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

TOWING VESSEL HULL INSPECTION AND REPAIR STANDARDS

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Background Information

Coast Guard Marine Inspectors have used NVIC 7-68, Notes on Inspection and Repair of Steel Hulls,[(1)] as their guidance for the inspection and repair of steel hulls on all classes of inspected vessels ever since it was published on Oct. 28, 1968 ï a period of 45 years. *[(1) All Navigation and Vessel Inspection Circulars (NVICs) are available on the internet. NVICs are guidance documents and are not regulations.]*

Approaching one of their largest inspection assignments in as many years, the inspection of over 6,200 towing vessels, a Coast Guard-AWO Bridging and Implementation Team (BAIT) was tasked with defining ñgood marine practiceò for inland towing vessel inspection and repair and making sure it is reflected in applicable Coast Guard guidance that supports the forthcoming towing vessel inspection regulations in 46 CFR Subchapter M.

The BAIT report was passed to the Towing Safety Advisory Committee (TSAC) on April 5, 2013. TSAC also makes recommendations to the Commandant. Since our President, Capt. Joe Dady reached the end of his appointed term as a Member of TSAC, and since our Association were unable to attend recent TSAC meetings, we first learned of this important report on Nov. 20, 2013.

Our Concerns and Our Position

At a meeting of the Towing Safety Advisory Committee (TSAC) at Coast Guard Headquarters a number of years ago, our Association brought up the necessity of making adequate and effective hull repairs on steel towing vessels when they become inspected vessels. We were especially concerned with the widespread use of doubler plates.

As an outstanding example, the poor maintenance, operation, and sinking of the inland towing vessel M/V Polaris (described below), demonstrated how a poorly managed, fly-by-night company failed to maintain the vesselôs steel hull in good repair so that the vessel sank. At the TSAC meeting the question turned to the use of ñdoubler plates.ò Several members in management of prominent western rivers towing companies in the audience vigorously defended the practice of using doubler plates to make permanent hull repairs on their vessels. We were not impressed.

The purpose of that TSAC meeting was to introduce the new ñBridgingò program along with the upcoming inspection of towing vessels, and the Safety Management System the National Transportation Safety Board (NTSB) and the American Waterways Operators (AWO) would like to see take the place of formal Coast Guard vessel inspection.

At the meeting, we asserted that using doubler plates is ***not*** a good practice ï although admittedly better than the

all-thread-rod ñsandwich patchò made on M/V Polaris in 2004 or the wooden patch that failed in June 2005 leading to the vesselôs very public sinking event.

During the discussion, members of the Coast Guard Towing Vessel Inspection rulemaking team were present in the room, and we asked for their views. In direct response, the next day they produced NVIC 7-68, Notes on Inspection and Repair of Steel Hulls. We found that the NVIC backed our position as quoted in part as follows:

ñ(1) A welded doubler plate is **not**, in general, considered suitable as a permanent repair measure for the main hull girder. Its use does not insure continuity of strength, which is achieved by the installation of an insert plate in the same location. In addition, when a doubler is attached to deficient plating, its very presence creates a discontinuity, which may induce rather than prevent a structural failure. Additionally, where doublers have been used, they tend to proliferate as randomly-plated patches which often serve only to cover up the deficiencies which would otherwise indicate the true condition of the hull.

ñ(2) Doublers may properly be used to provide local reinforcement at hatch corners, overboard discharges, sea chests, mast, or kingpost foundations, etc. They also may be used in accordance with approved plans in the form of strapping fitted to increase the hull girder strength and stiffness. Where so used, the plating to which they are attached should be in good condition to insure efficient attachment by fillet welding along the edges. Plug welding, in the body of the doubler, can be used. The corners of the doubler should be tapered and well roundedé ò.

We (and more importantly, Congress) believe(s) that the effective and efficient inspection of towing vessels by trained Coast Guard inspectors will eliminate the dangers posed by unscrupulous operators such as the company that operated the Polaris that was willing to place their crewmembers in danger serving on unsafe vessels.

We do not intend to tell inspectors how to do their jobs, but we intend to support them when they do their jobs effectively. Their work is the one of the only guarantees our mariners have faith in that the vessels they serve on are safe. Towing vessels will become inspected vessels as a result of the Coast Guard and Maritime Transportation Act of 2004 when the regulations in Subchapter M finally are promulgated. We fully support this project and the interim ñBridgingò program that we have seen underway since 2009. We are determined that the ñbest practicesò in NVIC 7-68 should apply to towing vessels as they apply to other inspected vessels.

About the BAIT Report

The BAIT report is a professional report that ***suggests*** a number of changes in the way that repairs to the hulls of ***inland*** towing vessels, as a class of vessels, should be accomplished. We are left with the question of whether the towing industry through its trade association is asking for special treatment or whether the time has come to change the guidance for repairing steel hulls throughout the entire maritime industry. To let our mariners judge for themselves, we enclosed the BAIT report in its entirety.

