



NMA REPORT #R-207-C

DATE: Nov. 8, 2010

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Asserting our right "...to petition the Government for redress of grievances."

Amendment 1, U.S. Constitution, Dec. 15, 1791

## MAINTAINING A PROPER LOOKOUT: THE 2010 "DUCK BOAT" ACCIDENT AT PHILADELPHIA

### NMA NEWSLETTER #71 ARTICLES

[Source: NTSB]

In its continuing investigation of a collision involving a barge and an amphibious passenger vessel, the National Transportation Safety Board developed the following factual information:

On Wednesday July 7, 2010, about 2:36 pm, the 250-foot long empty sludge barge THE RESOURCE, which was being towed alongside by the 75.5 foot-long towing vessel M/V CARIBBEAN SEA, collided with the anchored amphibious small passenger vessel the DUKW 34 in the Delaware River, near Philadelphia, PA. On board the DUKW 34 were 35 passengers and two crewmembers, and on board the Caribbean Sea were five crewmembers.

About 5 to 10 minutes before the accident, the DUKW 34 was northbound in the river and experienced a mechanical problem that led the master to anchor his vessel. At that time, the DUKW 34 was on its normal route about 150 feet from shore and within the Delaware River Channel (navigation channel). The CARIBBEAN SEA was also northbound in the Delaware River Channel traveling about 5 knots. The bow of the barge, THE RESOURCE, struck the stern of the DUKW 34, which resulted in the DUKW 34 sinking in about 55 feet of water. As a result of the accident, two passengers on the DUKW 34 were fatally injured and 10 passengers suffered minor injuries.

The crew of the DUKW 34, a master and a deckhand, were interviewed on July 9th. They told investigators that their radio calls to the CARIBBEAN SEA received no response. The NTSB has also interviewed the operators of several vessels in the area at the time of the accident, and they stated that they recalled hearing the DUKW 34's radio calls on channel 13. Although not all radio channels are recorded, the NTSB is attempting to verify this information.

The crew of the CARIBBEAN SEA consisted of a master, a mate, an engineer, and two deckhands. Except for the mate and a deckhand who was asleep at the time of the accident, the NTSB interviewed the crew of the CARIBBEAN SEA on July 10th. However, when the NTSB sought to interview the mate, he exercised his Fifth Amendment right and refused to meet with investigators.

Investigators are continuing to examine and document the structural damage of both vessels and will attempt to

determine the nature of the mechanical problem that affected the DUKW 34 before the accident. Investigators have collected photographs and video that may provide further information regarding the accident sequence and will be working to develop a chronology of events leading up to the accident. The CARIBBEAN SEA'S GPS and electronic chart navigation devices were removed from the vessel and taken to NTSB Headquarters for analysis.

The NTSB is coordinating and working closely with the Coast Guard during this investigation. The NTSB also acknowledges the continued support and cooperation of the other parties involved, including Ride the Ducks of Philadelphia and K-Sea Transportation.

The NTSB's investigation continues.

### Previous "DUCK" Accidents

[Source: Philadelphia Inquirer]

A 1999 accident killed 13 people when a World War II-era duck (DUKW) vehicle sank on Lake Hamilton near Hot Springs, Arkansas. As a result, the NTSB suggested a variety of modifications to the 1940s amphibious vehicles. NTSB's Robert Sumwalt said he did not know whether the newer ducks in Philadelphia met those NTSB safety recommendations. "That's something we're going to be looking at," he said. In general, he said, duck companies have not been responsive to the safety upgrades suggested by the NTSB in that report. "Any time our recommendations are not acted upon, we have concerns about that," he said.

The NTSB will have to determine if proper radio warnings were broadcast by Duck 34, and whether the crew aboard the tug CARIBBEAN SEA was monitoring marine radio and keeping a lookout as it steamed upriver, and pushing it a city-owned, 250-foot barge...

[NMA Comment: One obvious problem involves maintaining a proper lookout – Inland Rule 5. Visiting our website will clear up any uncertainty about posting lookouts. Go to our "Research Reports" and look for these reports: #R-207, Rev. 1, #R-207-A; #R-207-B. A very recent report (#R-207-B) deals with a case tried before Coast Guard Administrative Law Judge Bruce T. Smith and is very specific about the requirements to post a lookout. We suggest that our mariners immediately read

this report.]

[NMA Comment: One TV station quoted one passenger as saying, "I came to find out that nobody was on the deck of the barge" – a significant fact in the case reported in our Report #R-207-B.]

A Duck 34 passenger, Alysia Petchulat, 31, said the Duck 34's captain, Gary Fox, initially had used a radio to call the Ride the Ducks office to arrange for a tow.

Fox "tried to call three or four times" when he spotted the barge and realized it was bearing down on his immobile vessel, Petchulat said.

Marine radio broadcasts can be heard by anyone with a radio tuned to an identical channel. If Fox followed Coast Guard rules, he would have used Channel 13, which the tug was required to monitor.

As Petchulat recalled the scene, Fox said, "Stop... We are anchored down, and we cannot move... We are right here... Please see us." "They never responded," Petchulat said of the tug.

### Recalling the "Miss Majestic" Accident

[Source: NMA File #M-166.]

On May 1, 1999, the amphibious passenger vehicle *Miss Majestic*, with an operator and 20 passengers on board, entered Lake Hamilton near Hot Springs, Arkansas, on a regular excursion tour. About 7 minutes after entering the water, the vehicle listed to port and rapidly sank by the stern in 60 feet of water. One passenger escaped before the vehicle submerged but the remaining passengers and the operator were **trapped by the vehicle's canopy**<sup>(1)</sup> roof and drawn under water. During the vehicle's descent to the bottom of the lake, 6 passengers and the operator were able to escape and, upon their reaching the water's surface, were rescued by pleasure boaters in the area. **The remaining 13 passengers, including 3 children, lost their lives.** The vehicle damage was estimated at \$100,000. [<sup>(1)</sup> Pictures of the Duck 34 accident show that it, too, had a canopy.]

The Safety Board's investigation of this accident identified the following **major safety issues**:

- **Vehicle maintenance.**
- **Coast Guard inspections** of the *Miss Majestic*,
- **Coast Guard inspection guidance.**
- **Reserve buoyancy, and**
- **Survivability.**

The National Transportation Safety Board determined that the probable cause of the uncontrolled flooding and sinking of the MISS MAJESTIC was the **failure of its owner to adequately repair and maintain the DUKW.**

Contributing to the sinking was a **flaw in the design of DUKWs** as converted for passenger service, that is, the **lack of adequate reserve buoyancy** that would have allowed the vehicle to remain afloat in a flooded condition. Contributing to the unsafe condition of the MISS MAJESTIC was the **lack of adequate oversight by the Coast Guard.**<sup>(1)</sup>

Contributing to the high loss of life was a continuous canopy roof that entrapped passengers within the sinking vehicle. [<sup>(1)</sup>The Coast Guard lack of guidelines for and inspection of this "small passenger vessel" as well as its subsequent investigation of this incident were very questionable and should have attracted Congressional

attention.]

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### Lady Duck Accident in Canada

At about 1610 on 23 June 2002, the amphibious vehicle LADY DUCK took on water on the Ottawa River during a combined land and water-borne sightseeing tour of the National Capital region. The vehicle sank rapidly by the bow in 8 metres of water when near the Hull (Ont.) marina. Of the 12 people on board, 6 passengers, the driver, and the tour guide escaped from the vehicle and were recovered by private craft on scene at the time of the sinking. **Four passengers trapped within the sinking vehicle drowned.** [Refer to *Transportation Safety Board of Canada Report #M02C0030, NMA file #M-332.*]

[NMA Comment: Pictures of the Lady Duck show a modern, streamlined three-axle motor vehicle unlike the World War II "DUKWs." However, the TSB reported the new vessel had several very serious design flaws.]

### Other Issues

While, on the surface, it appears the DUKW 34 in Philadelphia was properly manned. Questions still to be answered are what experience operating that particular towing vessel in those waters did its mate have and how did he deploy his available crewmembers as lookouts. News reports show they were pushing this large barge with no cargo "on the hip." How did the mate and his lookout – if any – observe vessels in their blind spot as they were moving the barge?

We wonder how much we will hear about this accident since the President of the company that owns the tug CARIBBEAN SEA also happens to be the elected President of the American Waterways Operators (AWO), the tug-and-barge industry's trade association.

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### Followed by Another "Duck" Accident

[Source: Associated press, July 16, 2010]

BOSTON – An amphibious duck boat crashed into seven cars on a Boston highway Friday, and five people were treated for minor injuries, state police said.

It was the second time in a week that a duck boat was involved in an accident, though the driver of another vehicle was cited in the first crash.

Trooper Thomas Murphy said the accident Friday happened at about 12:15 p.m. on a ramp connecting to Storrow Drive.

Cindy Brown, general manager of *Boston Duck Tours*, said the driver couldn't stop after a computer box on board came loose and jammed behind the duck boat's brake pedal.

"Once the driver saw it down there and was able to kick it away, he was able to brake on his own," she said.

Brown said none of the 32 people on board was hurt, and they continued on the tour in a different duck boat. Brown said it's not known why the box came loose, though every duck boat will be inspected to make sure the problem doesn't happen again, she said.

**The company uses a fleet of 28 World War II-era duck boats for land and water tours.**

A duck boat was involved in another accident in Boston on Tuesday, when a car with carrying three people -- including one in a wedding gown -- tried to pass and became

wedged between a duck boat and delivery truck. A female passenger rushed from the car after the accident "due to their wedding ceremony," according to a police report. The car's driver was cited for an unsafe lane change.

"We were in the wrong place at the wrong time in that one," Brown said Friday.

**[NMA Comment: The Passenger Vessel Association and the Coast Guard should re-consider the safety of passengers who are allowed to ride on small passenger vessels with unique hull styles like DUKW boats and pontoon vessels like the LADY D that sank in Baltimore Harbor on Mar. 6, 2004 killing 5 passengers.]**

**NMA NEWSLETTER #72 ARTICLE  
"DUCK BOATS" ARE UNSAFE**

*[Source: By Nathan Gorenstein, The Philadelphia Inquirer, July 30, 2010. Contact staff writer Nathan Gorenstein at ngorenstein@phillynews.com. or 215-854-2797. NMA file #M-166.]*

Lawyers for two Hungarian tourists killed in the Delaware River duck-boat accident launched a public relations effort Friday aimed at getting the city and Coast Guard to prevent the ducks from returning to the water.

