# UNITED STATES COAST GUARD

## REPORT OF INVESTIGATION INTO THE CIRCUMSTANCES SURROUNDING THE INCIDENT INVOLVING

# THE COLLISION BETWEEN THE M/V SUMMER WIND AND THE T/B KIRBY 27706 PUSHED BY THE UTV MISS SUSAN ON MARCH 22, 2014

MISLE ACTIVITY NUMBER: 4821272

U.S. Department of Homeland Security
United States Coast Guard

Commandant
United States Coast Guard

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16732/IIA # 4821272
18 May 2023

**THE COLLISION AND RESULTING MARINE FUEL OIL SPILL BETWEEN THE MOTOR VESSEL SUMMER WIND (O.N. 9114139) AND THE TANK BARGE KIRBY 27706 (O.N. 1116758) BEING PUSHED BY THE UNINSPECTED TOWING VESSEL MISS SUSAN (O.N. 1026248) IN THE HOUSTON SHIP CHANNEL, TX ON AUGUST 13, 2014**

## COMMANDANT'S ACTION ON REPORT OF INVESTIGATION

The record and the report of the investigation convened for the subject casualty have been reviewed. The record and the report, including the findings of fact, analysis, conclusions, and recommendation, are approved subject to the following comments. Safety Recommendations 5, 7, and 8 were directed towards Sector Houston/Galveston. This marine casualty investigation is closed.

## COMMANDANT'S ACTION ON RECOMMENDATIONS

**Recommendation 1**: It is recommended that the Houston Pilots Association (HPA) require all pilots to strictly adhere to the FCC requirement to identify themselves by vessel name rather than pilot numbers. This is the second time this recommendation has been made. The NTSB made a recommendation on this issue in the wake of the collision between the EAGLE OTOME, the GULF ARROW and subsequent collision with the DIXIE VENGEANCE in Port Arthur, Texas in January 2010.

> **Action:** I concur with the intent of this recommendation. These requirements are listed in Title 47 Code of Federal Regulations § 80.102. As noted by District Eight, the practice identified in this investigation may not be limited to the HPA. This investigation report and safety recommendation will be shared with the HPA and the American Pilots Assocation for their consideration.

**Recommendation 2**: It is recommended that the Houston Pilots Association (HPA) require all pilots to strictly adhere to the VTS requirements regarding the use/monitoring of mandated VHF marine radio frequencies and take remedial action in the future against pilots who fail to do so.

> **Action:** I concur with the intent of this recommendation. While District Eight has taken previous action to direct Sector Houston-Galveston to updates its VTS User's Manual, a copy of this report will be shared with Sector Commanders as identified in Administrative Recommendation 2.

In review of this report by Sector Commanders, Vessel Traffic Services (VTS) Directors and Captains of the Port (COTP) are reminded to review and ensure that VHF communications with vessel include use of the vessel's name. Call signs or identifiers (pilot numbers) may be used in combination with the vessel's name in accordance with 47 CFR § 80.102.

Additionally, VTS Directors and COTPs are encouraged to review and ensure that local VTS instructions are in line with Vessel Traffic Services (VTS) National Standards for Operating, COMDTINST 16630.3B.

This investigation report and safety recommendation will be shared with the HPA and the American Pilots' Assocation for their consideration.

**Recommendation 3**: It is recommended that the Governor of the state of Texas review the current policies and practices in use by the Pilot Board Investigation and Recommendation Committee (PBIRC) to meet the requirements of Texas State Transportation Code Title 4 to ensure complete impartiality and encourage safe pilotage in state waters. The Pilot Board consists of pilots (3) and maritime industry stakeholders (6) or people affected by pilots, and one of the functions of the board is to initiate investigations or hearings into accidents or actions by the pilots, and make recommendations to the Governor with regard to their pilots' license. A review of pilot board records indicates that very little remedial or investigatory action has been taken by this board in 15 years.

**Action:** I concur with the intent of this recommendation. This investigation report and safety recommendation will be shared with the Texas Governor's Office for their consideration.

**Recommendation 4**: It is recommended that the Governor of the state of Texas consider revising or rescinding the 1987 Transportation law that limits state pilots' liability post-accident to $1,000.00. As with any other position of great responsibility, there should be a commensurate level of accountability for decisions made which have the ability to impact the entire port community. Unless the level of accountability is equal to the level of responsibility in making decisions that impact all users of a major waterway, there will be no impetus for change in the HPA culture.

**Action:** I concur with the intent of this recommendation. This investigation report and safety recommendation will be shared with the Texas Governor's Office for their consideration.

**Recommendation 6**: It is recommended that the Captain of the Port of Houston/Galveston consider converting the Active-Duty billets currently in the VTS to civilian Controller billets. There is a steep learning curve for a Controller to become not just minimally qualified, but actually competent in performing that job function. Most Active-Duty Operations Specialists do not have the experience or appreciation for the skills required to navigate a vessel or understand what it is like to get underway in the fog, have your PPU fail or otherwise operate safely in the waterway.

A typical three-year tour for Active-Duty personnel results in the member is transferring out right at the time when they are becoming proficient and confident in their abilities. By having all civilian controllers, the VTS would gain the long-term benefit of a non-transient staff and possibly employ accredited mariners with experience.

> **Action:** I do not concur with this recommendation. There were many factors that contributed to this marine casualty; however, the watchstander not being a civilian employee was not one of them. There is no evidence in this investigation that suggests that converting all Vessel Traffic Service watchstanders to civilian employees would have prevented this casualty.

## COMMANDANT'S ACTION ON ADMINISTRATIVE RECOMMENDATIONS

**Administrative Recommendation 1.a**: It is recommended that the Commandant of the Coast Guard consider revising the current or adopting new Parties in Interest (PII) rules for 46 CFR Part 4 investigations that are similar to the NTSB party rules, specifically with regard to 49 CFR 831.11(3), which states "No party to the investigation shall be represented in any aspect of the NTSB investigation by any person who also represents claimants or insurers. No party representatives may occupy a legal position (see § 845.13 of this chapter). Failure to comply with these provisions may result in sanctions, including loss of status as a party."

> **Action:** I do not concur with this recommendation. The Coast Guard investigation has a role in taking action for violations of law or regulation as a result of an investigation, which is not a facet of the NTSB's investigation. The outcome of a marine casualty investigation can and will be used in violations that can result in enforcement action. Therefore, the rights of the PII to be represented by counsel cannot be deprived.

**Administrative Recommendation 1.b**: It is recommended that the Commandant of the Coast Guard consider allowing only the witness and the investigating officer or investigations team to be present for interviews during a Part 4 investigation, thus eliminating the possibility that information gained during an interview could be used by the opposing party during civil proceedings.

> **Action:** I do not concur with this recommendation. Under 46 USC § 6303, the Party In Interest (PII) has the right to cross-examine witnesses and to call witnesses. As noted by District Eight, excluding a PII from interviews would deprive them of these rights. The cross-examination and calling of witnesses by a PII ensures that relevant information from all points of view may be addressed through the interviews that might otherwise not be possible without the PII's involvement in the investigation.

**Administrative Recommendation 1.c**: It is recommended that the Commandant of the Coast Guard consider amending our current regulations with regard to the conduct of hearings, specifically 46 CFR 4.09-17, to allow the Lead Investigation Officer to conduct a Closed Hearing if he/she deems that a hearing open to the public would be detrimental to the safety investigation or the potential for the release of protected information exists. The Report of Investigation would remain releasable to the public via the Freedom of Information Act process, thereby meeting our requirement for transparency. Although the rules clearly state that the

information that comes out of a Coast Guard hearing cannot be used in a civil proceeding, the truth is that there is no way to stop it, particularly with the dollar figures that are normally at stake in a case such as this one. This was particularly evident during the subsequent Pilot Board Investigation and Recommendation Committee hearing for Captain [redacted] that occurred on October 6, 2014. At this hearing, Captain [redacted] attorney attempted to enter into evidence and utilize documentation from the US Coast Guard Formal Hearing held June 2 - 5, 2014.

> **Action:** I do not concur with this recommendation. All transcripts and evidence from a formal hearing are available to the public through the Freedom of Information Act, and a closed hearing would not preclude public access to evidence or testimony collected from a hearing. As further discussed by District Eight, this investigaton was not bound by 46 CFR 4.09 due to a District convening instead of a Commandant convened hearing in the regulation specified. The the attorney's "attempt" implies that they were not successful in entering casualty documentation into evidence on October 6, 2014. Therefore, I will not pursue a regulatory project to 46 CFR 4.09-17.

**Administrative Recommendation 2:** It is recommended that the Commandant of the Coast Guard provide a copy of this report to the following entities:

a. Area, District, and Sector Commanders
b. Parties in Interest
c. The National Transportation Safety Board
d. The Governor of Texas
e. All USCG VTS Diretcors

> **Action:** I concur with this recommendation. A copy of the report will be provided to all identified entities upon closure of this report, TRACEN YORKTOWN, the Houston Pilots Association, and the American Pilots Association.

**Administrative Recommendation 3**: It is recommended that this casualty investigation be closed.

> **Action:** I concur with this recommendation. This casualty investigation is closed.

[redacted]
M. BEACH
Captain, U.S. Coast Guard
Director of Inspections & Compliance

U.S. Department of Homeland Security
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16732
12 May 2015

# MEMORANDUM [redacted]

From: K. S. Cook, RADM
CGD EIGHT

Reply to (dp)
Attn of: CDR E. Saddler

To: COMDT (CG-INV)

Subj: COLLISION BETWEEN THE M/V SUMMER WIND (O.N. 9114139) AND THE TANK BARGE KIRBY 27706 (O.N. 1116758) BEING PUSHED BY THE UNINSPECTED TOWING VESSEL MISS SUSAN (O.N. 1026248) IN THE HOUSTON SHIP CHANNEL WHICH RESULTED IN A 4,000 BARREL SPILL OF MARINE FUEL OIL INTO THE WATERWAY ON MARCH 22, 2014

Ref: (a) Title 46 United States Code, Chapter 63
(b) Title 46 Code of Federal Regulations, Part 4
(c) COMDTINST M16000.10A

1. In accordance with references (a) through (c), LCDR [redacted] was designated to conduct a one man formal investigation into the subject collision between the M/V SUMMER WIND and the Tank Barge KIRBY 27706 being pushed by the Uninspected Towing Vessel MISS SUSAN. I have reviewed and approved the Lead Investigating Officer's Report of Investigation. I am forwarding the report to COMDT (CG-INV) for endorsement of Safety Recommendations 1 through 4 (which are addressed to entities outside the Coast Guard) and Safety Recommendation 6 (which I recommend action by COMDT). I have directed Sector Houston-Galveston and the District Waterways Division (dw) to take action on Safety Recommendations 5, 7, and 8. This casualty highlights the need for mariners to exercise increased vigilance when faced with restricted visibility, traffic congestion and restricted maneuverability. It also underscores the need for the maritime industry and the Coast Guard to review holistic vessel traffic risk reduction measures. This is particularly important in the lower Galveston Bay where channel constraints and volume of vessel traffic are significant. I have the following comments with regard to the Lead Investigating Officer's Recommendations:

**Safety Recommendation 1:**

It is recommended that the HPA require all pilots to strictly adhere to the FCC requirement to identify themselves by vessel name rather than pilot numbers. This is the second time this recommendation has been made. The NTSB made a recommendation on this issue in the wake of the collision between the EAGLE OTOME, the GULF ARROW and subsequent collision with the DIXIE VENGEANCE in Port Arthur, Texas in January 2010.

D8 Comment on Safety Recommendation 1:

I concur with this recommendation. The NTSB recommended that the American Pilots Association "Advise your members to consistently identify vessels by name in bridge-to-bridge radio communication, as required by the Federal Communications Commission" (see NTSB Marine Accident Report MAR-11/04). The Federal Communications Commission requires vessels subject to the Vessel Bridge-to-Bridge Radiotelephone Act to use the vessel name when transmitting communications on the designated navigational frequency (see 47 CFR §80.331). This investigation revealed again that it is common practice of ship pilots from the Houston Pilots Association to identify the vessels they are piloting by using their personal pilot numbers rather than the vessel name. This a violation of FCC regulations and considered poor marine practice because it does not promote clear communications among all waterway users. However, I believe this practice is not limited to the Houston Pilots Association and recommend that COMDT (CG-INV) recommend that the American Pilots Association advise its members to consistently identify vessels by name in bridge-to-bridge radio communication, as required by the Federal Communications regulation. In view of the complexities of maritime transportation, everything to eliminate potential sources of confusion, including proper bridge to bridge protocol, must be followed.

**Safety Recommendation 2:**

It is recommended that the HPA require all pilots to strictly adhere to the VTS requirements regarding the use/monitoring of mandated VHF marine radio frequencies, and take remedial action in the future against pilots who fail to do so.

D8 Comment on Safety Recommendation 2:

I concur with this recommendation. The regulations in 33 CFR §161.12(c) require a VTS User, when not exchanging voice communications, to maintain a listening watch as required by 33 CFR §26.04(e) on the designated VTS frequency. In his testimony during the investigation hearings, Captain [redacted] acknowledged that he did not monitor Channel 12 during his piloting of the SUMMER WIND.

I have directed Sector Houston-Galveston to update Section I.E of the VTS User's Manual by removing the second bullet that states "Alternatively, VTS Users not maintaining a listening watch on the VTS frequency are required to monitor VHF-FM Ch 16 and the Bridge-to-Bridge frequency VHF-FM Ch 13." This alternative option contradicts the regulations and is not authorized without a regulatory amendment.

**Safety Recommendation 3:**

It is recommended that the Governor of the state of Texas review the current policies and practices in use by the Pilot Board Investigation and Recommendation Committee (PBIRC) to meet the requirements of Texas State Transportation Code Title 4 to ensure complete impartiality and encourage safe pilotage in state waters. The Pilot Board consists of pilots (3) and maritime industry stakeholders (6) or people affected by pilots, and one of the functions of the board is to initiate investigations or hearings into accidents or actions by the pilots, and make recommendations to the Governor with regard to their pilots' license. A review of pilot board records indicate that very little remedial or investigatory action has been taken by this board in 15 years.

D8 Comment on Safety Recommendation 3:

I concur with the intent of this recommendation. Title 4, Subtitle B of the Texas Transportation Code requires pilot services for Texas ports and provides Boards of Pilot Commissioners, also known as pilot boards, with jurisdiction over pilots. Title 4, Subtitle B Section 63 of the Code requires a pilot board to examine any cause of alleged or suspected misconduct or inefficiency in a branch or deputy pilot and gives a pilot board authority over pilots, including suspension of a pilot after a hearing for sufficient cause. Title 4, Subtitle B Section 66.043 gives specific authority and criteria for suspension or revocation of a pilot's license for Harris County ports.

The PBIRC of the pilot board for Harris County ports held a hearing regarding this collision on October 6, 2014 and by a vote of 8-0, proposed to the pilot board that there was no willful misconduct on the part of Captain Pizzitola in the handling of the SUMMER WIND, based on the agreed-to one whistle (port-to-port) passing arrangement and by maneuvering as far as possible to the red (inbound) side of the Houston Ship Channel. The pilot board for Harris County ports has yet to make a final decision and has elected to abate this decision pending the NTSB and U.S. Coast Guard's final review.

I applaud the Harris County pilot board's decision to wait for the completion of the Coast Guard and NTSB investigations and I encourage them to consider this investigation in addition to the PBIRC's Proposed Findings and Recommendations when making their final decision. The PBIRC proposal that there was no willful misconduct by Captain [redacted] may not fully address all of the reasons cited in Section 66.043 (a)(13) for which the pilot board may suspend or recommend that the governor revoke a pilot's license: specifically accounting for carelessness, neglect of duty, and misconduct (the cite does not specify that the conduct must be willful).

**Safety Recommendation 4:**

It is recommended that the Governor of the state of Texas consider revising or rescinding the 1987 Transportation law that limits state pilots' liability post-accident to $1,000.00. As with any other position of great responsibility, there should be a commensurate level of accountability for decisions made which have the ability to impact the entire port community. Unless the level of accountability is equal to the level of responsibility in making decisions that impact all users of a major waterway, there will be no impetus for change in the HPA culture.

