> http://www.sfmx.org/support/hsc/introhscplan.htm The Harbor Safety Committee and Plan is mandated by 14 C.C.R. § 800 *et seq*.

conditions. The Pilots Association, through its Port Agent, was obligated, under California law, to close the port if the conditions posed a danger, but it failed to do so. [7 C.C.R. § 218(c)(9).]<sup>5</sup>

2. The Coast Guard's Vessel Traffic Service (VTS)<sup>6</sup> disregarded the local Harbor Safety Plan by allowing and facilitating the departure of the *Cosco Busan* from its berth when visibility between the berth and the Pilot Station was less than 0.5 nautical miles. The Harbor Safety Plan<sup>7</sup> is enforced by the Coast Guard, yet the VTS did not notify the ship of the rule, and failed to even remind the pilot of the existence of the rule.<sup>8</sup> The Coast Guard's failure to close the Bay as a result of the fog placed the *Cosco Busan* and the entire Bay Area port complex in danger, as well as the passengers on various commuter ferries that were traveling in the bay at speeds exceeding 30 knots. While the master had the authority to overrule the pilot and VTS, the master would have little justification for doing so when the local pilot and the Coast Guard's VTS believe that passage in such conditions is safe and commonplace. This is precisely the kind of local expertise for which a foreign ship captain relies on the pilot and the VTS. In most cases this reliance is well placed. In Tokyo, Japan and elsewhere VTS regularly closes the port when fog makes the passage ill-advised.<sup>9</sup>

<sup>&</sup>lt;sup>5</sup> The Pilots Association acknowledges that it has the authority to close the bar due to weather conditions. *See*, January 2007 Minutes of Board of Pilot Commissioners regarding closure of the bar for five hours due to poor weather. (<a href="http://www.pilotcommission.org/agendas/pdfs/c070125m.pdf">http://www.pilotcommission.org/agendas/pdfs/c070125m.pdf</a>) "In carrying out his duties the port agent shall be primarily guided by the need for safety of persons, property, vessels and the marine environment." 7 C.C.R. § 218(d).

<sup>&</sup>lt;sup>6</sup> "The primary purpose of VTS San Francisco is to coordinate vessel movements to facilitate the safe and efficient transit of vessel traffic in the waterways of San Francisco Bay, its seaward approaches and tributaries. These efforts prevent vessel collisions, ramming, groundings and the associated loss of life and damage to property and the environment." (<a href="http://www.uscgsanfrancisco.com">http://www.uscgsanfrancisco.com</a>) VTS was formed after the collision of the *Arizona Standard* and the *Oregon Standard* near the Golden Gate Bridge in 1971. San Francisco had a Harbor Advisory Radar Project in place at the time, but the watchstanders could do nothing more than look on helplessly as the two tankers collided. The collision resulted in an 800,000-gallon oil spill. Thereafter, in 1978 the Port and Tanker Safety Act gave the Coast Guard the authority to order any vessel to "operate or anchor in a manner which the Coast Guard directs if by reason of weather, visibility, sea conditions, port congestion, or other hazardous circumstances such directive is justified in the interest of safety." Two years later, the VTS took navigational control over a vessel lost in fog, the *Dora Bella*, and accidentally ran the ship aground. Since that time the VTS refuses to take navigational control of a vessel *in extremis*. *Id*.

<sup>&</sup>lt;sup>7</sup> The Bay presents a number of challenges to navigation, such as shallow waterways, narrow shipping lanes, vessel traffic, strong tides and currents, and occasional bad weather conditions, such as dense fog and strong winds. The Harbor Safety Plan was developed to address these challenges.

<sup>&</sup>lt;sup>8</sup> It appears that VTS' failure to enforce the minimum visibility standard found in the Harbor Safety Plan was standard operating procedure for the Coast Guard. In addition to the *Cosco Busan*'s departure in fog, the *SH Bright*, and the *Emir Aksoy* were allowed to proceed through the Bay Bridge A-B span shortly before the *Cosco Busan* approached the bridge. Also, on the morning of the accident VTS allowed several ferries, carrying passengers around the bay at speeds that exceeded 30 knots, in the fog. VTS acknowledged, in writing, to the Inspector General that the Coast Guard had the authority on November 7, 2007 to close the port, and/or enforce the Harbor Safety Plan standards for visibility. (33 C.F.R. Part 161.) Subsequent to the accident, the VTS has changed it policy with respect to the Harbor Safety Plan such that in the future pilots will not be allowed to leave port with less than 0.5-mile visibility. No additional authority was requested or required for the change in policy. Unfortunately, San Francisco VTS' operational procedures still do not provide watchstanders with the criteria necessary for determining the specific measures to be taken when the watchstander believes that there is a risk of a collision or allision.

<sup>&</sup>lt;sup>9</sup> See www.oocl.com/china/eng/localinformation/localnews/2008/18jun2008out2. Also <a href="http://www.novinite.com/view\_newsphp?id=89303">http://www.novinite.com/view\_newsphp?id=89303</a>; <a href="http://www.novinite.com/view

- 3. The pilot made navigational errors that were the result of a loss of situational awareness and confusion. The pilot was experienced, and was navigating in waters that he was intimately familiar with; and yet he made navigational errors that an experienced pilot could not make absent an outside influence which, in this case, was likely prescription drugs.
- a. The Pilot Disregarded the Radar. According to the pilot, it was his practice to set a Variable Range Marker ("VRM") at 0.33 nautical miles on the radar and to use that distance marker as a guide to ensure that the ship would pass directly under the RACON of the Delta-Echo span of the Bay Bridge. The measure "0.33 miles" is the distance between the center of the Delta-Echo span and Yerba Buena Island. With the VRM on Yerba Buena Island, the ship would have passed directly under the Delta-Echo RACON. (Unfortunately, the pilot did not explain to anyone on the ship the purpose of his 0.33-mile VRM, or the significance of 0.33 miles.) After the accident, the pilot claimed that shortly after leaving port he believed that the radar failed to operate properly and so he decided to cease reliance on the radar. The pilot did not report the failure of the radar to the Coast Guard, nor did he inform the crew that he had concerns about the radar. Rather, he continued to conn<sup>12</sup> the vessel solely on the basis of the imagery on the Electronic Chart. Because the pilot disregarded the radar image, he did not pay attention to the VRM on the radar as it drifted away from Yerba Buena Island, showing visually on the radar that the ship had traveled too far to port and was no longer on the pilot's intended course. 14

### b. The Pilot Did Not Navigate a Traditional Course After Leaving the Berth.

The pilot did not follow the usual course from the Oakland berth to the pilot station. The pilot applied port rudder for too long before beginning the turn to starboard that was necessary to align the vessel with the bridge span. During the lengthy port ten rudder command, the helmsman reminded the pilot that he had left the rudder at port ten and the pilot responded, "yeah port ten," confirming that he was comfortable with the length of the port ten command. (*See* VDR Transcript, 8:24:52.)

<u>ports closed due to heavy fog</u>. Even in U.S. the Coast Guard has closed the port due to fog, but not in San Francisco. <a href="http://in.reuters.com/article/oilRpt/idINN1944156620081219">http://in.reuters.com/article/oilRpt/idINN1944156620081219</a>; <a href="http://www.click2houston.com/weather/10543977/detail.html">http://www.click2houston.com/weather/10543977/detail.html</a>. For some reason, the Coast Guard in San Francisco left the decision to the Bar Pilots.

- <sup>10</sup> Sperry, the manufacturer of the radar equipment, has confirmed that radar did not fail on November 7, 2007. Moreover, the radar images from the Voyage Data Recorder confirm the radar functioned properly throughout the passage, notwithstanding the pilot's claims to the contrary.
- <sup>11</sup> If the pilot thought that the radar was not functioning properly he should have reported it to the Coast Guard as a dangerous condition since operating without a radar in heavy fog would undoubtedly be dangerous. The pilot's comments to the NTSB that he ceased relying on the radar is contradicted by the fact that he altered the VRM and the Electronic Bearing Line several times during the passage. (*See* Radar images 268–271, 416–423, and 461–463, for examples.)
- 12 "Conn" means to have control of the ship's movements. (*See*, NTSB Report on grounding of *New Delhi Express*, n.10. (http://www.ntsb.gov/Publictn/2007/MAB0702.pdf)
- <sup>13</sup> The Electronic Chart displays the ship's movement as an animation on the screen. Some of the images displayed are obtained from the radar. If the radar was malfunctioning, the Electronic Chart could also be unreliable.
- <sup>14</sup> The VRM begins to drift away from Yerba Buena Island at approximately 8:26:44. This imagery can be seen in the radar images from the Voyage Data Recorder at time stamp UTC 16:26:44—16:27:29.

VTS observed the pilot's progress and recognized the unusual nature of the pilot's chosen course and should have addressed the issue with the pilot earlier than it did, particularly given the few ships being monitored at that particular time.

Chart Alone. Because the pilot was not utilizing the radar, he watched the progress of the ship on the Electronic Chart. However, the pilot had never been fully trained in the operation of the Electronic Chart and therefore was not qualified to navigate on the basis of the Electronic Chart alone. Like many older pilots, this pilot regularly relied on radar and his own passage plan—not on electronic charts. Because of his lack of experience with this type of technology, coupled with his use of various prescription medications, the pilot concluded that the buoy marker that marks the Delta tower was the RACON that marks the center of the span. This is an inexplicable conclusion bearing in mind his familiarity with these waters, and his own testimony to the NTSB that he considered the outbound pilotage analogous to driving out of one's own driveway.

**d.** The Pilot Was Not Medically Fit. 15 The pilot was licensed by the Coast Guard and Board of Pilot Commissioners and was assigned to the ship by the Pilots Association. The master had no choice in selecting which pilot would attend to the *Cosco Busan* and no opportunity to confirm the pilot's medical fitness. This particular pilot, Captain Cota, was the only pilot that decided to depart port in the fog. Other pilots informed the respective masters of the ship to which they were assigned that the fog was thicker than normal and that they would wait to depart.

It was reasonably assumed by the master that the pilot was medically fit, based on his licenses and the fact that the Association had assigned him to the *Cosco Busan*. Unfortunately, a long history of medical issues had been disregarded and the pilot was not medically fit to pilot the ship because of his migraines, <sup>16</sup> his history of abdominal pain from a variety of conditions, sleep apnea and his use of various prescription drugs to treat his migraines, anxiety, pain and excessive drowsiness. <sup>17</sup> However, the pilot did not display any outward appearance of being under the

<sup>15</sup> According to published reports, the list of prescription medications at issue include: "Provigil (to fight drowsiness), Valium, as a sleep aid, Lorazepam, an anti-anxiety drug, Darvon Compound-65, a narcotic pain reliever, Wellbutrin, an anti-depressant, Aciflux for heartburn, Lipitor for high cholesterol, Alphagan for glaucoma, Imitrex, a migraine drug, Synthroid for thyroid deficiency and Potassium citrate for kidney stones." (See, <a href="http://www.efluxmedia.com/news\_NTSB\_Blames\_Pilots\_Medication\_and\_Alcohol\_Use\_for\_SF\_Oil\_Spill\_16192.html">http://www.efluxmedia.com/news\_NTSB\_Blames\_Pilots\_Medication\_and\_Alcohol\_Use\_for\_SF\_Oil\_Spill\_16192.html</a>) There is an abundance of scientific literature documenting a several-fold increase in transportation and industry mishaps in operators who have sleep disorders.

<sup>&</sup>lt;sup>16</sup> Migraine headaches are often incapacitating due to severe pain. They are also associated with visual disturbances.

<sup>17</sup> Captain Cota had reported to the Coast Guard in January 2007 that he suffered from sleep apnea and that he was taking a drug called Provigil on a daily basis. He did not report the number of pills that was taking per day or the extent to which the dose had changed overtime. Since the grounding of the *Star Princess* in 1995, the Coast Guard and pilot association have known that sleep apnea is a serious medical impairment for a pilot. In June 1997, the NTSB issued its report on the *Star Princess* and in July 1997 it sent a letter to pilot associations around the country warning them of the danger posed by pilots with sleep apnea. Persons with sleep apnea are three to five times as likely to be involved in a serious car accident. <a href="http://awakeinamerica.info/2008/top-news/sleep-apnea-doubles-auto-accident-risk/">http://awakeinamerica.info/2008/top-news/sleep-apnea-doubles-auto-accident-risk/</a>. In addition to the sleep apnea and Cota's use of the stimulant Provigil, the Coast Guard was also notified by Captain Cota in January

influence of alcohol or drugs so the crew was unaware of his impairment. <sup>18</sup> One of the side-effects of one of the medications at issue, Provigil, is an increase in confidence. This may well explain why this pilot's decision to depart in the fog was unique amongst the other pilots assigned to ships that morning. The pilot has admitted to taking Provigil on the morning of the allision. Provigil has various other side-effects, including an impairment of judgment. While Provigil can promote wakefulness, it also produces psychoactive and euphoric effects, alterations in mood, perception, thinking, and feelings typical of other central nervous system stimulants. This is why the FAA does not allow the use of Provigil by pilots, including private, non-commercial pilots. The pilot was also a chronic user of other medications which, alone and in combination with the Provigil, impact judgment and perception. In addition, many of these drugs can cause serious withdrawal symptoms if their use is stopped abruptly.

Once the ship was underway, there was no outwardly manifest incapacitation; however, it is extremely difficult to comprehend how a pilot with so much experience could have become so disorientated with the radar and the Electronic Chart unless this was caused by his underlying medical conditions, including obstructive sleep apnea, and prescription drugs. 19 To obtain his pilot's license, the pilot was required to re-create the navigational chart of the entire Bay from memory, including all of the symbols, buoys and RACONs. Yet, during the passage, the pilot expressed confusion regarding standard navigation symbols used in the San Francisco Bay, and appears to have been aiming for the bridge's Delta tower because he thought it was the center of the Delta-Echo span. Despite his years of experience, the pilot at one point asked the master about the red triangle by asking, "This is the center of the bridge, right?," when what he apparently meant to ask was whether or not the red triangle marked the center of the fairway.<sup>20</sup> A pilot that has taken command of hundreds of ships, and navigated thousands of times under the San Francisco Bay Bridge, could not confuse a buoy, marked by a triangle, with a RACON marked by a circle with a dot in the middle. All of the RACONs on the Bay Bridge are circles with a dot in the center; the buoy marking the Delta Tower has never been marked as a circle, and indeed has always been marked as a triangle, or other approved symbol denoting a buoy. These symbols are displayed on the vessel's electronic chart system, and on the official paper chart, and should have been obvious to the pilot given that he has seen buoy symbology on identical charts during literally thousands of passages on ships under his command.

2007 that he was taking Lorazepam every night to get to sleep, and that he was taking a strong pain killer called Darvon. Opioids, stimulants and central nervous system depressants, are the most commonly abused prescription drugs in the United States. (*See*, <a href="http://www.fda.gov/fdac/features/2001/501\_drug.html">http://www.fda.gov/fdac/features/2001/501\_drug.html</a>.)

<sup>&</sup>lt;sup>18</sup> See Testimony of Dr. Robert Bourgeois before the NTSB.

<sup>&</sup>lt;sup>19</sup> The Coast Guard's Report on the Allision, prepared by Sector San Francisco, concurs with this finding. (*See*, Coast Guard Report on the Allision, page 29.)

<sup>&</sup>lt;sup>20</sup> As noted by the Coast Guard in its Report on the Allision, prepared by U.S. Coast Guard Sector, San Francisco, "Since these buoys in fact are near the geographic center of the bridge, the master's affirmative answer to the question, as it was posed by Captain Cota, was correct."

Because the Coast Guard's drug testing after the allision did not screen for the various prescription drugs prescribed to the pilot, only the pilot knows which medications he took in the days and hours prior to the allision. As discussed below, the Coast Guard was well aware of the pilot's use of prescription drugs. However, the Coast Guard failed to request preservation of the pilot's urine sample for the purpose of conducting a more appropriate analysis than the DOT-5. Because such an analysis is no longer possible, the parties must rely on the circumstantial evidence of the pilot's pharmacy records for prescriptions purchased both before <u>and after</u> the allision.<sup>21</sup>

4. The Coast Guard licensed the pilot despite its knowledge of his history of accidents, medical issues, disqualifying medical conditions and use of prescription drugs that were also disqualifying. The pilot's sleep apnea and use of Provigil, Lorazepam, and Darvon was known to the Coast Guard in January 2007. It had been disclosed to the Coast Guard on the pilot's medical examination Form 719K, but was not reviewed by the Coast Guard as required. Unfortunately, the Coast Guard received the pilot's report of annual physical exam, without actually conducting the review required to ensure that the pilot was medically fit.

The Coast Guard has indicated that there was confusion in the San Francisco Regional Examination Center ("REC") due to changes in their official policies for review of mariner and pilot physicals. However, the changes should not have had any impact on the review of the pilot's annual physical. Under then existing Coast Guard policy, the obstructive sleep apnea and use of Darvon and Provigil were, individually, disqualifying conditions that should have been referred to the Coast Guard's National Maritime Center ("NMC") for review.<sup>22</sup> The local Coast Guard REC in fact took no action despite these potentially disqualifying disclosures. The REC failed to follow its own procedures which mandated referral of this physical to the NMC based upon the disclosure of new medical conditions and medications.