We assert that a safe, welded steel hull is of primary importance to every mariner that serves on a towing vessel. In a perfect world, each of the estimated 32,000 mariners serving on towing vessels would have an opportunity to comment. Nevertheless, as Secretary of and on behalf of our Association, I took the opportunity to submit preliminary views to the appropriate Coast Guard officials and will be glad to forward further written comments we receive from our directors and individual mariners through the same channels. Progress, corrections, and changes will appear in later revisions to this report.

REPORT OF THE COAST GUARD-AWO BRIDGING AND IMPLEMENTATION TEAM WORKING GROUP #5 SUBGROUP ON INLAND TOWING VESSEL INSPECTION AND REPAIR STANDARDS

APRIL 5, 2013

BACKGROUND AND PURPOSE

The Subgroup on Inland Towing Vessel Inspection and Repair Standards was established by Coast Guard-AWO Bridging and Implementation Team (BAIT) Working Group #5 in the spring of 2011. Consistent with the goals of the Towing Vessel Bridging Program (TVBP) and the BAIT to facilitate the transition to towing vessel inspection for both industry and the Coast Guard, the subgroup was tasked with:

- Defining good marine practice for inland towing vessel inspection and repair[1]; and,
- Making recommendations to ensure that good marine practice for inland towboat inspection and repair is reflected in applicable Coast Guard guidance following the implementation of the forthcoming towing vessel inspection regulations at 46 CFR Subchapter M.

In the spirit of the TVBP/BAIT, the subgroup sought to anticipate and proactively address areas in which current industry practice for the inspection and repair of inland towing vessels may not be consistent with current Coast Guard guidance applicable to some other classes of inspected vessels, and to evaluate critically both the effectiveness of current industry practice and the appropriateness of current Coast Guard inspection and repair guidance for application to inland towing vessels. The intention of the BAIT working group that chartered the subgroup was that beginning these discussions early ï i.e., prior to publication of the final Subchapter M regulations ï would allow time to modify existing guidance documents or draft new guidance documents as needed before Subchapter M is implemented. Beginning the process early will also allow time to clarify expectations and educate both industry and Coast Guard personnel on how key issues in inland towboat inspection and repair should be handled once Subchapter M is in place. The working groupôs assumption was that the issues addressed by the subgroup would involve a finer level of detail than that likely to be addressed in the proposed or final Subchapter M regulations. As such, the subgroup saw no disadvantage to beginning its work prior to publication of the proposed and final Subchapter M regulations.

The need for the subgroupôs work was validated by the Congressionally authorized Towing Safety Advisory Committee (TSAC), which observed in its October 2011 report on the Subchapter M notice of proposed rulemaking that:

[1] The subgroup was originally established with a focus on inland (i.e., river and intracoastal waterway) towing operations, and industry members of the Subgroup reflect this orientation. The subgroup acknowledges that there would be value in exploring the potential applicability of the recommendations contained in this report to other types of towing vessel operations. Any such assessment should include industry and Coast Guard representatives with appropriate geographic knowledge.

While not an issue to be addressed through regulatory text in the final rule, the working group notes that it will be important to develop amplifying guidance on issues such as what constitutes an acceptable repair on an inspected towing vessel. Such guidance should be tailored to fit the vessel characteristics and operational environment of towing vessels, rather than simply mirroring existing guidance for other classes of inspected vessels, such as tank barges or passenger vessels.

MEMBERSHIP AND PROCESS

The subgroup was co-chaired and facilitated by Jennifer Carpenter of The American Waterways Operators and Steven Douglass of the Towing Vessel National Center of Expertise, U.S. Coast Guard. Other members of the subgroup included industry and Coast Guard experts with substantial experience in vessel operations, marine engineering, naval architecture, and vessel inspection. Brian Vahey of AWO provided staff support to the subgroup. Other members of the subgroup included the following:

Donald Blum, McNational, Inc.
Randy Bowling, Crounse Corporation
CAPT Greg Case, U.S. Coast Guard Towing Vessel National Center of Expertise[2]
Kevin Cissna, Crounse Corporation
Marion Clendenin, Marathon Petroleum Company
Lena Coradini, Ingram Barge Company
Steve Crowley, Marquette Transportation Company, Inc.
Ron Culp, AEP River Operations
Taylor DuChaine, Canal Barge Company
Mark Duley, Ingram Barge Company
Steve Furlough, Furlough Marine Management
Jerry Gallion, Kirby Corporation Alan
Hall, Amherst Madison, Inc. Chetan
Kumaria, Marine Solutions, Inc. Willie
Kurnot, Amherst Madison, Inc.
Patrick Lee, U.S. Coast Guard (CG-CVC-1)
Julio Martinez, U.S. Coast Guard ï District 5
Roy Murphy, U.S. Coast Guard Towing Vessel National Center of Expertise
Joe Myers, U.S. Coast Guard Training Center Yorktown
Chris Myskowski, Marquette Transportation Company, Inc.
Fred Nyhuis, Marathon Petroleum Company, LP
Mike Quinton, Golding Barge Line, Inc.
David Reed, Crounse Corporation Kenny
Robinson, Crounse Corporation
Mike Rushing, Rushing Marine Services
LCDR Wade Russell, U.S. Coast Guard Towing Vessel National Center of Expertise
David Sehrt, Ingram Barge Company
Ed Shearer, The Shearer Group, Inc.
Tim Sizemore, AEP River Operations