D8 Comment on Safety Recommendation 4:

I concur with the intent of this recommendation. I agree that by the nature of their positions the Houston pilots are given great responsibility and there should be a commensurate level of accountability when poor decisions are made with the potential to impact the entire port community. However, I don't believe this is the Coast Guard's purview to recommend changing the current $1,000 limit of liability on pilots in Section 66.083 of the Texas Transportation Code. I believe sufficient accountability measures already exist, but perhaps are not fully utilized by pilot boards. The Code provides for the suspension or revocation of a pilot's license for various circumstances to include if a pilot has been guilty of carelessness, neglect of duty, misconduct, or incompetence while on duty. Additionally, the Pilot Board Rules and Regulations Governing Pilotage on the Houston Ship Channel provide sufficient accountability measures, such as: (1) requiring that the Pilot undertake additional training, (2) issuing a Letter of Caution to the Pilot, (3) issuing a Letter of Reprimand to the Pilot, (4) suspending a Pilot's commission for not more than six months; or (5) recommending to the Governor of the State of Texas that the Branch Pilot's commission or Deputy Pilot's certificate be revoked. I note that currently the Texas Transportation Code does not define what constitutes carelessness, neglect of duty, misconduct, or incompetence.

**Safety Recommendation 5:**

It is recommended that the Captain of the Port of Houston/Galveston consider revising the VTC Watch Procedures to include active monitoring of radio communications on Channel 13. The robust workload of the Controller at Sector 1 & 2 makes active monitoring of bridge to bridge traffic challenging, and in this case led to the Controller missing several key communications that may have triggered VTC intervention and potentially mitigated the situation between the MISS SUSAN and the M/V SUMMER WIND. Currently, Channel 13 is broadcast in the VTC watch space through a speaker, but that procedure is clearly inadequate as evidenced by this incident. Tasking the watch supervisor or a Controller not currently manning a station with this task specifically, particularly during periods of high traffic, and/or reduced visibility could significantly reduce risk within the waterway.

D8 Comment on Safety Recommendation 5:

I concur with the intent of this recommendation. The VTS Houston-Galveston Internal Operating Procedures (IOP) require that VTS watch standers maintain a listening watch on Channel 13 as well as the designated frequency for their watch sector. However, this can be extremely challenging during intense operational periods (i.e. reduced visibility, high vessel congestion, etc.), which can occur in any of Houston's VTS Sectors. When such a period occurs, the affected sector's controller should be supplemented with an additional watch stander to monitor channel 13 and assist the controller. I have directed the Captain of the Port Houston-Galveston to review how to accomplish this and, if necessary, revise the VTS Internal Operating Procedures to ensure an effective listening watch is maintained on Channel 13 during intense operational periods. Because these periods already frequently occur and will likely increase, I have directed my Resources (dm) and Waterways (dw) divisions to examine whether VTS Houston, and all other D8 VTS have sufficient capacity to manage intense operational periods.

**Safety Recommendation 6:**

It is recommended that the Captain of the Port of Houston/Galveston consider converting the Active Duty billets currently in the VTS to civilian Controller billets. There is a steep learning curve for a Controller to become not just minimally qualified, but actually competent in performing that job function. Most Active Duty Operations Specialists do not have the experience or appreciation for the skills required to navigate a vessel, or understand what it is like to get underway in the fog, have your PPU fail or otherwise operate safely in the waterway. It is clear to the investigations team that OS1 Estes, while considered qualified, was not comfortable standing watch at Sector 1/2. A typical three year tour for Active Duty personnel results in the member is transferring out right at the time when they are becoming proficient and confident in their abilities. By having all civilian controllers, the VTS would gain the long term benefit of a non-transient staff and possibly employ accredited mariners with experience.

D8 Comment on Safety Recommendation 6:

I do not concur with this recommendation. I do not believe that this Report of Investigation (ROI) nor this casualty itself support the general concept that Active Duty Operations Specialists do not have the proper experience or skills to be successful and proficient VTS watch standers. However, I do believe that VTS Controller competency is critical and policies should be reviewed for the entire Coast Guard in a holistic manner that includes training, assignment, promotion and retention policies. I recommend that COMDT (CG-5P), (CG-7) (CG-1), (CG-FC), and (CG-PSC) review these policies with a view to achieve maximum VTS controller proficiency and expertise.

**Safety Recommendation 7:**

Throughout the investigation, the pilots, the VTC Director and the VTC Controllers stated multiple times that they (the VTC Controllers) were not qualified to or have the "granularity of situational awareness" to provide direction to vessels moving in the Houston Ship Channel. The VTC Director indicated in his testimony that, in spite of the authority given to the VTC, they do not have the ability to direct vessels, and that they "broker information" (Nerheim, hearing testimony, pg 44/48). It is recommended that the Captain of the Port of Houston/Galveston and the local pilot and industry associations consider the development of a Memorandum of Agreement/Understanding that would provide an avenue for representatives of these associations in good standing with appropriate navigation/pilotage experience to support/augment the Vessel Traffic Center as part of the regularly scheduled watch staff in order to provide the knowledge and skill needed to make the determination to and act upon the need to direct vessels when necessary. This has been done successfully in other VTS areas, including VTC New Orleans which is similar to Houston-Galveston in that it is also a linear port with very heavy deep draft, UTV and barge traffic.

D8 Comment on Safety Recommendation 7:

I concur with the intent of this recommendation. Under 33 CFR §160.5, Coast Guard Vessel Traffic Service Directors are delegated the authority to discharge the duties of the COTP that involve *directing* the operation, movement, and anchorage of vessels within a VTS Area to ensure the safety of the port or the marine environment. The VTS National Standard Operating Procedure (COMDTINST M16630.3A) authorizes VTS controllers to exert four levels of control over vessel movement. From lowest to highest, these four levels are monitor, inform, recommend, and *direct*. In general, a VTS controller should use the lowest measure possible to preempt a problem or to prevent deterioration of a situation, but occasions may arise where the *direct* measure is required. I believe more interaction between industry and VTS personnel will increase the competency and confidence of our VTS watch standers to appropriately use all four levels. This interaction primarily occurs in three ways: VTS personnel conduct industry ship rides, industry personnel visit and observe operations at the VTS, and VTS and industry personnel collaboratively share post-incident lessons learned. Sector Houston Galveston should consult with industry to investigate ways to increase this interaction and advise my Resources (dm) and Waterways Management (dw) divisions if additional capacity is needed to affect this increased interaction.

I support the recommendation to develop a Memorandum of Understanding (MOU) with the local pilot and industry associations to augment the Vessel Traffic Center. I have directed the Captain of the Port Houston-Galveston to pursue this as a means to further enhance maritime situational awareness in vessel pilothouses, on ship bridges and in the VTS.

**Safety Recommendation 8:**

It is recommended that Sector Houston/Galveston initiate an internal review of the current VTC Houston Galveston policies, procedures and practices to ensure compliance with the VTS National Standard Operating Procedures and 33 CFR Part 161, and consider revising the Vessel Traffic Center watch procedures to include environmental or operational thresholds that would initiate the use of active control measures by VTS watch standers in high traffic areas, to include the management of crossing, overtaking and passing situations in accordance with the VTS National Standard Operating Procedures.

D8 Comment on Safety Recommendation 8:

I concur with this recommendation. I have directed Sector-Houston Galveston to conduct a review of the VTS Internal Operating Procedures and how those procedures apply to watch standers and watch supervisors.

**Enforcement Recommendation 1:**

The following enforcement action(s) are recommended:

a. It is recommended that Suspension and Revocation proceedings should be initiated against the U. S. Coast Guard issued license of Captain [redacted] for negligence, misconduct, violating company policy and for violating multiple Inland Navigation Rules. Any remedial action taken should include her attendance of a Bridge Resource Management course.

b. It is recommended that a Letter of Warning be issued to the master of the SUMMER WIND, Captain [redacted], for violating multiple Inland Navigation Rules, violating 33 CFR 161.12 and for negligence. Captain [redacted] did ask Captain [redacted] about the visibility, and the investigations team believes that he also recognized the close quarters situation developing between his vessel and the MISS SUSAN, but he failed to take any independent action to avoid collision, relying too heavily on the experience of the pilot to make decisions for his vessel.

c. It is recommended that Civil Penalty proceedings should be initiated for Captain [redacted] for violating multiple Inland Navigation Rules to include Rules 5, 6, 7, 8, and 19, for violating 33 CFR 161.12 and for negligence. Had Captain [redacted] been operating under his U.S. Coast Guard issued credential, this report would be recommending Suspension and Revocation proceedings be initiated against his license.

D8 Comment on Enforcement Recommendation 1:

a. I concur with this recommendation. Sector Houston-Galveston OCMI should conduct a Personnel Action investigation and consider initiating Suspension and Revocation action against Captain [redacted] license for negligence and misconduct for violations of the Inland Navigation Rules, specifically Rules 5, 7, 8, 9, and 19, and company policy by not posting a lookout during restricted visibility.

b. I concur with this recommendation. The decision on enforcement action belongs to the Sector Houston-Galveston COTP, who may consider a Letter of Warning in lieu of a civil penalty. Sector Houston-Galveston COTP should consider initiating a civil penalty enforcement activity against Captain [redacted] for violations of the Inland Navigation Rules, specifically Rules 6, 7, 8, and 19, 33 CFR 161.12, and for negligence under 46 USC 2302(a).

c. I concur with this recommendation. While the ROI does not clearly indicate that Captain [redacted] failed to comply with the regulations in 33 CFR §161.12, he acknowledged in his hearing testimony that while onboard the SUMMER WIND he never monitored the designated VTS frequency, Channel 12, as required by the regulations. Sector Houston-Galveston COTP should consider initiating a civil penalty enforcement activity against Captain [redacted] for violations of the Inland Navigation Rules, specifically Rules 6, 7, 8, and 19, violation of 33 CFR §161.12, and for negligence under 46 USC §2302(a). It should be noted the Lead Investigating Officer would have recommended pursuing Suspension and Revocation action had he been operating under the authority of his Coast Guard license. I would have concurred with this recommendation as it would be in alignment with the recommended enforcement actions against Captain [redacted].

**Other Recommendation 1:**

Although not specifically addressed in the body of the Report of Investigation, it is important to note that due to fears of litigation on the part of the witnesses and Parties in Interest, the investigations team found it extremely difficult to collect complete and honest answers to our questions during this investigation, which could ultimately impact our ability to make meaningful and effective safety recommendations. Unless and until we find a way to mitigate this issue, it will be nearly impossible to collect the information needed to effect positive change. To that end, I make the following recommendations:

a. It is recommended that the Commandant of the Coast Guard consider revising the current or adopting new Parties in Interest (PII) rules for 46 CFR Part 4 investigations that are similar to the NTSB party rules, specifically with regard to 49 CFR 831.11(3), which

states "No party to the investigation shall be represented in any aspect of the NTSB investigation by any person who also represents claimants or insurers. No party representative may occupy a legal position (see § 845.13 of this chapter). Failure to comply with these provisions may result in sanctions, including loss of status as a party."

b. It is recommended that the Commandant of the Coast Guard consider allowing only the witness and the investigating officer or investigations team to be present for interviews during a Part 4 investigation, thus eliminating the possibility that information gained during an interview could be used by the opposing party during civil proceedings.

c. It is also recommended that the Commandant of the Coast Guard consider amending our current regulations with regard to the conduct of hearings, specifically 46 CFR 4.09-17, to allow the Lead Investigating Officer to conduct a Closed Hearing if he/she deems that a hearing open to the public would be detrimental to the safety investigation or the potential for the release of protected information exists. The Report of Investigation would remain releasable to the public via the Freedom of Information Act process, thereby meeting our requirement for transparency. Although the rules clearly state that the information that comes out of a Coast Guard hearing cannot be used in a civil proceeding, the truth is that there is no way to stop it, particularly with the dollar figures that are normally at stake in a case such as this one. This was particularly evident during the subsequent Pilot Board Investigation and Recommendation Committee hearing for Captain [redacted] that occurred on October 6, 2014. At this hearing, Captain [redacted] attorney attempted to enter into evidence and utilize documentation from the U. S. Coast Guard Formal hearing held June 2-5, 2014.

D8 Comment on Other Recommendation 1:

I concur with the intent of this recommendation. It should be noted that 46 CFR Subpart 4.09 applies to a Marine Board of Investigation, which is designated by the Commandant. This investigation was a District Formal Investigation conducted under 46 CFR §4.07-1 and was not bound by Subpart 4.09 as implied in this recommendation. However, per 46 USC §6302 and the guidance provided in Volume V of the Marine Safety Manual, marine casualty investigations, including formal proceedings, shall be open to the public as was the case for this investigation.

I note that many of the changes proposed in this recommendation would require a Legislative Change Proposal to Congress. 46 USC 6303 - Rights of Parties in Interest states that parties in interest shall be allowed to be represented by counsel, to cross-examine witnesses, and to call witnesses. The Parties in Interest cannot cross-examine witnesses if they are not permitted to be present for the interview. 46 USC 6308 - Information Barred in Legal Proceedings was enacted to separate, as much as possible, the Coast Guard's casualty

investigation from any associated civil litigation. It has been interpreted by various courts over the years, rendering opinions on the applicability of this statute to various categories of evidence (e.g. Reports of Investigation, photographs, transcripts, data recordings, etc.). Some evidence has been deemed admissible, while other evidence has not. The intent of these statutes is to serve the purposes of the Coast Guard's investigation, to ensure that it is as thorough as possible, and to ensure that parties and witnesses are most likely to share information so that we can then take necessary action to prevent the recurrence of similar casualties.

Ultimately, whether or not amendments to these laws, regulations, or policies are made, I recommend that the Commandant continue to ensure that Coast Guard Investigating Officers and attorneys are trained on how to best manage interviews in order to encourage cooperation from reluctant witnesses during the course of marine casualty investigations.

**Other Recommendation 2:**

It is recommended that the Commandant of the Coast Guard provide a copy of this report to the following entities:

a. Area, District, and Sector Commanders
b. Parties in Interest
c. The National Transportation Safety Board
d. The Governor of Texas
e. All USCG VTS Directors

D8 Comment on Other Recommendation 2:

I concur with this recommendation.

**Other Recommendation 3:**

It is recommended that this casualty investigation be closed.

D8 Comment on Other Recommendation 3:
I concur with this recommendation. The investigation will be closed by CG-INV after COMDT takes final agency action on the Safety Recommendations.

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Encl: (1) Report of Investigation dated February 23, 2015

U.S. Department of Homeland Security
United States Coast Guard

Commander
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16732
February 23, 2015

# MEMORANDUM

From: [redacted]
Lead Investigating Officer

Reply to Attn of: spv [redacted]
504-365-2311

To: K. S. Cook, RADM

Thru: (1) CGD EIGHT (dp)
(2) CGD EIGHT (dl)
(3) CGD EIGHT (dcs)

Subj: COLLISION BETWEEN THE M/V SUMMER WIND (O.N. 9114139) AND THE TANK BARGE KIRBY 27706 (O.N. 1116758) BEING PUSHED BY THE UNINSPECTED TOWING VESSEL MISS SUSAN (O.N. 1026248) IN THE HOUSTON SHIP CHANNEL WHICH RESULTED IN A 4,000 BARREL SPILL OF MARINE FUEL OIL INTO THE WATERWAY ON MARCH 22, 2014

Ref: (a) Letter of Designation as Lead Investigating Officer dated 04 April 2014
(b) Title 46 United States Code, Chapter 63
(c) Title 46 Code of Federal Regulation, Part 4
(d) COMDINST M16000.1 Volume V

**Preliminary Statement**

In accordance with reference (a), you designated and directed me to conduct a formal investigation into the collision between the M/V SUMMER WIND and the Tank Barge (T/B) KIRBY 27706 pushed by the Uninspected Towing Vessel (UTV) MISS SUSAN in the Houston Ship Channel on March 22, 2014, which resulted in a 4,000 barrel oil spill into the Houston Ship channel, a navigable waterway of the United States. This incident was classified as a Major Marine Casualty in accordance with 46 CFR 4.40-5(d), and the National Transportation Safety Board participated in the investigation. Mr. [redacted] from MSU Texas City was assigned as my assistant, and Chief Warrant Officer [redacted], also from MSU Texas City was assigned as the recorder for the investigation. In accordance with reference (b), with investigative and administrative assistance from the Investigations National Center of Expertise, and legal advice provided by LCDR [redacted] and LCDR [redacted] from the Eighth Coast Guard District, a public hearing was held in Galveston Texas from Monday, June 2, 2014 through Thursday, June 5, 2014. In accordance with reference (c), numerous interviews were conducted, and we were able to gather facts, conduct analysis, draw conclusions and make recommendations regarding this marine casualty. All evidence, correspondence and testimony gathered during the investigation and used to create this report are included in the Coast Guard's Marine Information System for Law Enforcement (MISLE) electronic database under **Incident Investigation Activity Number 4821272.**

## Executive Summary

At approximately 1235 on Saturday March 22, 2014, the bulk freight ship M/V SUMMER WIND collided with the T/B KIRBY 27706, one of two barges being pushed ahead by the UTV MISS SUSAN. The collision occurred as the MISS SUSAN was crossing the Houston Ship Channel near Lighted Buoy 26, known locally as the "Texas City Y". (See Figure 4 on page 15)

At the time of the collision, the T/B KIRBY 27706 was loaded with 22,500 barrels of marine oil, and the M/V SUMMER WIND was in ballast. The UTV MISS SUSAN had departed the Texas City area earlier that morning and was heading eastbound to the Intracoastal Waterway near Bolivar to await orders. The M/V SUMMER WIND was inbound from inner anchorage "Bravo", which abuts the north edge of the Galveston entrance channel, heading to Houston to load cargo. The UTV MISS SUSAN was pushing a two barge unit tow, in a "strung-out" (end for end) configuration with the KIRBY 27706 in the lead position, and was crossing the Houston Ship Channel just south of Lighted Buoy 25. The T/B KIRBY 27706 was struck forward of amidships on the starboard side sustaining significant damage, subsequently discharging approximately 4,000 BBLS of LS RMG 380, a low-sulfur Marine Residual Fuel Oil into the water. The second barge in the tow, the KIRBY 27705, received only minor damage. The M/V SUMMER WIND sustained moderate damage to the bulbous bow.