The duck company, meanwhile, said it wanted to resume operations this season and was working with the Coast Guard and the city to come up with an acceptable plan.

**[NMA Comment: Why did a previous USCG Captain of the Port refuse to allow Duck boats to operate in the Philadelphia area?]**

The 15 amphibious vehicles licensed for operations on the river by **Ride the Ducks** are undergoing on-the-water testing and mechanical inspections.

**[NMA Comment: We are curious. The Coast Guard small passenger vessel inspection program is supposed to be an ongoing program with regular scheduled inspections. Do the revelations in Admiral Card's Marine Safety report impact USCG vessel inspections in Philadelphia? Refer to NMA Report #R-401=E.]**

"We're anxious to resume," said Bob Salmon, a spokesman for the Georgia-based company, "but we are still working with the Coast Guard and trying to work through what we need to do to get them back in operation."

Attorneys for the families of the victims, tourists Dora Schwendtner and Szabolcs Prem, say a federal analysis of a 1999 accident in Arkansas shows that the ducks' design, combined with canvas canopies, makes them unsafe for use as tourist craft.

**[NMA Comment: The Army designed DUKWs for use in amphibious operations in World War II. Most of these vessels were built in this era. Why does the Coast Guard continue to grant many of these obsolete antiques exemptions from seat spacing and aisle width requirements of 46 CFR Subchapter T especially after the huge loss of life in 1999 in Arkansas?]**

The Coast Guard did not respond to that claim, but said in a statement that the agency "will continue to work closely with Ride the Ducks and the City of Philadelphia to ensure that all safety issues related to the operation of these vessels are addressed."

The tourists died July 7 when Duck 34, carrying 35 passengers and two crew, was struck by a 250-foot-long barge being pushed by the tug Caribbean Sea. The tug's mate has taken the Fifth Amendment and declined to be interviewed by the National Transportation Safety Board. Regulations require commercial craft to keep a proper lookout.

The duck was anchored on the edge of the shipping lane after its motor failed during the water portion of the tour. Salmon said the duck's captain broadcast a warning on the marine radio channel used for communications between vessels.

He added that the "rules of the road" that govern vessels also make it the "obligation of a vessel under way to avoid a disabled vessel."

The NTSB report cited by the attorneys recommended that the Coast Guard require the amphibious vehicles to install "reserve buoyancy," which could keep even a vessel swamped with water afloat.

**[NMA Comment: Without adequate reserve buoyancy these steel vessels sink like a rock.]**

In the 1999 Lake Hamilton, Ark., accident that left 13 dead, the NTSB found that as the duck sank, "the natural buoyancy of passengers' bodies forced them into the overhead canopy, which acted like a net to entrap them and prevent their vertical escape." The vehicle was not operated by Ride the Ducks.

"I'm asking the city and the Coast Guard to look at the NTSB report," said Robert J. Mongeluzzi of Philadelphia, one of the lawyers representing the victims. "I would bet that there is nobody in the city who even knew about the report."

**[NMA Comment: We examined Report NTSB/MAR 02/01 and the USCG Marine Board Report. Conclusion 3c states that Dukws have features which make them inherently less safe than conventional small passenger vessels." It appears that "safety" plays a diminished role in the Coast Guard's "Prevention" (sic) program.]**

Salmon said the canopies on Ride the Ducks craft are designed to allow easy egress in the case of an accident.

A Coast Guard regulation requires at least a 32-inch opening between the side of a boat and the bottom of the canopy; Salmon said the Philadelphia ducks have 42 inches.

**NMA NEWSLETTER #78 ARTICLE  
DISTRACTIONS IN THE PILOTHOUSE**

*[Source: Marine Log, June 22, 2011. Emphasis is ours!]*

"The deadliness of distraction" was at the heart of a collision last year between a "duck" tour boat and a sludge barge, according to an investigation conducted by the U.S. National Transportation Safety Board. The accident on July

7, 2010 on the Delaware River near Philadelphia, Pa., left two passengers dead and 27 others injured.

The NTSB investigators say the mate operating the tug was distracted by repeated use of his cell phone and lap top. Further, rather than being in the upper wheel house as expected, the mate was navigating from its lower wheel house where visibility of the channel ahead was limited.

"This is yet another example of the deadliness of distractions," said NTSB Chairman Deborah A. P. Hersman. "Distraction is a safety concern across all modes of transportation. Regardless of the reason, it's not okay to multi-task while operating a vehicle - whether it's calling, texting, or surfing the web."

[NMA Comment: Since the Coast Guard has yet to require adequate manning levels on towing vessels, lone watchstanders often must "multi-task" by meeting deadlines for computer log entries and performing other "company business" while underway.]

The accident, which occurred at about 2:37 pm, involved the 250-foot sludge barge The Resource that was being towed by the 79-foot tugboat Caribbean Sea. K-Sea Transportation Partners, LP, operated the vessels. The barge collided with the amphibious passenger boat DUKW 34, which was anchored in the channel and sank in 55 feet of water. There were 35 passengers and two crewmembers onboard the DUKW 34 and five crew members onboard the Caribbean Sea. Two DUKW 34 passengers were killed; 26 passengers and one crewmember suffered minor injuries. No one on board the Caribbean Sea was injured.

DUKW 34 was anchored in the channel because of an overheated engine, according to the NTSB. Further, NTSB investigators found that while duck boat owner Ride The Ducks International, LLC, had written procedures for safe operational practices and emergency situations, the master of DUKW 34 did not take all actions appropriate to address the risk of anchoring in an active navigation channel. The NTSB determined these omissions contributed to the accident.

The NTSB issued recommendations to both Ride The Ducks International, LLC, and K-Sea Transportation Partners L.P., to review its management program and develop improved means to ensure that the company's safety and emergency procedures are adhered to by all employees.

The largest amphibious tour boat operator in the U.S., Ride the Ducks International, headquartered in Norcross, Ga., carries some 1.2 million annually with its fleet of 90 boats in operations around the country.

The NTSB also issued recommendations to the U.S. Coast Guard to increase its focus on and oversight of inappropriate use of cell phones and other wireless electronic devices by on-duty crewmembers so that such use does not affect vessel operational safety. Additionally, the NTSB issued a recommendation to the American Waterways Operators to encourage its members to ensure that their safety and emergency procedures are understood and adhered to by their employees in safety-critical positions.

#### Cell use on tugs, elsewhere: The 'new DUI'

[Source: By Dale DuPont, WorkBoat, June 28, 2011. Emphasis is ours!]

Next time you're onboard and you reach for your cell phone, consider this: the National Transportation Safety Board may want to see a record of your conversations if your vessel is involved in a casualty.

It won't matter whether you were on watch or not. The fact that you were on duty would be enough to trigger an investigation into your calls.

At a recent hearing on last July's fatal duck boat accident on the Delaware River in Philadelphia, NTSB chairman Deborah Hersman noted there were no phone records for the deckhand or the engineer on the K-Sea tug involved in the collision. But there will be in future accidents, because the agency is zeroing in on the use of electronic devices. Their ability to distract each of us has the potential to reach epidemic proportions," Hersman said.

The NTSB may get that chance while it investigates whether a truck driver was using a cell phone before hitting an Amtrak train in Nevada on Friday. The driver, a train conductor and several passengers were killed.

Such distractions "are becoming the new DUI," said board member Robert Sumwalt, who was on the scene and the spokesman for the investigation.

Two people were killed after a sludge barge pushed by the tug struck the tour boat that was anchored in the river. The tug mate on watch was in the lower wheelhouse dealing with a family emergency on his cell phone and a laptop at the time of the accident, the NTSB concluded. Company policies prohibiting the use of personal phones while on watch weren't followed.

"The NTSB has investigated too many highway, railroad, aviation and marine accidents and incidents – and seen too much loss of life – where distraction was the cause or a key contributing factor," Hersman said. "This accident isn't just about one individual's actions, but a new and highly troubling societal norm."

The board wants the Coast Guard to develop regulations about the use of cell phones and other electronic devices by on-duty crew.

Multitasking is unacceptable, Hersman said. "We must find a way to change the culture of distraction we see across transportation, because frankly it's just going to get worse in the coming years."

And while the board has no enforcement power, it likely will find a way to get what it wants. It's used the power of persuasion in the past.

For example, industry discussions already were under way on changing stability calculations for higher average passenger weights when the NTSB increased the pressure by saying out-of-date weight standards contributed to two fatal tour boat accidents. In the midst of the rulemaking process, the Coast Guard issued voluntary guidelines after one of the NTSB reports. The weight rules are now law.

### GUILTY PLEA IN DUCK BOAT CASE

[Source: Marine Log, July 14, 2011]

Matthew R. Devlin was charged today in Philadelphia with one count of misconduct of a ship operator causing death, in relation to the "Duck boat" accident on the Delaware River on July 7, 2010, announced United States Attorney Zane David Memeger and Special Agent-in-Charge William

P. Hicks, U.S. Coast Guard Investigative Service. In the accident, the barge The Resource, which was towed by the towing vessel M/V Caribbean Sea piloted by defendant Devlin, ran over a boat operated by the tourism company Ride the Ducks International LLC. As a result, two passengers on the Duck boat who were visiting from Hungary, Szabolcs Prem, 20, and Dora Schwendtner, 16, were killed.

