



National Transportation Safety Board

Washington, D.C. 20594

Safety Recommendation

Log N-414
Accident # DCA-98-MM-042

Date: May 19, 1998

In reply refer to: M-98-69 through -81

Admiral Robert E. Kramek
Commandant
U.S. Coast Guard
Washington, D.C. 20593-0001

The 560-foot-long Liberian tankship *Julie N*, carrying a cargo of heating oil, collided with the south bascule pier of the Portland-South Portland (Million Dollar) Bridge in Portland, Maine, about 1105 on September 27, 1996. The vessel had passed between the piers of the new Portland-South Portland bridge (Casco Bay Bridge) and was en route to the Rolling Mills terminal about 1.2 miles beyond the Million Dollar Bridge. The vessel was under the direction of a State-licensed docking master (pilot). After the collision, the pilot stated that as the vessel approached the bridge, he had issued three orders for port rudder to swing the bow to the left and then intended to order the rudder to hard starboard and to increase the engine speed from slow to half ahead to stop the swing and align the vessel for passage through the drawspan. However, the pilot inadvertently ordered the rudder to hard port instead of hard starboard. He recognized his error within seconds and ordered the rudder to hard starboard; given the narrowness of the bridge span, however, the shifting of the rudder occurred too late to avoid the collision.¹

There were no injuries, but the collision resulted in a 30-foot-long hole in the vessel's hull beneath the waterline. About 4,000 barrels of oil spilled into the harbor. The vessel sustained about \$660,000 in damage, and the cost for cleanup of the oil was approximately \$43 million. Repairs to the Million Dollar Bridge were about \$232,000.

The National Transportation Safety Board determines that the probable cause of the collision with the Portland-South Portland (Million Dollar) Bridge was the pilot's inadvertent order to port (left) rudder instead of starboard (right) rudder. Contributing to the accident was the narrow horizontal clearance of the bridge drawspan, which afforded little leeway for human error. Contributing to the severity of the damage to the vessel and to the amount of oil spilled was a corner of the bridge pier that was not adequately shielded by the timber fender system.

¹For additional information, refer to Marine Special Investigation Report—*Postaccident Testing for Alcohol and Drugs in the Marine Industry and the Ramming of the Portland-South Portland (Million Dollar Bridge) at Portland, Maine, by the Liberian Tankship Julie N on September 27, 1996* (NTSB/SIR-98/02).

Improving the chances of successfully navigating the bridge would require altering the procedures, vessels, or environment so that the job is made easier. For example, the establishment of permanent ranges would provide an easily observable means for checking alignment for passage through the drawspan and would make it easier to detect errors in alignment and correct them. The Safety Board concludes that establishing a range of navigation marks and lights would contribute to safe navigation in the area where the accident occurred. To further aid navigation, new operational guidelines may be needed to meet changes in the character of navigation. In Portland, any future operational guidance for vessels would likely involve guidance developed by the Captain of the Port or the Port Safety Forum on how and when to transit the new bridge. In order to be recognized and used by vessel masters and pilots, the Safety Board concludes that such operational guidance should be published in a readily available publication such as the *U.S. Coast Pilot*.

In addition to the port safety issues related to the probable cause of the *Julie N* accident, continuing problems encountered in conducting postaccident testing for alcohol and drugs² prompted the Safety Board to focus on the following postaccident testing issues:

- Timeliness of and accountability for testing,
- Testing and enforcement responsibilities, and
- Consistency of U.S. Coast Guard regulations with one another and with regulations in other transportation modes.

Timeliness of testing has been a recurring problem in major marine accidents investigated by the Safety Board. In the *Julie N* accident, the technicians elected to collect urine specimens first and conduct breath testing later. Thus, breath testing did not commence until about 1620, more than 5 hours after the accident, and was not completed until nearly 1800. Moreover, the master, the crewmember most directly involved in the accident, was among the last to be tested. This demonstrates that despite preparations by the vessel operator and timely orders to the testing contractor to conduct the testing, it is possible to conduct less than adequate testing and not be in violation of the regulations. Consequently, the Safety Board concludes that Coast Guard regulations for postaccident testing do not communicate clearly that alcohol testing is more time-sensitive and should be conducted as early as possible and, when possible, before collecting urine specimens.