Equally troubling is the fact that the Coast Guard was also aware of an incident with this same pilot aboard the *USS Tawara* in 2004 which was blamed on a "medical condition." This incident took place after the pilot was "off the board" for seven months in 1999 as a result of a "medical condition." The Coast Guard was also aware of the pilot's conviction for DUI in 1999 and knew that he entered an alcohol rehabilitation program in this same time frame. These events put the Coast Guard, the Board of Pilot Commissioners, and the Pilots Association on notice to carefully track this pilot's medical fitness. Thereafter, in 2006, on board the *Hyundai Pioneer*, the pilot was involved in the grounding of a ship which was the result of his "loss of situational awareness." These incidents put the Coast Guard, Board of Pilot Commissioners, as well as the Pilots

<sup>&</sup>lt;sup>21</sup> The pilot's pharmacy records for activity before and after the allision are part of the non-public record and therefore will not be discussed in detail. We respectfully suggest that the Board members review pharmacy records from before and after the allision with the NTSB's staff.

<sup>&</sup>lt;sup>22</sup> On June 23, 1995, the pilot of the *Star Princess* accidently grounded the ship as a result of suffering from sleep apnea. In its report on the accident, the NTSB counseled the Coast Guard and various Pilots Associations regarding the danger posed by pilots with sleep apnea. On October 15, 2003, the pilot of the Staten Island ferry was responsible for the allision of the ship with the dock, killing 11 passengers. The pilot was found to have been taking pain killers and anxiety medications similar to those at issue in this matter. The NTSB counseled the Coast Guard to upgrade its medical review and to track the condition of pilots over time. (*See* n.9, <a href="http://www.ntsb.gov/publictn/1997/MAR9702.pdf">http://www.ntsb.gov/publictn/1997/MAR9702.pdf</a>.)

Association, on notice of the seriousness of the pilot's lack of mental and physical fitness. Unfortunately, none of these entities, each of which had primary responsibility for ensuring the safety of the Bay, gave the pilot an appropriate level of scrutiny, despite the numerous warning signs. This is in part because the Coast Guard does not track the performance evaluations, changes in medical conditions, or prescription drug use of the pilots it licenses The NTSB's March 8, 2005 Report on the Allision of the Staten Island ferry *Andrew Barberi* highlighted these failures when it discussed the inadequacies of the Coast Guard's licensing procedures.<sup>23</sup> Despite the admonitions in the NTSB's 2005 report, the Coast Guard's licensing procedures still have not addressed this systemic problem.<sup>24</sup>

- 5. The California Board of Pilot Commissioners uses outdated and obsolete medical standards for pilots. The Board required physicians to use outdated 1986 SHIP standards.<sup>25</sup> These standards were adopted before several recent maritime casualties in which medical conditions such as obstructive sleep apnea were implicated, including the grounding of the *Star Princess* and the fatal accident involving the Staten Island ferry. (The U.S. Coast Guard, in its Report on the Allision, concurred with this conclusion.)
- 6. The Board of Pilot Commissioners and the Coast Guard failed to conduct thorough investigations of the pilot's prior incidents or his medical condition and drug use/abuse. The Pilots Association conducted an incomplete investigation of the *USS Tarawa* incident in 2004. The Coast Guard assured the Commanding Officer of the *USS Tarawa* that the Coast Guard would investigate the pilot's unusual conduct; however, it failed to follow through on this promise. There should have been a complete investigation of the pilot's past and ongoing medical treatment given that the Pilot Commission's conclusion that the pilot's conduct on the *USS Tarawa* was the result of a "medical issue." The pilot's medical competence should have been severely questioned at that time. As noted above, the pilot had an incident in 2006 (the grounding of the *Hyundai Pioneer*) in which he lost situational awareness in a similar manner to the incident on board the *Cosco Busan*. Despite the warning signs of the potential for a serious accident, the Board of Pilot Commissioners took no action.

<sup>&</sup>lt;sup>23</sup> "Therefore, the Safety Board recommends that the Coast Guard, in formal consultation with experts in the field of occupational medicine, review its medical oversight process and take actions to address, at a minimum, the lack of tracking of performance examinations, the potential for inconsistent interpretations and evaluations between medical practitioners; deficiencies in the system of storing medical data; the absence of requirements for mariners and others to report changes in medical condition between examinations, and the limited ability of the Coast Guard to review medical evaluations made by personal health care providers."

<sup>&</sup>lt;sup>24</sup> The Coast Guard, Sector San Francisco, acknowledges this fact in its Report on the Allision. (*See*, Coast Guard Report on the Allision, page 30, Conclusion 9.)

<sup>&</sup>lt;sup>25</sup> The Coast Guard, Sector San Francisco, has acknowledged that the guidelines in the SHIP publication are outdated and contain inadequate information on medications. (*See*, Coast Guard Report on Allision, page 30, Conclusion 10.)

7. The Pilots Association and Board of Pilot Commissioners were willfully blind to the details of the pilot's medical conditions.<sup>26</sup> Not only did they not ask to see the medical information, they intentionally avoided it. However, they did know that the pilot had a "medical issue" in 1999, they knew of another incident in 2004 that was found by the Commission to be a "medical issue,"<sup>27</sup> and they knew that he grounded a ship in 2006 as the result of a loss of situational awareness.<sup>28</sup> Yet, members of the Pilot's Association and specifically the Port Agent endorsed and supported the Pilot's application to the U.S Coast Guard for a waiver following his DUI in 1998 and suspension of his federal license in 1999. Moreover, the Board of Pilot Commissioners, which has a primary duty for qualifying and disciplining its pilots, was on notice of this pilot's evolving medical conditions and performance history, including his DUI and the resulting suspension of his federal license in 1999. Nonetheless, it renewed the pilot's state license in 1999, 2000 and each year following the *Tarawa* and *Hyundai Pioneer* incidents with indifference to these warning signs.

The president of the Pilots Association, Captain Pete McIssac, told the NTSB that the way the Association determines when pilots are no longer able to perform their job safely is that "they start having accidents." The NTSB has previously opined that such willful blindness to medical fitness and safety issues should not be tolerated. In 2005, the NTSB wrote the following with respect to the Staten Island ferry system:

In a safety-critical system such as the Staten Island ferry, operator performance without medical oversight is unacceptable; the associated risk of a potential catastrophic accident is too high. At the time of the accident, the NYC DOT took no role to ensure the continued medical fitness of its ferry captains and assistant captains, but instead, relied entirely on the Coast Guard regulations covering licensed mariners and Coast Guard enforcement of those regulations.

This statement by the NTSB from 2005 applies equally today to the San Francisco Bar Pilots Association and the Board of Pilot Commissioners. In a safety-critical system such as pilotage in the San Francisco Bay, pilot performance without medical oversight is unacceptable; as demonstrated by this accident, the associated risk of a catastrophic accident is too high.

<sup>&</sup>lt;sup>26</sup> The Coast Guard, Sector San Francisco, concurred in its report that the San Francisco Bay Pilots procedures for determining and monitoring the medical competence of its members are inadequate. (*See*, Coast Guard Report on Allision, page 30, Conclusion 11.)

<sup>&</sup>lt;sup>27</sup> See Report of Commission regarding the *USS Tarawa* incident in the NTSB public docket, including the August 8, 2005 Letter of Concern regarding Captain Cota's conduct on October 9, 2004, while boarding and aboard the *USS Tarawa*, which states that witnesses described Captain Cota's behavior as "enraged" and "irrational."

<sup>&</sup>lt;sup>28</sup> See Report of Commission on ground of the *Hyundai Pioneer* in the NTSB public docket, including the finding by the Commissioners that on the morning of February 20, 2006, in clear visibility at 0805 in the morning, Captain Cota "did not realize the vessel was going off track and did nothing to prevent it . . . Capt. Cota was not aware of the developing situation."

<sup>&</sup>lt;sup>29</sup> See interview of Pete McIssac and his public testimony before the NTSB.

- 8. The physician, selected and approved by the Board of Pilot Commissioners, who completed the pilot's Form 719k, failed to properly examine and accurately determine the pilot's medical fitness. Further, the pilot's treating physician failed to accurately determine the pilot's medical fitness given his ailments and use/abuse of prescription drugs.<sup>30</sup>
- 9. The Coast Guard's VTS failed to take timely, effective action to alert the pilot when they saw that he was deviating from the expected course, when the pilot was out of position to safely attempt to pass through the Delta-Echo span, and when the ship was standing in danger, despite the fact that the watchstanders "predicted" that the ship would hit the bridge.<sup>31</sup>
- As the ship traveled outside the customary route used by pilots, the VTS was slow to contact the pilot, and when it did contact him, it did not clearly articulate the concern that the vessel was out of position to pass safely through the Delta Echo span. Making matters worse, when VTS finally did contact the pilot, it provided him with incorrect information. The VTS reported to the pilot at 8:27:48 that his heading was 235. The VTS' data actually showed that the ship's course made good, or track over the ground, was 235, it was not the ship's heading as claimed by VTS. The pilot later told the NTSB that the VTS' misinformation only served to further confuse him. The IMO Standard Marine Communications Manual defines "heading" as "the horizontal direction of the vessel's bow at a given moment measured in degrees clockwise from North." A vessel's "course made good" is defined as "that course which a vessel makes good over ground, after allowing for the effect of currents, tidal streams, and leeway caused by the wind and sea."32 The communications between the pilot and the VTS continued for nearly one minute. At the end of the conversation, the pilot advised that he still intended to pass under the Delta-Echo span. Yet, by this time, the VTS display clearly showed the vessel was past the point where it could turn and pass through the Delta-Echo span; however, it could have safely passed through the Charlie-Delta span. Despite the fact that the watchstander at VTS "predicted that the ship would hit the bridge," VTS said nothing to warn the pilot and instead decided to become a passive observer of the incident.

<sup>&</sup>lt;sup>30</sup> The Coast Guard, Sector San Francisco concurred, in its report, that the physicians performing the evaluation of the pilot did not adequately explore the pilot's significant, performance affecting health conditions and that the Coast Guard does not require that health care providers that perform such exams have the requisite understanding of the duties and responsibilities of the mariner. (*See*, Coast Guard Report on the Allision, page 30, Conclusions 12 and 13.)

<sup>&</sup>lt;sup>31</sup> Mr. Perez told the NTSB investigators during a recorded interview that it was his opinion that "he wasn't going to make it" and they "predicted" that the ship would hit the bridge. (*See* Perez interview by the NTSB, page 76.) Despite this prediction, the VTS failed to warn the pilot or the captain that the ship was standing in danger. Much like the role of the watchstander during the collision of the *Arizona Standard* and the *Oregon Standard*, the VTS simply watched the accident occur.

<sup>&</sup>lt;sup>32</sup> While the Coast Guard denies that it has any responsibility to step in and assist a pilot, even one *in extremis*, the Coast Guard should acknowledge that it had a duty to communicate information accurately so as not to make the situation worse. In this case, the pilot reported to the NTSB that the VTS' misinformation only served to add to his confusion. The Coast Guard not only missed an opportunity to prevent an accident, it took actions which actually increased the chance that the ship would hit the bridge. Perhaps the outcome would have been different had the VTS warned the pilot that he was standing in danger or, at least, accurately reported the ship's heading.

### **RECOMMENDATIONS**

### **To the United States Coast Guard:**

1. For more than thirty years the NTSB has issued formal Recommendations to the Coast Guard that it require that pilots disclose to the bridge team the pilot's intended maneuvers. Each NTSB Recommendation was issued after the occurrence of a serious maritime accident involving a U.S. pilot. A timeline of the history of NTSB-investigated accidents, NTSB Recommendations and Coast Guard responses is attached hereto for reference. (Tab 1.) The supporting historical NTSB reports and letters are also provided, with sections relating to this particular recommendation highlighted. (Tabs 2–8.)

In 1977, in response to the NTSB's Recommendations, the Coast Guard published 33 C.F.R. § 164.11, which requires that the master of the ship inform the pilot of the maneuvering characteristics of the vessel, but they did not include the obligation for the pilot to inform the master of the pilot's expected maneuvers. During the past thirty years the Coast Guard has declined to place any requirement upon U.S. pilots to share their plans with the master of the ship. As a result, the degree to which a pilot will inform the bridge team of the pilot's planned route is left to the discretion of each individual pilot. The Coast Guard has justified its refusal to adopt the NTSB's recommendation by stating to the NTSB that "the pilot cannot be expected to establish a 'game plan' with the master when so many aspects of a passage cannot be predetermined." (See, <a href="http://www.ntsb.gov/Recs/letters/1988/M88\_27\_28.pdf">http://www.ntsb.gov/Recs/letters/1988/M88\_27\_28.pdf</a>). If this is accurate, then a crew cannot reasonably be expected to prepare a passage plan that accurately portrays the intended route of the pilot, or identify occasions when the vessel's position varies from the pilot's intended route.

As noted above, Coast Guard regulation 33 C.F.R. § 164.11 is one-sided: it only requires that foreign ship masters inform the pilot of the ship's characteristics, something which was properly done in this case. What the NTSB has repeatedly noted is missing from the Coast Guard's regulation is an obligation on the pilot to inform the ship's crew of the pilot's plans and expected maneuvers. As reiterated by the NTSB in 1988, 1990, and 1993, there is need for regulations that

<sup>&</sup>lt;sup>33</sup> On September 4, 1980, the Coast Guard wrote to the NTSB and stated that:

<sup>&</sup>quot;In our previous response to this safety recommendation dated 13 April 1978, we stated that requirements for a master/pilot conference were being drafted for publication as a Notice of Proposed Rulemaking (NPRM). As a preliminary step in this project, similar casualties were reviewed to determine the need for regulation. As a result of the review, and in keeping with the Administration's goal of reducing Federal Regulations, the Coast Guard finds that it cannot justify, at present, further regulation of the master/pilot working relationship.

<sup>&</sup>quot;The ship's master is currently required to inform the pilot of various characteristics of the vessel. A pilot will ordinarily report to the master anything pertinent that is not obvious from charts and publications. However, the pilot cannot be expected to establish a "game plan" with the master when so many aspects of a passage cannot be predetermined. The Coast Guard believes there are sufficient Federal regulations and customary practices which apply in master/pilot relationships." (Emphasis added.)

require that the pilot inform the ship's crew of the pilot's plans for navigating the ship.<sup>34</sup> Subsequently, in yet another rejection of an NTSB recommendation for a more comprehensive pilot exchange of information, the Coast Guard has justified its continued refusal to abide by the NTSB Recommendations by stating that "such a regulation would serve only as a way to penalize the master and the pilot after a casualty." (*See* Tab 9, Coast Guard's response to NTSB dated 9-27-1993).<sup>35</sup>

While maintaining the *status quo* since 1977 has served to protect U.S. pilots from the consequences of a lack of communication with the master, this protection is unjustified; particularly since the Coast Guard provides no such protection from liability for the master and the crew, and the protection has come at significant costs. Reliance on the purported "customary practices" of pilots has not been adequate, as clearly evidenced by the NTSB issuing the same recommendation in multiple cases over thirty years.<sup>36</sup>

If foreign ship masters, and their employers, are going to be held liable for the consequences of the navigational decisions of the U.S. pilot, it is only fair that the Coast Guard mandate that U.S. pilots communicate the general features of their intended passage plan to the master and crew of the vessel before the pilot takes the conn and begins giving maneuvering commands to the crew.<sup>37</sup> If the master is informed of the essential features of the pilot's intended navigational plan, that he can review the chart(s) to assure himself that his vessel will not be navigating into hazardous waters. The grounding f the QE2 in 1992 is yet another example of why this is so important. At that time the NTSB issued the following recommendation:

Require that State pilots, upon boarding a vessel, conduct a conference with the master and other relevant deck officers that includes a discussion of the pilot's proposed route, include courses,

<sup>&</sup>lt;sup>34</sup> "This accident illustrates the need for ship's pilots to keep the ship's officers aware of abnormal characteristics of the waterway to be transited and of the nonroutine maneuvers before such maneuvers are commenced. . . . The Safety Board believes that the master (or the deck watch officer) should be kept aware of the navigation situations that develop or the actions and intentions of the pilot." (Tab 6, page 5.)

<sup>&</sup>lt;sup>35</sup> This position is only half-right. In this case, the Coast Guard has faulted the master of the *Cosco Busan* for not trying to force the pilot to reveal his navigational plans. There again, since the pilot did not become confused between the RACON and the red triangle on the Electronic Chart until after the ship left port, had the pilot provided a proper disclosure it would not have revealed that the pilot was going to aim for the wrong target. It might, however, have revealed to the master the purpose of the pilot's 0.33 mile VRM.

<sup>&</sup>lt;sup>36</sup> The American Pilots' Association published "Best Practices" with respect to the Master-Pilot Information Exchange on October 8, 1997, some ten years before this accident. While the Associations' Best Practices recommends that the pilot have a conference with the master regarding the pilotage, the policy is vague as to the amount of detail that should be provided to the master. Here again, it is left to the discretion of each pilot in each respective port. As such, practices around the country, and even within a single port vary greatly. This lack of continuity leaves the international shipping community with little predictability in quality of the pilotage of their ships.

<sup>&</sup>lt;sup>37</sup> See Recommendation to the United States Congress, below, regarding oversight for governmental agencies that choose to disregard safety recommendations of the NTSB.

speeds, squat, and unique maneuvers that may be encountered. (Class II, Priority Action) (M-93-34.)

The NTSB also reiterated to the Coast Guard its Recommendation M-91-28, which was once again declined by the Coast Guard.

While in this case the pilot did not become confused until after he left port, the master and crew would still have been better served, and they would have had a better chance to discover that the pilot had lost situational awareness, if the pilot had informed the crew of his planned maneuvers. Perhaps, had the pilot told the master of the significance of the pilot's 0.33-mile VRM, the master could have alerted the pilot when the VRM drifted away from Yerba Buena Island. Perhaps, had the pilot told the master that the pilot had lost confidence in the radar, the master would have recommended that they cease proceeding and set anchor. While no one knows for certain how the outcome would have changed had the pilot informed the master of his plans, there can be no question that the crew would have been in a better position to discover that the pilot had lost situational awareness.