Devlin, 35, of Catskill, New York, was charged under a federal criminal statute<sup>(1)</sup> applicable to involuntary manslaughter committed by the operator of a vessel. <sup>[<sup>(1)</sup> See below.]</sup>

**[NMA Comment: Criminal statutes, in contrast to Administrative Law, can include fines and jail time. Notice that investigation of criminal charge is done by the Coast Guard Investigative Service (CGIS) and not by a local "Investigation Officer." Prosecution is by the U.S. Attorney and the case is tried in a Federal District Court.]**

United States Attorney Memeger further stated that Devlin has entered a plea agreement in which he has agreed to plead guilty to the charge. Devlin also agrees to the permanent revocation of his Coast Guard-issued license as a mate. In the plea agreement, the parties agree to the calculation of the United States Sentencing Guidelines, which suggest but do not mandate the final sentence, and which in this case likely propose a sentence of imprisonment of 37-46 months. Devlin reserves the right to argue for a lower sentence on the basis of mitigating circumstances. The United States Attorney's Office today also filed a guilty plea memorandum with the Court, which sets forth the facts of the case.

The charging information alleges that "for an extended period of time prior to the collision, [Devlin] was distracted by his use of a cell phone and a laptop computer to attend to personal matters; elected to pilot the Caribbean Sea from its lower wheelhouse, where he had significantly reduced visibility in comparison to the perspective from the upper wheelhouse of the Caribbean Sea, from which the captain of the Caribbean Sea had directed that Devlin pilot the vessel; and did not maintain a proper lookout or comply with other essential rules of seamanship."

**[NMA Comment: We recommend these NMA reports: #R-207, Rev. 1. Training and Posting Lookouts; #R-275, Rev. 3, Navigation. Bridge Visibility; #R-207-A. Lookout Training; #R-207-B. Rule 5 – Maintaining A Proper Lookout.]**

"Those who operate transport vessels on our waterways have a clear duty to ensure that proper sightlines are maintained at all times, and to obey all other rules of seamanship, so that the risks to others on the water are minimized," said U.S. Attorney Memeger. "When that duty is breached and causes death, the Seaman's Manslaughter Statute allows the federal government to seek criminal sanctions against the vessel operator."

#### **Title 18 U.S. Code §1115**

#### **§1115. Misconduct or neglect of ship officers**

Every captain, engineer, pilot, or other person employed on any steamboat or vessel, by whose misconduct, negligence, or inattention to his duties on such vessel the life of any

person is destroyed, and every owner, charterer, inspector, or other public officer, through whose fraud, neglect, connivance, misconduct, or violation of law the life of any person is destroyed, shall be fined under this title or imprisoned not more than ten years, or both.

When the owner or charterer of any steamboat or vessel is a corporation, any executive officer of such corporation, for the time being actually charged with the control and management of the operation, equipment, or navigation of such steamboat or vessel, who has knowingly and willfully caused or allowed such fraud, neglect, connivance, misconduct, or violation of law, by which the life of any person is destroyed, shall be fined under this title or imprisoned not more shall be fined under this title or imprisoned not more than ten years, or both.

<p style="text-align: center;"><b>NMA NEWSLETTER #81 ARTICLE TUG PILOT GETS YEAR IN DEADLY PENNSYLVANIA DUCK BOAT CRASH</b></p>
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[Source: By Maryclaire Dale, Associated Press]

<http://www.pocketexpress.com/downloadexpress.php?f=4099395913>

Philadelphia - A tug pilot distracted by cell phone calls amid a family emergency was sentenced Tuesday to a year in prison for a deadly river crash in Philadelphia that killed two Hungarian students. Pilot Matthew Devlin of Catskill, N.Y., was virtually driving blind as he pushed a huge barge through a busy shipping channel on the Delaware River, prosecutors said. He ran over a stalled duck boat, sinking the tour boat and sending 37 people onboard into the fast-moving river.

Devlin had spent nearly an hour on a cell phone and laptop, and turned down a marine radio, stifling Mayday calls from the duck boat and others before the July 7, 2010 crash. He had also moved to a lower wheelhouse so he could hear better, though it blocked his view of the river.

"Goodness gracious. Everybody knew this was happening but you," U.S. District Judge Legrome Davis told Devlin. A video played in court for the first time shows the 80-yard-long barge inching toward the idled duck boat about a mile ahead. Six minutes later, the barge drives right over the duck boat.

"There was plenty of time to avoid this accident," Assistant U.S. Attorney Robert Zauzmer said. Devlin, 35, of Catskill, N.Y., had faced up to three years for his involuntary manslaughter plea. Both sides agreed that a string of incredible events converged before the crash. His 5-year-old son had suffered a serious complication during routine eye surgery. The duck boat overheated on the 103-degree day because someone left a radiator cap off. The duck boat captain mistook the steam for an engine fire, and anchored the boat in the busy channel. Many of those aboard the duck boat were from Hungary and spoke limited English.

But Davis noted that if Devlin had done just one thing differently, he could have broken that unlucky chain and avoided the crash. Instead, Devlin failed to go on break after learning his son had been deprived of oxygen during the

surgery. He made repeated phone calls during the next hour and did medical research on the laptop.

Devlin, a married father of two who coaches youth baseball and ropes calf in his spare time, spoke publicly about the crash Tuesday for the first time. His son has since recovered. He said he awakes each day to images of bodies and orange flotation devices floating in the river. His wife, Corinne, feels responsible for calling him on duty. "There isn't a morning I don't wake up with a tremendous pit in my stomach that I was even involved in this accident," Devlin said. "And for this past year and four months, there hasn't been one night that we have laid in bed at ease."

Szabolcs Prem, 20, and Dora Schwendtner, 16, drowned in the crash. They were part of a Hungarian group visiting the U.S. through a church exchange. Their families gave victim-impact statements by way of a video shot in their hometowns that showed mementos of their childhoods. Prem's favorite song was Bruce Springsteen's "Streets of Philadelphia," his father said. The son hoped to move to the U.S. someday. Schwendtner's mother showed excited notes on her daughter's calendar about the upcoming trip to America.

"Two families lost the only child they had, and they're past child-bearing years," the judge said. "They send a child off with a school group to come to America and the child doesn't return. ... That's just sad." The families have lawsuits pending against K-Sea Transportation of East Brunswick, N.J., which operated the tug; Ride the Ducks of Norcross, Ga., which operated the tour boat; the city of Philadelphia, which owned the sludge barge; and others. They listened to the sentencing hearing in Hungary through an open phone line, with a lawyer and translator beside them.

Zauzmer hopes the sentence sends a message to commercial operators that "they can't be using all these wonderful devices we have while carrying out their duties."

Devlin must report to prison by Jan. 5. The sentence of more than a year makes him eligible for about two months off with good behavior. Davis accepted his remorse and noted his otherwise unblemished work record. Devlin's father-in-law, a retired port captain, had gotten him into the maritime trade, and he had risen from deckhand to first mate in about nine years. Devlin also had training about another tug accident involving a cell phone distraction, and knew his company banned their use. Davis questioned why he had not awoken his captain, who was sleeping nearby about the emergency. Tug boat crews work in pairs, with a pilot and deckhand rotating six-hour duty, round the clock. They typically work two weeks at a time. "In our particular job, there's very few times when you want to actually knock on a captain's door and wake him up," Devlin said. "His sleep is very important." Devlin said he thought he could handle the job while also dealing with his son's emergency.

The National Transportation Safety Board, which prepared a 4,400-page report on the crash, fears too many people feel the same way. "Distraction is becoming the new DUI," NTSB member Robert Sumwalt said at a June hearing on the case. "This is going to reach epidemic proportions."

## NTSB SAFETY RECOMMENDATIONS

- NTSB Recommendations M-11-1 thru 11 to Admiral Robert J. Papp, Jr., Commandant, USCG.
- NTSB Recommendation M-11-5 to Mr. Chris Herschend, Ride the Ducks International, LLC.
- NTSB Recommendation M-11-6 to Mr. Timothy J. Casey, President & CEO, K-Sea Transportation, L.P.
- NTSB Recommendation M-11-7 to Mr. Thomas A. Allegretti, President & CEO, The American Waterways Operators.



# National Transportation Safety Board

Washington, DC 20594

## Safety Recommendation

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**Date:** August 26, 2011

**In reply refer to:** M-11-7

Mr. Thomas A. Allegretti  
President and Chief Executive Officer  
The American Waterways Operators  
801 North Quincy Street, Suite 200  
Arlington, Virginia 22203

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The National Transportation Safety Board (NTSB) is an independent Federal agency charged by Congress with investigating transportation accidents, determining their probable cause, and making recommendations to prevent similar accidents from occurring. We are providing the following information to urge your organization to take action on the safety recommendation in this letter. The NTSB is vitally interested in this recommendation because it is designed to prevent accidents and save lives.

The recommendation is derived from the NTSB's investigation of the July 7, 2010, collision of the tugboat/barge combination *Caribbean Sea/The Resource* with Ride The Ducks International amphibious passenger vehicle (APV) *DUKW 34*. The recommendation addresses the safety management program within K-Sea Transportation Partners L.P. (K-Sea Transportation)—a member of The American Waterways Operators (AWO)—and is consistent with the evidence we found and the analysis we performed. As a result of this investigation, the NTSB has issued seven safety recommendations, one of which is addressed to AWO. Information supporting this recommendation is discussed below. The NTSB would appreciate a response from you within 90 days addressing the actions you have taken or intend to take to implement our recommendation.

### Background

On Wednesday, July 7, 2010, the empty 250-foot-long sludge barge *The Resource*, being towed alongside the 78.9-foot-long tugboat *Caribbean Sea*, collided with the anchored 33-foot-long APV *DUKW 34* in the Delaware River at Philadelphia, Pennsylvania. *DUKW 34* carried 35 passengers and 2 crewmembers. On board the *Caribbean Sea* were five crewmembers. As a result of the collision, *DUKW 34* sank in about 55 feet of water. Two passengers were fatally injured, and 26 passengers suffered minor injuries. No one on the *Caribbean Sea* was injured.<sup>1</sup>

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<sup>1</sup> For more information, see *Collision of Tugboat/Barge Caribbean Sea/The Resource with Amphibious Passenger Vehicle DUKW 34, Philadelphia, Pennsylvania, July 7, 2010*, Marine Accident Report NTSB/MAR-11/02 (Washington, DC: National Transportation Safety Board, 2011), which is available on our website at <http://www.nts.gov/doclib/reports/2011/MAR1102.pdf>.