In addition, alcohol or drugs could not be ruled out in numerous accidents investigated by the Safety Board because the postaccident testing was either not done or was delayed so long as to make the testing meaningless. For instance, in the *Julie N* accident, the pilot failed to be tested for alcohol because of the Coast Guard's failure to adequately address the industry-wide problem of postaccident alcohol and drug testing. Postaccident testing is not yet a reliable process for examining the factors of probable cause or for accurately assessing influences on safety

²The five drugs listed in the Department of Transportation regulations at 49 CFR 40.21 and the Coast Guard regulations at 46 CFR 16.350 are marijuana, cocaine, opiates, phencyclidines (PCPs), and amphetamines

attributable to alcohol or drugs, as is illustrated by the *Julie N* and five subsequent accidents shown in table 1 (enclosure 1).

The regulations at 33 *Code of Federal Regulations* (CFR) 95 and 46 CFR 4.06 both place the responsibility for testing on the marine employer; however, until late 1996, neither set of regulations contained enforcement provisions that could be applied to the marine employer. Lacking enforcement, the Coast Guard had to rely upon education and persuasion to get marine employers to recognize and carry out their responsibilities under the regulations for postaccident testing. The recently acquired authority in 46 *United States Codes* (U.S.C.) 2115 to impose civil penalties on marine employers, as well as others, for failing to comply with the postaccident testing regulations is a valuable new tool for the Coast Guard. The fact that the Coast Guard now has this authority should be conveyed to all Coast Guard personnel involved in enforcing the postaccident testing regulations.

Because the Coast Guard now has the needed authority to enforce its postaccident testing regulations, it should make enforcing these regulations a high priority and should develop a Service-wide program with procedures and guidance to ensure that postaccident testing is an effective, reliable process for accident investigation and enforcement.

Even a well-informed vessel operator may have other responsibilities following an accident that require a higher priority than postaccident testing and thus result in delayed testing for alcohol. Accordingly, it appears that the present procedure for testing will continue to result in unacceptable delays in alcohol testing, unless the Coast Guard becomes more actively involved in ensuring that marine employers make reasonable efforts to conduct timely testing. One way in which the Coast Guard could facilitate timely testing would be by having Coast Guard personnel conduct testing under certain circumstances. In the *Julie N* accident, a Coast Guard representative was able to board the vessel about 1230; hence, it would have been possible to initiate breath testing of the few individuals directly involved in the accident at that time, less than 2 hours after the accident.

The Coast Guard routinely performs breath testing for alcohol of operators of recreational vessels when such operators are involved in incidents or appear to be operating improperly. It would appear feasible for the Coast Guard personnel currently performing breath testing of recreational vessel operators to conduct breath testing for alcohol of the individuals on commercial vessels that are directly involved in serious marine incidents. Coast Guard personnel who are assigned to perform law enforcement or port safety functions normally would be able to be on scene to conduct breath testing for alcohol much sooner than the owner/operator or the owner/operator's testing contractor. Requiring trained Coast Guard personnel to perform testing of individuals on commercial vessels that are involved in serious marine incidents would not appear to represent a significant increase in workload, and such a procedure would most likely result in timely testing for alcohol. In fact, breath testing for alcohol may currently be conducted by appropriately trained Coast Guard personnel if such testing would be more timely than that arranged by the marine employer (ALDIST 179/94).

The Safety Board concludes that although the primary responsibility for postaccident testing for alcohol and dangerous drugs should remain with the marine employer, the timeliness

of postaccident alcohol testing on commercial vessels could be greatly improved by having Coast Guard personnel conduct breath testing of crewmembers involved in an accident.

The availability of crewmembers for testing can also adversely affect testing timeliness. Although not an issue in the *Julie N* accident, in other accidents, marine pilots and crewmembers have not been available for testing. Unless the crew is placed under subpoena, nothing prevents the crew of a foreign vessel from being transported out of the country. Accordingly, it should be required, when feasible, that the entire crew, including the marine pilot, remain with the vessel for breath testing by the Coast Guard, or until given permission by the Coast Guard to leave the vessel. The Safety Board concludes that requiring the crewmembers and pilot involved in a marine accident to remain with the vessel, when it is safe to do so, for breath testing by the Coast Guard would help to ensure that these individuals are tested for alcohol in a timely manner.