Irrespective of the Coast Guard's previous justifications for failing to follow the NTSB's Recommendations since 1977, this case illustrates, yet again, that the Coast Guard's reluctance to accept the NTSB's Recommendations on this point should be reversed. The Coast Guard should now accept the repeated recommendations from the NTSB and require that U.S. pilots disclose their plans for maneuvering the vessel to the master and the crew prior to assuming navigational control of the ship and that the pilot update the master and crew throughout the passage. It is a matter of courtesy to the crew, respect for the master, and, most importantly, it is a matter of the safety of all concerned, including the environment.

2. With respect to the Coast Guard's medical certification process, in 2005, after the loss of life in the Staten Island ferry accident, the NTSB Recommended that the Coast Guard: "In formal consultation with experts in the field of occupational medicine, review your medical oversight process and take actions to address, at a minimum, the lack of tracking of performed examinations; the potential for inconsistent interpretations and evaluations between medical practitioners; deficiencies in the system of storing medical data; the absence of requirements for mariners or others to report changes in medical condition between examinations; and the limited ability of the Coast Guard to review medical evaluations made by personal health care providers." The Coast Guard system of medical review is still flawed, and as a result, an unfit pilot was licensed to sail the *Cosco Busan* on November 7, 2007. NTSB's recommendations from three years ago are, unfortunately, still needed and should now be adopted by the Coast Guard. (*See* Recommendation M-05-06 in relation to the Staten Island ferry accident.)

<sup>&</sup>lt;sup>38</sup> The compulsory pilot has direct control of the navigation of the ship, subject to the master's overall command of the ship and the ultimate responsibility for its safety. It is always presumed, in the absence of positive evidence to the contrary, that a local pilot employed for the occasion and actually on the bridge is in charge of the navigation of the ship, subject to the authority of the master. *See*, NTSB Report on the *New Delhi Express*, n.17. (http://www.ntsb.gov/Publictn/2007/MAB0702.pdf; *U.S. v. Jacksonville Forwarding Co.*, 18 F.2d 39, 40 (5th Cir. 1929).

- 3. Revise Coast Guard licensing regulations to specify that medical examinations must be performed by a physician and no longer allow the examination to be performed by a nurse.
- 4. Amend the existing standards in Marine Safety Manual Volume III for medical professionals performing mariner physicals, to ensure that physicals are performed only by designated, trained physicians with a thorough understanding of the physical and mental demands of a mariner's position. This is similar to the procedure used by the FAA. Like the FAA, the physicians performing these examinations should be trained and certified.
- 5. Revise Coast Guard licensing regulations to designate NMC as the sole authority for determining the "medical competence" of mariners. Incorporate and develop a separate medical certificate issued by NMC with appropriate annotation of waiver(s) and specified dates of validity.
- 6. Revise Form 719k to require mariners to disclose all medical care received in the previous five years, including the names of all medical care providers, reason for visit or treatment, and any medications prescribed.
- 7. The Coast Guard should require, as part of the medical review process, that the applicant disclose not only the prescription drugs used by the applicant but also the dosage. While taking a single tablet of Provigil may not seriously affect a pilot's judgment or fitness for duty, a higher daily dosage would likely impair a pilot's ability to navigate a vessel within the port.<sup>39</sup> A pilot's daily dosage of medications is unavailable under the Coast Guard's current medical review process.
- 8. For all medical examinations, develop a new form for the mariner's Primary Care Provider ("PCP") to report all medical conditions, treatments, and medications prescribed over the previous five years. Include an acknowledgement section for the examining physician to indicate that he/she has reviewed this information. This form should be submitted together with Form CG719k. This form should also include an affirmation of truthfulness and full disclosure with a written warning regarding consequences for violations.
- 9. Revise Form 719k to include a separate section that requires the examining physician to list all diagnoses from the examination and medical history, status of the condition, and ongoing treatment and medications.
- 10. Require interim reporting of medical conditions which change substantially in the time period between annual physicals. This recommendation was made by the NTSB after the Staten Island ferry accident but was not followed by the Coast Guard.
- 11. Require interim reporting and disclosure at renewal when (if) a pilot's state license is suspended, surrendered, or the subject of any waiver, and/or administrative or disciplinary action.

<sup>&</sup>lt;sup>39</sup> "Provigil affects the central nervous system. This can cause effects that may impair your thinking or reactions. Be careful if you drive or do anything that requires you to be alert." (<a href="http://www.drugs.com/provigil.html">http://www.drugs.com/provigil.html</a>)

- 12. Require that pilots take themselves off the duty line if they are temporarily taking medications that could alter their perception and/or judgment. For example, if an airline pilot gets a cold and takes a medication with codeine, the pilot is required to remove him or herself from the flight-line until the drugs are out of their system. The Coast Guard should have a similar requirement.
- 13. Change the drug test used by the Coast Guard for random and post-incident testing to additionally screen for prescription drugs that the Coast Guard believes are disqualifying or potentially disqualifying, such as prescription analgesics and stimulants. The DOT-5 test is outdated and fails to test for the presence of some of the most commonly abused prescription drugs. A sample should be retained in all major casualties for further testing, particularly in cases where the Coast Guard is already on notice, based on the person's 719k, that the individual has a history of drug use.
- 14. Revise authority of the NTSB to require more in-depth drug testing when there is evidence of prescription drug usage. Currently, NTSB does not have the authority to request drug testing of samples.
- 15. For initial applicants and license renewal applicants, require a statement from the applicant's primary care provider annotating all conditions treated and medications prescribed over the preceding five years.
- 16. Revise Coast Guard licensing regulations to allow the Coast Guard to summarily suspend a mariner's license if the National Maritime Center determines, based on any medical information received and confirmed, that the mariner is not medically competent. The Coast Guard stated to the Inspector General that even if the Coast Guard had properly and timely reviewed the pilot's 719k in January 2007 and seen that he was medically unfit, the pilot would likely have still been conning ships some eleven months later, including the *Cosco Busan*. The international shipping community relies on the Coast Guard to ensure that the pilots assigned to their ships in the United States are qualified and medically fit. Given that this is a safety issue, it is unacceptable that the Coast Guard is incapable of immediately suspending the license of a pilot that is medically unfit, or requiring that the licensee deposit his license with the Coast Guard until the medical questions are clarified or corrected and the licensee is medically competent.
- 17. Require drug testing for masters, mates and pilots whenever an annual Form 719k is required and, as noted above, require that the drug testing include screening for prescription medications. This accident proves, once again, that the most commonly abused drugs by adults today in the United States (opiates, stimulants and antidepressants) must be part of the Coast Guard's drug testing program.
- 18. Revise VTS procedures to require VTS watchstanders to communicate with vessels using the name of the vessel as opposed to the call sign of the pilot navigating the vessel. In this incident, VTS communicated with the pilot by radio as "Unit Romeo" instead of referring in radio communications to the "Cosco Busan." If VTS follows this procedure, all bridge personnel will hear the name of their vessel and know that the communication is directed to their vessel as opposed to irrelevant radio chatter. It will also help to engage the entire bridge team in the ongoing

communications in order to help alert the crew as to when VTS is speaking to their ship rather than other ships in the bay. A call to the pilot gives the impression that the communication is personal to the pilot.

- 19. Require that VTS personnel submit to drug testing after an accident involving VTS. This was not done in this case and leaves open the possibility that the VTS operators were under the influence of alcohol or drugs. As with all drug testing, the test should be sufficiently robust to detect the use of prescription medications.
- 20. Review VTS San Francisco's procedures and revise them appropriately to guide VTS watchstanders on the need to communicate clearly and concisely with pilots or masters concerning the vessel's position, movement and intended track. The confusion created by the VTS' mistaken reporting of the pilot's course over ground as his heading should not re-occur. The VTS should follow the international standards for marine communications.<sup>40</sup>
- 21. Audit the 719k forms currently in the Coast Guard's files to determine the extent to which sleep apnea and prescription drug use by licensed pilots should be a concern outside this particular accident. Since the grounding of the *Star Princess* in Alaska and the Staten Island ferry accident, the Coast Guard has known that sleep apnea is a serious challenge for pilots, particularly given their schedule. Because the recommendations of the NTSB from the Staten Island ferry accident were not followed, the extent of the problem is not known because the Coast Guard, still to this day, does not know how many pilots with sleep apnea currently hold a Coast Guard issued license.
- 22. The staff of the VTS should include at least one licensed pilot or master mariner with experience navigating in the Bay. In addition, VTS training should include simulated emergency situations so that future watchstanders are prepared to take appropriate measures when they "predict" that an accident is about to take place.

### To the Coast Guard and the California Department of Transportation:

1. The Coast Guard and the California Department of Transportation should consider painting the San Francisco Bay Bridge a color other than grey in an area known for heavy fog. The Golden Gate Bridge has always been painted orange vermilion to aid its visibility in fog. The U.S. Navy had originally suggested that the Golden Gate Bridge should be painted with black and yellow stripes for even better visibility in fog. (<a href="http://www.fredbecker.org/News%20Letter/golden.htm">http://www.fredbecker.org/News%20Letter/golden.htm</a>) In contrast, the Bay Bridge is painted grey, the color most resembling fog. The towers of the Bay Bridge should be painted a color that is more identifiable in fog. The Coast Guard will, undoubtedly, not close the port every time fog presents a visibility challenge, and so a high-visibility paint color on the bridge would be advisable. This would greatly enhance visibility for a crew member acting as a look-out on the bow of the ship. In this case, by the time the look-out saw the grey bridge tower amidst the fog it was too late for the pilot to maneuver to avoid impact.

<sup>&</sup>lt;sup>40</sup> See International Maritime Organization's Standard Marine Communication Phrases.

2. The Coast Guard and the California Department of Transportation should upgrade the fenders around the San Francisco Bay Bridge. These fenders have long been recognized as sub-par and prone to do more damage to ships than other more updated designs. The fender should be sacrificial and designed to absorb energy. Given that the *Cosco Busan* did not hit the San Francisco Bay bridge, it only hit the fender, it is likely the spill could have been averted had the fender been designed to absorb energy and deflect, but not cut into the skin of the ship, much like the design of the fender in Portland's harbor. The prior recommendations of the Harbor Safety Committee for upgrades to the fenders should be seriously considered.<sup>41</sup>

### To the American Pilots' Association:

- 1. Advise your members about this accident and how sleep disorders and medication side effects impact a pilot's situational awareness.
- 2. Investigative procedures should be updated, along with specific requirements according to the circumstances or reasons for particular investigations, especially in regard to thorough documentation regarding medical competence. The Association should have a database to track incidents over time and the pilot(s) involved, to reveal patterns of causation and to provide lessons learned for all pilots.
- 3. On April 26, 1988, the NTSB wrote to Captain Pat J. Neely, President, American Pilots Association, and outlined the history of NTSB Recommendations to the Coast Guard regarding a pilot's communication with the ship's crew. (*See* April 26, 1988 letter at Tab 5.) As noted above, the Coast Guard has repeatedly rejected the NTSB's Recommendation that the Coast Guard require that pilots inform the crew of the pilot's intended maneuvers. While the pilot in this case did not lose situational awareness until after the ship was underway, the crew would have been better able to assist him had the pilot informed them of his planned maneuvers. The American Pilots' Associations should support amendment of 33 C.F.R. § 164 to require that pilots inform the crew of the pilot's planned maneuvers. It is apparent that merely stating in the Association's *Best Practices* that the pilot should so inform the crew is insufficient.

### To the San Francisco Bar Pilots Association and Board of Pilot Commissioners:

- 1. Update your medical standards so that they are at least as comprehensive as the USCG standards set forth in NVIC 04-08 and take steps to ensure compliance.
- 2. Develop a system for determination of when a pilot is no longer able to perform his/her duties competently. Currently there is no mandatory retirement criterion for pilots and no method for evaluation. As testified to by the San Francisco Bar Pilots Association, they only know a pilot needs to retire when he/she starts having accidents. This is an unacceptable method of quality control given the seriousness of the potential resulting accidents. The Pilots Association and Board

<sup>&</sup>lt;sup>41</sup> Since at least 1998, the Harbor Safety Committee has recommended to Caltrans the installation of energy-absorbing fendering, instead of the wooden or plastic fendering. (*See http://www.sfmx.org/support/hsc/acrobat/hsc\_plan1998.pdf* at page 13.)

of Pilot Commissioners must appreciate that ship owners and their crew members rely on the competence, experience and fitness of the local pilot.<sup>42</sup> Absent a robust system of quality control, the unfortunate damages from this accident will be repeated in San Francisco Bay.<sup>43</sup>

- 3. The physicians that perform the medical examinations should not be beholding to the Pilots Association or the Board of Pilots Commissioners. The examinations should be performed by independent doctors that are familiar with the duties of a pilot and also familiar with the influences of prescription drugs.
- 4. Require physicians who perform medical examinations of pilots (or pilot applicants) to obtain and review the records from the pilot's primary care physician, and any other providers of medical treatment, for the preceding 60 months (or since previous medical examination for licensing, if required more frequently).
- 5. Require continuing education, including the use of laptop computers, and implement a quality control program. The use of a laptop with an AIS plug-in feature should be a mandatory minimum standard for all pilots.
- 6. Require interim reporting of changes in medical conditions and/or changes in medication usage.
- 7. Require interim reporting and disclosure at renewal when (if) a pilot's federal license is suspended, surrendered, or the subject of any waiver, and/or administrative or disciplinary action.
- 8. Take active measures to ensure that the pilots operating in the San Francisco Bay are both competent and medically fit. This will require amendment to C.C.R. 217(3)(c)(1) to mandate that the examining physician provide the Commission with a complete medical evaluation and not merely a statement of "fit" or "unfit" for duty.
- 9. Require random drug testing and utilize the best available testing methods to ensure that your pilots are not using/abusing prescription medications. The DOT-5 is an outdated test that provides no protection from the most common drug abuse in adults: prescription medications.
- 10. Require that pilots disclose their plans for maneuvering the vessel to the bridge crew. As noted above, for more than 30 years the NTSB has recommended to the Coast Guard that it require pilots disclose to the bridge team the pilot's intended maneuvers. (NTSB Recommendations M-74-15, M-77-33, M-88-20, M-91-28.) The Coast Guard has so far refused to adopt these recommendations and so the degree to which pilots provide information to the bridge crew is left to

<sup>&</sup>lt;sup>42</sup> As recognized by the NTSB in its report on the bridge allision by the *Ziemia Bialostock*, "It was reasonable for the master to rely on the pilot to safely navigate the vessel through the bridge because of the pilot's experience and the master's limited knowledge of Brunswick Harbor. . . . " (<a href="http://www.ntsb.gov/Recs/letters/1988/M88\_27\_28.pdf">http://www.ntsb.gov/Recs/letters/1988/M88\_27\_28.pdf</a>).

<sup>&</sup>lt;sup>43</sup> As noted by the NTSB in its report on the grounding of the *Star Princess*: while focusing on a pilot after they cause an accident is the traditional approach, "the Safety Board considers that oversight would be more effective before an accident takes place." (NTSB Report on *Star Princess*, page 37.)

the discretion of each individual pilot. San Francisco bar pilots should be required by either work rule or state law to disclose their plan for navigating the ship in and out of the San Francisco Bay, even if the Coast Guard does not require it at the present time. (*See* IMO Resolution A.960(23), Adopted 5 December 2003: "Each competent pilotage authority should develop a standard exchange of information practice, taking into account regulatory requirements and best practices in the pilotage area.") The attached history of accidents and the related NTSB Recommendations from 1974, 1977, 1988, and 1991 well demonstrates that when a pilot fails to inform the crew of his intended maneuvers, the likelihood of a serious accident is increased. In 1989, the NTSB wrote that "communication is a two-way transfer of information, and this regulation (33 CFR 164.11) requires only that information pass in one direction – from the master to the pilot." The logic behind the NTSB's Recommendations has, unfortunately, been demonstrated over the years by the occurrence of serious accidents that, perhaps, could have been avoided had the pilot informed the crew of his planned maneuvers. Regardless of whether the Coast Guard now heeds the NTSB's Recommendation M-77-33, the Pilots Association and the State of California should do so on their own.

### **To the United States Congress:**

1. Congress should require that federal agencies, such as the Coast Guard, report to the appropriate Congressional oversight committee the agencies' basis for rejecting the recommendations set out by the National Transportation Safety Board in any official NTSB Report. In 1974, 1977, 1988, and 1991, the NTSB recommended that the Coast Guard mandate that pilots inform ship captains of the pilot's intended passage, but the Coast Guard declined to follow that recommendation. Separately, in 2005 the NTSB recommended that the Coast Guard address various failings the Coast Guard's medical review process for mariners. (http://www.ntsb.gov/publictn/2005/MAR0501.pdf) Had the Coast Guard implemented the recommendations of the NTSB, the pilot in this case would not have been issued a license in 2006 or 2007 as a result of his medical conditions and prescription drug use. While hindsight is obviously 20/20, there appears to be a pattern of NTSB recommendations that have been disregarded by the Coast Guard, any one of which could have prevented this unfortunate accident had it been adopted by the Coast Guard.

As this accident aptly demonstrates, the value of the NTSB's efforts are greatly diminished when its recommendations are disregarded.<sup>44</sup> While there may be justifications for the Coast Guard's failure to adopt various NTSB's recommendations, there should be oversight of such decisions. Fleet respectfully recommends that any time the NTSB makes formal recommendations to a governmental agency that the agency in question should be required to promptly report to the appropriate Congressional oversight committee how the agency intends to respond to the

<sup>&</sup>lt;sup>44</sup> Even today, the Coast Guard is apparently unable to identify the number of U.S. licensed pilots that suffer from sleep apnea, the number that use Provigil, or the number of pilots that use pain killers on a regular basis, all of which influenced the outcome of the *Star Princess* accident, the Staten Island ferry accident, and the accident at issue here. The Coast Guard needs to update its medical review process immediately so that it can easily track the progress of a pilot's medical issues and drug use over time. The international shipping community relies on the Coast Guard for this purpose.

recommendation and the timetable for implementation. Further, if the agency chooses to disregard the recommendations of the NTSB, as was done here, that agency should be required to justify its failure to take appropriate corrective actions set out by the NTSB. The agency's reasons for its delay in implementing, or refusing to implement, corrective actions should be submitted to Congress in writing and published in the Federal Register so that the justification can be open to public comment.