The NTSB determined that the probable cause of this accident was the failure of the mate of the *Caribbean Sea* to maintain a proper lookout due to (1) his decision to operate the vessel from the lower wheelhouse, which was contrary to expectations and to prudent seamanship, and (2) distraction and inattentiveness as a result of his repeated personal use of his cell phone and company laptop computer while he was solely responsible for navigating the vessel. Contributing to the accident was the failure of Ride The Ducks International maintenance personnel to ensure that *DUKW 34*'s surge tank pressure cap was securely in place before allowing the vehicle to return to passenger service on the morning of the accident, and the failure of the *DUKW 34* master to take actions appropriate to the risk of anchoring his vessel in an active navigation channel.

### **Location of Mate While Navigating the *Caribbean Sea***

The *Caribbean Sea* was outfitted with an upper wheelhouse above the main wheelhouse that provided improved visibility. The *Caribbean Sea* master told investigators that before the accident trip he had spoken with the mate about using the upper wheelhouse during the voyage. The master said that the mate had assured him that this was where he would be. In a postaccident interview with Coast Guard investigators, the mate said that he was operating from the upper wheelhouse when the accident occurred. Although *Caribbean Sea* crewmembers confirmed that when the voyage began, the mate was operating from the upper wheelhouse, the NTSB's investigation determined that the mate was not operating from the upper wheelhouse when the accident occurred but was instead occupying the lower wheelhouse.

### **Lack of Attention to Duty by the *Caribbean Sea* Mate**

Had an upper wheelhouse not been available, the mate could have navigated the tow combination safely from the lower wheelhouse. The lower wheelhouse was equipped with radars and radios that would have helped the mate monitor his surroundings and avoid hazards. Despite the presence of these navigation aids, however, with the limited visibility ahead because of the high freeboard of the empty barge, the mate would have needed to assign the deckhand, with a radio, as an additional lookout on the bow area of the barge.

In this case, the mate moved from the upper wheelhouse to the lower one without posting an additional lookout to ensure adequate visibility in the direction of travel. Based on the results of the NTSB's visibility study, from the lower wheelhouse, the mate's view of *DUKW 34* would have begun to be at least partially obstructed when the APV was still about 5,400 feet, or about 21 barge-lengths, away. Once the barge approached within 3,500 feet, or about 14 barge-lengths, the mate would have had no view of the anchored APV. At a barge speed of 6 knots, the mate's view of the APV would have begun to be partially obstructed about 9 minutes before the collision and would have been totally obstructed about 6 minutes before. Thus, from about the time *DUKW 34* was firmly anchored (at 1433) until the collision, it was partially or completely out of the view of the mate in the lower wheelhouse. By contrast, had the mate been navigating from the upper wheelhouse, the anchored APV would have been at least partially visible until it was less than one barge-length away.



Evidence also indicates that the mate was not actively monitoring the radars and radios while in the lower wheelhouse. Even if the master of *DUKW 34* did not make a *securité* radio call immediately when the APV was shut down and anchored (which the lack of recorded transmissions indicate that he did not), he and other mariners clearly radioed warning calls to the tugboat and barge about a minute before the collision. Had the mate been monitoring the radios and radar, even from within the lower wheelhouse, he would have been alerted to the presence of the APV and may have been able to take action in an attempt to avoid the collision. Based on the mate's own postaccident statements to the Coast Guard, however, he was not aware of the presence of the anchored APV until after the barge had struck it.

The NTSB attempted to determine why, on the day of the accident, a trained, experienced, and otherwise competent mariner failed to effectively carry out routine, but highly crucial, tasks central to his profession. No evidence indicates that the mate was fatigued, and his postaccident toxicological tests showed no signs of alcohol or illegal drugs.

### **Personal Use of Cell Phone and Laptop Computer by the *Caribbean Sea* Mate**

The mate's cell phone records revealed a likely explanation for his poor judgment and inattentiveness to his duties on the day of the accident. Those records showed that the mate was engaged in voice communications with several family members beginning just 22 minutes after he assumed the watch and continuing up until the time of the accident.

The mate's cell phone records indicated that 18 outgoing or incoming calls were made or received while the mate was solely responsible for navigating the tugboat and barge. The mate spent at least one-third of his time making or taking calls when he should have been attending to the safe passage of his vessel. It is likely that the mate was using his cell phone at least during the time of the radio calls and possibly at the time of the collision itself. Moreover, he simultaneously conducted Internet searches on the company laptop computer, which further distracted him from his navigational responsibility. The NTSB therefore concluded that the mate of the *Caribbean Sea* failed to maintain an appropriate lookout, including monitoring the radios, while navigating the vessel because he was distracted by personal use of his cell phone and the company laptop computer in dealing with a serious family medical emergency.

The mate had been an employee of K-Sea Transportation since late December 2000. As early as March 22, 2002, the company had issued a memorandum to its personnel prohibiting mariners from using personal cell telephones while on watch. This policy was reinforced with a second memorandum issued to all personnel on February 10, 2004, and by a third memorandum issued on July 17, 2006. Additionally, the company's policy prohibiting personal use of cell phones while on watch was specifically discussed at a 2-day seminar that the mate attended in 2007 as part of his training. K-Sea Transportation also prohibited personal use of company-provided laptop computers while on watch. The NTSB concluded that the mate of the *Caribbean Sea* should have been aware of his employer's prohibition of personal use of cell phones and company-provided computers while on watch, but on the day of the accident, he did not follow the policy.

Therefore, the NTSB has issued the following safety recommendation to K-Sea Transportation Partners, L.P.:

Review K-Sea Transportation's existing safety management program and develop improved means to ensure that the company's safety and emergency procedures are understood and adhered to by employees in safety-critical positions. (M-11-6)

A K-Sea Transportation official told investigators that the mate had met with him briefly after the accident and told him about a serious medical emergency that affected the mate's young child. The NTSB confirmed that such an emergency had occurred less than an hour before the mate reported for duty at 1200 on the day of the accident.

All of the calls on the mate's cell phone were of relatively short duration and were to or from an immediate family member, which suggests that all of the calls were in regard to the medical emergency. The fact that the calls involved an emotionally troubling event that was likely evolving over a period of time increased the likelihood that the calls would distract the mate from his duties. Although such a distraction is understandable, personal concerns cannot be allowed to create risks for others. If the mariner is unable to fully carry out his responsibilities, for whatever reason, his duty is to turn over those responsibilities to someone else.

No one else on board the *Caribbean Sea* was aware of the emergency that the mate was dealing with. Had he informed the master of the situation and asked for relief, at least temporarily, the master likely would have acceded to the request. The company provided the NTSB with 15 instances during the 12- to 18-month period before the accident in which crewmembers had been granted emergency relief from duty to attend to a family emergency or other family matter. But rather than seek relief, which would have been justified under the circumstances, the mate erroneously attempted to attend to his duties while dealing with the distractions presented by a serious personal issue and frequent cell phone use. The NTSB concluded that, had the mate of the *Caribbean Sea* informed the master or K-Sea Transportation management of the serious family medical emergency, he would likely have been granted relief from the watch.

Based on the findings of this accident investigation, the National Transportation Safety Board makes the following safety recommendation to The American Waterways Operators:

Notify your members of the circumstances of this accident, and encourage them to ensure that their safety and emergency procedures are understood and adhered to by employees in safety-critical positions. (M-11-7)

In addition to the previously referenced recommendation to K-Sea Transportation Partners L.P., the NTSB also issued four safety recommendations to the U.S. Coast Guard and one safety recommendation to Ride The Ducks International, LLC.

In response to the recommendation in this letter, please refer to Safety Recommendation M-11-7. If you would like to submit your response electronically rather than in hard copy, you may send it to the following e-mail address: [correspondence@ntsb.gov](mailto:correspondence@ntsb.gov). If your response includes attachments that exceed 5 megabytes, please e-mail us asking for instructions on how to use our Tumbleweed secure mailbox. To avoid confusion, please use only one method of

submission (that is, do not submit both an electronic copy and a hard copy of the same response letter).

Chairman HERSMAN, Vice Chairman HART, and Members SUMWALT, ROSEKIND, and WEENER concurred in this recommendation.

*[Original Signed]*

By: Deborah A.P. Hersman  
Chairman



# National Transportation Safety Board

Washington, DC 20594

## Safety Recommendation

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**Date:** August 26, 2011

**In reply refer to:** M-11-1 through -4

Admiral Robert J. Papp, Jr.  
Commandant  
U.S. Coast Guard  
2100 Second Street, SW  
Washington, DC 20593

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The National Transportation Safety Board (NTSB) has completed its investigation of yet another marine accident in which crewmember distraction resulting from nonoperational use of a cell phone or other wireless device has been identified as a causal factor. The findings from the investigation of this fatal accident suggest that Coast Guard actions thus far, with regard to wireless device use by crewmembers engaged in vessel operations, have been inadequate in addressing this critical safety risk and that additional, more effective measures are needed.

### Background

On Wednesday, July 7, 2010, the empty 250-foot-long sludge barge *The Resource*, being towed alongside the 78.9-foot-long tugboat *Caribbean Sea*, collided with the anchored 33-foot-long amphibious passenger vehicle (APV) *DUKW 34* in the Delaware River at Philadelphia, Pennsylvania. *DUKW 34* carried 35 passengers and 2 crewmembers. On board the *Caribbean Sea* were five crewmembers. As a result of the collision, *DUKW 34* sank in about 55 feet of water. Two passengers were fatally injured, and 26 passengers suffered minor injuries. No one on the *Caribbean Sea* was injured.<sup>1</sup>

The NTSB determined that the probable cause of this accident was the failure of the mate of the *Caribbean Sea* to maintain a proper lookout due to (1) his decision to operate the vessel from the lower wheelhouse, which was contrary to expectations and to prudent seamanship, and (2) distraction and inattentiveness as a result of his repeated personal use of his cell phone and company laptop computer while he was solely responsible for navigating the vessel. Contributing to the accident was the failure of Ride The Ducks International maintenance personnel to ensure that *DUKW 34*'s surge tank pressure cap was securely in place before allowing the vehicle to return to passenger service on the morning of the accident, and the failure

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<sup>1</sup> For more information, see *Collision of Tugboat/Barge Caribbean Sea/The Resource with Amphibious Passenger Vehicle DUKW 34, Philadelphia, Pennsylvania, July 7, 2010*, Marine Accident Report NTSB/MAR-11/02 (Washington, DC: National Transportation Safety Board, 2011), which is available on our website at <http://www.nts.gov/doclib/reports/2011/MAR1102.pdf>.

of the *DUKW 34* master to take actions appropriate to the risk of anchoring his vessel in an active navigation channel.