The availability of testing equipment can also affect the timeliness of postaccident testing. The regulations at 46 CFR 4.06 require U.S. oceangoing ships to carry breath-testing devices and to have urine specimen collection and shipping kits readily available.³ The Safety Board considers the intent of this requirement to be a reasonable effort to enable postaccident testing to be carried out expeditiously. Unfortunately, the option allowing vessels to forgo carrying the urine collection and shipping kits if they can be obtained in 24 hours can defeat the intent of the regulation and lead to unacceptable delays in testing. Eliminating the 24-hour option and requiring the equipment to be on board would eliminate the need to acquire this equipment on a time-consuming case-by-case basis and then transport the equipment to the vessel. Having the equipment on board would also make it possible for the vessel's officers to conduct testing when Coast Guard or shore-side technicians cannot reach the vessel in a timely manner.

Because most oceangoing ships entering U.S. ports are foreign vessels,⁴ it appears likely that marine casualties will probably involve such vessels as frequently as U.S. flag vessels. This is borne out by the data in table 1, which show that over half of the accidents on U.S. navigable waters investigated by the Safety Board involved foreign vessels. Accordingly, the Safety Board concludes that foreign, as well as U.S. vessels, should be required to carry breath-testing devices and urine specimen collection and shipping kits on board so that postaccident testing can be carried out in a timely manner. In addition, the Safety Board believes that having the breath-testing and urine collection/shipping kits on board is important for timely testing, but knowledge about how to use the devices is also crucial. Therefore, the Safety Board further concludes that a vessel plan for conducting postaccident testing would ensure that the marine employer and vessel personnel would be aware of the requirements for postaccident testing, trained to use the testing and collection equipment on board, and informed about where to send urine specimens for analysis.

³The *Julie N* had such equipment on board, but Maritime Overseas Corporation (MOC), the operator of the vessel, elected to have an independent contractor perform the testing. MOC only allows crewmembers to perform postaccident testing when an independent testing agency is not readily available.

⁴According to data collected by the U.S. Customs Service and collated by the Bureau of the Census, there were 85,330 port calls (arrival of vessels) to U.S. ports in 1996 by foreign vessels and 10,170 by U.S. vessels. Some port calls were made by the same vessel, as it is common for a vessel to visit more than one U.S. port during a voyage to the United States.

Many postaccident testing reliability and reliability problems can be traced to the lack of uniformity between 33 CFR 95 and 46 CFR 4.06, as illustrated by table 2 (enclosure 2). This lack of uniformity regarding when to test and what specimens to collect for what purpose probably contributed to the misunderstanding expressed by the pilot of the *Julie N* and the principal owner of the tugboat company that only urine was needed for postaccident testing. The situation could be improved readily by inserting a minimal amount of text to explain that:

- Breath or blood is required for alcohol testing, and
- Urine is required solely for determining the use of dangerous drugs.

A simple, clear explanation of the purposes of the two categories of specimens would help eliminate confusion and misconceptions about postaccident testing and would assist the Coast Guard in its continuing effort to inform the public about testing requirements. Accordingly, the Safety Board concludes that including text in the regulations to clarify that breath or blood specimens are for alcohol testing and that urine specimens are for determining the presence of dangerous drugs would help to inform the marine industry that both urine and breath or blood specimens are required for postaccident testing.

The two sets of rules also have different thresholds for initiating postaccident testing. In 33 CFR 95, testing is required when an individual is involved in a marine accident as defined somewhat generally at 46 U.S.C. 61, whereas in 46 CFR 4.06, the threshold is a "serious marine incident," as defined very specifically at 46 CFR 4.03-2. The definition of serious marine incident, which includes discharges of oil of 10,000 gallons or more, appears to be well crafted to provide a reasonable threshold for accidents involving commercial vessels that are serious enough to warrant testing and to exclude lesser accidents where the consequences would not be severe. The Safety Board concludes that adopting the "serious marine incident" criteria described in 46 CFR 4.03-2 as the criteria for initiating postaccident testing involving commercial vessels would provide uniform, easily understood conditions for initiating testing.

In addition, the regulations at 33 CFR 95 and 46 CFR 4.06 do not specify a time limit for postaccident testing or set a priority for alcohol testing. As was mentioned earlier, the *Julie N*'s crew did not commence alcohol testing until more than 5 hours after the accident because the testing technicians elected to collect urine specimens first. These actions complied with the current regulations (33 CFR 95 and 46 CFR 4.06), which call for testing "as soon as practicable," rather than requiring specific sampling times.