[2] CAPT Case served as a member of the working group until June 2011, when he was succeeded by LCDR Wade Russell as Detachment Chief of the Towing Vessel National Center of Expertise.

Tim Spencer, Amherst Madison, Inc.
Peter Squicciarini, U.S. Coast Guard - LANTAREA
Mike White, U.S. Coast Guard ï District 8

The full subgroup convened for two separate meetings over three days. The first meeting was on May 18, 2011. The second meeting took place on May 23-24, 2012. Between meetings, the subgroup conducted its work primarily by email. Small teams of subgroup members met several times by conference call to discuss the shipyard survey and casualty analysis discussed later in this report.

The subgroup presented its report to the National Quality Steering Committee (QSC) of the Coast Guard-AWO Safety Partnership on August 1, 2012. The QSC endorsed the subgroupôs goal of having Coast Guard guidance that is appropriate for the physical characteristics and operational environment of inland towing vessels in place by the time the Subchapter M regulations are final. The Coast Guard agreed to conduct a careful review of the subgroupôs report and work with the subgroup and the QSC to address any questions or concerns.

The Coast Guard conducted a thorough review of the subgroup report and provided its comments and questions to the subgroup in late December. The subgroup met by conference call on January 14, 2013, to discuss the Coast Guardôs feedback. Following the conference call, the subgroup worked via email to provide further comments and finalize the report for consideration by the National QSC at its April 16, 2013 meeting.

OPERATIONAL CONDITIONS AND SAFETY CONSIDERATIONS IN THE INLAND TOWING VESSEL ENVIRONMENT

The subgroup began its work by cataloging operational conditions and safety considerations in the inland towing vessel environment to lay the foundation for its subsequent analysis. The group identified the following physical features of inland towing vessels and characteristics of the inland towing vessel operating environment as relevant to defining good marine practice for the inspection and repair of inland towing vessels and evaluating the applicability of current Coast Guard guidance for steel hull repair to inland towboats.

Physical Features of Inland Towing Vessels

- Transverse (not longitudinal) framing on most inland towing vessels
- Inland towing vessels are generally short (average 100-120 feet, many 50-60 feet, largest ever 200 feet) and heavily stiffened
- Rugged, durable design (plus fendering) to withstand contact with the river bottom, barges, fleet boats, etc.
- Square bows
- Flat bottoms
- Shallow draft
- Towing vessels donôt carry cargo so draft does not change significantly during a trip
- Long-lived vessels with no significant history of hull failure
- Most plating deterioration caused by abrasion
- Donôt need much freeboard so no freeing ports, low door sill heights

- Donôt need/donôt have loadlines
- Not designed for operation in heavy waves
- Engine room ventilation through doors/windows and bulkhead openings
- No required subdivision bulkheads; vessel can sink quickly if the large machinery space is flooded
- Generally, older towing vessels have single-skin fuel tanks; many newer vessels have double skin fuel tanks and engine rooms
- Most vessels are twin-screw or triple-screw

Characteristics of the Inland Towing Vessel Operating Environment

- Close proximity to shore
- Shallow water
- Swift water
- Less exposure to longitudinal stress than oceangoing or cargo-laden vessels
- Except when operating light boat, towing vessel is connected to multiple-barge tow
- Fresh water operation produces less hull deterioration
- Generally protected waters without heavy waves (standard practice is to wait out heavy waves if transiting Mississippi Sound or other areas of open water)
- Significant temperature variations from warm water to ice
- Drift or debris present, especially during high water conditions
- Frequent drydockings to address emergent need for repairs based on operational environment (e.g., fouled propeller)
- Close proximity to other vessels that can provide emergency assistance
- Most inland line-haul towing vessels carry a skiff or utility boat
- Crew comfort/crew endurance often drives need for repairs (e.g., noise, vibration issues)
- Taking boat out of water for drydocking may be highest stress event vessel experiences

EVALUATION OF EFFECTIVENESS

The subgroup used the following criteria to assess the effectiveness of current industry practice for inland towing vessel inspection and repair and to evaluate the soundness of the proposed definitions of good marine practice with respect to the key issues discussed in this report:

- Historical industry experience
- Expert perspective provided by port engineers, shipyard personnel, and naval architects/marine engineers with knowledge and experience in inland towing vessel operation, construction and repair
- Inland towing vessel casualty data from the Coast Guardôs Marine Information for Safety and Law Enforcement (MISLE) database

Shipyard Survey

Information on historical industry experience and expert perspective was collected through the distribution of a shipyard questionnaire developed by subgroup members Taylor DuChaine, Canal Barge Company, and Fred Nyhuis, Marathon Petroleum Company, LP. The purpose of the questionnaire was to gather information about current industry practice on issues related to the repair of inland towing vessels. The information provided was used to ensure an accurate characterization of current industry practice in the various sections of this report and to inform the development of recommendations on good marine practice for inland towing vessels. In some instances, the shipyard responses prompted additional questions from Mr. DuChaine and Mr. Nyhuis, who posed clarifying follow-up questions to targeted shipyards as needed. The survey questions, list of participating shipyards, and a summary of responses are contained in Appendices A, B, and C, respectively.

Coast Guard Casualty Data Analysis

In April-May 2012, Mr. Nyhuis, Mr. DuChaine, and Mr. David Sehrt, Ingram Barge Company, conducted an analysis of inland towing vessel hull failure casualty cases based on information extracted from the Coast Guardôs MISLE database and Coast Guard investigation reports supplied by Mr. Dave Dickey of the Offices of Investigations and Analysis at Coast Guard headquarters. Mr. Dickey extracted inland towing vessel hull failure incidents that were not the result of other casualty events such as collisions, allisions or groundings from 2002 (the first full year of MISLE) through 2010. From these cases, the review team observed the following:

- There were 59 hull failure incidents during this nine-year period. Mr. Dickey did not provide detailed information on 14 of the incidents because they involved atypical circumstances that were not likely to produce useful lessons for inland towing vessels generally (e.g., wooden hull vessels, ice damage, laid up vessels, etc.). The review team thus excluded these 14 cases from its analysis.
- No deaths or injuries resulted from any of the casualty incidents.
- The majority of incidents involved very small vessels in harbor/fleeting service. Only two vessels were line-haul vessels more than 100 feet in length. The vessels involved in more than half (30) of the incidents were 60 feet in length or less.
- There were no major hull buckling failures.
- The majority of the casualty incidents occurred with vessels that were moored and unmanned. (The subgroup observes that while it is not unusual for small harbor or fleet boats to be unmanned and tied up at the dock, inland line-haul towing vessels are generally in continuous operation.)
- There were no incidents in which the vessel sank quickly.

The investigation reports tended to focus more on any oil discharge resulting from the incidents and less on the precipitating hull failure, making it difficult for the review team to make any determination as to the nature of the failure. However, it is noteworthy that there were only two hull failure incidents involving inland line-haul towing vessels over a nine-year period.

Additionally, AWO reviewed its records to determine whether the company listed as the ñsubject of investigationò in the Coast Guard casualty reports (or as the ñoperatorò of the vessel if no subject company was provided) was operating with a safety management system (SMS) at the time of the incident. Since 2000, AWO members have been required to be in compliance with the Responsible Carrier Program (RCP), a third-party audited SMS, as a condition of membership. It is unlikely that any inland towing company would have been using an SMS other than the RCP.

AWO found that 30 of the 45 incidents for which the Coast Guard provided detailed information involved a subject company that was not an AWO member at the time of the casualty and therefore not likely to have been operating under an SMS. One company had joined AWO just weeks before the casualty occurred and would not have had time to implement the RCP. The remaining 14 companies were AWO members at the time of the event and can be assumed to have been operating under the RCP.

While not the primary focus of this report, the subgroup believes that the fact that hull failure incidents involving companies without an SMS outnumber incidents involving companies with an SMS by more than 2 to 1 supports the recommendations of TSAC that all towing vessels subject to Subchapter M be operated in compliance with a Coast Guard-accepted safety management system.

Risk Management Considerations

Also relevant to the subgroupôs evaluation of good marine practice is the concept of risk management, which requires weighing the following factors:

- The probability of failure;
- The consequences of failure; and,
- The cost-effectiveness or cost-benefit of proposed alternatives.

The subgroup believes that these factors must be considered together in any evaluation of good marine practice for inland towing vessel inspection and repair. Consider the example of an inland towing vessel with a minor fracture in hull plating resulting in a small amount of water entering a void tank. If the probability of failure is low (as demonstrated by Coast Guard casualty data indicating a very low incidence of inland towing vessel hull failures); the consequences of failure are low to moderate (for example, because of the availability of emergency resources or the ability to evacuate to the tow in the event of an emergency), and the opportunity cost of requiring an immediate repair is high (because the vessel would have to drop its tow and would not be able to deliver economically critical cargo in a timely manner), it might be prudent to allow the vessel to complete its voyage, deliver the tow to its destination, and continue to operate until its next scheduled drydocking, subject to ongoing monitoring, evaluation and management to ensure that the situation does not worsen to an unacceptable level.