2. Congress should request that the Inspector General of the Coast Guard review the Coast Guard's "unacceptable action" in response to the various NTSB Recommendations discussed above, including, but not limited to, Recommendations M-74-15, M-77-33, M-88-20, M-91-28, and M-05-06, to determine whether the Coast Guard's historic refusal to follow the NTSB's formal Recommendations is justified.

<sup>\*</sup> Please note that Fleet's comments and Recommendations are constrained by the existence of pending litigation and the issuance of a protective order limiting Fleet's ability to discuss, in a public submittal, certain medical information which is at issue in the litigation and which is part of the NTSB's non-public docket.

# TAB 1

# 30 Years Of NTSB Recommendations To The **Coast Guard**

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30

### NTSB Recommendations

### Nov 7, 1972

### African Neptune Allision With Sidney Lanier Bridge (with loss of life)

Under the navigational control of a pilot the African Neptune allided with the the Sidney Lanier Bridge in Brunswick, Georgia. As a result, 10 persons died and 11 were injured when several cars fell into the water.

NTSB Safety Recommendation M-74-15 to the Coast Guard that it require that pilots inform the master of the pilot's intended route and maneuvers.

(See Tab 6)

### Jan 31, 1975

### Edgar Queeny Collision With Corinthos (with loss of life)

The collision resulted from the failure of the pilot aboard the Queeny to safely execute a turn into Marcus Hook channel. As a result of the accident, 26 persons either were killed or are missing, and 11 were injured.

NTSB issued Recommendation M-77-33 to the Coast Guard requesting that the Coast Guard amend of 33 CFR 164.11 to require that pilots discuss their planned maneuvers with the master.

(See Tab 2)

### Dec 4, 1977

### Collision of M/v Ribaforada with M/V Tiaret

The ramming occurred while the pilot, who had assumed navigational control of the vessel, was navigating the Ribaforada downriver from Algiers Point. The Safety Board determined that the pilot stated the turn too late to safely clear the river's left

NTSB reiterated Recommendation M-77-33 to the Coast Guard. (See Tab 3)

### **Coast Guard's Responses**

### 7 Nov 7, 1972

### African Neptune Collision With Sidney Lanier Bridge

The Coast Guard issued a regulation requiring that the master of a ship inform the pilot regarding the ship's characteristics, but declined to require that the pilot inform the master of the intended route. (See: 33 CFR 164.11).

NTSB Recommendation M-74-15: Closed -- "Unacceptable Action." (See Tab 6)

### Jan 31, 1975

### Edgar Queeny Collision With Corinthos

NTSB Recommendation M-77-33: Closed -- "Unacceptable Action." (See Tab 2)

bank.

### Dec 4, 1977

### Collision of M/v Ribaforada with M/V Tiaret

No action was taken by the Coast Guard in response to NTSB reiterated Recommendation. (See Tab 3)

# Sep 1 1988

### Nov 9, 1978

## N/V Irene S. Lemos Collision With Maritime Justice

The collision occurred during heavy fog and resulted in estimated \$4 million in damage. Both ships were under the navigational control of a pilot at the time of the collision.

NTSB reiterated Recommendation M-74-15 and M-77-33 to the Coast Guard. (See Tab 4)

### May 3, 1987

# Ziemia Bialostocka Allision With Sidney Lanier Bridge

Under the navigational control of the local pilot when it allided with the bridge. There were no injuries or deaths. The Bridge sustained \$1.4 million in damage and the bridge did not re-open for four months, at an estimated cost to the public of \$7.9 million.

NTSB re-issued Safety Recommendation M-77-33 to the Coast Guard and called it Recommendation M-88-20. (See Tab 5)

### Sep 2, 1988

### Esso Puerto Rico Collision With M/V Longevity

Under the navigational control of a pilot the ship struck the anchor of the M/V Longevity releasing 23,000 barrels of carbon black oil.

NTSB Finding: "Communication is a twoway transfer of information, and this regulation (33 CFR 164.11) requires only that information pass in one direction - from the master to the pilot."

Reiterated to Coast Guard the need for action on Recommendations M-77-33, and M-88-20.

(See Tab 6)

### Nov 9, 1978

### <u>N/V Irene S. Lemos Collision With Maritime</u> Justice

No action was taken by the Coast Guard in response to NTSB reiterated Recommendation. (See Tab 4)

### May 3, 1987

### Ziemia Bialostocka Allision With Lanier Bridge

No action was taken by the Coast Guard in response to NTSB Recommendation M-88-20 and so it was closed by the NTSB with the finding of "Unacceptable Action."

(See Tab 5)

### Sep 2, 1988

# Esso Puerto Rico Collision With M/V Longevity

No action was taken by the Coast Guard in response to the NTSB Recommendations. (See Tab 6)

M/V Shinoussa Collision With Barge,

6

### Jul 28, 1990

### M/V Shinoussa Collision With Barge, Galveston Bay Texas

No action was taken by the Coast Guard in response to NTSB Recommendation M-91-028 and so it was closed by the NTSB with a finding of "Unacceptable Action." (See Tab 7)

## Galveston Bay Texas The Sinoussa collided with a three-tank barge

tow in the Houston ship channel. Total estimated damage to the vessel and cargo was 1,784,105. The Coast Guard estimated the clean-up cost to the Federal Pollution Fund to be \$2.1 million. Oil lost to the environment was estimated at 347,000 gallons.

NTSB Reissued Recommendation M-77-33 to the Coast Guard and called it M-91-28. (See Tab 7)

### Aug 7, 1993

Jul 28, 1990

### Grounding of RMS Queen Elizabeth 2

The Queen Elizabeth 2 was outbound in Vineyard Sound, Massachusetts, under the navigational control of a pilot when the vessel grounded. The pilot opted to pilot by his own methods rather than following the courses plotted by the navigator. Damage was significant, temporary and permanent repairs cost approximately \$13.2 million, in addition to a loss of revenue estimated at \$50 million.

NTSB Reissued Recommendation M-91-28 to the Coast Guard, which was a re-issue of M-77-33.

(See Tab 8)

### Aug 7, 1993

### Grounding of RMS Queen Elizabeth 2

No action has taken by the Coast Guard in response to NTSB reissued Recommendation M-91-28. (See Tab 8)

<sup>\*</sup> The dates listed are the date of occurrence of the marine accident.

<sup>\*\* &</sup>quot;Unacceptable Action" is an official finding by the NTSB that the Coast Guard did not take appropriate action in response to the Recommendation and that the Recommendation is closed.

# TAB 2

Log M-58

# NATIONAL TRANSPORTATION SAFETY BOARD WASHINGTON, D.C.

ISSUED: November 10, 1977

Forwarded to:

Admiral Owen W. Siler Commandant U.S. Coast Guard Washington, D.C. 20590

SAFETY RECOMMENDATION(S)

M-77-33 through 36

On January 31, 1975, the SS EDGAR M. QUEENY departed the Monsanto Company dock at Bridgeport, New Jersey, and commenced a 180° turn to proceed up the Delaware River to Paulsboro, New Jersey. The turn across the Marcus Hook anchorage into the channel was not successful, and the QUEENY collided with the S/T CORINTHOS. The CORINTHOS was moored across the river on the Pennsylvania side at the British Petroleum dock discharging her cargo of crude oil. The collision initiated a series of explosions and fires that destroyed the CORINTHOS, caused minor damage to the QUEENY, and substantially damaged the British Petroleum facility. As a result of the accident, 26 persons either were killed or are missing, and 11 persons were injured. 1/

The collision resulted from the failure of the pilot aboard the QUEENY to safely execute a turn into Marcus Hook channel. The pilot was regularly assigned to the QUEENY on her itinerary of local ports and had frequently worked with the master. Both the pilot and master were familiar with the operating characteristics of the QUEENY and were well acquainted with the waters in which the ship was operating. The pilot, while maneuvering, divided his attention between conning and intership communications. The master questioned the pilot about the turning maneuver early in the evolution, accepted the assurance of the pilot, and failed to take corrective action until it was too late to avoid the collision with the CORINTHOS.

By recent Federal regulation (33 CFR 164.11(k)), the master is required to provide the pilot with essential information regarding

<sup>1/</sup> For more complete information regarding this casualty, read "Marine Casualty Report, SS EDGAR M. QUEENY Collision with the Liberian S/T CORINTHOS, Marcus Hook, Pennsylvania, January 31, 1975." (USCG/NTSB-MAR-77-2)

maneuvering data, vessel characteristics and peculiarities, and equipment status. However, we believe it is at least equally important for the master to have pertinent information in regard to the plans of the pilot. We believe that a turn or maneuver in confined waters should not be undertaken without a briefing or discussion and mutual agreement between the master and the pilot before any maneuvering is begun. This matter was addressed in a previous recommendation as a result of our analysis of another casualty. 2/ In your rulemaking adding Part 164 to 33 CFR, the provision to require the pilot to advise the master regarding certain expected navigational precautions and maneuvers was not included in the final rules which became effective June 1, 1977. The Safety Board still believes that the master and the pilot should discuss and agree on the pertinent features of the planned maneuvers. A discussion between the master and the pilot would permit the master to evaluate the risks of the planned maneuver, resolve any disagreements with the pilot, and give the master the information needed to monitor the vessel's actual conformance with the agreed-upon maneuver. Such a discussion before the QUEENY left the dock could have established the intended position and heading at various checkpoints in the maneuver and avoided the indecisions and disagreements as to whether or not the ship was maneuvering as intended and eliminated the long delay before the master acted to alter the maneuver.

The problem of predicting the path of a ship in a turn is complicated because changes in the ship's angular accelerations are not easily and quickly detected. On board the QUEENY, such changes in angular accelerations could have been expected from the release of the tug, the diminishing effect of the bow thruster, the varying angle of attack of the river current, variations in the shallow bottom contours, and the increasing ship's speed. Although the master and pilot may not have needed to know which factor was causing a change in turn rate, it was important to know as soon as possible when a change did occur. It was also important that they commence their evaluation from an accurate common data base. A rate-of-turn indicating instrument does provide an immediate indication of a change in turn rate as well as a measure of the existing rate. This is particularly important for pilots who must frequently maneuver many vessels with different maneuvering characteristics. It is also important because pilots and masters rely so heavily on visual clues in piloting, yet factors which affect the turn rate, such as variations due to bottom contours, are not visually detectable or readily sensed. We believe that turn indicators should be installed on oceangoing vessels so that they may be operated more safely in restricted and congested waters.

<sup>2/ &</sup>quot;Marine Casualty Report - SS AFRICAN NEPTUNE: Collision with the Sidney Lanier Bridge at Brunswick, Georgia, on November 7, 1972." (USCG/NTSB-MAR-74-4)

The cargo tanks in the CORINTHOS were penetrated and opened at low speed and at a relatively shallow collision angle. The protruding anchor of the QUEENY was instrumental in causing the breach in the CORINTHOS' hull. Had the anchor not been protruding, providing sharp edges to cut into the side plating, the collision could conceivably have resulted only in denting the plating.

The use of lifeboats was precluded due to their open construction and the surrounding fire. If an enclosed device such as that used successfully for escape from oil drilling rigs had been available to the crew of the CORINTHOS, the loss of life might have been greatly reduced.

The elimination of collision and reduction in the vulnerability of tankships is being pursued by several regulatory and legislative efforts. The elimination of the cascading fire and violent explosion was also addressed by the recommendation of the Marine Board. The Safety Board concurs in these efforts which address the need for inert gas systems, segregated ballast design, and other proposals.

The existence of similar conditions in other accidents is additional evidence that changes are needed. Therefore, the National Transportation Safety Board recommends that the U.S. Coast Guard:

> Amend 33 CFR 164.11(k) to require that masters and pilots discuss beforehand and agree to the essential features and relevant checkpoints of maneuvers expected to be undertaken. (Class II, Priority Action) (M-77-33)

Require a rate of turn indicator on the bridge of all ships of 10,000 or more deadweight tons. (Class II, Priority Action) (M-77-34)

Develop and promulgate specifications for an enclosed, firesafe, self-contained lifeboat for installation aboard oceangoing vessels of 10,000 or more deadweight tons. (Class II, Priority Action) (M-77-35)

Undertake rulemaking and IMCO initiatives to require that anchors be stowed in recesses in the hull so that there is no projection outside the hull plating. (Class III, Longer Term Action) (M-77-36)

BAILEY, Acting Chairman, McADAMS, HOGUE, and KING, Members, concurred in the above recommendations.

francis H. M. Adams

for By: Kay Bailey
Acting Chairman

# TAB 3

11-106

# NATIONAL TRANSPORTATION SAFETY BOARD WASHINGTON, D.C.

ISSUED: October 29, 1979

Forwarded to:

Admiral John B. Hayes Commandant U.S. Coast Guard Washington, D.C. 20590

SAFETY RECOMMENDATION(S)

M-79-103 through -106

At 0750 c.s.t. on December 4, 1977, the Spanish motor tankship RIBAFORADA rammed the moored barge MB-5, three wharves, and the cargo ship M/V TIARET on the lower Mississippi River near New Orleans, Louisiana. Two of the RIBAFORADA's cargo tanks were breached. Property damage was estimated to be \$921,000. 1/

The ramming occurred while the pilot, who had assumed navigational control of the vessel, was navigating the RIBAFORADA downriver around Algiers Point. The Safety Board determined that the pilot started the turn too late to safely clear the river's left bank. The pilot was not adequately familiar with the vessel's maneuverability to navigate the vessel around a turn such as Algiers Point, where there is little margin for error in navigating an 805-foot-long tankship.

The Navigation Safety Regulations, 33 CFR 164.35(g), require vessel maneuvering information to be prominently displayed in the wheelhouse. This information was not displayed on the RIBAFORADA. Also, the master did not inform the pilot of the vessel's maneuvering characteristics as required by 33 CFR 164.35 (k). The Coast Guard has established a foreign vessel boarding program to assure compliance with U.S. regulations. To assure compliance with the Navigation Safety Regulations, the Coast Guard should include in its boarding checklist for foreign vessels a requirement to determine that the maneuvering information is properly posted.

The necessary expertise to navigate the RIBAFORADA around Algiers Point was split between the pilot and master. The master was more specifically familiar with the maneuvering performance of the vessel and the pilot was expected to have extensive knowledge of local factors, such as current velocities, depths, and navigational practices important to navigation. Because the master and

<sup>1/</sup> For more detailed information read "Marine Accident Report — Spanish Motor Tankship RIBAFORADA Collision with Barge MB-5, Three Wharves, and Cargo Ship M/V TIARET near New Orleans, Louisiana, December 4, 1977" (NTSB-MAR-79-15).

pilot did not discuss the maneuvering characteristics of the RIBAFORADA and the essential features of the downriver voyage (including the rounding of Algiers Point), neither was fully prepared to control the vessel's navigation. The pilot could not properly plan the approach to Algiers Point, determine when to start the turn, and determine how much rudder to apply. The master was handicapped in supervising the pilot's actions or monitoring the vessel's progress in the turn around Algiers Point because he did not know the pilot's maneuvering plan. This lack of knowledge may have led to his reluctance to relieve the pilot immediately or to press his concern when he became apprehensive that the vessel was too close to the left descending bank.

Because the pilot was uncertain of vessel traffic below Algiers Point, he delayed starting his turn until he could see below the point. The pilot said he would have started turning sooner and stayed more to the right if he had known that vessel traffic was clear below Algiers Point. The Coast Guard Vessel Traffic Service (VTS) might have provided information to the pilot about vessel traffic below Algiers Point, but the pilot's VHF radiotelephone was not equipped with channel 11 to communicate with the VTS. Moreover, this pilot said he did not trust the VTS information because some vessels do not report their movements and others make inaccurate reports. The immediate danger to the RIBAFORADA was that a nonparticipating vessel could be approaching Algiers Point even though the VTS might have reported traffic was clear.

The Coast Guard advises mariners that the effectiveness of the New Orleans VTS depends on vessel participation and cautions that the accuracy of VTS information reflects the reports received from participating vessels. Since vessels are not required to participate in the VTS and participating vessels are allowed to continue transiting the VTS area even if they have a radio failure, there is substantial uncertainty about vessel movements in the New Orleans VTS. Nonparticipating vessels, vessels experiencing radio failure, and vessels making inaccurate reports could hazard the navigation of a vessel which had been advised by the VTS that traffic was clear. Because VTS information to vessels approaching Algiers Point is so conditional, it is not adequate assurance that participating vessels can navigate safely around Algiers Point while relying on this information.

During high river stages, the Coast Guard seeks to reduce the risk of collisions near Algiers Point by controlling the movement of vessels with traffic lights. Through visual surveillance near the existing traffic lights, the Coast Guard can provide reasonably complete information on vessel movements near Algiers Point. The Coast Guard could further resolve the dangerous navigation situation created by the existence of conflicts between the points and bends custom and the Inland Rules at Algiers Point by using its VTS to advise vessels nearing the point of meeting traffic on their side of the channel.