Because of its concerns about the time sensitivity of toxicological sampling, in 1989, the Safety Board recommended⁵ to the Department of Transportation (DOT) that both blood and urine samples be collected within 4 hours of a transportation accident. Subsequent Congressional concern about the possible use of alcohol by transportation workers resulted in the passage of the Omnibus Transportation Employee Testing Act of 1991 (the Act). The preamble to the testing

⁵Safety Recommendation I-89-006 was issued in a December 5, 1989, letter to the DOT and classified "Closed—Unacceptable Action," on May 15, 1995.

regulations adopted by other DOT administrations⁶ pursuant to the Act sets a 2-hour time period for alcohol testing and a requirement to document any failure to test.

Because alcohol is eliminated very quickly from the body and because the rate of elimination can vary among people, testing very soon after an accident affords the best opportunity to ascertain whether alcohol could be a casual factor in the accident. An additional requirement for a written record of failure to test will emphasize to the marine employers that timely testing for alcohol is needed and is expected to raise the priority for testing in relation to other postaccident responsibilities and concerns. The information in the written record will also enable the Coast Guard to ascertain how closely the various marine employers are complying, determine whether adjustments in the program are needed, and decide whether enforcement action is called for. Accordingly, the Safety Board concludes that adopting testing timeliness and documentation requirements would result in more timely testing and facilitate effective oversight by the Coast Guard.

The Safety Board believes that confusion regarding postaccident testing requirements and procedures will persist as long as two sets of regulations exist on postaccident testing that contain different information. To address this problem, two options appear feasible: (1) Rewrite and consolidate both sets of regulations to make them identical or (2) Locate the consolidated regulations solely in either Title 33 (33 CFR 95) or Title 46 (46 CFR 4.06).

Title 33, *Navigation and Navigable Waters* covers numerous operational topics,⁷ the majority of which pertain to all vessels transiting U.S. waters or visiting U.S. ports. Because the majority of the Title 33 regulations pertain to foreign vessels operating on U.S. waters, as well as U.S. vessels, Title 33 is a logical location for the regulations concerning *Operating a Vessel While Intoxicated* (33 CFR 95). The Safety Board concludes that the guidance to conduct testing following marine accidents, being operational in nature and applicable to all vessels, would fit best in Title 33 of the regulations.

Conversely, the Title 46 regulations are almost exclusively concerned with U.S. commercial vessels and U.S. mariners and are directed at marine employers. The first part of Title 46, Subchapter A, *Procedures Applicable To The Public*, and Part 4 of Subchapter A, *Marine Casualties Investigations*, are widely recognized as applicable to foreign vessels that experience a marine accident on U.S. waters as well as to U.S. vessels anywhere. Accordingly, the location of regulations for *Mandatory Chemical Testing Following Serious Marine Incidents Involving Vessels in Commercial Service* at 46 CFR 4.06 is logical. However, Title 46, because it is largely devoted to U.S. mariners and vessels, does not invite or attract the attention of foreign vessel operators until they become involved in a marine accident.

⁶Federal Aviation Administration, Federal Railroad Administration, Federal Highway Administration, Federal Transit Administration, and Research and Special Programs Administration.

⁷Of the 16 subchapters in Title 33 relating to Coast Guard functions, 12 are of interest to all vessels, including foreign vessels

The Safety Board concludes that the guidance to conduct testing following marine accidents, being operational in nature and applicable to all vessels, would fit best in Title 33 of the regulations. Because one of the purposes of postaccident testing is to determine intoxication from alcohol, the standards for intoxication should be a part of the testing regulations to avoid the need to refer to other parts of the regulations which can be time-consuming and result in confusion. The Safety Board concludes that renaming and expanding 33 CFR 95, *Operating a Vessel While Impaired (Intoxicated)*, by incorporating the present regulations at 46 CFR 4.06, *Mandatory Chemical Testing Following Serious Marine Incidents Involving Vessels in Commercial Service*, into 33 CFR 95 would eliminate the confusion caused by two sets of regulations, contribute to better understanding of the intent of the regulations, achieve improved testing for alcohol and drugs, and demonstrate that postaccident testing applies to all vessels experiencing a serious marine incident on U.S. waters.

The preamble to the testing regulations adopted in other DOT administrations pursuant to the Omnibus Transportation Employee Testing Act of 1991 established an additional requirement concerning postaccident drinking that appears appropriate to commercial marine vessels. This requirement prohibits anyone involved in an accident from consuming alcohol for 8 hours following the accident.