CURRENT INDUSTRY PRACTICE: DRYDOCKING

The subgroup expects that the forthcoming Subchapter M regulations will specify the frequency, scope and content of Coast Guard-required drydocking examinations of inland towing vessels, a subject addressed in detail by the TSAC in its recommendations to the Coast Guard during the development of the draft Subchapter M proposal. With this expectation in mind, the subgroup thought it useful simply to describe current industry practice for the drydocking of inland towing vessels, rather than make recommendations on this subject. Having an understanding of current industry practice with respect to drydocking may inform the subsequent development of recommendations for good marine practice on particular issues associated with the inspection and repair of inland towing vessels.

The AWO Responsible Carrier Program recommends that inland towing vessels undergo a hull inspection on drydock as needed, but no less frequently than every 36 months. In practice, however, most inland towing vessels are drydocked much more frequently (once a year is not unusual) to address emergent operational conditions. While some companies may elect to send a diver down to visually examine a potential problem and determine whether it is necessary to take the boat out of the water (or whether, for example, unusual vibration is caused by a line or crab trap in the propeller), it is more common simply to drydock the vessel to investigate the cause of a mechanical problem with the wheel or rudder, a crew complaint (vibration, noise, etc.), a performance problem (e.g., burning more fuel than usual), or water in a void tank caused by a crack in the plating above the kort nozzle.

While the boat is on drydock, standard industry practice is not only to repair the problem that prompted the decision to take the boat out of the water in the first place, but to conduct a visual examination of the hull and address any other issues that present themselves. During the visual examination, if propeller damage is noted and appears to be significant enough to require one or more propellers to be removed for repair or replacement, it is standard practice to take lift and run-out readings of the tailshaft to determine if it needs to be replaced or if it is suitable for continued service based on the companyôs standards for deviation; check rudders and visually inspect the hull for cracks or leaks and other more significant damage; clean the sea chest; etc. Inland shipyards report that the majority of issues on inland towing vessel hulls tend to involve indents/upsets, cracks/fractures, and plate/weld wastage; hull punctures and buckling issues are far less common on inland vessels.

Hull gaugings are typically not conducted at a specified interval but rather as needed based on visual observation or in order to establish a baseline for future comparison when a vessel is newly acquired. Most companies use a drydocking checklist and produce a report of the items examined, findings and repairs. Such inspections are typically conducted by trained company personnel such as port engineers. (Because inland towing vessels are drydocked so frequently due to operational conditions, it is often cost-effective to have qualified personnel on staff to conduct such examinations.) Companies that operate inland tank barges will typically employ the same or similar practices for repairing their towboats as their barges rather than maintain two separate sets of standards or maintenance programs. Companies that do not operate tank barges may have different practices.

KEY ISSUES IN INLAND TOWING VESSEL INSPECTION AND REPAIR

The subgroup identified several key issues related to inland towing vessel inspection and repair for further examination, including:

- Use of doubler plates
- Set-ins
- Internal structural members
- Wastage
- Testing of repairs
- Welding standards/welder qualifications
- Water in void tanks

In each of these areas, the group sought to make recommendations regarding what should be considered good marine practice in the inland towing industry and accepted by the Coast Guard for application to inland towing vessels inspected under the forthcoming Subchapter M.

The subgroup proposes that the approach to good marine practice outlined in this report be applicable to all towing vessels that will receive Certificate of Inspection (COI) endorsements under Subchapter M for service on rivers, lakes, bays and sounds, the limited coastwise route from St. Marks to Carrabelle, FL, and the limited Great Lakes route from Chicago, IL, to Burns Harbor, IN.

Use of Doubler Plates

Doubler plates are commonly used on inland towing vessels as temporary or permanent repairs to small cracks, punctures, and fractures. Although doublers may also be used to reinforce wear points such as knuckles or to reinforce plating where galvanic corrosion occurs, the subgroupôs focus in this report is on the use of doublers for purposes of repair. Some typical applications for doublers for towing vessel repairs include:

- Void or ballast tank fractures at framing;
- Washout hole covers in void, ballast and water tanks;
- Over formed channel coolers for machinery as a repair (ñchannel coolersò refers to the heat exchanger portion of a closed loop system used to cool main engines, generators, aftercoolers or gear boxes);
- Hull plate in the vicinity of kort nozzles after interior framing repairs.