While navigating the RIBAFORADA toward Algiers Point, the pilot was using the radiotelephone to determine whether he would meet any vessels near the point. Although his calls were not answered, he was not convinced that traffic below the point was clear. He had previously experienced situations where vessels

were not either listening or answering on channel 13 VHF. Communication over channel 13 VHF at the time of the accident was difficult because of poor user discipline. Similar problems with bridge-to-bridge radiotelephone communications were discussed in an earlier accident report. 2/ In that report, the Coast Guard stated that it had the authority to enforce the requirements of the Vessel Bridge-to-Bridge Radiotelephone Act, that it would monitor that frequency regularly, and that it would cite and levy penalties against violators. The Coast Guard monitoring activities since that time show that improper use as well as illegal transmissions are continuing. However, the Coast Guard has said more recently that its enforcement efforts have been hampered by difficulties in identifying violators and measuring signal strengths of suspected illegally high-powered transmissions.

Acting at the request of the Coast Guard, the Federal Communications Commission (FCC) has changed the frequency for bridge-to-bridge operations in the Southern Louisiana section of the Mississippi River. Channel 67 will replace channel 13 in most of the lower Mississippi River up to mile 242.4 AHP near Baton Rouge and in the Inner Harbor Navigational Canal and in the Mississippi River Gulf Outlet Canal. This change should reduce the congestion which has been a problem in bridge-to-bridge radiotelephone communications in the lower Mississippi River. However, the Safety Board believes that some problems will remain, such as failure to guard on the proper bridge-to-bridge channel. The Coast Guard, in conjunction with the FCC, should improve the effectiveness of its monitoring and enforcement program to curb these problems.

Therefore, the National Transportation Safety Board recommends that the U.S. Coast Guard:

Expedite the installation of vessel surveillance systems and institute mandatory participation in the Vessel Traffic Service for the Mississippi River near Algiers Point. (Class II, Priority Action) (M-79-103)

As an interim measure pending installation of vessel surveillance systems for the Vessel Traffic Service, operate the Algiers Point traffic lights continuously. (Class I, Urgent Action) (M-79-104)

Include in its foreign vessel boarding program checklist a requirement to determine that maneuvering information is displayed as required by 33 CFR 164.35(g). (Class II, Priority Action) (M-79-105)

<sup>2/ &</sup>quot;Marine Casualty Report — SS KEYTRADER and SS BAUNE Collision in the Mississippi River on January 18, 1974 with Loss of Life" (USCG/NTSB-MAR-77-1).

Establish, with the assistance of the Federal Communications Commission, a monitoring and enforcement program and a public information program to reduce improper use of the bridge-to-bridge radiotelephone channels on the lower Mississippi River. (Class II, Priority Action) (M-79-106)

The Safety Board also reiterates the following recommendations which were made to the U. S. Coast Guard as a result of previous accident investigations:  $\underline{3}/$ 

Require that every master of an oceangoing vessel inform himself of the pilot's plan to maneuver his ship in or out of a harbor and that the master determine, with the pilot's assistance, the critical aspects of the maneuver, including the pilot's plan for emergencies. The master should then be required to instruct his crew to insure that high-risk tasks receive priority. (M-74-15)

Amend 33 CFR 164.11(k) to require that masters and pilots discuss beforehand and agree to the essential features and relevant checkpoints of maneuvers expected to be undertaken. (M-77-33)

KING, Chairman, DRIVER, Vice Chairman, McADAMS, GOLDMAN, and BURSLEY, Members, concurred in the above recommendations.

By: James B. King Chairman

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<sup>3/ &</sup>quot;SS AFRICAN NEPTUNE Collision with the Sidney Lanier Bridge, Brunswick, Georgia, November 7, 1972" (USCG/NTSB-MAR-74-4); "SS EDGAR M. QUEENY Collision With the S/T CORINTHOS, Marcus Hook Channel, Pennsylvania, January 31, 1975" (USCG/NTSB-MAR-77-2).

# **TAB 4**

11-109

## NATIONAL TRANSPORTATION SAFETY BOARD WASHINGTON, D.C.

ISSUED: March 20, 1980

Forwarded to:

Admiral John B. Hayes Commandant U.S. Coast Guard Washington, D.C. 20593

SAFETY RECOMMENDATION(S)

M-80-9 through M-80-13

At 0640 c.s.t., on November 9, 1978, the Greek bulk carrier M/V IRENE S. LEMOS and the Panamanian bulk carrier M/V MARITIME JUSTICE collided in the lower Mississippi River at mile 78.3 AHP, about 15 statute miles below New Orleans, Louisiana. Because of the dense fog, the visibility at the time of the collision was less than 400 feet. The vessels struck nearly head-on, damaging the bows of both vessels. There were no deaths or injuries. Cost of repairs to the two vessels was estimated at \$4 million. 1/

Fog on the lower Mississippi River is common from November to March each year. Sometimes the fog is very dense and lasts for days, thereby preventing any vessel movements. On the day of the accident, the fog was patchy and varied in density and duration; it would suddenly appear on a stretch of the river and suddenly disappear. At the time of the collision, both ships were experiencing near zero visibility, but 5 minutes later the fog lifted. Although traffic continued to move on the Mississippi River during the dense fog, some vessels had anchored and had waited for the fog to lift.

Since the master of the MARITIME JUSTICE went to his cabin to rest about 0130, the mate on watch, representing the master, was in charge of the vessel. However, the mate relied completely on the pilot for the safe navigation of the vessel. The mate did not sound fog signals, post a lookout, or call the master as required by the master's standing orders because the pilot did not order him to do so. The mate should have called the master so that the master, who had ultimate responsibility, could have made decisions concerning operating in the dense fog. The mate testified that he could not overrule the pilot's decision while the pilot was aboard. The mate and the pilot did not discuss the proposed port-to-port meeting with the IRENE S. LEMOS at Shingle Point. The mate did not question the pilot on what other vessels the MARITIME JUSTICE would meet or where they would pass the vessels. The mate should have kept himself aware of the locations of other vessels, especially in the dense fog conditions, and discussed with the pilot (1) whether the MARITIME JUSTICE should slow or anchor because of the dense fog and (2) where other vessels could be passed safely.

<sup>1/</sup> For more detailed information read, "Marine Accident Report--Collision of Greek Bulk Carrier M/V IRENE S. LEMOS and Panamanian Bulk Carrier M/V MARITIME JUSTICE, Lower Mississippi River, Near New Orleans, Louisiana, November 9, 1978" (NTSB-MAR-80-4).

The master of the IRENE S. LEMOS was on the bridge and did question the pilot of the IRENE S. LEMOS concerning the passing of the MARITIME JUSTICE at Shingle Point shortly before the accident. However, the master did not request the pilot to keep him informed of the information the pilot received over the radiotelephone regarding the vessels the IRENE S. LEMOS would meet or what passing agreements were made. When the master questioned the pilot concerning the MARITIME JUSTICE, the pilot had already agreed to the meeting in English Turn Bend. The master did not further question the judgment of the pilot and did not assume any control of the vessel until seconds before the collision when he rang up full astern.

The pilots aboard the MARITIME JUSTICE and IRENE S. LEMOS did not know if maneuvering data was posted on their respective bridges nor did they consult with the master concerning the maneuvering characteristics of the respective vessels. The masters of the vessels did not inform the pilots of the maneuvering characteristics of the vessels in accordance with 33 CFR 164.11(k).

The Mississippi River has a number of sharp bends, similar to Shingle Point, which require careful navigation to execute the turns properly. Radar enables the pilot to continue navigating in dense fog but it does not give the pilot immediate information on vessel aspect and heading changes of vessels he encountered. The Safety Board believes that restrictions on the continued operation of vessels on difficult portions of the lower Mississippi River under dense fog conditions need to be examined. Furthermore, the Safety Board believes that the institution of one-way traffic patterns in bends during conditions of reduced visibility would reduce the risk of collision.

The New Orleans Vessel Traffic Service (VTS) only provides weather information if specifically requested by the participating vessel. On the day of the accident, a downbound vessel which was participating in VTS and left New Orleans just ahead of the IRENE S. LEMOS was not informed of the dense fog conditions on the lower Mississippi River although the vessel traffic center (VTC) operators were aware that fog conditions existed downriver from New Orleans. The Safety Board believes that the New Orleans VTS could provide a valuable service to vessels by routinely broadcasting significant weather conditions.

Currently, VTS on the lower Mississippi River has a low level of effectiveness because of the lack of surveillance, lack of participation, inaccurate positions provided by users, user deviation from reported operations, and users not maintaining a radio watch on the designated frequencies. Without surveillance and a high rate of participation to increase the reliability of information, the New Orleans VTS does not provide any more information as to conditions in the immediate vicinity than the pilots themselves can obtain from passing vessels. Without some form of surveillance, the VTS is only as accurate as the information entered into the system from radiotelephone reports from participating vessels.

About 30 minutes before the collision, the pilot of the MARITIME JUSTICE was advised by another pilot that there were two downbound vessels, the EASTERN MERIT and the IRENE S. LEMOS, above Shingle Point and that there was dense fog at Shingle Point. However, the pilot of the MARITIME JUSTICE had no radiotelephone communication with the pilot of the IRENE S. LEMOS until the pilot of the IRENE S. LEMOS contacted him 9 minutes before the collision. The Safety Board believes that it is unlikely that the pilot of the MARITIME JUSTICE would have acted differently had he obtained similar information through participation in VTS.

The authority to control traffic on the Mississippi River rests with the Captain of the Port (COTP) of New Orleans. The VTC acts in cooperation with the COTP, but the VTC does not make recommendations to the COTP as to when traffic should be controlled. For the VTC to improve safe navigation on the Mississippi River under fog conditions, the Safety Board believes that the VTC must have more accurate information of vessel movements through some type of surveillance system and that there is a need for improved procedures between the COTP and the VTC to insure prompt action to control traffic movements on the lower Mississippi River during conditions of limited visibility. When dense fog exists on all or part of the Mississippi River, the VTC should inform all vessels that the dense fog conditions exist. For these measures to be effective, there must be mandatory participation in the VTS by all vessels subject to the Bridge-to-Bridge Radiotelephone Act.

On May 22, 1974, as a result of its investigation of the SS AFRICAN NEPTUNE collision with the Sidney Lanier Bridge at Brunswick, Georgia, on November 7, 1972, 2/ the Safety Board issued the following safety recommendation to the U.S. Coast Guard:

Require that every master of an oceangoing vessel inform himself of the pilot's plan to maneuver his ship in or out of a harbor and that the master determine, with the pilot's assistance, the critical aspects of the maneuver, including the pilot's plan for emergencies. The master should then be required to instruct his crew to insure that high-risk tasks receive priority. (M-74-15)

This recommendation is classified as open by the Safety Board.

On November 10, 1977, as a result of its investigation of the SS EDGAR M. QUEENY collision with the S/T CORINTHOS at Marcus Hook Channel, Pennsylvania, on January 31, 1975, 3/ the Safety Board issued the following safety recommendation to the U.S. Coast Guard:

Amend 33 CFR 164.11(k) to require that masters and pilots discuss beforehand and agree to the essential features and relevant checkpoints of maneuvers expected to be undertaken. (M-77-33)

This recommendation is classified as open by the Safety Board.

As a result of this accident, the National Transportation Safety Board reiterates safety recommendations M-74-15 and M-77-33 and further recommends that the Coast Guard:

Determine which bends on the lower Mississippi River present difficult navigational problems and should be limited to one-way traffic during conditions of reduced visibility, and promulgate appropriate restrictions. (Class II, Priority Action) (M-80-9)

<sup>2/</sup> For more detailed information read, "SS AFRICAN NEPTUNE Collision with the Sidney Lanier Bridge, Brunswick, Georgia, November 7, 1972" (USCG/NTSB-MAR-74-4).
3/ For more detailed information read, "SS EDGAR M. QUEENY Collision with the S/T CORINTHOS, Marcus Hook Channel, Pennsylvania, January 31, 1975" (USCG/NTSB-MAR-77-2).

Require the New Orleans Vessel Traffic Center to inform participating vessels routinely of important weather information, such as dense fog, and withdraw the current instructions which require vessels to request such information specifically. (Class II, Priority Action) (M-80-10)

Accelerate rulemaking, Docket No. 75-112, to make participation in the New Orleans Vessel Traffic Service mandatory. (Class II, Priority Action) (M-80-11)

Develop and implement a plan of action for the Captain of the Port of New Orleans and the New Orleans Vessel Traffic Center that will insure prompt action to control traffic movements on the lower Mississippi River during conditions of limited visibility. (Class II, Priority Action) (M-80-12)

Re-evaluate the proposed level of vessel traffic service (VTS) on the lower Mississippi River, and determine if an extended surveillance system is needed to overcome the severe limitations of the present VTS to provide useful, accurate information to participants. (Class II, Priority Action) (M-80-13)

KING, Chairman, DRIVER, Vice Chairman, McADAMS and BURSLEY, Members, concurred in the above recommendations. GOLDMAN, Member, did not participate.

By: James B. Kj.

Chairman

# **TAB 5**

M-338B



### **National Transportation Safety Board**

Washington, D. C. 20594

### **Safety Recommendation**

Date: April 26, 1988

In reply refer to: M-88-27 and -28

Captain Pat J. Neely President American Pilots Association 1055 Thomas Jefferson Street, N.W. Washington, D.C. 20007

About 0112 on May 3, 1987, the 607-foot-long Polish bulk carrier ZIEMIA BIALOSTOCKA rammed the Sidney Lanier highway bridge in Brunswick, Georgia. At the time of the accident, the outbound vessel was under the control of a Georgia State pilot; the master was in the wheelhouse. There were no injuries or deaths. As a result of the accident, the ZIEMIA BIALOSTOCKA sustained minor damage. Damage to the Sidney Lanier Bridge has been estimated at \$1.4 million. The highway bridge did not reopen for vehicular traffic until September 6, 1987, at an estimated cost to the public of \$7.9 million. 1/

The pilot of the ZIEMIA BIALOSTOCKA stated that the ZIEMIA BIALOSTOCKA was "handling to me like any other ship" until the port turn from the East River to the Turtle River approach channel to the Sidney Lanier Bridge when the vessel did not respond as he had expected. However, based on the maneuvering information on board the vessel and the 1981 U.S. Coast Guard report comparing the tactical diameters of over 600 vessels, 2/ the Safety Board determined that the ZIEMIA BIALOSTOCKA had a turning track significantly larger than the turning track of most other vessels of similar size. The pilot stated that he did not read or request maneuvering information regarding turning tracks and stopping distances from the master because he could determine the maneuvering characteristics of a vessel by handling the vessel "in just a matter of a few minutes."

If the pilot of the ZIEMIA BIALOSTOCKA had read the maneuvering information on the vessels he previously had piloted and compared the maneuvering information with their actual turning tracks in shallow water, he may have been able to determine from the maneuvering information on board the ZIEMIA BIALOSTOCKA that the vessel had a larger turning track than most vessels and that some special precautions were needed in making the approach to the Sidney Lanier Bridge. However, even if he had not done so, he should have been able to determine

If For more detailed information, read Marine Accident Report--"Ramming of the Sidney Lanier Bridge by the Polish Bulk Carrier ZIEMIA BIALOSTOCKA, Brunswick, Georgia, May 3, 1987" (NTSB/MAR-88/03).

2/ U.S. Coast Guard Report No. CG-M-8-81, "Technical Basis for Maneuvering Performance Standards," December 1981.

from the vessel maneuvering information that the ZIEMIA BIALOSTOCKA's turning track was greater than the distance he normally allowed for the turn from the East River to the Turtle River.

The pilot's testimony indicated that he did not have knowledge of the technical parameters affecting the maneuvering characteristics of a vessel and that his practical knowledge of some vessel maneuvering characteristics was incorrect. The pilot was not familiar with standard marine terminology of "advance" and "transfer" for describing a vessel turning track. He stated that the vessel's 11-foot stern trim versus a normal stern trim of about 6 feet would decrease the ZIEMIA BIALOSTOCKA turning track; the increased stern trim actually would have increased the vessel turning track. He also stated that the ZIEMIA BİALOSTOCKA was not in shallow water during the port turn, when, in fact, there was about 40 feet of water in the channels and the vessel mean draft was about 27 feet 7 inches, or a ratio of water depth to draft of about 1.4. Coast Guard regulations define shallow water as a ratio of less than 2 for assessing maneuvering characteristics. Recent studies show that the turning tracks of a vessel can be increased from 50 to 100 percent in shallow water. Thus, although the pilot was experienced and was aware of the effects of shallow water on the turning track of a vessel, he apparently was unaware at what water depth these effects occur.

At the time the pilot obtained his Federal and State pilot licenses, he was not required to pass an examination on the technical parameters affecting vessel maneuvering or the use of maneuvering information posted on the bridges of vessels. Although the Coast Guard required pilots to pass an examination on shiphandling, these examinations were not standardized throughout the country and normally did not require a pilot to have knowledge of the technical parameters affecting vessel maneuvering or the use of various systems of measurement, such as the metric system. Since the pilot was licensed before the enactment of the Coast Guard regulations regarding maneuvering information, the pilot has never had to prove knowledge of these Coast Guard regulations. The Saint Simons and Saint Andrews Bars Board of Commissioners only required the pilot to pass the Coast Guard examination.

New Coast Guard licensing regulations, which were effective on December 1, 1987, will require all pilots to pass an examination on certain ship maneuvering and handling subjects but will not require the pilots to have knowledge of the technical parameters affecting vessel maneuvering or the use of the maneuvering information currently required aboard vessels. The new regulations will require masters and mates, but not pilots, to prove knowledge of these subjects. The Safety Board believes that these subjects are just as important for pilots as masters and mates. To effectively use the maneuvering information required on vessels over 1,600 gross tons in U.S. waters, pilots must understand the parameters that affect the maneuverability of a vessel and how to interpret and use the posted maneuvering information. Pilots also need a working knowledge of various systems of measurement, including the international metric system, to interpret maneuvering information on vessels. Foreign vessels normally show maneuvering information in the metric system, and most vessels entering U.S. ports are foreign vessels. The pilot stated that 99 percent of the large vessels entering Brunswick Harbor are foreign vessels. The Safety Board believes that the maneuvering information required on large U.S. and foreign vessels can be an effective tool in preventing accidents in harbors if pilots use the information. Therefore, the Safety Board believes the American Pilot Association should encourage State pilots to have knowledge of these technical parameters and to use the maneuvering information.