## DEFINITION OF ACRONYMS/TERMS

**AIS**: Automated Information System
The Automatic Identification System is an automatic tracking system used on ships and by vessel traffic services (VTS) for identifying and locating vessels by electronically exchanging data with other nearby ships, AIS base stations, and satellites.

**ARPA**: Automatic Radar Plotting Aid
An Automated Radar Plotting Aid has the ability to create tracks using radar contacts, and can calculate a tracked objects course, speed and closet point of approach, thereby assisting with the identification that a danger of collision exist.

**CAPTAIN**:
The licensed master in charge of a vessel.

**CONTROLLER**:
A VTC Watch stander assigned to monitor a specific VTS sector.

**DECKHAND**:
An unlicensed member of a vessels crew.

**HSC**: Houston Ship Channel

**HPA**: Houston Pilots Association

**LIO**: Lead Investigating Officer

**MASTER**:
The commander or first officer of a ship; a licensed captain in charge of a vessel.

**MATE (PILOT)**:
A mate of towing vessels is authorized to be the second captain on towing vessels within the limitations of the endorsement (46 CFR 11.465). In the towing industry, this person is commonly referred to as the pilot.

**M/V**: Motor Vessel

**NTSB**: National Transportation Safety Board

**PAWSS**: Port and Waterways Safety System
The Port and Waterways Safety System is the USCG's Vessel Traffic Management Information System used to collect, processes, and display information on the marine operating environment including vessel traffic in designated U.S. ports and waterways. The PAWSS supports operators in monitoring and assessing vessel movements within a Vessel Traffic Service Area, exchanging information regarding vessel movements with vessel and shore-based personnel, and providing advisories to vessel operators. Other Coast Guard missions are supported through the exchange of PAWSS information with appropriate Coast Guard units.

**PBIRC**: Pilot Board Investigation and Recommendation Committee
This board conducts investigations and hearings of complaints and incidents, and presents findings and recommendations to the Board of Pilot Commissioners.

**PILOT**:
According to the Board of Pilot Commissioners for Harris County Ports in Texas, the Houston Pilots **take direct command** or transfer directions to the ship's captain while navigating the 52 mile long Houston Ship Channel. The primary responsibility of the pilot is to protect the public interest by facilitating the safe and effective movement of vessels in state waters along the HSC and the Galveston Bar.

**PSC**: Port State Control
The Coast Guards foreign vessel examinations program used to verify vessel compliance with statutory and international safety and security standards.

**PPU**: Personal Pilot Unit
A PPU is a portable, computer based system that a pilot brings onboard a vessel to use as a decision-support tool for navigating in confined waters. These units are typically used to display an electronic chart, the vessel's position and movement in real time, and information about the location/movement of other vessels via an AIS interface.

**RELIEF CAPTAIN**:
The relief captain serves as the mate (pilot) when the UTV master is on the vessel, and serves as the master when the UTV master of record is ashore.

**SOG**: Speed Over Ground

**T/B**: Tank Barge

**UTV**: Uninspected Towing Vessel

**VDR**: Vessel Data Recorder
A data recording system designed for all vessels required to comply with the IMO's International Convention SOLAS Requirements (IMO Res.A.861(20)) in order to collect data from various sensors on board the vessel. It then digitizes, compresses and stores this information in an externally mounted protective storage unit. The protective storage unit is a tamper-proof unit designed to withstand the extreme shock, impact, pressure and heat, which could be associated with a marine incident (fire, explosion, collision, sinking, etc.).

**VHF**: Very High Frequency

**VTC**: Vessel Traffic Center
The physical location where a VTSA is monitored and managed.

**VTS**: Vessel Traffic Service
A marine traffic monitoring system established by harbor or port authorities, Typical VTS systems use radar, closed-circuit television (CCTV), VHF radiotelephony and automatic identification system to keep track of vessel movements and provide navigational safety in a limited geographical area.

**VTSA**: Vessel Traffic Service Area

**WATCH STANDER**:
The term used by the VTS Houston Galveston Internal Operating Procedures to denote all personnel on duty in the VTC.

NOTE: All times used are annotated in military/24 hour fashion (001-2359).

## Vessel Data

Figure 1: Photo of M/V SUMMER WIND

| M/V SUMMER WIND | |
|---|---|
| Flag: | LIBERIA |
| Official Number: | 9114139 |
| Service: | Freight Ship |
| Vessel Type: | General |
| Builder: | Hyundai Heavy IND CO LTD |
| Place Built: | South Korea |
| Hull Material: | Steel |
| Gross Registered Tons: | 25503 |
| Length: | 585.2 |
| Breadth: | 100 |
| Maximum Draft: | 36.8 |
| Propulsion: | Diesel Direct |
| Horsepower: | 10580 |
| Maximum Speed | 12.1 kts loaded, 12.2 kts ballast |
| Year Built: | 1995 |
| Manning: | 22 |
| Owner: | Sea Galaxy Marine S.A. |
| Operator: | Cleopatra Shipping Agency LTD |


Figure 2: Photo of UTV MISS SUSAN

| UTV MISS SUSAN | |
|---|---|
| Flag: | United States |
| Official Number: | 1026248 |
| Service: | Towing Vessel |
| Vessel Type: | Pushing Ahead (Towboat) |
| Builder: | John Blueworth Marine Inc. |
| Place Built: | Pasadena, TX |
| Hull Material: | Steel |
| Gross Registered Tons: | 131 |
| Length: | 70 |
| Breadth: | 28 |
| Maximum Draft: | 10 |
| Propulsion: | Diesel Reduction |
| Horsepower: | 1800 |
| Inspection Subchapter: | C |
| Year Built: | 1995 |
| Manning: | 6 |
| Route: | Coastwise |
| Hailing Port: | Houston, TX |
| Owner: | Kirby Inland Marine LP |
| Operator: | Kirby Inland Marine LP |

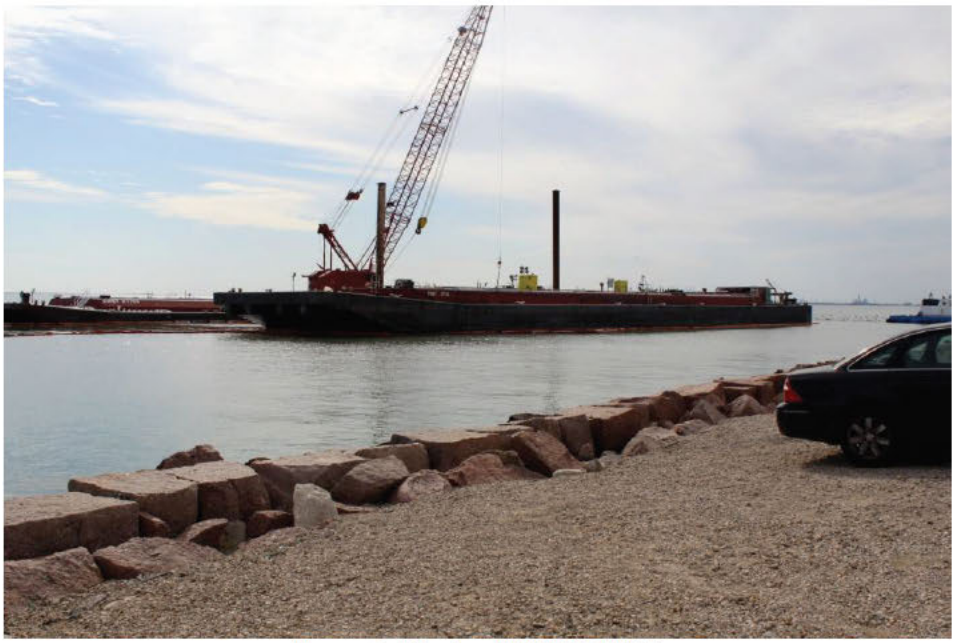

Figure 3: Photo of KIRBY 27706

| KIRBY 27706 | |
|---|---|
| Name: | KIRBY 27706 |
| Flag: | US |
| Official Number: | 1116758 |
| Service: | Tank Barge |
| Vessel Type: | Bulk Liquid Cargo (Tank) Barge |
| Builder: | Jeffboat LLC |
| Place Built: | Jeffersonville, IN |
| Hull Material: | Steel |
| Gross Registered Tons: | 1632 |
| Length: | 300 |
| Breadth: | 54 |
| Maximum Draft: | 12 |
| Inspection Subchapter: | 46 CFR Part 30 (D) and Part 151 (O) |
| Year Built: | 2001 |
| Certification Date: | 12JUN2012 |
| Expiration Date: | 12JUN2017 |
| Manning: | Unmanned |
| Route: | Lakes, Bays and Sounds |
| Hailing Port: | Wilmington, DE |
| Owner: | Kirby Inland Marine, LP |
| Operator: | Kirby Inland Marine, LP |

**Personnel Data**

| MISS SUSAN | Age | Position | Merchant Mariner Credential |
|---|---|---|---|
| Captain [redacted] | [redacted] | Relief Captain | [redacted] |
| [redacted] | | [redacted] | |
| [redacted] | | Deckhand | N/A |
| [redacted] | | Tankerman | [redacted] |
| [redacted] | | Deckhand | N/A |
| [redacted] | | Tankerman | [redacted] |

| SUMMER WIND | DOB | Position | Nationality |
|---|---|---|---|
| [redacted] | [redacted] | Master | Greek |
| [redacted] | | Chief Officer | Ukrainian |
| [redacted] | | 2nd Officer | Filipino |
| [redacted] | | 3rd Officer | Filipino |
| [redacted] | | Chief Engineer | Greek |
| [redacted] | | 2nd Engineer | Greek |
| [redacted] | | 3rd Engineer | Filipino |
| [redacted] | | 4th Engineer | Filipino |
| [redacted] | | Electrician | Filipino |
| [redacted] | | Electrician | Ukrainian |
| [redacted] | | Bosun | Filipino |
| [redacted] | | Fitter | Filipino |
| [redacted] | | Fitter | Filipino |
| [redacted] | | A/B | Filipino |
| [redacted] | | A/B | Filipino |
| [redacted] | [redacted] | A/B | Sri Lankan |
| [redacted] | [redacted] | O/S | Filipino |
| [redacted] | | Oiler | Filipino |
| [redacted] | [redacted] | Oiler | Sri Lankan |
| [redacted] | [redacted] | Oiler | Sri Lankan |
| [redacted] | [redacted] | Cook | Sri Lankan |
| [redacted] | [redacted] | Messman | Sri Lankan |

| Parties in Interest | Role | Counsel |
|---|---|---|
| Captain [redacted] | Relief Captain on the UTV MISS SUSAN | [redacted] |
| Captain [redacted] | Pilot on the M/V SUMMER WIND | [redacted] |
| Kirby Inland Marine | Owner/Operator of the UTV MISS SUSAN and the Tank Barge KIRBY 27706 | [redacted] |
| Sea Galaxy Marine S.A /Cleopatra Shipping Agency LTD | Owner/Operator of M/V SUMMER WIND | [redacted] |
| Houston Pilots Association | Contract employer of Captain [redacted] | [redacted] |

**Findings of Fact**

**Involved Vessel Information**

1. The M/V SUMMER WIND is a 585 foot bulk freight vessel registered under the Liberian flag state. The ship is classed by Nippon Kaiji Kyokai (NKK) and the last Port State Control (PSC) exam prior to the incident was conducted on January 3, 2014 at the Port of Houston, Texas by examiners from US Coast Guard Sector Houston/Galveston. There were 00 discrepancies found, MISLE Activity Number 4777054.

2. The M/V SUMMER WIND arrived in the port of Houston on March 17th and docked at City Dock 30 for a cargo hold inspection. She departed that dock and proceeded to inner anchorage "Bravo" on March 19th to await berthing at Cargill to load cargo. The M/V SUMMER WIND had ordered a pilot and was scheduled to depart the anchorage at 0800 March 22nd bound for Cargill.

3. There are two radars on the bridge of the M/V SUMMER WIND. The X-band radar was set at a range of 0.75 miles, and the S-band radar at 1.5 miles. During his interview, Captain [redacted] indicated that during the transit, he changed the radar range often to check for vessel traffic farther up the channel, and then changed it back to the previous settings.

4. According to testimony from Captain [redacted], the S-band radar also has Automated Radar Plotting Aid (ARPA) installed[1]. During the hearing, Captain [redacted] was questioned about the navigation equipment that he was using to determine risk of collision, and he indicated that he did not use "any of that stuff" ([redacted], pg. 161) in reference to the ARPA.

5. The Captain of the M/V SUMMER WIND had set Watch Level Two on the bridge, which is required by company policy for transiting narrow channels and requires two officers on the bridge. Also, due to the restricted visibility, there was an additional (two total) lookout posted on

[1] An Automated Radar Plotting Aid (ARPA) has the ability to create tracks using radar contacts, and can calculate a tracked objects course, speed and closet point of approach, thereby assisting with the identification that a danger of collision exist.

the bow, also in accordance with company policy. The bow lookouts communicated with the bridge team by hand-held radios.

6. The UTV MISS SUSAN is a U.S. flagged Uninspected Towing Vessel owned and operated by Kirby Inland Marine, LP. The MISS SUSAN underwent an Industry Initiated UTV Exam on November 29, 2012 at the Port of Beaumont Texas by Coast Guard examiners from Marine Safety Unit Port Arthur Texas. There were 00 discrepancies found and a UTV decal was issued.

7. The UTV MISS SUSAN is home ported in Houston, Texas. On the morning of March 22, 2014, she was docked at NuStar Energy Dock 19, in Texas City, Texas. She was due to depart the dock that morning, but was delayed by the reported fog conditions. She departed the dock at 1115 bound for Bolivar Terminal to await orders to a facility in Galveston to offload cargo.

8. The T/B KIRBY 27706 is enrolled in the US Coast Guard District Eight Tank Barge Streamlined Inspection Program (TBSIP) and was last inspected by a Coast Guard certified Kirby Inland Marine Inspections Tank Barge Inspector on June 8, 2013 with no discrepancies noted. On the morning of March 22, 2014, the KIRBY 27706 and 27705 were in tow with the UTV MISS SUSAN, docked at NuStar Energy Dock #19 in Texas City where 22,500 barrels of LS RMG 380 had been loaded on each barge.