Doubler plates are typically affixed by trained shipyard personnel. Normal procedure for using a doubler to repair a fracture involves first stopping the fracture by drilling the ends and welding over the crack, and then welding the doubler on all sides over the fracture. Some welders will elect to make two passes on all sides of the patch, but there is no standard practice among shipyards for how a weld is to be reinforced. Based on the shipyard survey results, the subgroup estimates that it is 2-3 times more expensive to crop and renew damaged steel than to use a doubler plate.

Current Coast Guard guidance (NVIC 7-68 Section IV (D)(1)-(8)) provides, in pertinent part, that:

- Doublers may be properly used to provide local reinforcement at hatch corners, overboard discharges, seachests, mast or kingpost foundations, etc., and in accordance with approved plans;

- Doublers may be accepted in non-strength areas where their purpose is essentially to restore watertight integrity and local strength (e.g., deck plating well inboard between cargo hatches, platform decks, etc.)

- Doublers should not be permitted where special local strength is required;

- When a doubler is installed over a crack, the ends of the crack should be drilled and the crack should be veed and welded;

- On vessels without double bottoms operating on protected waters, doublers may be accepted for repairs in way of engine or boiler rooms where it would be necessary to remove heavy equipment in order to provide access for plating replacement;

- Doublers should not be permitted in such locations on tank barges where the interface between doubler and the plate beneath can constitute a gas pocket; and,

- A record of each installation, including size and location, should be made in the vesselôs inspection file.

- A welded doubler is not, in general, considered suitable as a permanent repair measure for the main hull girder;

Since 1968, NVIC 7-68 has supported the assumption of the Coast Guard and classification societies that doubler plates are only appropriate for temporary repairs. However, a 2005 report of the Ship Structural Committee (SSC), an interagency research and development committee for safer ship structures, stated that there has been little to no performance data and engineering design guidance collected to support this long-standing position.[3] In its report, the SSC counters this thinking and recommends specific best practices for doubler repair work that will allow the original hull structure to regain its original strength so that the repairs can be considered permanent.[4]

The historical experience of the inland towing industry is consistent with the SSCôs conclusion that properly installed doubler plates are a suitable means of permanent repair for hull fractures. While doubler plates may fail due to improper welding or instances where the doubler was welded to a plate that was too thin to hold it, when installed properly, shipyards have reported doubler failure rates on inland towing vessels of 5 percent or less.

The guidance in the SSC report was intended to apply to large ocean-going ships, and thus its specific recommendations are not necessarily appropriate for the very different physical characteristics and operating environment of inland towing vessels. With this in mind, the

[3] *Design Guidelines for Doubler Plate Repairs of Ship Structures*, Ship Structure Committee, 2005, p. 4.

[4] Ibid, p. 3.

subgroup believes that the use of doubler plates for permanent repairs on inland towing vessels is consistent with good marine practice under the following circumstances:

- Doublers should not be used in way of fuel tanks or any tank carrying hazardous materials or other pollutants (e.g., waste oil tanks, lube oil tanks, and slop tanks).

- Doublers should not be layered or overlapped.

- Cracks should be arrested in accordance with NVIC 7-68 or other applicable standard.

- Doubler plates should be sized to extend a minimum distances beyond the crack or puncture being repaired. The minimum distance should be ascertained using the following formula: ***50 mm or 2 in*** Ò***Overlap Length, Overlap Width*** Ò***100 mm or 4 in.*** [5]

- A doubler plate of more than 18òx18ò on each side should be affixed with slot or plug welds inside the perimeter welds. The corners of the plate should be radiused as appropriate in accordance with the pending ASTM standard on doubler plates.

- As a general rule, doubler plate thickness should be 65% of the original stiffened panel plate thickness or greater.[6]

- As a general rule, doublers on inland towing vessels should not be less than 8ò x 8ò in size.

- Previously affixed doublers, including those in way of fuel tanks, should <u>not</u> be removed simply on the basis that the repair does not conform to the recommendations listed in this section, so long as the integrity of the doubler is intact. In this case, the vessel owner should document the pre-existing repair and check previously affixed doublers whenever the vessel is on drydock, whether in the presence of the Coast Guard, a Coast Guard- approved third party, or in accordance with the Towing Safety Management System applicable to the vessel.

- If a vesselôs original hull construction included the use of lap seam type welded joints in way of fuel tanks, the vessel shall be permitted to continue to operate as such provided a hazardous condition does not exist. However, any new construction using lap seam type welded joints shall not be used in way of fuel tanks unless allowed for and approved in the vesselôs plan review.

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[5] *Design Guidelines for Doubler Plate Repair of S hip Structures,* Ship Structure Committee, 2005, Abstract, p. 17.

[6] *Design Guidelines for Doubler Plate Repair of Ship Structures,* Ship Structure Committee, 2005, p. 107.