The master of the ZIEMIA BIALOSTOCKA was familiar with the maneuvering characteristics of his vessel, the maneuvering information posted in the navigation bridge, and the technical parameters affecting maneuverability; however, he had never navigated in Brunswick Harbor. For the outbound voyage, the master relied on the pilot's previous experience of maneuvering vessels in Brunswick Harbor, the pilot's knowledge of the waterway, and his observation of the ability of the pilot during the inbound voyage. Because it was his first voyage to Brunswick and because he was not familiar with the locations of aids to navigation in the harbor or the exact configuration of the channel, the master relied on the pilot and National Oceanic and Atmospheric Administration navigation chart No. 11506, which did not show the East River channel widener nor identify the two lights marking the western edge of the widener as range lights.

Since the pilot had not discussed the widener or his intended maneuvers with the master and since he had not expressed any concern to the master that the vessel was not turning properly, the master did not realize that the ZIEMIA BIALOSTOCKA was off the pilot's intended course until the pilot ordered full astern. The Safety Board believes that it was reasonable for the master to rely on the pilot to safely navigate the vessel through the bridge because of the pilot's experience and the master's limited knowledge of Brunswick Harbor; however, the master should have informed the pilot of all the maneuvering information posted in the wheelhouse of the ZIEMIA BIALOSTOCKA as required by Coast Guard regulations (33 CFR 164.11(k)). If the master and pilot had discussed the ZIEMIA BIALOSTOCKA's turning track, the pilot may have realized that the vessel turning track was larger than the distance that he normally allowed for the turn from the East River into the Turtle River, and it may have prompted the pilot to maneuver the vessel differently. Also, the pilot should have informed the master of the channel widener, the purpose of the widener, and his intended maneuvers using the widener. Such a discussion may have prompted the master to inform the pilot of the vessel's turning track and may have caused the pilot to maneuver the vessel differently during the turn from the East River to the Turtle River.

The Safety Board has addressed the need for the master and pilot to share pertinent information about the vessel and the waterway in several other accident reports. 3/ As a result of its investigation of the collision between the U.S. tankship EDGAR M. QUEENY and the Liberian tankship CORINTHOS at Marcus Hook, Pennsylvania, on January 31, 1975, the Safety Board recommended on November 10, 1977, that the Coast Guard:

#### M-77-33

Amend 33 CFR 164.11(k) to require that masters and pilots discuss beforehand and agree to the essential features and relevant checkpoints of maneuvers expected to be undertaken.

3/ Marine Casualty Reports--"SS AFRICAN NEPTUNE: Collision with the Sidney Lanier Bridge at Brunswick, Georgia, on 7 November 1972 with Loss of Life" (USCG/NTSB-74-4); and "SS EDGAR M. QUEENY-S/T CORINTHOS: Collision at Marcus Hook, Pennsylvania on 31 January 1975 with Loss of Life" (USCG/NTSB-77-2); and Marine Accident Report--"Collision of Greek Bulk Carrier M/V IRENE S. LEMOS and Panamanian Bulk Carrier M/V MARITIME JUSTICE, Lower Mississippi River, near New Orleans, Louisiana, November 9, 1978" (NTSB-MAR-80-4).

#### On September 4, 1980, the Coast Guard responded:

In our previous response to this safety recommendation dated 13 April 1978, we stated that requirements for a master/pilot conference were being drafted for publication as a Notice of Proposed Rulemaking (NPRM). As a preliminary step in this project, similar casualties were reviewed to determine the need for regulation. As a result of the review, and in keeping with the Administration's goal of reducing Federal regulations, the Coast Guard finds that it cannot justify, at present, further regulation of the master/pilot working relationship.

The ship's master is currently required to inform the pilot of various characteristics of the vessel. A pilot will ordinarily report to the master anything pertinent that is not obvious from charts and publications. However, the pilot cannot be expected to establish a "game plan" with the master when so many aspects of a passage cannot be predetermined. The Coast Guard believes there are sufficient Federal regulations and customary practices which apply in master/pilot relationships.

On July 10, 1981, the Safety Board classified Safety Recommendation M-77-33 as "Closed--Unacceptable Action." The Safety Board continues to believe that a formal, required master/pilot conference is the most effective way to bring about a sharing of information between master and pilot and has urged the Coast Guard to reconsider its position. Meanwhile, the Safety Board believes that the American Pilots Association should encourage member pilots to discuss and agree beforehand with masters to essential features and relevant checkpoints of maneuvers expected to be undertaken.

Therefore, as a result of its investigation, the National Transportation Safety Board recommends that the American Pilots Association:

Recommend to member associations that all State pilots and applicants for State pilot licenses have knowledge of the technical parameters affecting vessel maneuvering and that pilots use the maneuvering information currently required aboard U.S. vessels and foreign vessels over 1,600 tons entering U.S. ports. (Class II, Priority Action) (M-88-27)

Recommend to member associations that pilots discuss and agree beforehand with masters to the essential features and relevant checkpoints of maneuvers expected to be undertaken. (Class  $\Pi$ , Priority Action) (M-88-28)

Also, the Safety Board issued Safety Recommendations M-88-18 through -23 to the U.S. Coast Guard; M-88-24 through -26 to the State of Georgia; and M-88-29 to the National Oceanic and Atmospheric Administration.

BURNETT, Chairman, and LAUBER, NALL, and KOLSTAD, Members, concurred in these recommendations.

Chairman

# TAB 6



### **National Transportation Safety Board**

Washington, D.C. 20594
Safety Recommendation

endation Log M-353 A

Date: August 8, 1989

In reply refer to: M-89-41 and -42

Admiral Paul A. Yost, Jr. Commandant U.S. Coast Guard Washington, D.C. 20593

At 1945, on September 2, 1988, the Bahamian tankship ESSO PUERTO RICO departed the Exxon facility in Baton Rouge, Louisiana with a cargo of carbon black feedstock oil bound for Rotterdam, Netherlands. The vessel's downriver transit was without incident until the vessel approached Kenner Bend and the pilot sighted the Philippine bulk carrier LONGEVITY ahead which was at anchor and lying crosswise in the river. The deep water channel was to the stern of the anchored LONGEVITY, but the pilot did not believe that there was sufficient room astern of the LONGEVITY for the ESSO PUERTO RICO to pass Therefore, he piloted the ESSO PUERTO RICO past the bow of the In so doing, the vessel left the confines of the deep water channel, entered an area of shallow water, and returned to the deep water channel downstream from the LONGEVITY. Shortly thereafter, the ESSO PUERTO RICO developed a port list which continued to worsen until it reached 8 degrees. The master ordered the cargo tanks sounded, and it was discovered that approximately 6 meters of cargo had been lost from the No. 1 starboard cargo tank. The ESSO PUERTO RICO then proceeded to anchorage. A diver examined the hull and found a 32-foot-long gash in the bottom of the No. 1 starboard cargo tank. The 4,003.6 metric tons of carbon black oil that had been contained in the No. 1 starboard cargo tank leaked into the Mississippi River.1

The master of the ESSO PUERTO RICO was in the pilothouse when the pilot change was executed near Convent, Louisiana. The master stated that he had spoken briefly with the second pilot who navigated the ESSO PUERTO RICO past the LONGEVITY. He told the pilot about the ship's characteristics and informed him that the ship's main engine was operating on pilothouse control. The master remained in the pilothouse for only about 5 minutes after the pilot arrived. The master said that he had confidence in the competence of this pilot before he left the pilothouse. However, the master also stated that it was his first round trip in the Mississippi River, and that he would never relieve a pilot or countermand an order issued by a pilot in the Mississippi River.

<sup>&</sup>lt;sup>1</sup>For more detailed information, read Marine Accident Report--"Striking of a Submerged Object by the Bahamian Tankship ESSO PUERTO RICO, Mississippi River, Kenner, Louisiana, September 3, 1988" (NTSB/MAR-89/02).

The Safety Board believes that this boarding process was typical for a foreign ship by a pilot in U.S. waters, and it characterizes the reliance that foreign ship masters place on the judgement and skill of U.S. pilots. The master of the ESSO PUERTO RICO gave the pilot minimal information concerning the ship, and the pilot gave no information to the master concerning his intentions during the pilotage. The Safety Board realizes that when the intended pilotage covers a long distance, as it did in this case, a pilot cannot be expected to describe ahead of time each action that he will take throughout his tenure as pilot on the vessel. However, it would be reasonable to expect that a pilot could point out areas where navigation would be expected to be more difficult and explain any unusual conditions that exist in the waterway. The Safety Board believes that the relationship between the pilot and the master (and in the absence of the master, the deck watch officer) ought to be one of cooperation. Good communication is essential in achieving a meaningful level of cooperation. The pilot and the master must communicate with each other, and this communication must begin as soon as possible after the pilot arrives on board the vessel. The need for pilot/master discussions is an issue the Safety Board has addressed in a number of past accident reports.<sup>2</sup> Unfortunately, the Safety Board has had little success in convincing the Coast Guard that there is a need to require such discussions. As a result of its investigation of the ramming of the Sidney Lanier Bridge in Brunswick, Georgia, by the SS AFRICAN NEPTUNE on November 7, 1972, the Safety Board recommended that the Coast Guard:

#### M - 74 - 15

Require that every master of an oceangoing vessel inform himself of the pilot's plan to maneuver his ship in or out of a harbor and that the master determine, with the pilot's assistance, the critical aspects of the maneuver, including the pilot's plan for emergencies. The master should then be required to instruct his crew to insure that high-risk tasks receive priority.

Following the issuance of Safety Recommendation M-74-15, the Coast Guard published a notice of proposed rulemaking (NPRM) in the Federal Register on May 6, 1976. This rulemaking action requested comments on a proposed new part to Title 33 of the Code of Federal Regulations. The proposed new Part 164 contained the following relative to Safety Recommendation M-74-15:

<sup>&</sup>lt;sup>2</sup>Marine Casualty Reports--"SS AFRICAN NEPTUNE: Collision with the Sidney Lanier Bridge at Brunswick, Georgia, on 7 November 1972 with Loss of Life" (USCG/NTSB-74/4); and "SS EDGAR M. QUEENY-S/T CORINTHOS: Collision at Marcus Hook, Pennsylvania on 31 January 1975 with Loss of Life" (USCG/NTSB-77-2); and Marine Accident Reports--"Collision of Greek bulk Carrier M/V IRENE S. LEMOS and Panamanian Bulk Carrier M/V MARITIME JUSTICE, Lower Mississippi River, near New Orleans, Louisiana, November 9, 1978" (NTSB/MAR-80/04); and "Ramming of the Sidney Lanier Bridge by the Polish Bulk Carrier ZIEMIA BIALOSTOCKA, Brunswick, Georgia, May 3, 1987" (NTSB/MAR-88/03).

The pilot-master conference required in proposed 164.11(m) would minimize misunderstandings. Although the pilot is of course qualified, every vessel has its own peculiarities which frequently are known only to the crew and which often vary with draft, speed, trim, and sea state. Similarly, every channel and harbor is unique. A short explanation by the pilot of unusual navigation or maneuvering techniques necessary for safe navigation in the waterway will help to ensure the close cooperation required by the pilot and master in maneuvering the vessel, particularly if emergency action becomes necessary.

Section 164.11 The owner, master, or person in charge of each vessel underway shall ensure that:

(m) If a pilot other than a member of the vessel's crew is employed--

(1) The pilot is informed of the maneuvering characteristics and peculiarities of the vessel and of any abnormal circumstances on the vessel that may affect its safe navigation; and

(2) The master or person in charge of the vessel is informed by the pilot of abnormal characteristics of the area to be transited that may affect the vessel's safe navigation and of non-routine maneuvers before the pilot makes them.

When the final rule was published in the Federal Register on January 31, 1977, it did not contain 164.11(m)(2). The reason for its omission was stated in the preamble as:

Paragraph (m)(2) in the proposal, which would have required the pilot to inform the master of abnormal characteristics of the area, is not included in this final rule. It may be the subject of a separate rulemaking at another time.

Because paragraph (m)(2) was never made the subject of any subsequent separate rulemaking, Safety Recommendation M-74-15 was classified "Closed-Unacceptable Action."

As a result of its investigation of the collision between the U.S. tankship EDGAR M. QUEENY and the Liberian tankship CORINTHOS at Marcus Hook, Pennsylvania, on January 31, 1975, the Safety Board recommended that the Coast Guard:

#### M - 77 - 33

Amend 33 CFR 164.11(k) to require that masters and pilots discuss beforehand and agree to the essential features and relevant checkpoints of maneuvers expected to be undertaken.

On September 4, 1980, the Coast Guard Commandant responded:

In our previous response to this safety recommendation dated 13 April 1978, we stated that requirements for a master/pilot conference were being drafted for publication as a Notice of Proposed Rulemaking (NPRM). As a preliminary step in this project, similar casualties were reviewed to determine the need for regulation. As a result of the review, and in keeping with the Administration's goal of reducing Federal regulations, the Coast Guard finds that it cannot justify, at present, further regulation of the master/pilot working relationship.

The ship's master is currently required to inform the pilot of various characteristics of the vessel. A pilot will ordinarily report to the master anything pertinent that is not obvious from charts and publications. However, the pilot cannot be expected to establish a "game plan" with the master when so many aspects of a passage cannot be predetermined. The Coast Guard believes there are sufficient Federal regulations and customary practices which apply in master/pilot relationships.

As a result of the Coast Guard's response to this recommendation, the Safety Board classified Safety Recommendation M-77-33 "Closed--Unacceptable Action" on July 10, 1981. Although the Safety Board continued to believe that there was a need for mandatory discussions between pilots and masters, the issue remained dormant until it was highlighted again in the Safety Board's report of the ramming of the Sidney Lanier Bridge near Brunswick, Georgia, by the Polish bulk carrier ZIEMIA BIALOSTOCKA on May 3, 1987. In this report, the Board stated, "The Safety Board continues to believe that a formal, required master/pilot conference is the most effective way to bring about a sharing of information between master and pilot and urges the Coast Guard to reconsider its position." As a result, the Safety Board reissued Safety Recommendation M-77-33 as a new Safety Recommendation M-88-20.

In a response, dated October 27, 1988, to Safety Recommendation M-88-20, the Coast Guard Commandant stated:

I concur with the intent of this recommendation.... Although the Coast Guard agrees that the master and pilot need to share pertinent information about the vessel and the waterway, we believe that sharing of information between master and pilot is a part of prudent seamanship,

and that the language of 33 CFR  $164.11(k)^3$  is sufficient to require them to communicate. The Coast Guard does not believe that more regulations are warranted and plans no further action on this safety recommendation.

Based on this response, the Safety Board classified Safety Recommendation M-88-20 "Closed--Unacceptable Action." The Safety Board believes that the requirements of 33 CFR 164.11(k) are not sufficient to require the master and pilot to communicate. Communication is a two-way transfer of information, and this regulation requires only that information pass in one direction -- from the master to the pilot. The regulation places no burden on the pilot to communicate pertinent information to the master. The Board believes that a pilot should inform the ship's master about any unusual conditions that exist in the waterway, identify those locations that are particularly difficult to maneuver, explain the manner in which he intends to maneuver the ship in those locations, and ask the master if the ship is capable of performing the maneuver that the pilot envisions. The Safety Board concludes that the discussions between the master and the pilot of the ESSO PUERTO RICO were less than adequate to achieve a cooperative atmosphere. A more indepth discussion of his intended route would have forced the pilot to verbalize potential danger areas. Such a discussion might have led the master to recognize that potential problems were likely to develop near anchorages. If the master had come to such a realization, he may have requested the pilot to make a more cautious approach to known anchorage areas and the vessel might not have entered Kenner Bend at full speed.

This accident illustrates the need for ships' pilots to keep the ships' officers aware of abnormal characteristics of the waterway to be transited and of nonroutine maneuvers before such maneuvers are commenced. The chief mate on board the ESSO PUERTO RICO, who was on watch when the vessel left the deep water channel to pass around the bow of the LONGEVITY, did not know that anything was amiss until the ESSO PUERTO RICO developed a list on the down river side of the LONGEVITY. Until he noticed the list, he had no idea that an emergency situation had arisen during his watch because the pilot did not inform him of the situation as it developed. The Safety Board believes that the master (or the deck watch officer) should be kept aware of navigation situations that develop or the actions and intentions of the pilot. Regardless of the fact that a local pilot generally knows more about the local conditions in an area than the ship's officers, the ship's officers generally know more about their ship than the pilot and should be informed when any condition that poses increased risks to the vessel exists. The Safety Board, therefore, concludes that the pilot should have informed the watch officer beforehand that he was taking the vessel outside of the deep

 $<sup>^3</sup>$ Title 33 CFR 164.11(m) was amended on June 1, 1977 and became 33 CFR 164.11(k), which now reads: "The owner, master, or person in charge of each vessel underway shall ensure that:

<sup>(</sup>k) If a pilot other than a member of the vessel's crew is employed, the pilot is informed of the draft, maneuvering characteristics, and peculiarities of the vessel and of any abnormal circumstances on the vessel that may affect its safe navigation."

water channel. This unilateral action by the pilot deprived the watch officer of his options to countermand the pilot's orders or to advise the master that an emergency situation had arisen.