**Involved Persons Information**

9. [redacted] is a member of the HPA. He holds a Master of Steam or Motor Vessels of not more than 500 Gross Registered Tons Upon Oceans, most recently renewed by the US Coast Guard February 7, 2012. [redacted] stated in his testimony that he has been a mariner for 40 years. A review of his records indicates that he has been a licensed mariner since 1986, and is on his 5th issuance. He is an involved party in 5 investigations, including this one. All were minor with the exception of a collision and spill between the M/V NEW AMITY (O.N. 9177820) with [redacted] as pilot and the UTV CARSON (O.N. 298127) that occurred on September 22, 2001 in the Houston Ship Channel (See MISLE Activity 169890). According to the Decision and Order issued by the US District Court for the Southern District of Texas Houston Division (Case 4:01-cv-03320) filed 05/02/2006, the court found that the M/V NEW AMITY violated multiple Inland Rules of the Road, was travelling at an excessive speed under the prevailing circumstances and conditions, and caused the subsequent collision and spill. At the time of the incident, [redacted] Merchant Mariner License was expired and in the one year grace period[2]. It should be noted that this is in conflict with the requirement for holding a State Pilot's License as laid out in Texas State Transportation Code 66.043(1). The state of Texas requires all state pilots to hold a valid federal (i.e. Coast Guard issued license) as a prerequisite to receiving a state pilots license. Because his federal license was expired, [redacted] state license was not valid at the time of this casualty. [redacted] stated in his testimony that he has been a contract employee of the Houston Pilots Association for 24 years, as of July 2014.

10. On the morning of March 22, 2014, [redacted] had been the pilot aboard the M/V ALICE (O.N. 9323792) for her outbound transit from Kinder Morgan to sea around 0400. He

[2] The US Coast Guard allows a Merchant Mariner Credential to be renewed up to 1 year before and 1 year after its expiration date. However, during the "grace" period, the holder may not operate vessels under their license.

disembarked at the sea buoy at 1005 and remained aboard the pilot boat until 1155 at which time he embarked the M/V SUMMER WIND for her transit inbound to Cargill in Houston.

11. According to testimony by the Presiding Officer of the HPA ([redacted], Hearing Testimony pg 97-99), there are between 40 and 50 pilots contracted by the HPA. The pilots wait for their turn to be called by the dispatcher to pilot a vessel. Once they have taken their turn, their name goes to the bottom of the list. At the time [redacted] boarded the SUMMER WIND, he was the "number one" pilot, or the pilot at the top of the list, and pilotage for inbound deep draft vessels was still suspended due to fog. As the number one pilot, according to his testimony, it was [redacted] responsibility to determine whether the conditions were safe to make the transit. He indicated that after discussions with other pilots he determined it was safe to begin the inbound transit.

12. [redacted] was the Master of the M/V SUMMER WIND on the date of the incident. He had been with Cleopatra Shipping for five years, and was serving his seventh contract as a master. This was his second contract on the M/V SUMMER WIND, having served nine months previously, and was five days into the second contract when the collision occurred. He has been a mariner for twenty-two years, and had made the transit into Houston many times as a mate, but this was his first trip as master.

13. [redacted] was the relief captain on board the UTV MISS SUSAN on the date of the incident. She holds a Master of Towing Vessels Upon Near Coastal Waters and Western Rivers. Her license was renewed by the U. S. Coast Guard on September 8, 2010 and again post-incident on June 10, 2014. [redacted] has been a licensed mariner since 1982 and according to her testimony at the hearing, has been employed by Kirby Inland Marine for twenty (20) years.

14. A review of her records indicated that she has been an involved party in 7 investigations over the course of her career, including this one. Most were minor, of note was a completed Settlement Agreement for a positive drug screen in 2003[3], and a Letter of Warning issued to her for Negligence as a result of a grounding categorized as a Major Marine Casualty in 2002 (See MISLE Activity 2302029). In that case, [redacted] was the pilot of the UTV COURAGEOUS when the barge she was pushing, the MICKIE BIRDSALL, ran aground while she was inbound on the Crystal River in Tampa Florida. It was determined that [redacted] over compensated for the strong flood tide, and the subsequent grounding caused over $520,000.00 in damage.

15. [redacted] was the mate aboard the UTV MISS SUSAN on the morning of the incident. [redacted] holds a Master Of Towing Vessels (Limited) Of Not More Than 200 Gross Register Tons (Domestic Tonnage), 500 Gross Tons (ITC Tonnage) Upon The Houston Ship Channel From The Galveston Bay Sea Buoy To The Houston Turning Basin, Including The Texas City and Galveston Channels, And The GIWW From Mile 340 To Mile 365"(endorsement

[3] Per the Marine Safety Manual, Volume V, the US Coast Guard has the authority to offer a mariner who has tested positive for drugs a Settlement Agreement under some conditions. Settlement Agreements contain a series of actions that the mariner takes in order to prove to the US Coast Guard that they are no longer users of, or addicted to drugs.

issued in 2012). He has been with Kirby Marine since June 2011, which was the beginning of his career as a mariner. On the day of the incident, he had been on watch since 0500 and was in the pilot house at the helm of the MISS SUSAN until he was relieved by [redacted] at approximately 1215.

**U. S. Coast Guard Vessel Traffic Center**

16. U. S. Coast Guard Vessel Traffic Center (VTC) Houston operates under authority of 33 CFR 160.5 subject to the supervision of the Captain of the Port. The defined VTS Area (VTSA), is the area within which the VTC is responsible for providing vessel traffic and waterways management information. The Houston Galveston VTSA extends along the Gulf Intracoastal Waterway between mile markers 346 and 352 and the approaches, harbors, and connecting waterways of the ports of Houston, Galveston, and Texas City, Texas as described at 33 CFR Table 161.12(c) and 33 CFR 161.35.

17. Under 33 CFR 160.5(d), U.S. Coast Guard Vessel Traffic Services are delegated the authority to discharge the duties of the Captain of the Port that involve directing the operation, movement, and anchorage of vessels within their VTSA to ensure the safety of the port or the marine environment. The VTS National Standard Operating Procedure (COMDINST 16630.3A) provides instruction on the roles and responsibilities of the VTS.

18. As written in 33 CFR 161.12(c), all vessels 40 meters or longer and all towing vessels eight meters or longer are to maintain a constant listening watch on the VTS designated frequency to ensure they are "cognizant of navigational and safety information provided by a VTS". In this case the designated VTS frequency is Channel 12. In 1997, VTS Houston Galveston requested and was granted a permanent deviation of this regulation. In their request letter, VTS Houston/Galveston stated that, "the requirement is unnecessary here because VTS Houston/Galveston delivers customized summaries of relevant navigational and safety information to participating vessels at each checkpoint, or to specific vessels when necessary between checkpoints."

19. Additionally, 33 CFR 161.19 requires vessels to report information regarding their transit to the VTS, "at least 15 minutes before navigating a VTS area". In 1997, VTS Houston Galveston also requested and was granted a permanent deviation of this regulation. In their request letter, VTS Houston/Galveston stated that the requirement to provide a Sailing Plan "is impractical for many vessels, particularly ships. Inbound ships are often in the VTS area before the pilot reaches the bridge, get situated, and is able to call VTS. Outbound ships frequently do not receive their pilots until just a few minutes before getting underway. Many tows enter the VTS area at congested waterway intersections where making a call as soon as practical serves safety better than requiring fifteen minute notice and disrupting established bridge routines on ships and tows." Also, the letter states that the requirement "adds to an existing local problem, that being radio congestion."

20. The regulations under 33 CFR 161.21(a) and the VTS Houston/Galveston Users Guide currently in use state that vessels equipped with an Automatic identification System (AIS), are not required to provide voice Position Reports.

21. According to the VTS Users Guide dated July 2008 and 33 CFR 26.04(d), all VTS users are required to monitor the Bridge-to-Bridge frequency, Channel 13. According to the VTS Houston

Galveston Internal Operating Procedures, VTS watch standers must maintain a listening watch on Channel 13, the Bridge to Bridge frequency (VTS H-G IOP, pg 50) as well as the designated frequency for their watch sector.

22. According to the VTS National Standard Operating Procedure (COMDINST 16630.3A), the Coast Guard authorizes VTS controllers to exert four levels of control over vessel movement. These control levels, from lowest to highest, are *monitor*, *inform*, *recommend*, and *direct*. At the *monitor* level, controllers use their equipment to track vessel movement in the waterway and to identify potential risks. At the *inform* level, a controller may provide vessels with navigational information. At the *recommend* level, the controller, based on data from PAWSS that may not be available on board a vessel, may offer navigational suggestions or alternatives for consideration by the vessel's master or pilot. The decision whether or not to take a specific action remains with the vessel. At the *direct* level of control, a VTS operator who has determined that a certain vessel action is "necessary to enhance navigation and vessel safety and protect the environment" may direct a ship's master or pilot take specific actions to mitigate the risk. The directions from VTS may include "imposing vessel operating requirements," but do not include specific vessel operations orders such as helm or rudder commands. In times of restricted visibility, 33 CFR 161.11(b) stipulates that VTS may "control, supervise, or otherwise manage traffic, by specifying times of entry, movement or departure to, from, or within a VTS area."

23. According to the VTS Houston Galveston Internal Operating Procedures, each watch section normally consists of a Watch Supervisor, an Assistant Watch Supervisor and 5-8 qualified Vessel Traffic Controllers. The same document defines a Controller as "a watchstander assigned to a sector watch" and indicates that the defined VTSA for U. S. Coast Guard VTC Houston is separated into Sectors, as follows:

a. **Sector 1 & 2 (VHF 12)** – Covers the area from the Navigable waters South of a line extending due west from the southernmost end of Exxon Baytown Dock #1 29-43.37N 095-01.27W. This includes approximately 34 nautical miles of the Houston Ship Channel from Exxon Baytown dock #1 to the Galveston Bay Entrance Channel Lighted Buoy "1B". There is one controller with **eight** Ports and Waterways Safety System (PAWSS)[4] monitors. The controller is also supported by multiple flat panel CCTV displays and environmental data. The collision between the M/V SUMMER WIND and the T/B KIRBY 27706 occurred within this Sector.

b. **Sector 3 (VHF 11)** – Covers the Navigable waters north of a line extending due west from the southernmost end of Exxon Baytown Dock #1 29-43.37N 095-01.27W. This includes approximately 18 nautical miles of the Houston Ship Channel from Exxon Baytown dock #1 to the Buffalo Bayou Turning Basin. There is one controller with **four** PAWSS monitors. The controller is also supported by multiple flat panel CCTV displays and environmental data.

[4] The Port and Waterways Safety System is the USCG's Vessel Traffic Management Information System used to collect, processes, and display information on the marine operating environment and maritime vessel traffic in designated U.S. ports and waterways. The PAWSS supports operators in monitoring and assessing vessel movements within a Vessel Traffic Service Area, exchanging information regarding vessel movements with vessel and shore-based personnel, and providing advisories to vessel masters. Other Coast Guard missions are supported through the exchange of information with appropriate Coast Guard units.

c. **Sailing Plans/VTS Check In (VHF 05A)** - A third controller monitors VHF 05A for required VTS Check-Ins. This refers to the requirement for vessels intending to transit within the VTSA to "check-in" to the system, to provide information regarding their vessel, and to state their intended Sail Plan. PAWSS "Track Tags" are initiated by the 05A Controller when vessels check in. These tags display information that is pertinent to the Controller to formulate traffic advisories. A software data field with drop-down tags and "auto-complete" features facilitates this process. After checking-in, vessels shift to channel 11 or 12 as appropriate to receive controller reports of other vessels operating in the area, weather conditions or other pertinent information to ensure a safe transit.

24. On the day of the incident, there were three controllers and one watch supervisor on watch in VTC Houston-Galveston, in accordance with unit Standard Operating Procedures. Operations Specialist Chief (OSC) [redacted] was on watch as the Watch Supervisor; Operations Specialist First Class (OS1) [redacted] Mr. [redacted] and [redacted] were the Controllers on watch. All members of the duty section were properly qualified in accordance with National and Internal Standard Operating Procedures.

**Conditions**

25. The incident occurred where the Texas City Channel and the Galveston Channel intersect with the Houston Ship Channel. This area is known locally as the "Texas City Y".


Figure 4: Location of incident

26. On the morning of March 22, 2014, the weather conditions were reported to be cloudy with patchy fog and light to no wind.

27. The predicted tidal current for the Houston Ship Channel was reported by the VTC to be 1 knot on the flood. The VTC uses the National Oceanographic and Atmospheric Administration (NOAA) flood gage information taken from the NOAA website to obtain tide and current data.

28. The visibility at the time and location of the incident was reported to be approximately 300 meters, or less than one quarter of a mile. See analysis section for further visibility discussion.

Figure 5: Video Capture from SUMMER WIND bridge camera showing visibility at time of incident

**Timeline of Events**

29. At 0740 March 22, 2014 according to the VTC Daily Activities Summary Statistics dated March 22, 2014; the HPA suspended boarding inbound deep draft vessels due to reported fog conditions. According to the HPA and verified by the VTS Internal Standard Operating Procedures, the decision to "close the bar" or stop bringing ships into the Houston Ship Channel from offshore does not preclude the movement of deep draft vessels already in the port. There were no other vessel movement restrictions imposed by the Coast Guard or any other agency in effect on the waterway at that time.

30. The M/V SUMMER WIND had a pilot scheduled for 0800 to make the transit into Houston, but the pilot order was cancelled due to the fog conditions.

31. At approximately 1030, Mr. [redacted] assumed the watch at Sector 1 and 2 in the VTC.

32. At 1115, the UTV MISS SUSAN got underway from NuStar Dock #19 in Texas City with Captain [redacted] on watch in the pilothouse. According to Captain [redacted] and Captain

[redacted] testimony, this departure was delayed approximately 5 hours from the original scheduled departure time due to the fog.

33. According to [redacted] statement, [redacted] boarded the M/V SUMMER WIND at approximately 1155 for her inbound transit from inner anchorage Bravo. Upon his arrival on the bridge, a pilot exchange was conducted with the master. Captain [redacted] asked about the visibility north of their current position which is the direction the M/V SUMMER WIND would be heading, and [redacted] replied that it was improving. They discussed the vessel's air draft, because [redacted] was concerned about the lowest bridge, and [redacted] asked if everything was operating properly, which it was according to [redacted].

34. At approximately 1204, [redacted] instructed [redacted] to heave in the anchors. This is verified by the Voyage Data Recorder (VDR) which is a device on the bridge that records data from various sensors and microphones, including voice communications between bridge team members, radio transmissions sent and received, alarms, and changes in speed or direction.

35. Just after the order to heave anchor was given, there is a further exchange between [redacted] and [redacted] regarding the visibility and vessel traffic in the area. Captain [redacted] told [redacted] that they had "two outbound ships". At no time did he mention the numerous UTV's that were transiting in and around the Houston Ship Channel with their barges in tow.

36. At 1206, [redacted] received a call on his cell phone which lasted just over one minute. This conversation was not relevant to the investigation.

37. According to the PPU's log and the third party analysis of the unit, [redacted] PPU stopped functioning normally at 1206.

38. According to the VDR, the M/V SUMMER WIND got underway from the anchorage at 1208.

39. At 1210, [redacted] reports on Channel 13 that "Pilot 130" ([redacted] Houston Pilot identifier) is leaving anchorage bound for the Houston Ship Channel, but does not identify the vessel by name. According to [redacted], this is the standard practice by ship pilots in Houston.

40. According to the bridge log of the M/V SUMMER WIND, [redacted] energized the fog signals on the SUMMER WIND AT 1210.

41. At 1211, the UTV ALBERT also operating in the area, hails the MISS SUSAN on Channel 13. They discuss intentions and configurations, and the ALBERT asks the MISS SUSAN about visibility conditions in Texas City. **MISS SUSAN replies that visibility has deteriorated significantly at the end of the Texas City Dike.**

42. At 1212, [redacted] aboard the UTV MISS SUSAN broadcasts the vessel's position and intentions on Channel 13.

43. At 1214:10, [redacted] is heard on the VDR giving a report of the fog condition to another vessel over the radio, stating that "it is socked in all the way to Morgan's Point". Neither vessel is identified by name during this communication.

44. At 1214:56, [redacted], identifying himself only as "Pilot 130" is heard on Channel 13 reporting that he is leaving the anchorage and indicates the vessel position as passing Buoy 12.