The ability to discern an individual's blood alcohol concentration (BAC) can also be affected by postaccident drinking. While the need for individuals involved in a serious accident to refrain from consuming alcohol may be obvious, there is little reason to believe that individuals involved will automatically avoid alcohol. Further, someone who regularly consumes alcohol may be disposed to do so following the stress that can be associated with an accident. A clear regulation applicable to commercial vessels, including foreign vessels on U.S. waters, would probably be sufficient to obtain compliance in most cases. Also, it would enable the Coast Guard to take enforcement action when warranted. Accordingly, the Safety Board concludes that adopting a requirement prohibiting individuals involved in a marine accident from consuming alcohol within 8 hours of the accident would help to ensure that such individuals can be tested to determine their BAC.

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

Evaluate the benefit of a permanent set of ranges for vessel pilots and masters to use for navigating through the Casco Bay Bridge and establish such ranges if justified. (M-98-69)

Ensure that operational guidance for vessels navigating Portland harbor developed by the Port Safety Forum or by the Captain of the Port is published in a source readily available to vessel masters and pilots, such as the *U.S. Coast Pilot*. (M-98-70)

Incorporate language into the postaccident testing regulations that clearly states alcohol testing is more time-sensitive and therefore should be conducted ahead of drug testing. (M-98-71)

Institute a task force that will evaluate deficiencies in past postaccident alcohol and drug testing performance and use "lessons learned" to implement a program that ensures testing is performed in a manner that will produce meaningful results. (M-98-72)

Implement a procedure for Coast Guard personnel to conduct breath testing of mariners who are involved in a serious marine incident, as defined by 46 CFR 4.03-2, when testing by the marine employer will not or can not take place within 2 hours of the accident. (M-98-73)

Establish a requirement in the postaccident testing regulations that the crew and pilot of a vessel involved in a serious marine incident will remain with the vessel, when it is safe to do so, for breath testing for alcohol, until permitted by the Coast Guard to leave the vessel. (M-98-74)

Establish a requirement in the postaccident testing regulations that foreign commercial vessels on the navigable waters of the United States, as well as U.S. oceangoing vessels, must have on board breath-testing devices capable of determining the presence of alcohol in a person's system and urine specimen collection and shipping kits. (M-98-75)

Establish a requirement in the postaccident testing regulations that foreign vessels on the navigable waters of the United States and oceangoing U.S. vessels have a postaccident testing plan that identifies crewmembers who will conduct the testing; sets forth the qualifications for crewmembers assigned to conduct the testing; establishes procedures for the care of specimens, including chain of custody; lists the records to be prepared; and provides identification and addresses for testing laboratories that can process urine specimens or testing firms that may assist or conduct postaccident testing for vessels in U.S. ports. (M-98-76)

Incorporate language into the postaccident testing regulations that clearly states that breath or blood specimens are for determining the presence of alcohol and that urine specimens are used to determine the presence of dangerous drugs. (M-98-77)

To provide uniformity, adopt the criteria for "serious marine incident" described at 46 CFR 4.03-2 as the criteria for initiating postaccident testing for

commercial vessels in the regulations at 33 CFR 95 and in any future combined regulations. (M-98-78)

Establish a requirement that postaccident testing for drugs begin within 4 hours of a serious marine incident and postaccident testing for alcohol begin within 2 hours of a serious marine incident, with attempts to test for alcohol ceasing after 8 hours, and establish a requirement that the marine employer document any testing delays or failures. (M-98-79)

Expand the regulations at 33 CFR 95 to incorporate the provisions for postaccident testing currently found at 46 CFR 4.06 with a minimum of cross-referencing to other regulations, so that postaccident testing requirements are easy to read and comprehend and are found in one part of the regulations. (M-98-80)

Establish a provision in the postaccident testing regulations that prohibits mariners involved in an accident from consuming alcohol for 8 hours afterwards, or until breath or blood and urine specimens are collected, or until released by the Coast Guard. (M-98-81)

Also, the Safety Board issued Safety Recommendation M-98-82 to the Maine Department of Transportation, M-98-83 to the Federal Highway Administration, and M-98-84 to the American Association of State Highway and Transportation Officials

Please refer to Safety Recommendations M-98-69 through -81 in your reply. If you need additional information, you may call (202) 314-6457.

Chairman HALL, Vice Chairman FRANCIS, and Members HAMMERSCHMIDT, GOGLIA, and BLACK concurred in these recommendations.