Under normal conditions in the Mississippi River, the current in the river causes anchored ships to point upriver, parallel to the river banks. Under the conditions that prevailed in the Lower Mississippi River during the summer of 1988 and which continued to prevail at the time of this accident, the current was so weak that anchored ships were not necessarily held parallel to the banks, and the wind became an important factor in determining the heading of anchored ships. As a result, anchored ships could be expected to be lying at any angle to the river bank, even perpendicular. If a ship's length exceeded an anchorage's width or a ship were anchored close to the channelward boundary of an anchorage, then these anchored ships would extend out of the anchorage into the navigable portion of the river and would create hazards.

There are 30 established ship anchorages below Baton Rouge, Louisiana, and many of them are located near river bends where, even under ideal conditions, there is greater risk of accidents simply because the distance of visibility around a bend is limited, and a ship must maneuver to round a In the Kenner Bend area where this accident took place, there were three established anchorage areas. The configuration of the river near Kenner Bend, especially from upriver near the right descending bank, prevents pilots from seeing around the bend and seeing the conditions of the ships in all of the anchorage areas until their vessels have approached fairly close If, as in this case, a pilot suddenly realizes that an anchored vessel is lying across his intended track, he is faced with an immediate decision, the outcome of which could have dire consequences. The Coast Guard, which is responsible for the safety of navigation on the navigable water in the United States, did not recognize that the unusual river conditions presented special safety problems near anchorages. The Safety Board believes that there are many short term actions the Coast Guard could consider that would be effective in improving the safety of navigation near anchorages during such periods. Among the actions that could be considered increasing Coast Guard patrols of anchorages; establishing additional, special anchorage areas for use during the time that the unusual river conditions exist; requiring vessels to obtain permission from the COTP before anchoring in established anchorages; limiting the number of ships that may anchor within any particular anchorage; and establishing maximum vessel length limitations for anchorages based on the anchorages' available widths.

Federal regulations prohibit ships from anchoring outside of established anchorages, except in the case of an emergency. The Lower Kenner Bend Anchorage, where the LONGEVITY was supposed to be anchored, is located along the right descending river bank and is 700 feet wide. Obviously, the LONGEVITY, which was 781 feet long, could not remain entirely within the Lower Kenner Bend Anchorage if the ship were lying perpendicular to the river bank. Even if the bow of the ship were up against the river bank, its stern would extend 81 feet beyond the established limit of the anchorage. However, the LONGEVITY did not have the full width of the anchorage available in which to anchor. Other Federal regulations prohibit ships from anchoring over

Remainder of Report M-89-41 was not available through the internet.

## **TAB 7**



### **National Transportation Safety Board**

Washington, D. C. 20594

### **Safety Recommendation**

Date:

October 21, 1991

In Reply Refer To: M-91-26 through -28

Admiral J. William Kime Commandant U.S. Coast Guard Washington D.C. 20593-0001

About 1440 on July 28, 1990, the 601-foot-long Greek tankship SHINOUSSA collided with a three-tank barge tow being pushed by U. S. towboat CHANDY N near Red Fish Island, Houston Ship Channel (HSC), in Galveston Bay, Texas. The tow's overall length was about 966 feet. The inbound CHANDY N had just been overtaken by the 820-foot-long Liberian tankship HELLESPONT FAITH and was meeting the outbound SHINOUSSA. The SHINOUSSA sustained damage to its bow. One barge, APEX 3417 sank, and the other two barges, APEX 3503 and APEX 3510, were damaged. The CHANDY N and the HELLESPONT FAITH were not damaged. Total estimated damage to vessels and cargo was \$1,784,105. No one was injured. The Coast Guard estimated clean-up cost to the Federal Pollution Fund to be \$2.1 million. Oil lost to the environment was estimated at 347,000 gallons.1

The Galveston-Houston area is one of the largest high-volume bulk oil and chemical loading and unloading areas in the United States. The HSC's current dimensions were planned in the 1950s to accommodate vessels up to 40,000 deadweight tons (DWT). By the mid-1980s, vessels more than twice as large as 40,000 DWT routinely navigated the HSC.

In a 1985 study on tidal hydraulics and related phenomena, the U.S. Army Corps of Engineers determined that for two-way traffic, minimum channel width should be five times the beam of the largest vessel. The beams of the SHINOUSSA and the HELLESPONT FAITH were 106 feet and 126 feet respectively; the HSC only measures 400 feet wide.

<sup>&</sup>lt;sup>1</sup>For more detailed information, read Marine Accident Report--"Collision Between the Greek Tankship SHINOUSSA and the U.S. Towboat CHANDY N and Tow Near Red Fish Island, Galveston Bay, Texas, July 28, 1990" (NTSB/MAR-91/03).

Statistics show that in 1990, ships having an 80-foot or wider beam transited the HSC an average of 510 times monthly. Since 1980, six major marine accidents, including the one involving the SHINOUSSA, have occurred in the HSC between Bolivar Roads and Morgans Point. The Safety Board is concerned that the HSC confines require that large vessels execute passing maneuvers with little margin for error. The Safety Board considered two operational solutions to enhance safety in the HSC.

One solution would be to prohibit large deep-draft vessels greater than 80-foot beam from meeting or overtaking other large deep-draft vessels, except in designated widening areas in the Houston channel between Bolivar Roads and the Houston Turning Basin. The Coast Guard has broad regulatory powers and could establish such regulations. However, this solution would involve restricting the waterway to one-way traffic for periods of several hours each day. Restricting the traffic in the 400-foot wide section of the HSC from Bolivar Roads to the Houston Turning Basin would require that tugs be available in the designated widening areas and thus would quite likely necessitate expenditures for additional pilots, as well as operational time delays for the numerous large deep-draft vessels.

Under current Coast Guard authority, the Captain of the Port could require that pilots arrange large vessel passing in widening areas such as the Boggy Bayou Basin (near the Shell Oil Terminal), the Bayport Ship Channel intersection, and the area near the San Jacinto Monument. The Safety Board believes that the Coast Guard should conduct a study to identify procedures to improve navigation safety in the HSC, including procedures to prevent large vessels such as the HELLESPONT FAITH from meeting or overtaking other similar, large deep-draft vessels, except in designated widening areas in the Houston Ship Channel between Bolivar Roads and the Houston Turning Basin. This study should evaluate the effects of one-way traffic, including vessel time delays, tug requirements, and personnel requirements; it should also consider establishing vessel size limitations for the HSC.

The second solution to reduce the risk of collisions would be for the Coast Guard to establish a minimum in-line separation distance between meeting vessels and any vessel astern of the meeting vessels before large deep-draft vessels are permitted to execute a meeting maneuver. This requirement would enhance safety and have little impact on vessel operations. In this accident, the interval between the HELLESPONT FAITH and the CHANDY N at the time the SHINOUSSA met the HELLESPONT FAITH was not adequate to prevent the SHINOUSSA from striking the towboat when the tankship sheered out of control to port. If the separation distance had been larger, this collision probably would not have happened.

<u>Vessel Traffic Service Assistance</u>.--The Coast Guard established the Houston-Galveston VTS in 1975 to improve vessel transit safety by providing the vessels with advance information of other reported marine traffic and any additional information which may affect vessel traffic safety within the VTS area.

The VTS is a voluntary vessel movement system. The Vessel Traffic Center (VTC) commanding officer stated that the unit experiences a 99.9 percent vessel participation rate and prevents 40 to 50 accidents per year. Approximately 290 vessels, from towboats with a single barge to tankships with drafts of about 40 feet, participate in the VTS every day. Of these 290 vessels, about 17 are ships with an 80-foot or greater beam.

To develop a traffic summary, the traffic watchstanders enter the information received from a vessel into a computer, using either their closed circuit television (CCTV) or radar to verify the information. The radar and television displays are located at the VTC. The only radar site in the VTS is located at the Coast Guard Base Galveston on the northeast end of Galveston Island. The radar provides coverage of the area from the Galveston Bay entrance sea buoy north to just below Red Fish Bar. Eight CCTV towers are located along the HSC from Morgans Point to the Houston City Dock No. 29. Each tower has two television cameras, one facing up the channel and the other down the channel. However, VTS watchstanders can only view one direction at a time. The Morgans Point CCTV can only view as far south as the Bayport Ship Channel. The area between the Bayport Ship Channel and the Red Fish Bar does not have radar or CCTV coverage. The commanding officer stated that radar coverage in this area would be helpful in locating vessels, especially for breakaway barges.

In this accident, VTS watchstanders were aware that the HELLESPONT FAITH, SHINOUSSA, and CHANDY N were in the vicinity of Red Fish Island, but they were unable to monitor the vessels on a radar scope or CCTV screen because they lacked electronic monitoring devices for that area. Without such equipment, the watchstanders have no way of verifying how accurate a pilot's report is or how long such information remains valid. The Safety Board believes that the VTS should have surveillance equipment for the area from the Bayport Ship Channel to the Red Fish Bar so that it can continuously monitor vessels from the seabuoy to the Houston Turning Basin.

The pilots on the SHINOUSSA and HELLESPONT FAITH failed to provide speed information required by VTS guidelines to the VTS watchstander, thus hampering his ability to predict accurately the vessel meeting location. The Safety Board believes that the Coast Guard should instruct VTS watchstanders to encourage pilots to provide speed information and assist pilots in planning meetings and overtakings so that they take place in the widening areas.

As a result of its investigation of the collision between the Swedish auto carrier FIGARO and the French tankship CAMARGUE at the Galveston Bay Entrance, Texas, on November 10, 1988,<sup>2</sup> the Safety Board made the following recommendation to the U.S. Coast Guard:

#### M-89-155

Require participation in the Houston/Galveston Vessel Traffic Service (VTS) by those commercial vessels subject to the Vessel Bridge-to-Bridge Radiotelephone Act, when transiting the Houston/Galveston VTS area.

In response, Coast Guard officials said they would develop regulations to implement this recommendation. The Oil Pollution Act of 1990 made VTS participation mandatory for all vessels subject to the Bridge-to-Bridge Radiotelephone Act. The Coast Guard NPRM concerning VTS regulations was

<sup>2</sup>For more detailed information, read Marine Accident Report-- "Collision between the Swedish Auto Carrier FIGARO and the French Tankship CAMARGUE near Galveston Bay Entrance, Texas on November 10, 1988." (NTSB/MAR-89/07).

published on August 1, 1991, and the regulations are expected to become effective in early 1992. Therefore, the Safety Board will continue to hold Safety Recommendation M-89-155 in an "Open--Acceptable Response" status until the Coast Guard finalizes regulations for mandatory VTS participation.

Federal Oversight of Pilots.—The pilots of both the SHINOUSSA and HELLES-PONT FAITH were operating under the authority of their State Commission, rather than their Federal license, and their State licenses were not subject to Coast Guard review. The CHANDY N operator was the only person-in-charge working under the authority of his Federal license. The Safety Board concludes that State-licenced pilot's lack of accountability under Federal statutes is an impediment to maintaining safety standards on Federal waterways.

As a result of its investigation of the collision between the Hong Kong bulk carrier PETERSFIELD and the U.S. towboat BAYOU BOEUF and tow in the Mississippi River, near New Orleans, Louisiana, on October 26, 1986,3 the Safety Board made the following recommendation to the U.S. Coast Guard:

#### M-88-1

Seek legislation to require all pilots of commercial vessels on the navigable waters of the United States to have a Federal pilot's license which would be legally superior to all State-issued documents, licenses, or commissions that a State may continue to employ to accredit those pilots that it desires to pilot vessels engaged in foreign commerce.

The Coast Guard replied on July 13, 1988:

The Coast Guard concurs with the intent of this recommendation, and recognizes the need for establishing better disciplinary control over some State-licensed pilots. However, past Coast Guard efforts to obtain the recommended authority have not been successful in Congress. Therefore, to enhance the possibility of gaining Congressional support, we intend to conduct a study of marine casualties over the past several years to determine the extent of pilot-related accidents and their impact on marine safety. This initial step is critical to justify the need for additional legislative authority.

The Safety Board reiterated this recommendation as a result of its investigation of the grounding of the U.S. tankship EXXON VALDEZ4 on Bligh Reef, Prince William Sound, near Valdez, Alaska, on March 24, 1989. The Safety Board has been advised that the Coast Guard expects to release its marine casualties study by the end of

<sup>&</sup>lt;sup>3</sup>For more detailed information, read Marine Accident Report--"Collision between the Hong Kong Flag Bulk Carrier PETERSFIELD and the U.S. Towboat BAYOU BOEUF and tow near New Orleans, Louisiana on October 28, 1986." (NTSB/MAR-88/01)

<sup>4</sup>For more detailed information, read Marine Accident Report-- "Grounding of the U.S. Tankship EXXON VALDEZ on Bligh Reef, Prince William Sound near Valdez, Alaska, March 24, 1989" (NTSB/MAR-90/04)

calendar year 1991. The Safety Board has classified Safety Recommendation M-88-1 as "Open--Acceptable Action."

As this accident demonstrates, lack of adequate accountability can easily lead to sloppy practices and complacency by a pilot. The SHINOUSSA and HELLESPONT FAITH pilots demonstrated their complacency or lack of competence (or both) when they failed to prepare adequately for their overtaking and meeting maneuvers. Despite the fact that the consequences of a major marine disaster — particularly one with a significant potential for catastrophic environmental damage — cannot be considered local in effect, under existing regulatory arrangements, the sole authority to prevent or punish such professional malfeasance resides with local authorities. In the case of the SHINOUSSA accident, the local regulatory authority has taken no action at all against the involved parties as of the date of this report. For this reason, the Safety Board continues to be concerned about the lack of adequate, consistent accountability of state pilots, and urges the Coast Guard to enact legislation requiring all pilots of commercial vessels on U.S. waters to operate under Coast Guard authority. Thus, the Safety Board reiterates Safety Recommendation M-88-1 to the U.S. Coast Guard.

Master/Pilot Communications.--The SHINOUSSA's pilot testified that he and the master did not have an exchange-of-information conference and that he generally did not do so on any vessel. The HELLESPONT FAITH's pilot testified that he and the master held a Master/Pilot Conference and that he usually did so on every vessel that he piloted. This case, like others investigated by the Safety Board, demonstrates that some pilots routinely hold a conference with the master, but that others do not. The Safety Board has addressed the need for sharing information about the vessel and the waterway by holding a master/pilot conference in several other accident reports<sup>5</sup>. As a result of its investigation of the collision between the U.S. Tankship EDGAR M. QUEENY and the Liberian tankship CORINTHOS at Marcus Hook, Pennsylvania, on January 31, 1975, the Safety Board on November 10, 1977, recommended that the Coast Guard:

#### M-77-33

Amend 33 CFR 164 (k) to require that masters and pilots discuss beforehand and agree to the essential features and relevant checkpoints of maneuvers expected to be undertaken.

#### On September 4, 1980, the Coast Guard responded:

In our previous response to this safety recommendation dated 13 April 1978, we stated that requirements for a master/pilot conference were being drafted for publication as a Notice of Proposed Rulemaking (NPRM). As a preliminary step in this project, similar casualties were reviewed to determine the need

<sup>5</sup>Marine Casualty Reports--"SS AFRICAN NEPTUNE: Collision with the Sidney Lanier Bridge at Brunswick, Georgia, on 7 November 1972 with Loss of Life" (USCG/NTSB-74-4); and "SS EDGAR M. QUEENY-ST CORINTHOS: Collision at Marcus Hook, Pennsylvania on 31 January 1975 with Loss and Life" (USCG/NTSB-77-2); and Marine Accident Report--"Collision of Greek Bulk Carrier M/V IRENE S. LEMOS and Panamanian Bulk Carrier M/V MARITIME JUSTICE, Lower Mississippi River, near New Orleans, Louisiana, November 9, 1978" (NTSB-MAR-80-4).

for regulation. As a result of the review, and in keeping with the Administration's goal of reducing Federal regulations, the Coast Guard finds that it cannot justify, at present, further regulation of the master/pilot working relationship. The ship's master is currently required to inform the pilot of various characteristics of the vessel. A pilot will ordinarily report to the master anything pertinent that is not obvious from charts and publications. However, the pilot cannot be expected to establish a "game plan" with the master when so many aspects of a passage cannot be predetermined. The Coast Guard believes there are sufficient Federal regulations and customary practices which apply in master/pilot relationships.

On July 10, 1981, the Safety Board classified Safety Recommendation M-77-33 as "Closed--Unacceptable Action."

Therefore, the National Transportation Safety Board recommends that the U.S. Coast Guard:

Conduct a study to identify procedures to improve navigation safety in the Houston Ship Channel between Bolivar Roads and the Houston Turning Basin including the feasibility of procedures to prevent large, deep-draft vessels such as the HELLESPONT FAITH from meeting or overtaking other large deep-draft vessels in the 400-foot wide channel, except in designated widening areas. (Class II, Priority Action) (M-91-26)

Install radar and closed-circuit television for the area between the Bayport Channel and Red Fish Bar in order to complete surveillance coverage of the Houston Ship Channel. (Class II, Priority Action) (M-91-27).

Amend 33 CFR 164.11(k) to require that masters and pilots discuss and agree beforehand to the essential features and relevant checkpoints of maneuvers they expect to undertake. (Class II, Priority Action (M-91-28).

The Safety Board is also reiterating its recommendation that the U.S. Coast Guard:

#### M-88-1

Seek legislation to require all pilots of commercial vessels on the navigable waters of the United States to have a Federal pilot's license which would be legally superior to all State-issued documents, licenses or commissions that a State may continue to employ to accredit those pilots that it desires to pilot vessels engaged in foreign commerce. Also, the Safety Board issued Safety Recommendations M-91-29 and -30 to the Environmental Protection Agency. The Safety Board is also reiiterating Safety Recommendation M-90-47 to the U.S. Environmental Protection Agency.