45. At approximately 1215 [redacted] relieved [redacted] in the pilothouse of the UTV MISS SUSAN, which was 30 to 45 minutes ahead of the scheduled watch relief time. [redacted] indicated during her testimony that she did this occasionally, but today in particular because of the restricted visibility conditions and because she was the more experienced mariner. At the time of the watch relief, while still transiting the Texas City Channel the MISS SUSAN was making 6 kts, as verified by the PAWSS playback and Automated Information System[5] (AIS) data.

46. Just after the watch relief, [redacted] energizes the fog signals of the MISS SUSAN.

47. At 1217, [redacted] made a broadcast on Channel 13 indicating that she was headed to the end of the Texas City dike in preparation for crossing the Houston Ship Channel.

48. At 1221, [redacted] made a broadcast on Channel 13 indicating that she was leaving the Texas City Channel bound for Bolivar.

49. At 1222, the MISS SUSAN and the NATURE'S WAY COMMANDER, another UTV operating in the area, engage in an exchange on Channel 13 regarding their transits, which included a discussion and agreement on their order of transit into Bolivar based on their speeds, and their tow configurations. Based on these communications, the transit order into Boliver would be MISS SUSAN, followed by MISSION and then NATURE's WAY COMMANDER.

50. At 1222, "Pilot 130" reports the vessel position as "Buoy 16 inbound" on Channel 13. According to his statements at the preliminary interview and at the hearing, after the M/V SUMMER WIND gets underway from the anchorage, [redacted] PPU is reported to have malfunctioned. During his testimony ([redacted] Hearing Testimony, pg 104), he states that "it's froze up" and "it's acting crazy" around the time that he is passing Buoy 16. This is not verifiable via the VDR transcript or during post-incident interviews with the bridge team of the M/V SUMMER WIND.

51. At 1224, there is a radio communication between the pilot boat (PB1) and an unidentified vessel regarding visibility. In this communication, the unidentified party stated "we just came around the corner here by 16 buoy and it is shut out". The transmission continues, indicating that

[5] The Automatic Identification System (AIS) is an automatic tracking system used on ships and by vessel traffic services (VTS) for identifying and locating vessels by electronically exchanging data with other nearby ships, AIS base stations, and satellites. (http://www.navcen.uscg.gov/?pageName=AISmain)

visibility was zero most of the way in, with a few areas that had visibility a quarter mile or possibly a half mile for short periods.

52. At 1225, [redacted] aboard the UTV MISSION, also operating in the area, contacts the M/V SUMMER WIND on Channel 13. During this exchange, [redacted], onboard the UTV MISSION, passes his vessel's position and intentions and passing arrangements are made and agreed to, such that the MISSION would pass the SUMMER WIND in a starboard to starboard passing.

53. In her testimony, [redacted] indicated that she calculated the Closest Point of Approach (CPA) of the M/V SUMMER WIND and the UTV MISS SUSAN using the initial observed speed of the M/V SUMMER WIND (10 kts), and the speed she anticipated making when she entered the Houston Ship Channel (4 kts) taking into account the projected 1 knot flood tide. During the hearing, [redacted] stated that she thought she was going to "clear him by about half a mile". According to the VDR and PAWSS playback, the SUMMER WIND was making 10 knots right around 1226.

54. At 1226, the NATURE'S WAY COMMANDER contacts the M/V SUMMER WIND on Channel 13. During this exchange, intentions are discussed and NATURE'S WAY COMMANDER requests starboard passing arrangements as well ("on two"), and the SUMMER WIND agrees.

55. Between 1225 and 1226, the UTV MISS SUSAN changes heading and begins to turn out of the Texas City Channel and into the Houston Ship Channel. When UTV MISS SUSAN and her barges left the Texas City Channel she began to rapidly lose speed, slowing from 6 to 4 knots, and maneuver erratically. When asked about this at the hearing, [redacted] stated that she was looking for the "sweet spot", meaning the speed and course that would be most effective in the prevailing conditions.

56. At approximately 1226 to 1228 OS1 Estes assumed the watch at Sector 1 and 2 in the VTC from [redacted] last transmission is heard at approximately 1226 on the PAWSS recording.

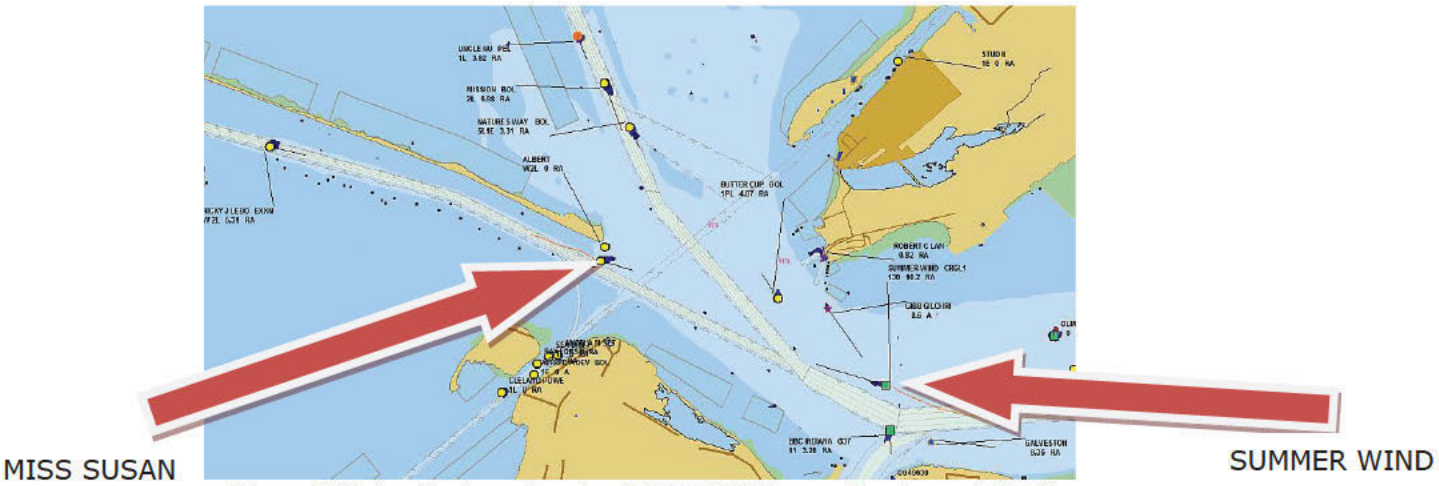


Figure 7: Video Capture showing MISS SUSAN executing turn at 12:25

57. At some point between 1228 and 1232, [redacted] changes watch sections with OS1 [redacted], and assumed the watch for Sector 1 and 2. According to testimony offered by OS1 [redacted] during his interview on March 27th, the only information passed during the watch relief was "we have fog, ships and tows". The last transmission from OS1 [redacted] occurs at approximately 1229, and [redacted] first transmission occurs at approximately 1232.

58. At 1228:45, [redacted], the pilot at the helm of the UTV MISSION, contacts the UTV MISS SUSAN on Channel 13 and asks whether she would be "meeting or beating that inbound ship across the intersection there?" This is the first indication that a close quarters situation is developing. MISS SUSAN responds that she thinks she'll be beating him across the intersection. This exchange is clearly heard over the SUMMER WIND's VDR recording, however, during his testimony, [redacted] stated that he did not hear the exchange [redacted] Hearing Testimony pg 130 lines 18-20). At the time of the transmission the MISS SUSAN and the SUMMER WIND are 1.5 nautical miles apart.

59. During his Post Casualty Interview, [redacted] states that he first hears the MISS SUSAN on the radio when he clears Buoy 18, 1228:45 through 1229:03( [redacted] Post Casualty Interview pg 8 line 25), He also states that at this point he looks at his Personal Pilot Unit (PPU)[6] despite knowing that it was malfunctioning when he was near Buoy 16, and notes that she is between the Texas City Channel and the Houston Ship Channel, and she is going 3.5 knots, having slowed from the 6 knots she was making in the Texas City Channel.

60. At 1229:19 [redacted], the Master of the M/V SUMMER WIND, is heard to say "They will come very close" on the VDR, although the object of the discussion is not defined during this statement. He also points something out to [redacted], who acknowledges.

61. At approximately 1232, the first communication between the M/V SUMMER WIND and the UTV MISS SUSAN occurred on Channel 13. The substance of this communication was [redacted] asking [redacted] "how am I looking to you on your plotter over?" [redacted] replies "well if you keep on going, I'm going to get you unless you're doing about 7 or 8 knots cause right now I'm less than three quarters of a mile from you, you ain't got to the channel yet." Based on this exchange, it is at this point that both parties must be aware that a risk of collision exists. During this transmission, [redacted] indicates that the vessels were approximately one-half mile apart. This distance is confirmed by the vessel positions indicated on the PAWSS playback and Automated Information System[7] (AIS) data. None of this exchange was heard by the VTC. It was during this timeframe that OS1 [redacted] and [redacted] were changing watches at Sector 1/2 (see #57), which is likely the reason this exchange was not heard.

62. [redacted] stated that when he came out of the fog, he got the first visual contact with the MISS SUSAN, and there was about 1 ship length between them.

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[6] A PPU is a portable, computer based system that a pilot brings onboard a vessel to use as a decision-support tool for navigating in confined waters. These units are typically used to display an electronic chart, the vessel's position and movement in real time, and information about the location/movement of other vessels via an AIS interface. In Houston, the Houston Pilots Association has purchased these units and distributed them to their pilots. The pilots keep the units in their possession, and are responsible for ensuring that they are appropriately updated and maintained. In his testimony (pg – line -), Captain Pizzitola indicated that the PPU has an ARPA function.

63. Just before the collision, the M/V SUMMER WIND was at Full speed, which is 90 RPM's. The actual speed over ground (SOG) is dependent on environmental variables such as current and weather. According to the VDR and PAWSS data, the SUMMER WIND's SOG at the time of collision was 12.2 kts.

64. Once the two vessels determined they were at risk of collision after their first communication at 1232, each vessel took the following collision avoidance measures:

- MISS SUSAN – Hard Starboard rudder (12:32:35)
- SUMMER WIND – Dead Slow (12:33:12)
- SUMMER WIND/MISS SUSAN – Agree to a port to port passing arrangement (12:33:33)
- SUMMER WIND – Full Ahead (12:33:47)
    - In his testimony, [redacted] states that his "rudder's are already getting robbed by a minimum of 2 knots flood…….in order to get full steerage I have to bump it up to full maneuvering"
- SUMMER WIND - Starboard, from 0322 to 0324 (12:34:10)
    - In his testimony, [redacted] indicates that he wanted to get on the "red" side in order to meet the MISS SUSAN in a port to port passing arrangement.
- MISS SUSAN – Backing (12:34:27)
    - This is verified by [redacted] 's radio transmission heard on the VDR and on the PAWSS data.
- SUMMER WIND – Hard Starboard (12:34:53)
- SUMMER WIND/MISS SUSAN – **Point of Impact (12:35:02)**
- SUMMER WIND – Stop Engines (12:35:04)
- SUMMER WIND – Full Astern (12:35:07)

65. Damages to the involved vessels were as follows:

a. M/V SUMMER WIND: Minor rippling of shell plating and several sharp indentations, all in way of the bulbous bow. Repair cost was estimated at **$350,000.00**.

b. KIRBY 27706: Barge sustained damage primarily to the starboard side of the bow, the #1, #2 and #3 starboard wing tanks. The #2 starboard cargo tank also sustained significant damage. Repair cost was estimated at $790,000.00

c. KIRBY 27705: Barge sustained a 6 foot long and 12 inch deep inset on its stern box. The barge was issued a CG-835 and allowed to discharge cargo before proceeding to a shipyard for repair.

66. Post incident drug and alcohol testing is required by regulations on those individuals determined to be "directly involved" in the marine casualty. U.S. Coast Guard regulations also require that active duty and reserve military members be subject to random, probable cause, and post-accident alcohol and chemical tests. Additionally, civilian personnel serving as VTS watch standers are subject to U.S. Department of Transportation policies for random, pre-employment, probable cause and post-accident testing.

| | Personnel Tested | Position | Directly Involved? | Alcohol Tested w/in 8 Hrs | Drug Tested w/in 32 Hrs |
|---|---|---|---|---|---|
| **MISS SUSAN** | [redacted] | Captain | Yes | Yes | Yes |
| | | Mate/Pilot | No | No | Yes |
| | | Tankerman | No | No | Yes |
| | | OS | No | No | Yes |
| | | Crewman | No | No | Yes |
| | | Tankerman | No | No | Yes |
| **SUMMER WIND** | | Pilot | Yes | Yes | Yes |
| | | Captain | Yes | Yes | Yes |
| | | 2nd Officer | Yes | Yes | Yes |
| | | 2nd Engineer | No | Yes | No |
| | | 3rd Engineer | No | Yes | No |
| | | 4th Engineer | No | Yes | No |
| | | Bos'n | Yes | Yes | Yes |
| | | AB | Yes | Yes | Yes |
| | | Oiler | No | Yes | No |
| | | Chief Officer | Yes | Yes | Yes |
| | | Chief Engineer | No | Yes | No |
| **VTS** | | Watch Supervisor | Yes | Yes | Yes |
| | | Watchstander | Yes | Yes | Yes |
| | | Watchstander | Yes | No | No |

Figure 8: Drug and Alcohol Test Results

* The result for the initial urine specimen of one of the remaining Controller's was returned as [redacted] This member was retested in accordance with the Civilian Drug and Alcohol Policy and those results were [redacted]

** Due to an oversight, one member who had been relieved of watch just prior to the incident was not tested.

## Analysis

1. Based on the testimony given, [redacted] calculated the Closest Point of Approach (CPA) between the M/V SUMMER WIND and the UTV MISS SUSAN based on the speed she observed the M/V SUMMER WIND making (10 knots), and the speed she thought the UTV MISS SUSAN was going to make when entering the Houston Ship Channel from the Texas City Channel (4 knots). [redacted] testimony also indicated that she did not adjust for the SUMMER WIND'S increase in speed and the actual speed the UTV MISS SUSAN made, which was less than expected.

a. Based on analysis of the PAWSS and VDR data, from the time the M/V SUMMER WIND departed the anchorage, she had a steady increase in SOG, with minor fluctuations attributed to maneuvering, until reaching at max SOG of 13 kts before the incident.

b. There are two points at which the M/V SUMMER WIND was making 10 knots. At 12:25 at which time the vessels were 2.2 nautical miles apart, and at 12:28, at which time the vessels were 1.5 nautical miles apart. Further analysis of the timeline of events indicates that [redacted] most likely observed the M/V SUMMER WIND at 12:28 and used that information to calculate her CPA.

2. A review of the PAWSS data shows that when the MISS SUSAN nears the end of the Texas City Dike, she makes a turn to port taking her out of the established navigation channel as she

prepared to cross the Houston Ship Channel. According to local waterway users, this is a common local practice.

3. Based on the investigative review of the radio communications, the investigations team questioned why [redacted] would get the SUMMER WIND underway given his radio communication at 12:14:10 indicating that the fog was still heavy all the way to Morgan's Point, which is exactly the route he would be taking the SUMMER WIND. When questioned about this during the hearing, [redacted] indicated that his report was "a joke" and that they (the pilots) did that all the time to try to reduce non-pilotage traffic in the channel.