Set-Ins

Set-ins, or indented hull plating, may occur on the headlog, rake sheet, bottom or side shell plating, or on the aft rudder housing of an inland towing vessel, primarily because of impact with a structure such as a dock or lock or another vessel. Set-ins are typically found while the vessel is on drydock.

The subgroup developed the following recommendations on good marine practice for set-ins on inland towing vessels. These recommendations are adapted from the March 1994 *Inland Tank Barge Inspection and Repairs Guidelines* developed by Coast Guard MSD Baton Rouge.

- The severity and need for repair of set-ins depends upon location, orientation (transverse/longitudinal), sharpness, size, and framing. Each set-in must be evaluated on a case-by-case basis.
- A set-in seen on the outside that may need repair should also be looked at from the inside, to evaluate the effect on the structure inside.
- Sharp set-ins should be cropped/renewed/inserted as appropriate. For example, a sharp set-in could be one that is obviously sharp, where the plate forms an angle of less than 135 degrees (2.5ö depth/1ô span) in any direction, or where the internal attached framing is abruptly tripped.
- If the set-in is smooth (1ö deep/1ô span), it may not require repair. The internal members in way of these set-ins should be intact and connected to the hull.

Internal Structural Members

The subgroupôs recommended approach to good marine practice with respect to shaped structural members on inland towing vessels is also adapted from the *Inland Tank Barge Inspection and Repairs Guidelines*:

- If bending, twisting, buckling, crushing, or other distortion of shaped or flanged structural members (e.g., angles, channels, I-beams, and pipe stanchions) results in a loss of strength that is necessary for the vesselôs intended service, the impacted member(s) should be repaired.
- Angles that serve as shell plate stiffeners (e.g., bottom or side shell angles) may have smooth bends associated with smooth plate set-ins. Smooth set-ins, within the limits of acceptable plate set-in, may not require renewal if:
    - They stay in their original longitudinal alignment of the member;
    - They are connected to the plate;
    - They do not roll, twist, or buckle;
    - The shaped members stay in the same orientation to the plate as original, throughout their length.
- Isolated, individual bottom plate and side shell plate stiffeners that are rolled or buckled should be examined on a case-by-case basis to determine whether the adjacent members are intact and whether the condition impacts the structural integrity of the vessel based on its intended service.

Wastage

Inland towing vessels generally do not experience the same amount of framing damage as barges, although they may experience some wastage. Bottom framing may also be damaged due to grounding. The subgroup believes that current Coast Guard guidance for repairing internal structural members on inland tank barges at 46 CFR 32.59 and the *Inland Tank Barge Inspection and Repairs Guidelines* lay out an appropriate standard for good marine practice for the repair of inland towing vessels: that is, steel should be replaced when wastage exceeds 20% from the ñas requiredò thickness for structural members and 25% for plating. This is also consistent with the guidance in NVIC 7-68. ñAs requiredò thickness should be determined using the ABS River Rules at the time of the vesselôs construction or, if the vessel was built prior to publication of the River Rules, by the first published edition thereof.[7]

Testing of Repairs

Repairs on hull plating or watertight bulkheads should be tested using satisfactory, non-destructive testing procedures. The appropriate testing procedure will vary depending on the type and location of the repair. In some cases, conducting a visual examination of the repair is appropriate.

Welding Standards/Welder Qualifications

There is currently no requirement for welders working on inland towing vessels to be certified to any standard or code; shipyards determine if and how their welders are qualified at their own discretion. For this reason, there is considerable variance in individual shipyard practices. In some instances, shipyards require 100% of their welders to be certified to a standard or code; in other instances, shipyards do not require any of their welders to achieve any official certification. Many shipyards have a mix of certified and non-certified welders.

For those shipyards that require all or some portion of their welders to be certified, the three most popular standards are Coast Guard, American Bureau of Shipping (ABS), and American Welding Society (AWS) standards.

Those shipyards that do not require certification for their welders generally qualify them through testing and maintain performance records for each employee that can be audited by a third party.

With respect to Coast Guard requirements for welder qualifications for inspected vessels generally, 46 CFR 2.75-70, ñWelding Procedure and Performance Qualifications,ò provides that ñwelding procedures and welder performance utilized in the fabrication of vessels and their various systems and components subject to Coast Guard inspection shall be qualified as requiredò by the subchapter applicable to that vessel class. Some subchapters, including Subchapter L and Subchapter T, do not require the use of certified welders for vessels subject to those subchapters.

[7] Section III of NVIC 7-68, ñNotes on Inspection,ò part D, ñOversize or Undersize Scantlings,ò lays out procedures for repairing reduced scantlings. This is not an issue for inland towing vessels because they are generally overbuilt.