### **Location of the *Caribbean Sea* Mate at the Time of the Accident**

The *Caribbean Sea* was outfitted with an upper wheelhouse above the main wheelhouse that provided improved visibility. The *Caribbean Sea* master told investigators that before the accident trip he had spoken with the mate about using the upper wheelhouse during the voyage. The master said that the mate had assured him that this was where he would be. In a postaccident interview with Coast Guard investigators, the mate said that he was operating from the upper wheelhouse when the accident occurred. Although *Caribbean Sea* crewmembers confirmed that when the voyage began, the mate was operating from the upper wheelhouse, the NTSB's investigation determined that the mate was not operating from the upper wheelhouse when the accident occurred but was instead occupying the lower wheelhouse.

Had an upper wheelhouse not been available, the mate could have navigated the tow combination safely from the lower wheelhouse. The lower wheelhouse was equipped with radars and radios that would have helped the mate monitor his surroundings and avoid hazards. Despite the presence of these navigation aids, however, with the limited visibility ahead because of the high freeboard of the empty barge, the mate would have needed to assign the deckhand, with a radio, as an additional lookout on the bow area of the barge.

Evidence also indicates that the mate was not actively monitoring the radars and radios while in the lower wheelhouse. The *DUKW 34* master and other mariners clearly radioed warning calls to the tugboat and barge about a minute before the collision. Had the mate been monitoring the radios and radar, even from within the lower wheelhouse, he would have been alerted to the presence of the APV and may have been able to take action to avoid the collision. Based on the mate's own postaccident statements to the Coast Guard, however, he was not aware of the presence of the anchored APV until after the barge had struck it.

The NTSB attempted to determine why, on the day of the accident, a trained, experienced, and otherwise competent mariner failed to effectively carry out routine, but highly crucial, tasks central to his profession. No evidence indicates that the mate was fatigued, and his postaccident toxicological tests showed no signs of alcohol or illegal drugs.

### **Personal Use of Cell Phone and Laptop Computer by the *Caribbean Sea* Mate**

The mate's cell phone records revealed a likely explanation for his poor judgment and inattentiveness to his duties on the day of the accident. The records showed that the mate was engaged in voice communications with several family members beginning just 22 minutes after he assumed the watch and continuing up until the time of the accident.

A K-Sea Transportation official told investigators that, in a conversation with the mate after the accident, the mate informed him that he had learned while on watch that his young child had suffered a serious medical emergency earlier that day. The official said that the mate told him that he had been "consumed" with dealing with this family crisis (medical records obtained

by the NTSB confirmed that the mate's child, who was undergoing a scheduled routine medical procedure that day, had suffered a potentially life-threatening complication less than an hour before the mate went on duty).

The mate's cell phone records indicated that 18 outgoing or incoming calls were made or received while the mate was solely responsible for navigating the tugboat and barge. The mate spent at least one-third of his time making or taking calls when he should have been attending to the safe passage of his vessel. It is likely that the mate was using his cell phone at least during the time of the radio calls and possibly at the time of the collision itself. Moreover, he simultaneously conducted Internet searches on the company laptop computer,<sup>2</sup> which further distracted him from his navigational responsibility. The NTSB therefore concluded that the mate of the *Caribbean Sea* failed to maintain an appropriate lookout, including monitoring the radios, while navigating the vessel because he was distracted by personal use of his cell phone and the company laptop computer in dealing with a serious family medical emergency.

All of the calls on the mate's cell phone during the time leading up to the accident were of relatively short duration and were to or from an immediate family member, which suggests that all of the calls were in regard to the medical emergency. The fact that the calls involved an emotionally troubling event that was likely evolving over a period of time increased the likelihood that the calls would distract the mate from his duties. Although such a distraction is understandable, personal concerns cannot be allowed to create risks for others. If the mariner is unable to fully carry out his responsibilities, for whatever reason, his duty is to turn over those responsibilities to someone else.

### **Personal Cell Phone Use by the *DUKW 34* Deckhand**

While standing on the bow of the anchored APV, the *DUKW 34* deckhand was the individual on board with the greatest height of eye and a 360° unobstructed field of view. He could have used this vantage point to continuously monitor the position of the approaching tugboat/barge combination and, at a minimum, keep the master informed about its progress. Instead, according to the deckhand, he only acted as lookout in the upriver direction (forward), assuming that the master was covering the lookout responsibilities downriver (aft). Additionally, cell phone records reviewed by the NTSB revealed that, while the deckhand was on the bow, he transmitted two text messages and his phone received two others. The last text message that he sent was about 1 minute before he jumped into the water, just before the collision. The NTSB therefore concluded that the *DUKW 34* deckhand's use of his cell phone to send text messages while he was on the bow of the vessel distracted him from effectively performing his duty as a lookout.

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<sup>2</sup> K-Sea Transportation provided all company vessels with laptop computers for the purpose of general communication, aids to navigation, and transmission of data for billing. On the *Caribbean Sea*, the laptop computer, which had Internet connectivity, was located in the lower wheelhouse. Following the accident, NTSB investigators removed the laptop computer for analysis. In June 2011, the Federal Bureau of Investigation, which had further examined the computer, informed the NTSB that on the day of the accident, between about 1400 and 1420, the computer had been used to look up medical information.

## Nonoperational Use of Cell Phones and Other Wireless Devices

Using cellular telephones and other wireless electronic devices has been demonstrated to be visually, manually, and cognitively distracting.<sup>3</sup> Talking on cell phones can have serious consequences in safety-critical situations, and sending or reading text messages is potentially even more distracting than talking because texting requires visual attention to the display screen of the device.

As a result of its preliminary investigations of two marine accidents occurring in December 2009 involving collisions between Coast Guard and civilian vessels, the NTSB, on August 11, 2010, issued the following safety recommendation to the Coast Guard:

Issue a safety advisory to the maritime industry that (1) promotes awareness of the risk posed by the use of cellular telephones and other wireless devices while operating vessels and (2) encourages the voluntary development of operational policies to address the risk. (M-10-3)

In response to Safety Recommendation M-10-3, the Coast Guard, on October 29, 2010, issued Marine Safety Advisory 01-10, *Distracted Operations—Don't let it be you*, which warned mariners of the danger and potential for distraction from duty caused by the use of a cellular telephone or wireless device for purposes unrelated to vessel operation. That safety alert specifically mentioned the risk of using these devices when mariners were performing navigation duties alone, as was the mate on the *Caribbean Sea*. Based on this response, Safety Recommendation M-10-3 was classified “Closed—Acceptable Action” on December 14, 2010.

Cell phone use has been a factor in accidents in all transportation modes. For example, the NTSB has investigated several fatal railroad accidents in which use of a wireless device was identified as causal or contributing. In its investigation of a May 28, 2002, head-on collision of a coal train with an intermodal train near Clarendon, Texas,<sup>4</sup> in which the engineer of the intermodal train was killed, the NTSB determined that the probable cause of the accident was the coal train engineer's use of a personal cell phone during the time he should have been attending to the requirements of the track authorization under which his train was operating. As a result of that accident investigation, the NTSB made the following safety recommendation to the Federal Railroad Administration:

Promulgate new or amended regulations that will control the use of cellular telephones and similar wireless communication devices by railroad operating employees while on duty so that such use does not affect operational safety. (R-03-1)

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<sup>3</sup> For research information, see U.S. Department of Transportation website on distracted driving <<http://www.distracted.gov>>.

<sup>4</sup> *Collision of Two Burlington Northern Santa Fe Freight Trains Near Clarendon, Texas, May 28, 2002*, Railroad Accident Report NTSB/RAR-03/01 (Washington, DC: National Transportation Safety Board, 2003), which is available at our website at <<http://www.nts.gov/doclib/reports/2003/RAR0301.pdf>>.

In its investigation of the September 12, 2008, head-on collision of a westbound commuter train with an eastbound freight train near Chatsworth, California,<sup>5</sup> in which 25 people were killed, the NTSB determined that the probable cause of the accident was the failure of the engineer of the commuter train to observe and appropriately respond to a red signal aspect because he was engaged in prohibited use of a wireless device, specifically text messaging, that distracted him from his duties.

Inappropriate use of cell phones or other wireless electronic devices has also been cited as a causal or contributing factor in highway accidents that the NTSB has investigated.<sup>6</sup>

In this accident, the *Caribbean Sea* mate was operating the vessel from the lower, rather than the upper, wheelhouse when the accident occurred, an action possibly explained by his desire for an environment favorable for using his cell phone and accessing K-Sea's laptop computer for Internet searches. On *DUKW 34* leading up to the collision, the deckhand was using his personal cell phone to send text messages instead of performing his duty as lookout.

The NTSB was unable to determine the extent to which cell phone use by mariners has caused or contributed to marine accidents. Coast Guard investigations typically have not verified nonoperational cell phone use following marine accidents. As a result, the Coast Guard's marine accident database does not explicitly record instances in which nonoperational use of a cell phone or other wireless device has been causal in an accident. The ability to determine the extent of inappropriate cell phone or other wireless device use will provide investigators and policymakers with important information about this form of distracted operations on board marine vessels, but this information will have been gathered after accidents have occurred. The NTSB believes that critical measures can be taken to keep those accidents from happening. These include a continuing outreach program of information and education to the maritime industry on this issue, regulations to prohibit nonoperational use of communication devices, and enforcement mechanisms to ensure that the regulations are being adhered to.