By:


 Jim Hall
 Chairman

Enclosures (2)

Table 1—Time elapsed before postaccident testing performed and types of testing performed after major marine accidents investigated by the Safety Board

Vessel	Breath/blood testing (hours)	Urine testing (hours)	Remarks
<i>Exxon Valdez</i> March 24, 1989	—/10.5	10.5	<ul style="list-style-type: none"> ▪ Testing delayed because of time necessary for Coast Guard investigators arrive at scene and the several hours it took to locate a collector. ▪ Alcohol was a causal factor.
<i>World Prodigy</i> June 23, 1989	—/22	22	None
<i>Aleutian Enterprise</i> March 22, 1990	—/—	42	<ul style="list-style-type: none"> ▪ Remote location. Lack of knowledge by marine employer about postaccident testing. Urine specimen from master tested negative.
<i>Shinousa/</i> <i>Chandy N</i> <i>Hellespont Faith</i> July 28, 1990	—/—	8	<ul style="list-style-type: none"> ▪ USCG investigators on board soon after accident to interview crews observed no evidence of intoxication or drug use. Pilot of <i>Shinousa</i> gave urine specimen in about 8 hours. All other urine collected over 24 hours later.
<i>Mandan</i> August 15, 1990	5.5/—	5.5	<ul style="list-style-type: none"> ▪ Pilot and master tested ▪ Test results were negative for alcohol and drugs.
<i>Jupiter Buffalo</i> September 16, 1990	—/—	Unknown/9.5	<ul style="list-style-type: none"> ▪ USCG investigators reminded <i>Buffalo</i> of need for alcohol and drug testing about 6 hours after accident. Some crewmembers had gone ashore already; thus, no alcohol testing attempted of <i>Buffalo</i> crew. No one thought to test <i>Jupiter</i> injured that were hospitalized. Deceased <i>Jupiter</i> crewman tested negative for drugs.
<i>Sea King</i> January 11, 1991	—/—	—	<ul style="list-style-type: none"> ▪ Owner refused to test. Lack of authority at time to impose penalty against the owner for failure to test. Master rescued by USCG soon after accident. ▪ Unknown whether alcohol or drugs involved.
<i>QE 2</i> August 7, 1992	—/39	16-39	<ul style="list-style-type: none"> ▪ Remote location. Marine employer's instructions were to cooperate with USCG in postaccident testing. ▪ Test results were negative for drugs.
<i>Fremont/</i> <i>Juraj Dalmatinac</i> December 21, 1992	—/— —/—	18 14-16	None
<i>Chris</i> May 28, 1993	—/7-7.5	7-7.5	<ul style="list-style-type: none"> ▪ USCG on scene a few minutes after the accident.
<i>Yorktown Clipper</i> August 18, 1993	—/—	18.5	<ul style="list-style-type: none"> ▪ Remote location.
<i>Mauvilla</i> September 22, 1993	—/—	8	<ul style="list-style-type: none"> ▪ Remote location.
<i>Omi Charger</i> October 9, 1993	—/—	5-18	<ul style="list-style-type: none"> ▪ Postaccident drinking. Lack of knowledge by marine employer. Testing initiated by USCG by informing marine employer of need for testing and how to obtain testing assistance.
<i>Noordam/</i> <i>Mount Ymitos</i> November 6, 1993	7/— Yes/—	7-26 29-30	<ul style="list-style-type: none"> ▪ No authority to conduct testing of foreign vessels in international waters. However, watchstanders volunteered for testing.