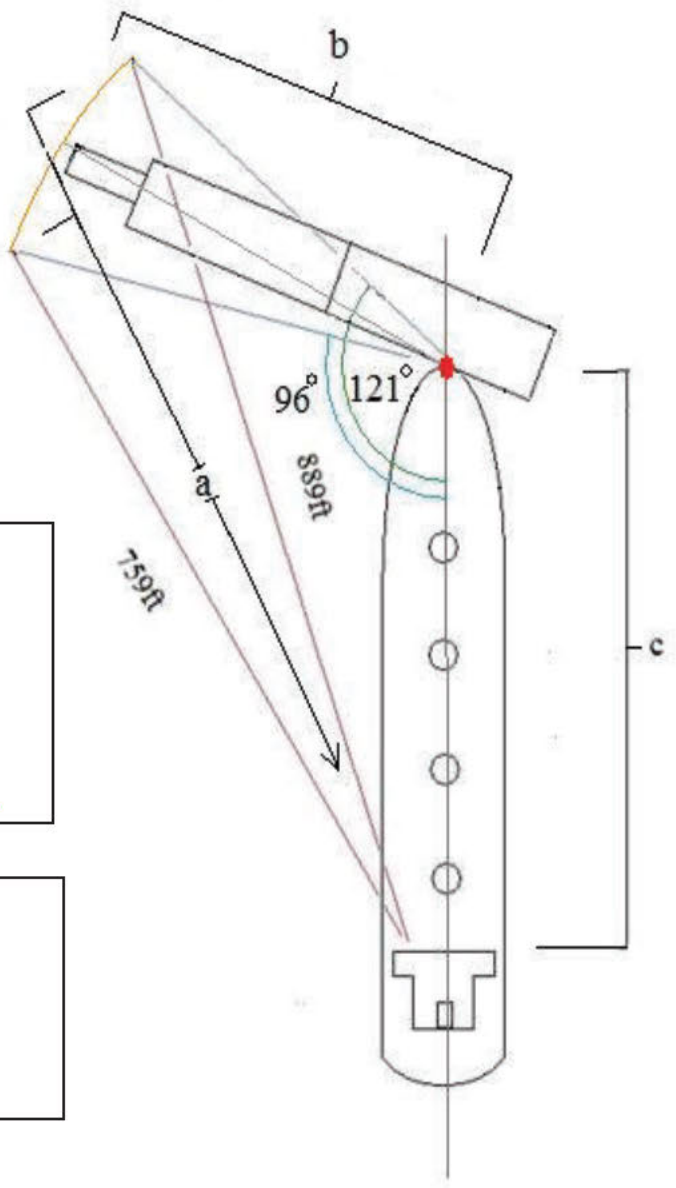
4. Utilizing video stills from M/V SUMMER WIND's CCTV, the investigations team was able to estimate the visibility at four points during this transit, as follows:

a. Departing the anchorage at 12:18 – The bow is visible at approximately 500 ft with visibility beginning to degrade.
b. The M/V SUMMER WIND is under way at 12:26 – The bow is visible with a minor improvement in visibility. The M/V SUMMER WIND is between buoys 16 and 18.
c. The M/V SUMMER WIND is under way at 12:33 – The bow is becoming difficult to see clearly.
d. At the time of the collision, at 12:35 – approximately 400 ft clear visibility, with the UTV MISS SUSAN barely visible at 874 ft.
e. Complete analysis indicates that the visibility could be considered poor for the entire transit.

**VISIBILITY ESTIMATE FROM THE BRIDGE OF THE M/V SUMMER WIND AT THE TIME OF THE COLLISION.**

This estimate is based on:

- The known lengths of the vessels involved.
- The point of impact on the Barge KIRBY 27706.
- The ability to see the UTV MISS SUSAN (as indicated in the bridge video).
- The known location of the video camera aboard the M/V SUMMER WIND.
- Due to the camera only providing a single reference point of the collision angle between the vessels. The angle was estimated to be within a range of 96 to 121 degrees.




DATA:

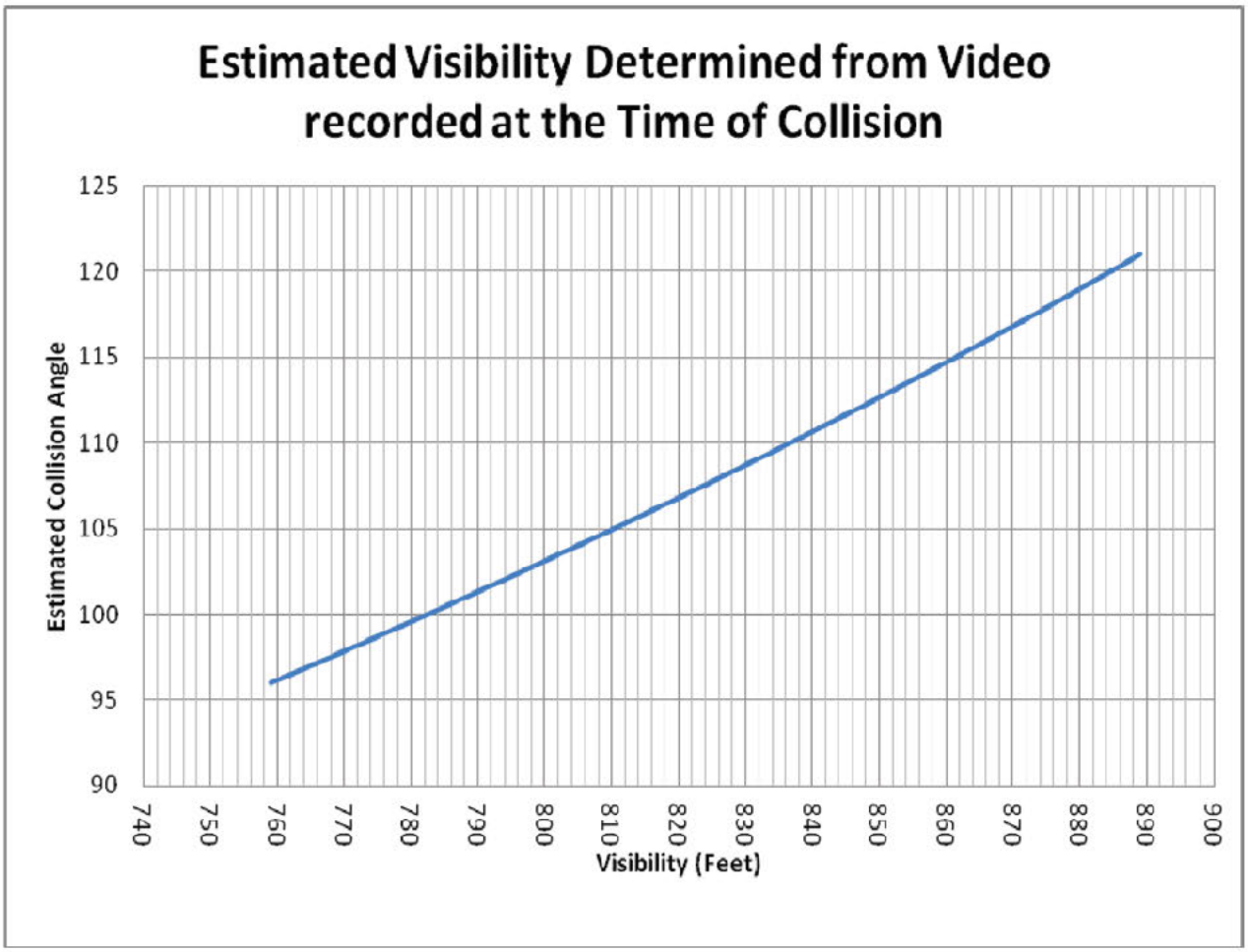
b = 520.7ft (impact to stern)
c = 501.5ft (camera to bow)
a = ? (estimated visibility)
θ = 96 – 121 (relative angle)

Note: (a) varies in proportion to the increase in angle between the vessels.

CALCULATIONS:

$$a^2 = b^2 + c^2 - 2bc(\cos 0)$$
$$a = \sqrt{b^2 - c^2 - 2bc(\cos 0)}$$
$$a = 759 - 889ft$$

Figure 9: Visibility Calculations and Graphic




Based on the available data the stern of the UTV MISS SUSAN can be seen at an estimated range of 824 ft. However the video shows the UTV MISS SUSAN only partially visible at that point. This is a result of the fog reducing the range of visibility from the bridge of the M/V SUMMER WIND.

Figure 10: Visibility Graph and Results

5. An analysis of the current Houston/Galveston VTS Users Guide, Houston/Galveston VTS Internal Operating Procedures and the deviations to the VTS regulations granted by the Eighth District Commander in 1997, indicates that a physical communications gap has been created. The deviations granted in 1997, specifically (1) the deviation from the requirement in 33 CFR 161.12(c) that all vessels 40 meters or longer and all towing vessels eight meters or longer are to maintain a constant listening watch on the VTS designated channel and (2) the deviation from the requirement in 33 CFR 161.19 that requires vessels to report information regarding their transit to the VTS, or their Sail Plan "at least 15 minutes before navigating a VTS area", are not compatible with current regulations designed around vessels with Automatic Identification System (AIS) capabilities. With regard to the first deviation, Coast Guard policy requires the VTC to monitor the designated VTS frequency, Channel 12 in this case, and Channel 13. Additionally, Coast Guard regulations require vessels to monitor the designated VTS frequency and Channel 13. However, the deviations granted by D8 in 1997 no longer require vessels to monitor the designated VTS frequency thereby increasing the potential for critical information

being disseminated by the VTS to be missed. In 2003 the regulations were updated to exempt vessels equipped with AIS from the requirement to provide voice Position Reports as long as their AIS was broadcasting continuously. One of the reasons given by the VTS in 1997 as justification for the deviation from the requirement in 33 CFR 161.12(c) was that the requirement became unnecessary due to the fact the VTS delivered customized summaries of relevant navigational and safety information to participating vessels at each checkpoint. However, this argument is no longer valid since vessels broadcasting AIS are not required provide voice Position Reports by the updated regulations and, therefore, may not receive these customized summaries. This creates a high-risk situation as evidenced by this incident, in that multiple critical radio transmissions by and regarding the MISS SUSAN were missed by both the VTC and the M/V SUMMER WIND preceding the incident, and the VTC never engaged with either vessel once the emergency situation began to develop.

6. During his testimony, [redacted] indicated that he did not hear the multiple transmissions made by the MISS SUSAN giving her position and intentions on Channel 13. According to the VTS Users Guide, dated July 2008, all VTS users are required to monitor the Bridge-to-Bridge frequency, Channel 13. He could not give a satisfactory answer as to why he did not hear the transmissions. Additionally, during the master/pilot exchange, no mention was made of the multiple UTV's and barges that were transiting in the area, only the other deep draft traffic. These factors would indicate a lack of regard for waterway users other than vessels with a state pilot.

7. Analysis of the VDR transcript indicates some evidence that [redacted], the Master of the M/V SUMMER WIND, was aware of the UTV MISS SUSAN at 1229 at which time he is heard to say "They will come very close" on the VDR, although the object of the discussion is not defined during this statement. There is no further discussion between the pilot and the master at this time. This comment is heard immediately after the radio communication between the UTV MISSION and the UTV MISS SUSAN in which the question of whether the UTV MISS SUSAN will cross the channel before the M/V SUMMER WIND was asked. This is also consistent with the statements made by [redacted] during his initial interview in which he states that he began looking at the UTV MISS SUSAN after becoming aware of it just prior to the first radio communication between both vessels.

8. The location where this collision occurred is a very busy waterway and the location where east and westbound UTV traffic on the ICW cross the main deep draft ship channel. VTC Houston Galveston reported the average daily traffic along the Houston Ship Channel in 2013 included over 55 ships, 345 tow operations including barge movements, and 297 ferry transits for a total of over 730 transits a day with an average of 75 ships in port. According to this data, total transits decreased more than 16 percent from 2011 to 2013, and daily deep-draft vessel movements decreased from 287 in 2011 to 96 in 2013. Data provided by the VTS also showed an increase in Marine Casualties, up 85.9% in one year (2013 = 264 vs. 2012 = 142). (http://www.uscg.mil/vtshouston/docs/sww_2014_files/frame.htm)

9. A review of available data indicated no record of previous collisions at this specific location. During the hearing, all witnesses were queried as to their assessment of the vessel traffic level on the morning of the incident. The witnesses all indicated that the traffic was light to moderate. None of the witnesses thought the traffic was heavy or overly congested at the time of the incident.

10. The predicted tidal current at the time of the collision for the Houston Ship Channel was reported to be 1 knot on the flood by the VTC. This data is collected from the National Oceanographic and Atmospheric Administration's website which provides feeds for their local gages.

a. [redacted] stated in his testimony that he believed the M/V SUMMER WIND was experiencing a 2 knot flood tide.

b. [redacted] indicated that she calculated the CPA for the UTV MISS SUSAN and the M/V SUMMER WIND using 1 knot of flood current as broadcast by the VTC.

c. The investigations team calculated the flood current at 0.8 knots as follows: with the M/V SUMMER WIND making Full Ahead as verified by the VDR Engine Order Telegraph, the vessel is shown as making 13 knots speed over ground on the VDR. The ships specification for full speed in ballast is 12.2 knots. This would indicate a following current of 0.8 knots.

d. At 1232, the VTC Controller is heard to say "the current meter, right now is reading about a half oh almost one knot on the flood right now, decreasing."

e. Analysis of the PAWSS playback appears to indicate a strong impact by the inbound flood current on the UTV MISS SUSAN's barges as she turned out of the Texas City Channel. This is supported by the erratic course and speed changes as she entered the Houston Ship Channel, and also supported by Captain Hartman's testimony.

f. [redacted] stated that based on his estimation of the conditions, the M/V SUMMER WIND was experiencing a 2 knot flood current, and because of that he needed to keep the M/V SUMMER WIND at Full Maneuvering speed in order to maintain steerage.

g. Analysis of the PAWSS playback shows the M/V SUMMER WIND effectively maneuvering at speeds of 8.3 kts as she came around the wrong side of Buoy 16 to give another deep draft vessel room to make a turn.

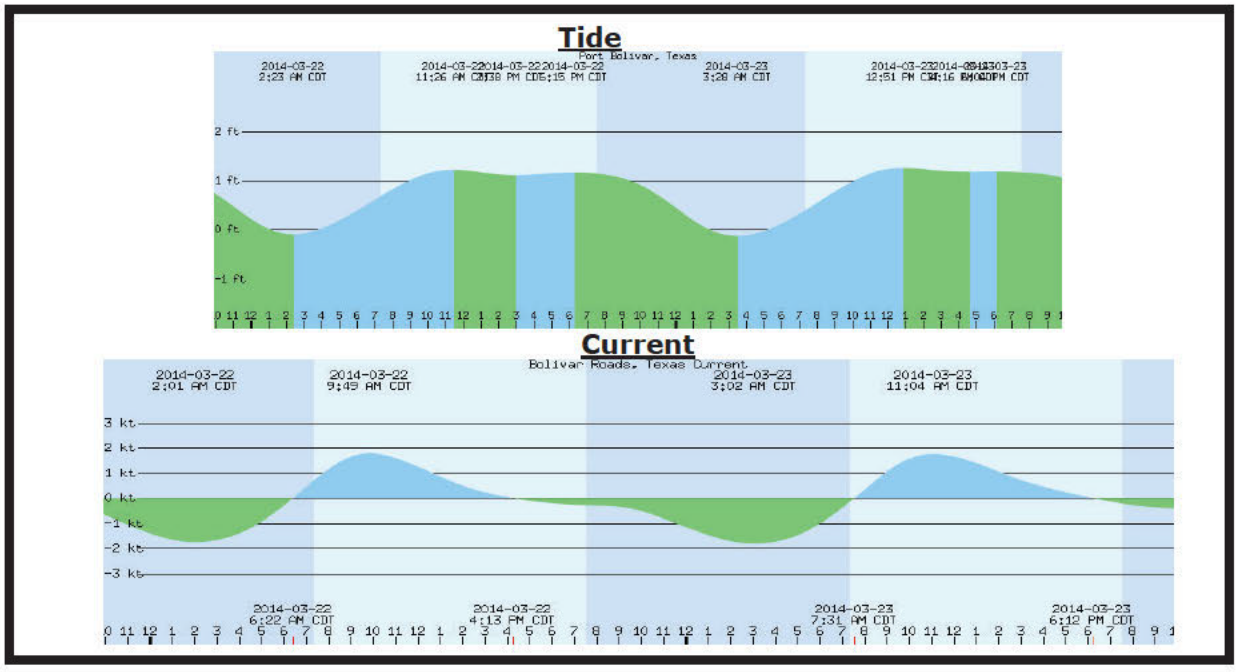



Figure 11: Tide and Current tables for the date of the incident (Source: GeoGraphics.com)

11. It could never be verified by the investigations teams whether the lights on the barges in the tow of the UTV MISS SUSAN were energized. Both [redacted] and [redacted] stated that the lights on the barges are battery powered and have an LED light sensor that activates the lights. This incident occurred during daylight hours and during conditions of restricted visibility. According to statements by both Captains, normal procedures for the vessel's Tankerman are for them to verify that the lights are on and in position ([redacted] pg 69 and [redacted] pg 26). Neither [redacted] nor [redacted] sent anyone to specifically verify whether the lights were activated or not, both assuming that is was done because "it was part of their normal procedures", however, [redacted] stated specifically in her testimony that the lights *were* activated when she took the watch from [redacted]. None of the witnesses from the M/V SUMMER WIND could state with certainty whether they saw lights on the barges, and examination of available video footage by the investigations team was inconclusive.