KOLSTAD, Chairman, COUGHLIN, Vice Chairman, and LAUBER, HART and HAMMERSCHMIDT, Members, concurred in these recommendations.

James L. Kolstad

Chairman

# **TAB 8**

Log M-384D



#### NATIONAL TRANSPORTATION SAFETY BOARD

Washington, D.C. 20594

### Safety Recommendation

Date:

June 25, 1993

In Reply Refer To:

M-93-34

State Pilot Commissions (address list attached)

On August 7, 1992, the United Kingdom passenger vessel RMS (Royal Mail Ship) QUEEN ELIZABETH 2 (QE2) was outbound in Vineyard Sound, Massachusetts, when the vessel grounded about 2 1/2 miles south of Cuttyhunk Island. No injuries or deaths resulted from this accident. However, damage was significant; temporary and permanent repairs cost about \$13.2 million. In addition, the total revenue lost for the period before the vessel returned to service on October 2, 1992, was estimated at \$50 million.<sup>1</sup>

The Safety Board believes that in this accident, a critical need existed for improved communication between the pilot, the master, and the other crewmembers on the bridge. The master had apparently made incorrect assumptions about the pilot's intentions, and the pilot saw no need to inform the master about what he actually planned to do. Although the pilot expressed

<sup>&</sup>lt;sup>1</sup>For more detailed information, read Marine Accident Report-Grounding of the United Kingdom Passenger Vessel RMS QUEEN ELIZABETH 2 Near Cuttyhunk Island, Vineyard Sound, Massachusetts, August 7, 1992 (NTSB/MAR-93/01).

full confidence in the ability of the officers on the bridge to perform navigational tasks and was aware that the second officer was monitoring the ship's progress and reporting that information to the master, the pilot still opted to pilot by his own methods rather than following the courses plotted by the navigator. The master stated that he assumed that the pilot was going to follow the reverse of the inbound course. Thus, the navigation of the vessel as understood by the pilot was not communicated to the master or the bridge watch.

Evidence from the investigation also indicates that the master did not fully understand how the pilot had planned to get to his debarkation point or that the pilot planned a course change at the "NA" buoy. The Safety Board believes that had adequate communication been established between the master and pilot, the master would have told the pilot of his preference to remain on a course that passed Brown's Ledge to the south. Moreover, the pilot probably would have explained his intention to stay north of the shoals near Brown's Ledge, and he and the ship's officers would have discussed the implications for safety in returning or not returning to the base course. Had the pilot and the ship's officers discussed the ship's course either immediately following the turn at the "NA" buoy or during a predeparture pilot/master conference, the factors increasing the risk of striking bottom would have become apparent.

One element that hindered effective communication in this accident was the substance and nature of the master/pilot conference currently required by Federal regulation (33 CFR 164.11(k)). Presently, the briefing only requires details of the vessel's status and its maneuvering characteristics at the beginning of a voyage. No requirements exist for a detailed navigation plan for maneuvering the vessel in pilotage waters or for followup conversations during the voyage. Furthermore, the nature of the conference requires only the inclusion of the master and the pilot. Thus, even if the master and pilot chose to discuss their navigation plans, other members of the bridge team may be excluded from those discussions.

Therefore, the National Transportation Safety Board recommends that State pilot commissions:

Require that State pilots, upon boarding a vessel, conduct a conference with the master and other relevant deck officers that includes a discussion of the pilot's proposed route, including courses, speeds, squat, and unique maneuvers that may be encountered. (Class II, Priority Action) (M-93-34)

Also, the Safety Board issued Safety Recommendations M-93-17 through -26 to the U.S. Coast Guard, M-93-27 to the Department of Transportation, M-93-28 and -29 to the National Oceanic and Atmospheric Administration, and M-93-30 through -33 to the Cunard Lines, Ltd. The Safety Board is also reiterating Safety Recommendations M-91-6 and -28 to the U.S. Coast Guard.

The National Transportation Safety Board is an independent Federal agency with the statutory responsibility "to promote transportation safety by conducting independent accident

investigations and by formulating safety improvement recommendations" (Public Law 93-633). The Safety Board is vitally interested in any action taken as a result of its safety recommendations. Therefore, it would appreciate a response from you regarding action taken or contemplated with respect to the recommendations in this letter. Please refer to Safety Recommendation R-93-34 in your reply. If you need additional information, you may call (202) 382-6850.

Chairman VOGT, Vice Chairman COUGHLIN, and Members LAUBER, HART, and HAMMERSCHMIDT concurred in this recommendation.

Bv:

Čarl W. Vogt

Chairman

#### State Pilot Commissions

Mr. E. Robert Leatherberry Chairman Alabama State Pilotage Commission Post Office Box 2188 Mobile, Alabama 36601

Captain Bob Baratko
Marine Pilot Coordinator
Department of Occupation Licensing
State of Alaska
Post Office Box 110806
Juneau, Alaska 99811-0806

Mr. Chris Adams
President
State Board of Pilot Commissioners
World Trade Center
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San Francisco, California 94111

Mr. Edward M. Archibald
Deputy Commissioner
Connecticut Department of Transportation
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Post Office Drawer A
Wethersfield, Connecticut 06109-0801

Captain Dick Buckaloo Pilot Commissioner 14 Horknill Avenue Lewes, Delaware 19958

Mr. Gary Maddox Chairman Board of Florida Pilot Commissioners Department of Professional Regulation 1940 North Monroe Street Tallahassee, Florida 32399-0773 Mr. Raf Biezenbos Chairman Savannah Pilot Commission c/o Lanport, Inc. 124 Prosperity Drive Savannah, Georgia 31407

Captain Fred Hoppe
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Captain Donald J. Short
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Belle Chasse, Louisiana 70037-0848

Captain Martin Gould, Sr.
President
New Orleans - Baton Rouge Pilot
Commission
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Jefferson, Louisiana 70121

Captain Paul Vogt
Commissioner
Board of Commissioners of the Bar Pilots
for the Port of New Orleans
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Mr. Edwin McDuffy Chairman Board of Harbor Commissioners 2 Portland Fish Pier Suite 213 Marine Trade Center Portland, Maine 04101 Mr. Frank O. Heinz
Chairman
State of Maryland
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231 East Baltimore Street
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Captain Authur M. Knight
Commission of Pilots
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National Historic Park, Building 32
Charleston Navy Yard
Boston, Massachusetts 02129

Mr. Johnny S. Tillman Board of Commissioners Post Office Box 70 Pascagoula, Mississippi 39568

Mr. Ernest Conner
Executive Director
Portsmouth Port Authority
Noble Island
Portsmouth, New Hampshire 03802

Mr. Edward B. Pulver Board of Commissioners of Pilots Post Office Box 1022 Rahway, New Jersey 07065

Mr. S. Frasier Sammis Board of Commissioners of Pilots 17 Battery Place New York, New York 10004

Dr. W. P. Rabon Chairman Cape Fear River Navigation and Pilotage Commission 110 North Caswell Avenue Southport, North Carolina 28461 Mr. Frank D. Butchart Chairman Board of Maritime Pilots State Office Building Suite 507 800 NE Oregon Street, #15 Portland, Oregon 97232

Mr. George Shevlin
Chairman
Navigation Commission for the Delaware
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Post Office Box 2649
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Mr. Vernon Dunlap
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Plantations
State Pilotage Commission
22 Hayes Street
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Captain Whitemarsh Smith III Commissioner of Pilotage Port of Charleston Post Office Box 20096 Charleston, South Carolina 29413

Mr. Ned Holmes Chairman Port Commissioners Post Office Box 2562 Houston, Texas 77252-2562

Mr. Robert T. Hassler, Jr. President
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Rear Admiral Chester A. Richmond, Jr.
USCG, Retired
Chairman
State of Washington Board of Port Pilotage
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Colman Dock, Pier 52
801 Alaskan Way
Seatttle, Washington 98104-1487

# **TAB 9**



#### NTSB > Search Recommendations > Results

1 record was found.

Display 5 records per page Change Display

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1

Rec #: M-77-033

NTSB Status: Closed - Unacceptable Action

Issue date: 11/10/1977 Accident Date: 1/31/1975 Source Event: ACCIDENT

**Location:** MARCUS HOOK Pennsylvania

Location. WARCOS HOOK Fellisylvania

Mode: MARINE

Most Wanted List: No Closed date: 7/10/1981

Report Number: MAR-77-02 Accident ID: DCA75AM002

**View Status by Addressee** 

#### **View NTSB Recommendation Letter [PDF]**

#### **Background Synopsis:**

ON JANUARY 31, 1975, THE U.S. REGISTERED TANKSHIP SS EDGAR M. QUEENY, LADEN WITH CHEMICAL AND PETROLEUM PRODUCTS, WAS MANEUVERING INTO MARCUS HOOK CHANNEL OF THE DELAWARE RIVER IN PENNSYLVANIA, WHEN IT COLLIDED WITH THE LIBERIAN TANKER S/T CORINTHOS WHICH WAS MOORED AND DISCHARGING A BULK CARGO OF CRUDE OIL AT THE BRITISH PETROLEUM COMPANY DOCK. THE PORT ANCHOR OF THE QUEENY SLIGHTLY PENETRATED THE PORT SIDE PLATING OF THE CORINTHOS AT AN ANGLE OF ABOUT 39 DEGREES INTO ONE OR MORE OF THE WING CARGO TANKS, WHICH WERE BEING PUMPED AND WERE APPROXIMATELY HALF FULL. ALMOST IMMEDIATELY, A SERIES OF INCREASINGLY INTENSE EXPLOSIONS BEGAN IN THE CORINTHOS, AND THE VESSEL WAS ENGULFED IN FLAMES. TWENTY-SIX PERSONS WERE KILLED OR ARE MISSING AND 11 WERE INJURED IN THIS ACCIDENT. THE QUEENY SUFFERED MINOR DAMAGE BUT THE CORINTHOS WAS DESTROYED. THE DELAWARE RIVER WAS POLLUTED BY OIL ABOUT MARCUS HOOK. PROPERTY DAMAGE WAS ESTIMATED TO BE \$20 MILLION.

#### Recommendation:

AMEND 33 CFR 164.11(K) TO REQUIRE THAT MASTERS AND PILOTS DISCUSS BEFOREHAND AND AGREE TO THE ESSENTIAL FEATURES AND RELEVANT CHECKPOINTS OF MANEUVERS EXPECTED TO BE UNDERTAKEN.

1

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#### Safety Recommendation History for M-91-028 USCG

Close

#### Page 1 of 1 6 records found

Response Date:

5/13/1992

From:

Addressee

Response:

I CONCUR WITH THE INTENT OF THIS RECOMMENDATION. THE CG AGREES THAT THE MASTER AND THE PILOT NEED TO SHARE AND DISCUSS PERTINENT INFORMATION ABOUT THE VESSEL, THE WATERWAY, AND INTENDED ACTIONS. 33 CFR 164.11 (K) ALREADY REQUIRES COMMUNICATION BETWEEN THE MASTER AND PILOT, AND I CONTINUE TO BELIEVE THAT NO FURTHER REGULATIONS ARE NECESSARY. HOWEVER, AS A RESULT OF THIS RECOMMENDATION, THIS MATTER HAS BEEN PLACED ON THE AGENDA FOR CONSIDERATION BY THE NAVIGATION SAFETY ADVISORY COUNCIL (NAVSAC). I WILL ADVISE THE BOARD WHEN WE HAVE RECEIVED A RECOMMENDATION FROM NAVSAC AND HAVE DETERMINED A COURSE OF ACTION.

Response Date:

From:

8/31/1992

Response:

THE SAFETY BOARD IS ENCOURAGED THAT THE RECOMMENDATION HAS BEEN FORWARDED TO THE NAVIGATION SAFETY ADVISORY COUNCIL (NAVSAC) FOR CONSIDERATION. PENDING A FOLLOWUP RESPONSE ON NAVSAC'S ACTIONS, SAFETY RECOMMENDATION M-91-28 WILL BE CLASSIFIED "OPEN--ACCEPTABLE RESPONSE.

Response Date:

From:

5/24/1993

Addressee

Response:

I CONCUR WITH INTENT OF THIS RECOMMENDATION. THE USCG AGREES THAT THE MASTER AND ANY OTHER CONNING OFFICER, SUCH AS A PILOT OR MOORING MASTER, NEED TO SHARE AND DISCUSS PERTINENT INFORMATION ABOUT THE VESSEL, THE UNDERWAY AN OR MOORING MASTER, NEED TO SHARE AND DISCUSS PERTINENT INFORMATION ABOUT THE VESSEL, THE UNDERWAY AND INTENDED ACTIONS TO ENSURE SAFE NAVIGAITON OF THE VESSEL. MASTER/PILOT COMMUNICATIONS ARE ALREADY REQUIRED BY 33 CFR 164.11 (K). THE NAVSAC CONCLUDED THAT THE CURRENT REGULATIONS ARE SUFFICIENT BECAUSE THE MASTER CLEARLY HAS THE AUTHORITY AND OPPORTUNITY TO OBTAIN NECESSARY INFORMATION FROM THE PILOT WITHOUT FURTHER REGULATIONS. IN ADDITON, THE USCG IS DRAFTING A NOTE FOR PRESENTATION BY THE U.S. DELEGATION TO THE IMO SUB-COMMITTEE ON STANDARDS OF TRAINING AND STW CONCERNING THE RELATIONSHIP BETWEEN THE MASTER/NAVIGATIONAL WATCH AND THE PILOT. THE DRAFT NOTE WILL INCLUDED A DISCUSSION OF INFORMATION TO BE EXCHANGED BETWEEN THE MASTER OR OFFICER IN CHARGE OF A WATCH AND THE PILOT. WE ARE WORKING WITH DOMESTIC PILOT ORGANIZATIONS TO DEVELOP A STRATEGY FOR IMO WHICH DOES NOT UNDERMINE THE STATE PILOTAGE SYSTEM CURRENTLY ESTABLISHED IN THE U.S. I WILL PROVIDE THE BOARD A COPY OF THE NOTE WHEN IT IS FINALIZED AND ADVISE THEM OF ANY ACTION TAKEN BY THE IMO ON THE U.S. RECOMMENDATIONS.

Response Date: 8/31/1993

From:

Response:

THE SAFETY BOARD UNDERSTANDS THAT THE USCG IS WORKING ON A PROPOSAL AT THE INTERNATIONAL MARITIME ORGANIZATION SUBCOMMITTEE ON STANDARDS OF TRAINING AND WATCHKEEPING, CONCERNING THE RELATIONSHIP BETWEEN THE MASTER/NAVIGATIONAL WATCH AND THE PILOT, THAT WILL INCLUDE A DISCUSSION OF THE PERTINENT INFORMATION THAT SHOULD BE EXCHANGED BETWEEN THEM. THEREFORE, RECOMMENDATION M-91-28 HAS BEEN CLASSIFIED "OPEN--ACCEPTABLE ALTERNATE RESPONS."

Response Date:

From:

Addressee

9/27/1993 Response:

I PARTIALLY CONCUR WITH THIS RECOMMENDATION. IN THIS INSTANCE, MAKING A HIGH SPEED TRANSIT IN RELATIVELY SHALLOW WATER, IT WOULD HAVE BEEN PRUDENT FOR THE MASTER AND PILOT TO DISCUSS THE PROPOSED ROUTE. BECAUSE OF THIS, THE USCG INVESTIGATING OFFICER RECOMMENDED CITING THE MASTER AND PILOT FOR FAILURE TO COMPLY WITH 33 CFR 164.11 (K). HOWEVER, THE USCG REMAINS UNCONVINCED THAT A MORE DETAILED RULE WOULD HAVE PREVENTED THIS FAILURE TO COMMUNICATE. BECAUSE

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THERE ARE INNUMBERABLE VARIABLES THAT POTENTIALLY COULD BE DISCUSSED, SUCH A REGULATION WOULD SERVE ONLY AS A WAY TO PENALIZE THE MASTER AND PILOT AFTER A CASUALTY. IN 1992, THE NAVIGATION SAFETY COMMITTEE (NAVSAC) DISCUSSED A REQUIREMENT FOR A PREARRANGED PLAN BETWEEN THE MASTER AND PILOT. THE COUNCIL FELT THAT THE MASTER AND PILOT ALREADY HAVE THE AUTHORITY AND OPPORTUNITY TO OBTAIN INFORMATION ABOUT THE TRANSIT. THEREFORE, THE USCG DOES ANTICIPATE PROPOSING CHANGES TO 33 CFR 164.11(K) REGARDING MASTER/PILOT COMMUNICATIONS AT THIS TIME, AND I REQUEST THAT THIS RECOMMENDATION BE CLOSED.

Response Date:

1/7/1994

From:

Response:

THE BOARD IS DISAPPOINTED THAT THE U.S. USCG CONTINUES TO BELIEVE THAT THE CFR ALREADY SUFFICIENTLY REGULATES MASTER AND PILOT DISCUSSIONS. THE BOARD MAINTAINS THAT THE CFR DOES NOT REQUIRE MASTER AND PILOT DISCUSSIONS, BUT RATHER REQUIRES ONLY THAT THE CREW INFORM THE PILOT OF THE VESSEL CHARACTERISTICS, PECULIARITIES, AND ABNORMAL CIRCUMSTANCES. BECAUSE THE USCG HAS MADE CLEAR THAT IT PLANS NO FURTHER ACTION, RECOMMENDATION M-91-28 HAS BEEN CLASSIFIED "CLOSED--UNACCEPTABLE ACTION."

Note:

Please note that the Addressee's incoming letter's text is not posted until the NTSB's outgoing letter is posted as well.