Vessel	Breath/blood testing (hours)	Urine testing (hours)	Remarks
<i>El Toro</i> December 5, 1993	—/3–6	—	▪ Test results were negative for alcohol and drugs
<i>All Alaskan</i> July 24, 1994	—/—	28	▪ Master not tested. Master boarded USCG cutter about 3 hours after fire started but was not tested during the 3 days on board. Health clinic closed; thus, urine collection of crew delayed until next day.
<i>Seal Island</i> October 8, 1994	—/—	—	▪ In port at St. Croix, Virgin Islands. Lack of knowledge by marine employer of testing requirements.
<i>Alaska Spirit</i> May 27, 1995	—/Postmortem	Not applicable	None.
<i>Royal Majesty</i> June 10, 1995	—/25–28	25–28	▪ No authority to conduct testing of foreign vessel in international waters. Remote location. Crew volunteered to be tested.
<i>Star Princess</i> June 23, 1995	Pilot 4/— Crew 8.5/—	4 8.5	▪ Test results were negative for alcohol and drugs (pilot).
<i>Scandia</i> January 19, 1996	9/—	15.7	▪ Remote location. Crew fighting fire and attempting to salvage barge. USCG performed breath testing of crew for alcohol. ▪ Test results were negative for alcohol and drugs.
<i>Universe Explorer</i> July 27, 1996	—/—	34	None.
<i>Julie N</i> September 27, 1996	Pilot —/— Crew 3–7/—	3 3–7	▪ Lack of knowledge by marine employer ▪ Test results of pilot were negative for drugs. ▪ Breath testing of <i>Julie N</i> crew delayed by technicians who elected to collect urine specimens first ▪ Test results were negative for alcohol and drugs.
<i>Dave Blackburn</i> October 23, 1996	9/—	9	None.
<i>Sundowner</i> December 7, 1996	—/16–17	16–17	• No breath testing conducted because owner reported to USCG that he had permitted crew to engage in postaccident drinking. Testing consortium under contract not open after hours and on weekends, thus delaying specimen collection. ▪ Unknown whether alcohol or drugs involved.
<i>Bright Field</i> December 7, 1996	Crew 6.5–8.5/— Pilot 1.5/—	6.5–8.5 1.5	▪ USCG on board soon after accident; reminded owner of need for testing. Directly involved personnel were tested last. ▪ Test results were negative for alcohol and drugs.
<i>Cowslip/ Evergrade</i> May 14, 1997	<i>Cowslip</i> —/8.6–10 Pilot —/— <i>Evergrade</i> —/17.5–18.5	8.6–10 12.7 17.5–18.5	▪ <i>Cowslip</i> is a USCG cutter.
<i>Alaska I/ Hanjin Barcelona</i> February 11, 1998	6/— —/—	6 —	▪ Saliva collected instead breath for alcohol testing. ▪ No authority to test crew of <i>Hanjin Barcelona</i> because ship was a foreign vessel in international waters. ▪ Unknown whether alcohol or drugs involved.

Table 2—Coast Guard regulations governing postaccident testing

	33 CFR 95	46 CFR 4.06
Applicability	<ul style="list-style-type: none"> ▪ Commercial vessels—U.S. and foreign flag ▪ Recreational vessels—U.S. and foreign flag 	<ul style="list-style-type: none"> ▪ U. S. commercial vessels ▪ Foreign-flag commercial vessels on U.S. waters
Intoxication standards for alcohol	<ul style="list-style-type: none"> ▪ Commercial operators—.04 percent blood alcohol concentration (BAC) ▪ Recreational vessels—.10 percent BAC or State Standard 	None
Testing samples	General— <ul style="list-style-type: none"> ▪ Breath ▪ Blood ▪ Urine ▪ Saliva or other bodily fluids or tissues 	<ul style="list-style-type: none"> ▪ Urine ▪ Breath or blood or both
Criteria for testing	Accident meeting criteria of 46 U.S.C. 6101: <ul style="list-style-type: none"> ▪ Death or serious injury to individual ▪ Material loss of property ▪ Material damage affecting seaworthiness or efficiency of vessel ▪ Significant harm to the environment <p style="text-align: center;">-OR-</p> Individual suspected of being intoxicated	Accident meeting “serious marine incident” criteria of 46 CFR 4.03-2: <ul style="list-style-type: none"> ▪ One or more deaths ▪ Injury to passenger or crewmember requiring medical treatment beyond first aid or injury rendering crewmember unfit for routine vessel duties ▪ Property damage exceeding \$100,000 ▪ Loss of inspected vessel ▪ Loss of self-propelled vessel of 100 gross tons ▪ Discharge of 10,000 gallons of oil into navigable waters of U.S. or reportable quantity of hazardous substance into navigable waters or atmosphere of U.S.
Penalties for refusal to test*	Suspension or revocation of employee’s license; none against marine employer	Suspension or revocation of employee’s license; none against marine employer
Testing responsibility and timeliness	Marine employer—as soon as practical	Marine employer—as soon as practical
Postaccident drinking	No prohibition	No prohibition
Testing equipment required	Not specified	<ul style="list-style-type: none"> ▪ Breath testing devices (oceangoing vessels) ▪ Urine specimen collection and shipping kits (only required on board if not obtainable in 24 hours)

*The Coast Guard received authority in late 1996, after the *Julie N* accident, to impose civil penalties on marine employers or anyone else failing to comply with the regulations for postaccident testing.