12. [redacted] indicated in her testimony that the settings for the UTV MISS SUSAN in the AIS system included the entire length of the tow, to include the UTV and the two barges she was pushing. [redacted] indicated in both his preliminary and his hearing testimony that the UTV MISS SUSAN was only showing up with the length of the UTV and the barges were not included. Analysis of data from the VDR and the Port of Galveston indicates that the barges were not included in the tow length of the UTV MISS SUSAN in the AIS, and also the vessels destination was listed as Houston vice the actual immediate destination which was Bolivar. The tags in PAWSS playback indicate that there are two barges in UTV MISS SUSAN's tow; however, these tags are manually entered by VTS personnel when the vessel checks in to the system. There is no regulatory requirement to include the barges in the settings at this time, only "guidance" as prescribed in 33 CFR 164.46(b)(circa 2003) which governs the "requirements for Vessel Bridge-to-Bridge radiotelephones in §§ 26.04(a) and (c), 26.05, 26.06 and 26.07 this chapter, and also apply to AIS. The term "effective operating condition" used in § 26.06 includes accurate input and upkeep of AIS data fields." The Encoding Guide provided guidance on how to input the data, but it was not a requirement. It would, however, certainly be considered a good marine practice to do so. Having said that, regardless of whether the setting included the barges or not, the UTV MISS SUSAN had broadcast over VHF-FM channel 13 at 1217, 1221 and 1222 her intentions and her tow configuration.

13. Analysis of [redacted] phone records and UTV MISS SUSAN's Air Card records indicate that [redacted] was not on the phone (voice) nor texting while on watch. The first captured voice call on [redacted] cell is 1314. The UTV MISS SUSAN's Air Card was on the whole time with no change during the captured time period.

14. [redacted] phone records were also analyzed and there is no indication that he was on the phone or texting during any critical portion of the transit.

15. The Inland Navigation Rules Act of 1980, also known as the "Rules of the Road", governs vessels transiting within the inland waterways of the United States. This investigation required a robust review of the applicability of the Rules of the Road to the involved vessels, which follows:

Inland Navigation Rule 5: Look – Out

**Every vessel shall at all times maintain a proper look-out by sight and hearing as well as by all available means appropriate in the prevailing circumstances and conditions so as to make a full appraisal of the situation and risk of collision.**

- Although there was a bow lookout posted on the SUMMER WIND, there is evidence to indicate that [redacted] and [redacted] violated Rule 5 by not adequately monitoring radio communications on Channels 13 which would have alerted them of the MISS SUSAN's intentions in time to take timely and appropriate collision avoidance measures.

- [redacted] violated Rule 5 by not using all available means at all times to determine if a risk of collision existed, and violated company policy by not posting a look-out during restricted visibility operations. [redacted] stated in her testimony (pg 26) that the light sensors on the barges had activated the barge lights, which would indicate that the fog was dense enough to restrict the amount of light on the barges leading to the conclusion that restricted visibility conditions existed. Additionally, according to testimony by both [redacted] and [redacted], [redacted] activated sound signals just after assuming the watch from [redacted] (pg 27), which indicates that she felt the vessel was in restricted visibility as well, and should have posted a look-out.

Inland Navigation Rule 6: Safe Speed

**Every vessel shall at all times proceed at a safe speed so that she can take proper and effective action to avoid collision and be stopped within a distance appropriate to the prevailing circumstances and conditions.**

- There is evidence to indicate that [redacted] and [redacted] violated Rule 6 (a)(i) and (a)(iii) by not taking into account the restricted visibility conditions that were present for the majority of the transit, and by using incorrect/unverified information regarding the current to determine the actual speed required to maintain steering. Additionally, there is evidence to indicate that they violated Rule 6 (a) (ii) and (b)(v) by disregarding the tow and barge traffic that was also utilizing the waterway and visible on radar.

Inland Navigation Rule 7: Risk of Collision

**Every vessel shall use all available means appropriate to the prevailing circumstances and conditions to determine if risk of collision exists. If there is any doubt, such risk shall be deemed to exist.**

- There is evidence to indicate that [redacted] and [redacted] violated Rule 7(a) by not properly monitoring radio traffic or contacting vessels to verify their intentions to determine that a risk of collision existed. [redacted] violated Rule 7 (b) as he stated during the hearing that he did not use the ARPA function on the ship's radar, although it was, by all reports, properly functioning while the ARPA function on his PPU was not. Finally, [redacted] violated Rule 7 (c) by making assumptions of the MISS SUSAN's intentions after he observed her on radar and also because, as he stated in his testimony (pg 123), he continued to

use information from his PPU, specifically the speed of the MISS SUSAN, although he has indicated that it was not properly functioning, that it was "froze up".

- There is evidence to indicate that [redacted] violated Rule 7(a) by not making direct radio communication with the M/V SUMMER WIND upon first observing her on radar to determine if a risk of collision existed and Rule 7(c) by making an assumption that the M/V SUMMER WIND's speed would not change after [redacted] first became aware of her and calculated the CPA between the two vessels based on the initial observed speed of 10 knots.

Inland Navigation Rule 8: Action to Avoid Collision
**Any action taken to avoid collision shall, if the circumstances of the case admit, be positive, made in ample time and with due regard to the observance of good seamanship.**

- There is evidence to indicate that [redacted] and [redacted] each violated Rule 8 (a) by not taking adequate and timely action immediately following the determination that a risk of collision existed. While they did take actions, none recognized the developing extremis situation quickly enough and therefore their collision avoidance measures were not sufficient to prevent the casualty. This fact is supported by radio transmissions between the vessels at 1232 which clearly indicates the belief that a risk of collision existed, yet [redacted] took no specific action to mitigate the risk. The Inland Rules of the Road clearly state that if there is doubt, then risk of collision can be assumed to exist.

- There is evidence to indicate that [redacted] and [redacted] violated Rule 8 (e) by failing to reduce speed or come to a stop to avoid the collision following the determination that a risk of collision existed. The Maneuvering Characteristics chart on board the SUMMER WIND at the time of the incident indicates that it takes 8.28 minutes and 1.28 miles to go from Full Sea Speed to Stop. Full Sea Speed for the SUMMER WIND is 115 RPM's and 15.5 kts. At Full Speed, the SUMMER WIND would be making 90 RPM's and about 14 kts in a normal ballast condition, which would have lessened the stopping time and distance. [redacted] did initially slow the vessel; however, once the passing arrangements were made with [redacted], he brought the SUMMER WIND back up to Full-Maneuvering Speed ([redacted] hearing testimony, pg 107). [redacted] can be heard on the VDR and PAWSS playback stating that he could slow down, but that he would still hit the MISS SUSAN, and also in his testimony ([redacted] Hearing Testimony, pg 120). The Maneuvering Characteristics chart on board the SUMMER WIND at the time of the incident also indicates that the minimum steering speed in a normal ballast condition is 3.9 kts. Even with a 2 knot flood current, the SUMMER WIND still could have maintained steerage at a much slower speed.

- [redacted] violated Rule 8 (f) (i) and (ii) by impeding the safe passage of another vessel and did not take early action to ensure sufficient room for the safe passage of the M/V SUMMER WIND.

Inland Navigation Rule 9(d): Narrow Channels
**A vessel shall not cross a narrow channel or fairway if such crossing impedes the passage of a vessel which can safely navigate only within that channel or fairway.**

- There is evidence to indicate that [redacted] violated Rule 9 (d) by crossing the channel and impeding the passage of the SUMMER WIND who could only safely navigate within the confines of the narrow channel.

Inland Navigation Rule 15: Crossing Situation
**When two power-driven vessels are crossing so as to involve risk of collision, the vessel which has the other on her starboard side shall keep out of the way and shall, if the circumstances of the case admit, avoid crossing ahead of the other vessel.**

- While this was a crossing situation, Rule 15 falls under subpart II of the Navigation Rules, and by Rule 11, applies only when vessels are in sight of one another. Rule 3(j) states that vessels are in sight of one another "only when one can be observed visually from the other." In this case, the vessels had observed each other by radar, but not visually before the crossing, <u>therefore Rule 15 does not apply</u>.

Inland Navigation Rule 19: Conduct of Vessels in Restricted Visibility
**Applies to vessels not in sight of one another when navigating in or near an area of restricted visibility.**

- There is evidence to indicate that [redacted] and [redacted] violated Rule 19 (c) by not giving due regard to all prevailing circumstances as indicated by his violations of Rules 5, 6, 7 and 8. There is evidence to indicate that [redacted] violated Rule 19 (c) by not giving due regard to all prevailing circumstances as indicated by her violations of Rules 5, 6, 7, 8 and 9.

- There is evidence to indicate that [redacted] and [redacted] violated Rule 19 (d) by failing to determine that a risk of collision existed early enough to take effective evasive action. There is evidence to indicate that [redacted] violated Rule 19 (d) by failing to determine that a close quarters/risk of collision was developing early enough to take effective avoiding action.

16. Throughout the investigative analysis of the VDR transcript, [redacted] routinely only uses "Pilot 130" as an identifier during his radio transmissions. There are several transmissions where he uses no identifier at all. This is common practice among HPA pilots in this area and across the US, and has been cited as a concern in previous investigative reports by the National Transportation Safety Board. When questioned about this practice by the investigations team, the HPA pilots indicated that the vessel names are often too difficult to pronounce, and that the use of the pilot number is enough information for waterways users to identify them, where they are

and their intentions. While this may be true for other pilots transiting the area, it may not be the case for all waterway users as pilot numbers are not typically distributed to the public. Also, with the heavy reliance on AIS data which shows vessel names on the display screen and not pilot numbers, the need to use the vessel name as the primary identifier is even more important than in the past.

17. [redacted] alleges that his PPU malfunctioned shortly after getting underway on the M/V SUMMER WIND. This is not verifiable via the VDR transcript or during post-incident interviews with the bridge team of the M/V SUMMER WIND. The PPU was analyzed by LCG Discovery Experts at the behest of [redacted] representative and their analysis was limited to the user activity and Raven Software logging. Although the analysis confirmed the PPU stopped functioning normally, no cause was identified in the report. The report also failed to specify to what degree the PPU was still displaying reliable information. During the interview with [redacted], he stated that he had cross checked the information that he could see on the PPU with the vessels equipment and it was the same.

18. According to his testimony, [redacted] continued to rely on the data from the unit to make decisions despite being aware that the PPU was not properly functioning.

19. A review of statements from the VTC Controllers revealed that there were 3 different Controllers in the position responsible for Sector 1 and 2, where the incident occurred, within approximately 20 minutes. There is no indication that a thorough pass down of vessel traffic in the vicinity of the Texas "Y" was completed prior to any one of these watch reliefs.

**Conclusions**

1. In accordance with reference (c) the Initiating Event, or the first unwanted event for this casualty was:

   a. The UTV MISS SUSAN and her barges left the Texas City Channel and as she entered the Houston Ship Channel began to rapidly lose speed and maneuver erratically which negatively impacted all agreed upon passing arrangements, meeting points and calculated CPA's for all water way users in the immediate vicinity.

2. The causal factors that led to this casualty are as follows:

   a. Environment: There were 2 environmental causal factors.

      (1) Fog: The fog condition in the Houston Ship Channel and surrounding areas was clearly a factor in this incident.

         (a) There is evidence to indicate that both involved vessels were sounding appropriate fog signals at the time of the incident.

         (b) It could not be verified whether the navigation lights on the barges being pushed by UTV MISS SUSAN were activated at the time of the incident, so that cannot be ruled out as a causative factor to the collision.

(2) Current: There is discrepant information between the parties on the actual current each vessel experienced, or expected to experience.

(a) The inbound flood current had a strong impact on the UTV MISS SUSAN's barges as she turned out of the Texas City Channel and onto a course bringing her perpendicular to the current. This is supported by the erratic course and speed changes as she entered the Houston Ship Channel, and also supported by [redacted] testimony.

(b) The investigations team has been unable to find any evidence to support a 2 knot current, and the investigations teams calculation of 0.8 knots of current based on the Speed Over Ground of the M/V SUMMER WIND and the vessel's handling characteristics, as indicated by the pilot card for this transit and discussed in the analysis section of this report, would indicate that [redacted] estimate of the current was incorrect.

(c) Given the above, the need to maintain Full speed is called into question, particularly in conditions of restricted visibility. The investigations team concludes that if [redacted] had directed a reduction in speed or an attempt to stop once he determined that a risk of collision existed as required by the Inland Navigation Rules of the Road, the risk of collision would have been reduced and it is likely that the damage would have been less severe.

b. Personnel: There are 14 causal factors that involve human error on the part of the pilot on the M/V SUMMER WIND, the master of the M/V SUMMER WIND, the relief pilot of the UTV MISS SUSAN, and the VTC Controllers.

(1) [redacted]:

(a) The investigations team concludes that [redacted] violated multiple Inland Navigation Rules as discussed in item #15 in the Analysis portion of this report.

(b) The transit into Houston from the anchorage was the first time [redacted] had been in command of a vessel making an inbound transit. As the person in command of the SUMMER WIND, [redacted] relied heavily on the experience of the pilot who had made that transit many times, in all conditions, according to [redacted] testimony, as would be expected of someone who had been employed as a Houston Ship Pilot for 24 years. [redacted] abdicated all responsibility for ships speed and maneuvering in restricted visibility conditions to [redacted].

(2) [redacted]:

(a) The investigations team concludes that [redacted] violated multiple Inland Navigation Rules as discussed in item #15 in the Analysis portion of this report.

(b)The investigations team concludes that [redacted] misjudged the effect that the current would have on the speed and maneuverability of her tow, and did not adjust her CPA to the M/V SUMMER WIND accordingly.

(c) The investigations team has concluded that [redacted] did not take proper notice of all traffic transiting in the area, in particular the M/V SUMMER WIND. This is a particular danger during reduced visibility, as was the case at the time of this incident.

(3) [redacted]:

(a) The investigations team concludes [redacted] violated multiple Inland Navigation Rules as discussed in item #15 in the Analysis portion of this report.

(b) The investigations team has concluded that [redacted] did not take proper notice of all traffic transiting in the area, in particular tow and barge traffic. This is a particular danger during reduced visibility, as was the case at the time of this incident.

(c) The investigations team has concluded that [redacted] overestimated the flood current that the M/V SUMMER WIND was experiencing. Additionally, based on the calculations discussed in item #14 in the Analysis portion of this report, the M/V SUMMER WIND could have maintained steerage at a slower speed, even with a 2 knot flood current. Therefore, the investigations team concludes that he did not need to maintain Full Maneuvering speed in order to maintain steering and was travelling at an excessive speed under the prevailing circumstances and conditions. The investigations team further concludes that had the the speed of the M/V SUMMER WIND been reduced, the impact and the damage to the KIRBY 27706 would have been reduced, likely reducing the amount of oil that entered the waterway.

(d) The investigations team has concluded that [redacted] did not adhere to the published VTS User's Manual and 33 Code of Federal Regulations 161.12 by not monitoring Channel 13 sufficiently to hear the multiple broadcasts of and about the UTV MISS SUSAN and its intentions to cross the Houston Ship Channel. This includes the critical transmission at 1228 that [redacted] felt that she would beat the M/V SUMMER WIND across the channel.

(e) The investigations team concludes that [redacted] continued to rely heavily on data supplied by his PPU, which, according to his own testimony, was not operating properly. The starboard radar of the SUMMER WIND is marked as having ARPA capability. Although the plotting function of the PPU was not working, at no time did he refer to the SUMMER WIND's ARPA to determine risk of collision.

(4) VTC Houston-Galveston:

(a) The multiple changes of controllers at watch Sector 1 & 2 took place at the same time multiple critical radio transmissions were made between the vessels, including

UTV MISS SUSAN stating her intentions to cross the Houston Ship Channel, the communication from UTV MISSION to UTV MISS SUSAN asking if she was going to make it across the channel in front of the M/V SUMMER WIND, and the initial communication between the UTV MISS SUSAN and the M/V SUMMER WIND that included the words "if you keep on going I'm going to get ya". None of these transmissions were heard by the controllers.