The NTSB recognizes the difficulty of this task. Establishing that a wireless communication device was actually used leading up to an accident can be an involved and time consuming process. Additionally, the devices in question are small and therefore easily concealable, and those individuals or employees wishing to circumvent the prohibitions on their use can frequently do so undetected. But the consequences that can result from such use, as shown by this accident, are serious enough to demand that every feasible action be taken to prevent it.

Because cell phones and other wireless electronic devices have come to play such a prominent role in the day-to-day activities of people in all walks of life and because their use has

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<sup>5</sup> *Collision of Metrolink Train 111 with Union Pacific Train LOF65-12, Chatsworth, California, September 12, 2008*, Railroad Accident Report NTSB/RAR-10/01 (Washington, DC: National Transportation Safety Board, 2010) <<http://www.nts.gov/doclib/reports/2010/RAR1001.pdf>>.

<sup>6</sup> See (a) *Ford Explorer Sport Collision with Ford Windstar Minivan and Jeep Grand Cherokee on Interstate 95/495 near Largo, Maryland, on February 1, 2002*, Highway Accident Report NTSB/HAR-03/02 (Washington, DC: National Transportation Board, 2003) <<http://www.nts.gov/doclib/reports/2003/HAR0302.pdf>>; (b) *Motorcoach Collision With the Alexandria Avenue Bridge Overpass, George Washington Memorial Parkway, Alexandria, Virginia, November 14, 2004*, Highway Accident Report NTSB/HAR-06/04 (Washington, DC: National Transportation Safety Board, 2006) <<http://www.nts.gov/publicctn/2006/HAR0604.pdf>>.



been implicated in accidents across all transportation modes, the NTSB concluded that increased Coast Guard focus on and oversight of mariners' use of cell phones and other wireless electronic devices will prevent accidents and save lives.

Therefore, the National Transportation Safety Board makes the following safety recommendations to the U.S. Coast Guard:

Develop and implement an investigative protocol that directs your investigation officers to routinely check for nonoperational use of cell phones and other wireless electronic devices by on-duty crewmembers in safety-critical positions involved in marine accidents. (M-11-1)

Revise your commercial vessel accident database (MISLE) to maintain a record of nonoperational use of cell phones and other wireless electronic devices by on-duty crewmembers in safety-critical positions when such use is causal or contributory to marine accidents. (M-11-2)

Regulate and enforce the restriction on nonoperational use of cell phones and other wireless electronic devices by on-duty crewmembers in safety-critical positions so that such use does not adversely affect vessel operational safety. (M-11-3)

Until you can develop regulations governing nonoperational use of cell phones and other wireless electronic devices by on-duty crewmembers in safety-critical positions, continue your outreach program of information and education to the maritime industry on this issue. (M-11-4)

The NTSB also issued one safety recommendation to Ride The Ducks International, LLC, one safety recommendation to K-Sea Transportation Partners L.P., and one safety recommendation to The American Waterways Operators.

The NTSB would appreciate a response from you within 90 days addressing the actions you have taken or intend to take to implement our recommendations. In response to the recommendations in this letter, please refer to Safety Recommendations M-11-1 through -4. If you would like to submit your response electronically rather than in hard copy, you may send it to the following e-mail address: [correspondence@ntsb.gov](mailto:correspondence@ntsb.gov). If your response includes attachments that exceed 5 megabytes, please e-mail us asking for instructions on how to use our Tumbleweed secure mailbox. To avoid confusion, please use only one method of submission (that is, do not submit both an electronic copy and a hard copy of the same response letter).

Chairman HERSMAN, Vice Chairman HART, and Members SUMWALT, ROSEKIND, and WEENER concurred in these recommendations.

*[Original Signed]*

By: Deborah A.P. Hersman  
Chairman



# National Transportation Safety Board

Washington, DC 20594

## Safety Recommendation

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**Date:** August 26, 2011

**In reply refer to:** M-11-5

Mr. Chris Herschend  
President  
Ride The Ducks International, LLC  
5445 Triangle Parkway, Suite 200  
Norcross, Georgia 30092

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The National Transportation Safety Board (NTSB) is an independent Federal agency charged by Congress with investigating transportation accidents, determining their probable cause, and making recommendations to prevent similar accidents from occurring. We are providing the following information to urge your organization to take action on the safety recommendation in this letter. The NTSB is vitally interested in this recommendation because it is designed to prevent accidents and save lives.

This recommendation is derived from the NTSB's investigation of the July 7, 2010, collision of the tugboat/barge combination *Caribbean Sea/The Resource* with Ride The Ducks' amphibious passenger vehicle (APV) *DUKW 34*. The recommendation addresses the safety management program within Ride The Ducks International, LLC (Ride The Ducks), and is consistent with the evidence we found and the analysis we performed. As a result of this investigation, the NTSB has issued seven safety recommendations, one of which is addressed to Ride The Ducks. Information supporting this recommendation is discussed below. The NTSB would appreciate a response from you within 90 days addressing the actions you have taken or intend to take to implement our recommendation.

### Background

On Wednesday, July 7, 2010, the empty 250-foot-long sludge barge *The Resource*, being towed alongside the 78.9-foot-long tugboat *Caribbean Sea*, collided with the anchored 33-foot-long APV *DUKW 34* in the Delaware River at Philadelphia, Pennsylvania. *DUKW 34* carried 35 passengers and 2 crewmembers. On board the *Caribbean Sea* were five crewmembers. As a result of the collision, *DUKW 34* sank in about 55 feet of water. Two passengers were fatally injured, and 26 passengers suffered minor injuries. No one on the *Caribbean Sea* was injured.<sup>1</sup>

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<sup>1</sup> For more information, see *Collision of Tugboat/Barge Caribbean Sea/The Resource with Amphibious Passenger Vehicle DUKW 34, Philadelphia, Pennsylvania, July 7, 2010*, Marine Accident Report NTSB/MAR-11/02 (Washington, DC: National Transportation Safety Board, 2011), available on the NTSB website at <http://www.nts.gov/doclib/reports/2011/MAR1102.pdf>.

The NTSB determined that the probable cause of this accident was the failure of the mate of the *Caribbean Sea* to maintain a proper lookout due to (1) his decision to operate the vessel from the lower wheelhouse, which was contrary to expectations and to prudent seamanship, and (2) distraction and inattentiveness as a result of his repeated personal use of his cell phone and company laptop computer while he was solely responsible for navigating the vessel. Contributing to the accident was the failure of Ride The Ducks International maintenance personnel to ensure that *DUKW 34*'s surge tank pressure cap was securely in place before allowing the vehicle to return to passenger service on the morning of the accident, and the failure of the *DUKW 34* master to take actions appropriate to the risk of anchoring his vessel in an active navigation channel.

### ***DUKW 34* Maintenance and Inspections**

The master and the deckhand of *DUKW 34* told investigators that about 10 minutes into the water portion of the accident tour, they saw smoke entering the passenger cabin. Fearing an engine fire, the master shut down the engine. Postaccident examination of the engine compartment of the APV revealed no evidence of fire or smoke damage. The examination did, however, reveal that the pressure cap was not in place on the radiator surge tank.

In postaccident interviews, the deckhand told investigators that he had noticed that the engine coolant temperature was registering (on the operating console temperature gauge) about 220° F during the upstream (northbound) waterborne portion of the accident tour. The deckhand did not inform the master of the high engine coolant temperature. During a test run that investigators conducted in Branson, Missouri, of an APV similar to *DUKW 34*, with the surge tank pressure cap removed and a coolant temperature of 220° F, the vapor from the boiling coolant filled the passenger cabin of the APV in a manner similar to that described by the master and the deckhand as having occurred on the day of the accident. The NTSB therefore concluded that the *DUKW 34* surge tank pressure cap was not in place at the time of the accident, and the missing pressure cap allowed the engine coolant to boil and create steam that entered the passenger compartment and prompted the master to shut down the engine because he believed he had an onboard fire.

The missing pressure cap was found in the bottom of the engine bay when *DUKW 34* was salvaged. Given the fact that the APV's engine compartment was documented as having been inspected the evening before the accident, the misplaced cap could be explained by two possible scenarios.

First, the cap could have been removed to check or add to the coolant level and then reinstalled improperly so that, as a result of vibration or pressure within the cooling system, it worked loose until the spring pressure within the cap caused it to separate from the surge tank filler neck.

Another possibility is that a mechanic may have removed the cap to replenish the coolant and become distracted and forgotten to finish the task. The cap would have fallen to the bottom of the engine bay after the vehicle left the maintenance facility for the Visitor Center.

The mechanic who performed the post-trip inspection of *DUKW 34* the evening before the accident told investigators that he had used the coolant level markings on the expansion tank to check the coolant level in the APV. He said that the coolant was “right at the level it should have been” and that he had not removed the pressure cap from the surge tank. But *DUKW 34* was one of four APVs that the mechanic inspected that evening, and it is possible that his recollection was faulty about which actions he had performed on which vehicle. If his recollection was correct, he simply may not have noticed if the cap had been improperly installed.

Thus, Ride The Ducks mechanical personnel either failed to reinstall the cap after removal or failed to install the cap properly to prevent it from becoming dislodged during vehicle operation. In any event, the mechanics who were responsible for inspecting Ride The Ducks APVs allowed *DUKW 34* to be put into service with a missing or improperly installed pressure cap. The NTSB therefore concluded that the mechanics who performed post-trip inspections of *DUKW 34* failed to ensure that the surge tank pressure cap was securely in place before allowing the vehicle to enter passenger service.

### **Performance of the *DUKW 34* Master and Deckhand**

On seeing and smelling what he believed to be smoke from a fire in the APV’s engine space, the *DUKW 34* master took action to mitigate the emergency situation as he understood it. His actions included securing the fuel source, the electrical supply, the ignition switch, and the ventilation closures to the engine compartment. He also directed the deckhand forward to the bow to deploy the anchor to stop the APV from drifting uncontrollably in the river current. Although anchoring in a navigational channel is never preferred and is typically prohibited by regulation during normal operations, it is appropriate in an emergency. The master’s actions in this regard did keep the vessel from drifting with the river’s current (which could have delayed assistance by the APV that was being dispatched as a tow vessel) and reduced the potential for the APV to be damaged by contact with fenders, bulkheads, and other structures along the west side of the river. The NTSB therefore concluded that the *DUKW 34* master’s initial response (shutting down the engine and anchoring) to what he believed to be a fire on board the vessel was reasonable given his perception of the nature of the emergency.

But although the master’s initial actions were reasonable given his understanding of the situation, his subsequent actions were not. The Ride The Ducks *Captains’ Operations Manual* contains procedures to be followed in the event of an onboard fire during waterborne operations and in the event of a loss of propulsion. They included that the master, “immediately notify the USCG [Coast Guard] by radio.” However, the master did not notify the Coast Guard that he had lost propulsion and anchored in the navigation channel. (According to Coast Guard regulations and company policy, the manager-on-duty should also have notified the Coast Guard, but she did not do so.) Thus an opportunity was missed to have the Coast Guard issue an early *securité* call on channel 16 using the agency’s high-wattage VHF output capability as well as to make the Coast Guard aware of a potentially hazardous situation. Other than the four VHF marine radio transmissions from the master attempting to contact the *Caribbean Sea* on channels 13 and 16 when the collision was imminent, the NTSB was unable to verify that the master actually

transmitted any *securité* or other callouts on either channel 13 or channel 16 to inform vessel traffic in the area of the situation on board *DUKW 34*.

Anchoring in the middle of an active navigation channel placed the APV and its occupants in a vulnerable position because of the deep-draft or limited-maneuverability vessels that routinely use the channel. Awareness of that vulnerability and its associated risk to the APV occupants should have prompted the master to maintain the highest levels of alertness with regard to vessel traffic and to fully employ the deckhand to assist in that effort. Nevertheless, the master never specifically directed the deckhand—who in accordance with Coast Guard regulations was on board to assist the master—to serve as lookout once he had deployed the anchor. During the 8 minutes that passed between dropping the anchor and the collision, the master did not task the deckhand to perform any safety-related function, such as assisting passengers with donning lifejackets in preparation for the planned tow or explaining emergency egress.

Furthermore, in the event of either an onboard fire or a loss of propulsion, Ride The Ducks procedures called for masters to ask passengers to remain calm and don lifejackets. Although this incident involved both a fire on board (as believed by the master) and a loss of propulsion (by way of the master's shutting down the engine), the master did not immediately direct passengers to don their lifejackets, nor did he make any attempt to apprise the passengers of the situation. It may be argued that the master's first actions were rightly directed toward containing what he believed to be a fire; nevertheless, his belief that there was a fire on board should have been enough to prompt him to prepare the passengers for an evacuation of the vessel. If the master felt that he needed to continue working to contain the fire, he could have directed the deckhand to have passengers take the lifejackets down from their overhead storage and prepare to put them on.

Only when the collision was imminent did the master direct passengers to don lifejackets. Even then, not all the passengers heard the master's order. As described by the passengers, the last few moments before the collision were chaotic as passengers tried to secure lifejackets from the overhead storage and put them on. Because of the delay in the master's order, which came less than 1 minute before the collision, no passengers had time to fully put on a lifejacket or evacuate the vessel before the barge struck. Some passengers were able to hang onto a lifejacket as the vessel was forced under water; others were able to grab a floating jacket when they surfaced. As a result of the master's combined failures to (1) notify the Coast Guard of anchoring in the channel, (2) direct the deckhand to perform safety-related functions after deploying the anchor, and (3) instruct passengers to don lifejackets, the NTSB concluded that the *DUKW 34* master did not fully appreciate or appropriately respond to the risk of a collision that faced *DUKW 34* and its occupants once he had shut down the vessel's engine and anchored in the navigation channel.

### **Personal Cell Phone Use by the *DUKW 34* Deckhand**

While standing on the bow, the deckhand was the individual on board with the greatest height of eye and a 360° unobstructed field of view. He could have used this vantage point to continuously monitor the position of the approaching tugboat/barge combination and, at a minimum, keep the master informed about its progress. Instead, according to the deckhand, he only acted as lookout in the upriver direction (forward), assuming that the master was covering

the lookout responsibilities downriver (aft). Additionally, cell phone records reviewed by the NTSB revealed that, while the deckhand was on the bow, he transmitted two text messages and his phone received two others. The last text message the deckhand sent was about 1 minute before he jumped into the water, just before the collision.

Talking on a cell phone has proven to be a distraction that can have serious consequences in safety-critical situations. Using a cell phone or other wireless device to send or read text messages is potentially even more distracting in that it requires attention to the display screen of the device. The deckhand's use of his cell phone to send text messages diverted his attention away from what should have been his duty of maintaining a proper lookout. The NTSB therefore concluded that the *DUKW 34* deckhand's use of his cell phone to send text messages while he was on the bow of the vessel distracted him from effectively performing his duty as a lookout.

### **Ride The Ducks Safety Management**

At the time of the accident, Ride The Ducks operated passenger vessels on limited U.S. domestic routes; therefore neither the company nor its vessels were required to comply with domestic regulations or international treaties with regard to establishing or implementing a safety management system (SMS). Ride The Ducks did, however, have systematic and comprehensive processes in place that met some elements of an SMS. The company's manuals and guidance provided established practices for safe vessel operation and a safe working environment. Ride The Ducks identified the potential risks related to operation of APVs both on the road and on the water, and outlined specific actions that were to be taken by personnel in each instance to mitigate that risk. Personnel received annual training in these written safety and emergency procedures. Additionally, for employees in safety-critical positions such as the master and the deckhand of *DUKW 34*, the company provided periodic safety and emergency procedure reviews that were intended to reinforce the actions learned during the initial pre-season training.

Audits can never guarantee that a true safety culture exists within an organization or ensure the safe performance of individuals within that organization. However, audits that are conducted properly by knowledgeable and unbiased personnel can help reduce risk and ensure compliance with applicable procedures and regulations. The overall intent of a safety audit, whether it is performed internally by company personnel or externally by an independent third party, is to identify potential hazards or other safety concerns so that preventative measures can be implemented. If an audit is to be carried out internally, it should be carried out by personnel who are independent of the areas being audited.

In the months preceding the accident, the general manager in Philadelphia had performed eight random, internal audits of safety-critical positions to ensure that the employees under his direction understood the emergency procedures required of their respective positions and that they performed them as trained. Those internal audits resulted in no documented non-conformities with the company's safety or emergency procedures. Both internal and independent third-party audits are integral elements of recognized quality systems. Before the accident, no independent, third-party audits had been performed at the Philadelphia location to validate or confirm the general manager's audit findings.

The effectiveness of the company's internal audits in ensuring adherence to written safety procedures became questionable on the day of the accident when personnel in safety-critical positions did not take emergency actions consistent with their training and did not implement important elements of the company's safety and emergency procedures. For example, the master did not immediately issue a *securité* call as soon as he shut down the APV engine and began to drift within the navigation channel; the master did not properly prepare the passengers for the risk they faced by having them don lifejackets while awaiting a tow; both the master and the deckhand failed to effectively monitor vessel traffic; and neither the master nor shore-side personnel immediately notified the nearest Coast Guard office of the possible fire and the subsequent loss of propulsion, as required by Federal regulation and by company policy.

After *DUKW 34* was anchored in the channel and the urgency of the perceived fire situation had diminished, the master had sufficient time to evaluate the risk of being anchored in a navigation channel with passengers on board and to prioritize his next actions based on his emergency procedures training. But he failed to do so.

If the failures to perform critical elements of the company's emergency procedures had been limited to the master, those failures could be attributed to poor judgment or a lack of experience with this type of emergency. However, other Ride The Ducks personnel—such as the manager-on-duty who did not notify the Coast Guard of the incident, the deckhand who did not maintain an effective lookout and inappropriately used a personal cell phone while on duty, and the line mechanics who did not perform effective inspections of the APV before the accident—also failed to properly execute company procedures in accordance with their training. If a more effective safety culture existed at the Ride The Ducks Philadelphia operation, these and other noted systemic failures to properly execute company safety procedures may have been detected. The NTSB concluded that Ride The Ducks International's written procedures for safe operational practices and emergency procedures on the water were comprehensive and exceeded requirements; however, they were not fully implemented by the crew of *DUKW 34* or the shore-side personnel on the day of the accident.

Therefore, the National Transportation Safety Board makes the following safety recommendation to Ride The Ducks International, LLC:

Review Ride The Ducks International's existing safety management program and develop improved means to ensure that your company's safety and emergency procedures are understood and adhered to by employees in safety-critical positions.  
(M-11-5)

The NTSB also issued four safety recommendations to the U.S. Coast Guard, one safety recommendation to K-Sea Transportation Partners L.P., and one safety recommendation to The American Waterways Operators.

In response to the recommendation in this letter, please refer to Safety Recommendation M-11-5. If you would like to submit your response electronically rather than in hard copy, you may send it to the following e-mail address: [correspondence@ntsb.gov](mailto:correspondence@ntsb.gov). If your response includes attachments that exceed 5 megabytes, please e-mail us asking for instructions on how to use our Tumbleweed secure mailbox. To avoid confusion, please use only one method of

submission (that is, do not submit both an electronic copy and a hard copy of the same response letter).

Chairman HERSMAN, Vice Chairman HART, and Members SUMWALT, ROSEKIND, and WEENER concurred in this recommendation.

*[Original Signed]*

By: Deborah A.P. Hersman  
Chairman





# National Transportation Safety Board

Washington, DC 20594

## Safety Recommendation

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**Date:** August 26, 2011

**In reply refer to:** M-11-6

Mr. Timothy J. Casey  
President and Chief Executive Officer  
K-Sea Transportation Partners L.P.  
One Tower Center Blvd., 17th Floor  
East Brunswick, New Jersey 08816

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The National Transportation Safety Board (NTSB) is an independent Federal agency charged by Congress with investigating transportation accidents, determining their probable cause, and making recommendations to prevent similar accidents from occurring. We are providing the following information to urge your organization to take action on the safety recommendation in this letter. The NTSB is vitally interested in this recommendation because it is designed to prevent accidents and save lives.