(b) This is verified by the testimony of the controller ( ) on watch at the time of the collision when he stated that he was aware of both vessels, but he made the assumption, as did , that the UTV MISS SUSAN was going to wait to cross the channel until the M/V SUMMER WIND had passed. This was an assumption made by the controller based on his observations of similar situations, but he never communicated directly with the UTV MISS SUSAN to verify her intentions, which indicates a bias that in this case, removed the VTC as a critical defense mechanism.

(c) OS1 assumed the watch at Sector 1 & 2 and was relieved moments later by Mr. . When asked the reason for this relief, Mr. indicated that he was aware that OS1 was less comfortable in that watch position and as the more experienced controller, he felt that with the weather clearing and the traffic picking up, he would be more effective in that position. There is no standard watch relief process, however, the information provided to Mr. when he relieved the watch was minimal by all accounts.

(d) Although the VTC maintains a passive listening watch on Channel 13, the controller was unable to hear some of the transmissions being made by the UTV MISS SUSAN announcing her intentions on Channel 13 because he was actively monitoring/transmitting on Channel 12 at the same time to other vessels.

c. Equipment: There are 2 causal factors that involve equipment.

(1) **PPU:** According to testimony and independent analysis, there are indications that Personal Pilot Unit (PPU) malfunctioned shortly after getting the M/V SUMMER WIND underway from the anchorage. The investigations team is concerned with the fact that, according to his own testimony, continued to rely on the data from the malfunctioning PPU during the transit despite the availability of other properly functioning pieces of navigational equipment on the bridge of the M/V SUMMER WIND during that transit.

(2) **VTS:** The controller at Sector 1 & 2 is required to observe the activities occurring on the waterway on 8 PAWSS monitors, multiple CCTV screens, actively monitor and respond to radio communications on Channel 12, and maintain a passive listening watch on Channel 13. The investigations team concludes that this is a robust workload for one controller, particularly during periods of high traffic, and/or reduced visibility and could be more effectively managed so as to reduce risk within the waterway. Locations where UTV's heading east and west on the ICW where they must cross the deep draft shipping channel should be given additional oversight, especially during periods of restricted visibility.

d. Safety Standards: There are 2 causal factors that involve safety standards.

(1) According to the VTC Houston Galveston Internal Operating Procedures, VTC watch standers must maintain a listening watch on Channel 13, the Bridge to Bridge frequency (H-G IOP, pg 50). Additionally, according to the VTS Users Guide and 33 CFR 26.04(d) users must maintain a listening watch of Channel 13 and other VTS designated frequencies. The investigations team concludes that [redacted] was not effectively monitoring Channel 13 during his transit on the SUMMER WIND. Had [redacted] complied with the regulatory requirement noted in 33 CFR 161.12, he may have been aware of [redacted] intentions to cross the channel in front of the M/V SUMMER WIND earlier, enabling effective and timely collision avoidance measures.

(2) The most current regulations, 33 CFR 161.21(a), and policies governing radio communications by VTS users in the Houston/Galveston VTSA state that users are not required to monitor Channel 12, additionally user with functioning AIS are required to make contentious, all stations, AIS broadcast, in lieu of voice position reports. This negates the activity that was cited as the reason for the deviation granted by the Eighth District Commander in 1997 exempting VTS users from monitoring Channel 12.

e. Organization: There are 2 causal factors that involve organizational factors.

(1) The Culture of VTC Houston-Galveston

(a) It is evident from the statements and actions of the VTC watchstanders and the VTC Director that the internal culture of VTC Houston-Galveston is to maintain a very passive approach to the management of the vessel traffic in the Houston Ship Channel. In spite of the fact that the National VTS Operating Procedures and 33 Code of Federal Regulations 161.11(b) state that the VTS may "control, supervise, or otherwise manage traffic" in times of restricted visibility, Mr. [redacted] testimony indicates that in "my IOP we have restricted the operators from the ability to direct the use of any controlling forces on a vessel" ([redacted], pg 48). This IOP restriction is not in agreement with 33 CFR 161.11(b) undermining the purpose and intent of a VTS as noted in 33 CFR 161.1 (a), ".....that will enhance navigation, vessel safety, and marine environmental protection, and promote safe vessel movement by reducing the potential for collisions, rammings, and groundings, and the loss of lives and property associated with these incidents within VTS areas.....".

(b) During the review and analysis of the PAWSS and VDR data of the radio traffic involving VTC, there was a clear distinction between the manner in which the controllers interacted with waterway users. There was considerable deference paid to the deep draft pilots, which was not evident in the communications with the UTV operators. An example follows:

- At 1200:48, the UTV BUTTERCUP was transiting near Sea Wolf Park and in no danger. The VTS controller [redacted] actively engaged the vessel to ascertain its status and intentions.

- In contrast, during her transit from the anchorage the morning of March 22nd, the M/V SUMMER WIND is clearly shown on the VTC recordings leaving the channel and passing a buoy on the wrong side at 1223, and at no time did the VTC controller make any inquiries to the vessel to ascertain its status and intentions, or question the pilot's actions.

(2) HPA Culture: The members of the Pilot Associations are given tremendous latitude to make decisions with the potential to impact large numbers of stakeholders and waterway users. The investigations team concludes that [redacted] displays a level of indifference and lack of consideration or concern for non-pilotage users of the waterway as described below:

(a) [redacted] never identified the vessel he was on during any of his radio transmissions by name. When questioned about this during the hearing, he stated that "he can't pronounce most of them's name. So I use either unit 130 or in bound ship……this is discussed on every pilot. They understand which ship are you". While the pilots may be able to identify each other that way, it is unlikely that the numerous waterway users that do not require pilotage will be able to easily use that information in their risk management decisions as pilot numbers are not generally released to the public, nor are they displayed on AIS. This issue has been identified and brought to the attention of the Houston Pilot Association ([redacted] Hearing Testimony, pg 183) and the US Coast Guard through recommendations made by the NTSB following the collision between the EAGLE OTOME, the GULF ARROW and subsequent collision with the DIXIE VENGEANCE in Port Arthur, Texas in January 2010.

(b) During his testimony, [redacted] indicated that he did not hear the multiple transmissions made by the MISS SUSAN giving her position and intentions on Channel 13. He could not give a satisfactory answer as to why, although many transmissions regarding the MISS SUSAN and its intentions are clearly heard on the SUMMER WIND's VDR.

(c) During the master/pilot exchange onboard the M/V SUMMER WIND, when discussing vessel traffic in the area they would be transiting, [redacted] made no mention of the multiple UTV's and barges that were transiting in the area, only the other deep draft traffic.

(d) At 1214 [redacted] gives a report of the fog condition to another vessel over the radio, stating that "it is socked in all the way to Morgan's Point". During his testimony he stated that this was a common "joke" that the pilots used in order to minimize the amount of traffic by non-pilotage vessels on the waterway.

(e) According to the State of Texas 1987 Transportation law, pilots are limited in their liability in accidents to $1,000.00[8]. This provides a significant protective

[8] Texas Transportation Code § 66.083. The limitation on liability does not apply in cases of a pilot's willful misconduct or gross negligence.

element to the HPA pilots, which is in stark contrast to the impact their decisions may have on other waterway stakeholders.

3. There is no evidence that drugs, alcohol, or other medical impairment contributed to this casualty. Due to an oversight, one of the VTC members, [redacted], who had been relieved of watch just prior to the incident, was not tested. However, as an [redacted] who is subject to drug and alcohol testing at any time, he is considered by the investigations team to be low risk.

4. There is no evidence that either [redacted] or [redacted] were distracted by inappropriate use of cellular telephones or internet during the time immediately preceding or at the time of the incident.

5. The investigations team concludes that there is no evidence that excessive vessel traffic congestion contributed to this casualty.

6. Both mariners were properly licensed at the time of this incident.

7. There is no evidence that any act of misconduct, incompetence, and/or willful violation of law committed by any officer, employee, or member of the Coast Guard contributed to this casualty. However, there was a distinct lack of professionalism which bordered on negligence demonstrated by two of the Controllers on watch in the VTC the morning of the incident. Although the guidance on watch relief is not specific as to length or content, the watch relief that took place between [redacted] and Mr. [redacted] was clearly inadequate for any watch, but particularly one that included restricted visibility conditions.

[redacted]: "The only kind of pass down we had was 'We have fog, ships and tows.' I wasn't really passing anything". ([redacted] interview, pg 9, lines 24-25)

**Recommendations**

**Safety:**

1. It is recommended that the HPA require all pilots to strictly adhere to the FCC requirement to identify themselves by vessel name rather than pilot numbers. This is the second time this recommendation has been made. The NTSB made a recommendation on this issue in the wake of the collision between the EAGLE OTOME, the GULF ARROW and subsequent collision with the DIXIE VENGEANCE in Port Arthur, Texas in January 2010.

2. It is recommended that the HPA require all pilots to strictly adhere to the VTS requirements regarding the use/monitoring of mandated VHF marine radio frequencies, and take remedial action in the future against pilots who fail to do so.

3. It is recommended that the Governor of the state of Texas review the current policies and practices in use by the Pilot Board Investigation and Recommendation Committee (PBIRC) to meet the requirements of Texas State Transportation Code Title 4 to ensure complete impartiality and encourage safe pilotage in state waters. The Pilot Board consists of pilots (3) and maritime industry stakeholders (6) or people affected by pilots, and one of the functions of the board is to

initiate investigations or hearings into accidents or actions by the pilots, and make recommendations to the Governor with regard to their pilots' license. A review of pilot board records indicates that very little remedial or investigatory action has been taken by this board in 15 years.

4. It is recommended that the Governor of the state of Texas consider revising or rescinding the 1987 Transportation law that limits state pilots' liability post-accident to $1,000.00. As with any other position of great responsibility, there should be a commensurate level of accountability for decisions made which have the ability to impact the entire port community. Unless the level of accountability is equal to the level of responsibility in making decisions that impact all users of a major waterway, there will be no impetus for change in the HPA culture.

5. It is recommended that the Captain of the Port of Houston/Galveston consider revising the VTC Watch Procedures to include active monitoring of radio communications on Channel 13. The robust workload of the Controller at Sector 1 & 2 makes active monitoring of bridge to bridge traffic challenging, and in this case led to the Controller missing several key communications that may have triggered VTC intervention and potentially mitigated the situation between the MISS SUSAN and the M/V SUMMER WIND. Currently, Channel 13 is broadcast in the VTC watch space through a speaker, but that procedure is clearly inadequate as evidenced by this incident. Tasking the watch supervisor or a Controller not currently manning a station with this task specifically, particularly during periods of high traffic, and/or reduced visibility could significantly reduce risk within the waterway.

6. It is recommended that the Captain of the Port of Houston/Galveston consider converting the Active Duty billets currently in the VTS to civilian Controller billets. There is a steep learning curve for a Controller to become not just minimally qualified, but actually competent in performing that job function. Most Active Duty Operations Specialists do not have the experience or appreciation for the skills required to navigate a vessel, or understand what it is like to get underway in the fog, have your PPU fail or otherwise operate safely in the waterway. It is clear to the investigations team that [redacted], while considered qualified, was not comfortable standing watch at Sector 1/2. A typical three year tour for Active Duty personnel results in the member is transferring out right at the time when they are becoming proficient and confident in their abilities. By having all civilian controllers, the VTS would gain the long term benefit of a non-transient staff and possibly employ accredited mariners with experience.

7. Throughout the investigation, the pilots, the VTC Director and the VTC Controllers stated multiple times that they (the VTC Controllers) were not qualified to or have the "granularity of situational awareness" to provide direction to vessels moving in the Houston Ship Channel. The VTC Director indicated in his testimony that, in spite of the authority given to the VTC, they do not have the ability to direct vessels, and that they "broker information" ([redacted], hearing testimony, pg 44/48). It is recommended that the Captain of the Port of Houston/Galveston and the local pilot and industry associations consider the development of a Memorandum of Agreement/Understanding that would provide an avenue for representatives of these associations in good standing with appropriate navigation/pilotage experience to support/augment the Vessel Traffic Center as part of the regularly scheduled watch staff in order to provide the knowledge and skill needed to make the determination to and act upon the need to direct vessels when necessary. This has been done successfully in other VTS areas, including VTC New Orleans

which is similar to Houston-Galveston in that it is also a linear port with very heavy deep draft, UTV and barge traffic.

8. It is recommended that Sector Houston/Galveston initiate an internal review of the current VTC Houston Galveston policies, procedures and practices to ensure compliance with the VTS National Standard Operating Procedures and 33 CFR Part 161, and consider revising the Vessel Traffic Center watch procedures to include environmental or operational thresholds that would initiate the use of active control measures by VTS watch standers in high traffic areas, to include the management of crossing, overtaking and passing situations in accordance with the VTS National Standard Operating Procedures.

**Enforcement**

1. The following enforcement action (s) are recommended:

a. It is recommended that Suspension and Revocation proceedings should be initiated against the US Coast Guard issued license of [redacted] for negligence, misconduct, violating company policy and for violating multiple Inland Navigation Rules. Any remedial action taken should include her attendance of a Bridge Resource Management course.

b. It is recommended that a Letter of Warning be issued to the master of the SUMMER WIND, [redacted], for violating multiple Inland Navigation Rules, violating 33 CFR 161.12 and for negligence. [redacted] did ask [redacted] about the visibility, and the investigation team believes that he also recognized the close quarters situation developing between his vessel and the MISS SUSAN, but he failed to take any independent action to avoid collision, relying too heavily on the experience of the pilot to make decisions for his vessel.

c. It is recommended that Civil Penalty proceedings should be initiated for [redacted] for violating multiple Inland Navigation Rules to include Rules 5, 6, 7, 8, and 19, for violating 33 CFR 161.12 and for negligence. Had [redacted] been operating under his U.S. Coast Guard issued credential, this report would be recommending Suspension and Revocation proceedings be initiated against his license.

**Other:**

1. Although not specifically addressed in the body of the Report of Investigation, it is important to note that due to fears of litigation on the part of the witnesses and Parties in Interest, the investigations team found it extremely difficult to collect complete and honest answers to our questions during this investigation, which could ultimately impact our ability to make meaningful and effective safety recommendations. Unless and until we find a way to mitigate this issue, it will be nearly impossible to collect the information needed to effect positive change. To that end, I make the following recommendations:

a. It is recommended that the Commandant of the Coast Guard consider revising the current or adopting new Parties in Interest (PII) rules for 46 CFR Part 4 investigations that are similar to the NTSB party rules, specifically with regard to 49 CFR 831.11(3), which states "No party to the investigation shall be represented in any aspect of the NTSB investigation by any person who also represents claimants or insurers. No party representative may occupy

a legal position (see § 845.13 of this chapter). Failure to comply with these provisions may result in sanctions, including loss of status as a party."

b. It is recommended that the Commandant of the Coast Guard consider allowing only the witness and the investigating officer or investigations team to be present for interviews during a Part 4 investigation, thus eliminating the possibility that information gained during an interview could be used by the opposing party during civil proceedings.

c. It is also recommended that the Commandant of the Coast Guard consider amending our current regulations with regard to the conduct of hearings, specifically 46 CFR 4.09-17, to allow the Lead Investigation Officer to conduct a Closed Hearing if he/she deems that a hearing open to the public would be detrimental to the safety investigation or the potential for the release of protected information exists. The Report of Investigation would remain releasable to the public via the Freedom of Information Act process, thereby meeting our requirement for transparency. Although the rules clearly state that the information that comes out of a Coast Guard hearing cannot be used in a civil proceeding, the truth is that there is no way to stop it, particularly with the dollar figures that are normally at stake in a case such as this one. This was particularly evident during the subsequent Pilot Board Investigation and Recommendation Committee hearing for [redacted] that occurred on October 6, 2014. At this hearing, [redacted] attorney attempted to enter into evidence and utilize documentation from the US Coast Guard Formal Hearing held June 2 – 5, 2014.

2. It is recommended that the Commandant of the Coast Guard provide a copy of this report to the following entities:

a. Area, District, and Sector Commanders

b. Parties in Interest

c. The National Transportation Safety Board

d. The Governor of Texas

e. All USCG VTS Directors

3. It is recommended that this casualty investigation be closed.

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