This recommendation is derived from the NTSB's investigation of the July 7, 2010, collision of the tugboat/barge combination *Caribbean Sea/The Resource* with Ride The Ducks International amphibious passenger vehicle (APV) *DUKW 34*. The recommendation addresses the safety management program within K-Sea Transportation Partners L.P. (K-Sea Transportation), and is consistent with the evidence we found and the analysis we performed. As a result of this investigation, the NTSB has issued seven safety recommendations, one of which is addressed to K-Sea Transportation. Information supporting this recommendation is discussed below. The NTSB would appreciate a response from you within 90 days addressing the actions you have taken or intend to take to implement our recommendation.

### Background

On Wednesday, July 7, 2010, the empty 250-foot-long sludge barge *The Resource*, being towed alongside the 78.9-foot-long tugboat *Caribbean Sea*, collided with the anchored 33-foot-long APV *DUKW 34* in the Delaware River at Philadelphia, Pennsylvania. *DUKW 34* carried 35 passengers and 2 crewmembers. On board the *Caribbean Sea* were five crewmembers. As a result of the collision, *DUKW 34* sank in about 55 feet of water. Two passengers were fatally injured, and 26 passengers suffered minor injuries. No one on the *Caribbean Sea* was injured.<sup>1</sup>

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<sup>1</sup> For more information, see *Collision of Tugboat/Barge Caribbean Sea/The Resource with Amphibious Passenger Vehicle DUKW 34, Philadelphia, Pennsylvania, July 7, 2010*, Marine Accident Report NTSB/MAR-11/02 (Washington, DC: National Transportation Safety Board, 2011), which is available on our website at <http://www.nts.gov/doclib/reports/2011/MAR1102.pdf>.

The NTSB determined that the probable cause of this accident was the failure of the mate of the *Caribbean Sea* to maintain a proper lookout due to (1) his decision to operate the vessel from the lower wheelhouse, which was contrary to expectations and to prudent seamanship, and (2) distraction and inattentiveness as a result of his repeated personal use of his cell phone and company laptop computer while he was solely responsible for navigating the vessel. Contributing to the accident was the failure of Ride The Ducks International maintenance personnel to ensure that *DUKW 34*'s surge tank pressure cap was securely in place before allowing the vehicle to return to passenger service on the morning of the accident, and the failure of the *DUKW 34* master to take actions appropriate to the risk of anchoring his vessel in an active navigation channel.

### **Location of Mate While Navigating the *Caribbean Sea***

At the time of the accident, the *Caribbean Sea* was being navigated by the mate. The mate was an experienced mariner who had about 118 days of service on either the *Caribbean Sea* or the *Falcon* as those vessels made daily sludge barge runs between two wastewater facilities serving the city of Philadelphia. Both the *Caribbean Sea* and the *Falcon* were outfitted with an upper wheelhouse above the main wheelhouse that provided improved visibility. The *Caribbean Sea* master told investigators that before the accident trip he had spoken with the mate about using the upper wheelhouse during the northbound voyage. The master said that the mate had assured him that this was where he would be. In a postaccident interview with Coast Guard investigators, the mate said that he was operating from the upper wheelhouse when the accident occurred.

However, a number of individuals who had been on the bulkhead at Penn's Landing at the time of the accident provided the NTSB with photographs taken just before, during, and just after the collision. At least two of the still photographs provide fairly clear images of the upper wheelhouse of the *Caribbean Sea* just before and just as the barge struck the APV. In both photographs, the upper wheelhouse appears to be unoccupied.

The master said that the mate, after he had alerted the master to the collision, left the master's stateroom. The master said that he got dressed and went to the upper wheelhouse, where he found the mate. The master said that when he arrived, he found the throttle active for operation from the upper wheelhouse. He said he also found that both VHF radios and the radar were turned on. But there was sufficient time for the mate, after leaving the master's stateroom, to have gone to the upper wheelhouse and activated the valve to change the throttle control location from the lower to the upper wheelhouse before the master arrived. The NTSB therefore concluded that, contrary to the master's instructions and contrary to his own postaccident statements, the mate of the *Caribbean Sea* was not navigating the vessel from the upper wheelhouse at the time of the collision.

### **Lack of Attention to Duty by the *Caribbean Sea* Mate**

Had an upper wheelhouse not been available, the mate could have navigated the tow combination safely from the lower wheelhouse. The lower wheelhouse was equipped with radars and radios that would have helped the mate monitor his surroundings and avoid hazards. Despite the presence of these navigation aids, however, with the limited visibility ahead because of the

high freeboard of the empty barge, the mate would have needed to assign the deckhand, with a radio, as an additional lookout on the bow area of the barge.

In this case, the mate moved from the upper wheelhouse to the lower one without posting an additional lookout to ensure adequate visibility in the direction of travel. Based on the results of the NTSB's visibility study, from the lower wheelhouse, the mate's view of *DUKW 34* would have begun to be at least partially obstructed when the APV was still about 5,400 feet, or about 21 barge-lengths, away. Once the barge approached within 3,500 feet, or about 14 barge-lengths, the mate would have had no view of the anchored APV. At a barge speed of 6 knots, the mate's view of the APV would have begun to be partially obstructed about 9 minutes before the collision and would have been totally obstructed about 6 minutes before. Thus, from about the time *DUKW 34* was firmly anchored (at 1433) until the collision, it was partially or completely out of the view of the mate in the lower wheelhouse. By contrast, had the mate been navigating from the upper wheelhouse, the anchored APV would have been at least partially visible until it was less than one barge-length away.

Evidence also indicates that the mate was not actively monitoring the radars and radios while in the lower wheelhouse. The *DUKW 34* master and other mariners clearly radioed warning calls to the tugboat and barge about a minute before the collision. Had the mate been monitoring the radios and radar, even from within the lower wheelhouse, he would have been alerted to the presence of the APV and may have been able to take action to avoid the collision. Based on the mate's own postaccident statements to the Coast Guard, however, he was not aware of the presence of the anchored APV until after the barge had struck it.

The NTSB attempted to determine why, on the day of the accident, a trained, experienced, and otherwise competent mariner failed to effectively carry out routine, but highly crucial, tasks central to his profession. No evidence indicates that the mate was fatigued, and his postaccident toxicological tests showed no signs of alcohol or illegal drugs.

### **Personal Use of Cell Phone and Laptop Computer by the *Caribbean Sea* Mate**

The mate's cell phone records revealed a likely explanation for his poor judgment and inattentiveness to his duties on the day of the accident. Those records showed that the mate was engaged in voice communications with several family members beginning just 22 minutes after he assumed the watch and continuing up until the time of the accident.

The mate's cell phone records indicated that 18 outgoing or incoming calls were made or received while the mate was solely responsible for navigating the tugboat and barge. The mate spent at least one-third of his time making or taking calls when he should have been attending to the safe passage of his vessel. It is likely that the mate was using his cell phone at least during the time of the radio calls and possibly at the time of the collision itself. Moreover, he simultaneously conducted Internet searches on the company laptop computer, which further distracted him from his navigational responsibility. The NTSB therefore concluded that the mate of the *Caribbean Sea* failed to maintain an appropriate lookout, including monitoring the radios, while navigating the vessel because he was distracted by personal use of his cell phone and the company laptop computer in dealing with a serious family medical emergency.

The mate had been an employee of K-Sea Transportation since late December 2000. As early as March 22, 2002, the company had issued a memorandum to its personnel prohibiting mariners from using personal cell telephones while on watch. This policy was reinforced with a second memorandum issued to all personnel on February 10, 2004, and by a third memorandum issued on July 17, 2006. Additionally, the company's policy prohibiting personal use of cell phones while on watch was specifically discussed at a 2-day seminar that the mate attended in 2007 as part of his training. K-Sea Transportation also prohibited personal use of company-provided laptop computers while on watch. The NTSB concluded that the mate of the *Caribbean Sea* should have been aware of his employer's prohibition of personal use of cell phones and company-provided computers while on watch, but on the day of the accident, he did not follow the policy.

A K-Sea Transportation official told investigators that the mate had met with him briefly after the accident and told him about a serious medical emergency that affected the mate's young child. The NTSB confirmed that such an emergency had occurred less than an hour before the mate reported for duty at 1200 on the day of the accident.

All of the calls on the mate's cell phone were of relatively short duration and were to or from an immediate family member, which suggests that all of the calls were in regard to the medical emergency. The fact that the calls involved an emotionally troubling event that was likely evolving over a period of time increased the likelihood that the calls would distract the mate from his duties. Although such a distraction is understandable, personal concerns cannot be allowed to create risks for others. If the mariner is unable to fully carry out his responsibilities, for whatever reason, his duty is to turn over those responsibilities to someone else. Yet, no one else on board the *Caribbean Sea* was aware of the emergency that the mate was dealing with. The NTSB concluded that, had the mate of the *Caribbean Sea* informed the master or K-Sea Transportation management of the serious family medical emergency, he would likely have been granted relief from the watch.

Therefore, the National Transportation Safety Board makes the following safety recommendation to K-Sea Transportation Partners, L.P.:

Review K-Sea Transportation's existing safety management program and develop improved means to ensure that your company's safety and emergency procedures are understood and adhered to by employees in safety-critical positions. (M-11-6)

The NTSB also issued four safety recommendations to the U.S. Coast Guard, one safety recommendation to Ride The Ducks International, LLC, and one safety recommendation to The American Waterways Operators.

In response to the recommendation in this letter, please refer to Safety Recommendation M-11-6. If you would like to submit your response electronically rather than in hard copy, you may send it to the following e-mail address: [correspondence@ntsb.gov](mailto:correspondence@ntsb.gov). If your response includes attachments that exceed 5 megabytes, please e-mail us asking for instructions on how to use our Tumbleweed secure mailbox. To avoid confusion, please use only one method of submission (that is, do not submit both an electronic copy and a hard copy of the same response letter).

Chairman HERSMAN, Vice Chairman HART, and Members SUMWALT, ROSEKIND, and WEENER concurred in this recommendation.

*[Original Signed]*

By: Deborah A.P. Hersman  
Chairman