With all of the above in mind, the working group makes the following recommendation with respect to good marine practice for welders working on inland towing vessels:

- Welders involved in the repair of inland towing vessels should display competency in the appropriate welding process, including welding procedure, position, and specific material.
- Welders may be qualified using a practical performance test or by the Coast Guard, by other agencies of the federal government, by the American Bureau of Shipping, or by the shipyard employing the welder.

Water in Voids

The subgroup also discussed industry practice when water is unintentionally introduced into the void spaces of an inland towing vessel.[8] The presence of some water in a void space on an inland towing vessel is not unusual and may occur as a result of a breach in the hull due to a collision, allision, or grounding; because of a crack in the hull plating or weld that may be either above or below the water line; from a leak from an adjacent compartment through an interior bulkhead; a leak from an internal source, such as a pipe that passes through the space; or from an open or unsecured hatch. Aboard inland towing vessels, the presence of unintentionally introduced water does not typically indicate that immediate corrective action is necessary. Current industry practice is to monitor the presence of the water and take corrective action commensurate with the severity of the situation.

As a general practice, Coast Guard marine inspectors are trained to investigate to determine whether the presence of water in the void spaces is adversely impacting the stability of the vessel. Given the diversity of variables in such a situation, the subgroup recognizes that the question of what to do when water is discovered in the void spaces of an inland towing vessel is not one that can be addressed in a guidance document on inland towing vessel inspection and repair in the same fashion as the other issues discussed in this report. That question will continue to be addressed by vessel owners and Coast Guard OCMIs on a case-by-case basis.

CONCLUSION

The Subgroup on Inland Towing Vessel Inspection and Repair Standards was established under BAIT Working Group #5 to make recommendations to ensure that future Coast Guard guidance with respect to what constitutes an acceptable repair or acceptable condition on an inland towing vessel is appropriate for the physical characteristics and operating environment of inland towing vessels. Accordingly, the subgroup recommends that the background information and recommendations reflected in this report be used by the Coast Guard as the basis for publication of a new Navigation and Vessel Inspection Circular (NVIC) on inland towing vessel inspection and repair. Such a NVIC should be developed in time to be published contemporaneously with the final Subchapter M regulations.

[8] Water may on occasion be introduced intentionally into the void spaces of an inland towing vessel to maintain proper trim, minimize noise and vibration, adjust the response of the vessel, or provide a source of clean cooling water. In the majority of cases, this is done safely; however, care must be taken not to negatively impact the stability of the vessel.

In the meantime, the subgroup recommends that the information and recommendations in this report be used as the basis for a Coast Guard headquarters policy letter on inland towing vessel repair. This will enable the document to be used by both industry and the Coast Guard during the Towing Vessel Bridging Program and will assist both parties in preparing for implementation of the Subchapter M regulations.

Shipyard Questionnaire:
Inland Towing Vessel Repair Practices

This survey has been developed by The American Waterways Operators (AWO), the national trade association for the tugboat, towboat and barge industry, to gather information about current industry practice on issues related to the repair of inland towing vessels. The information you provide will be used to inform the efforts of a Coast Guard-AWO working group that is developing recommendations on appropriate standards for inland towing vessel repairs in anticipation of forthcoming Coast Guard regulations on towing vessel inspection. Thank you for taking the time to complete this survey!

1. What type of shipyard are you?
   New construction _____
   Repair _____
   Both _____

2. Do you also do repair work on tank barges?
   Yes ____
   No ____

3. What percent of your welders are certified to some standard or code? _____

4. If certified to a standard or code, which one?
   AWS ____
   ABS ____
   USCG ____
   ASME____
   Other (please specify) _____

5. If you do not ñcertify ñto a specific standard or code, do you ñqualifyò your welders by testing?
   Yes ____
   No ____

6. If you test your welders, do you have records that could be reviewed by outside inspectors?
   Yes ____
   No _____

7. Briefly describe your approach to recordkeeping on welder qualifications:

8. Would you object to being required to test all welders working on towboats to a specific standard or code?
   Yes _____
   No _____

9. Would you object to establishing a standard welder qualification test designed by your yard with records available for audit?
   Yes ____
   No _____

10. Concerning hull exterior repair, please estimate the percentage of inland towing vessels you see in your yard that have the following situations:
    Indents/upsets _____
    Cracks/fractures _____
    Punctures _____
    Plate/weld wastage ____
    Buckling _____
    Other (please identify) _ _____

11. Do you commonly use doublers on towboat hull repairs?
    Yes _____
    No _____

12. Do you have a maximum and minimum size for doublers?
    Yes ____
    No ____

13. If yes, what are they?

14. On larger doublers, do you spot or plug weld the doublers inside of the perimeter welds?
    Yes ____
    No ____

15. Please describe your normal procedure for using a doubler to repair a fracture to exterior hull plating, assume the fracture is on flat plate.

16. Are there areas of the hull on an inland towboat on which you would not use a doubler?
    Yes ____
    No ____

17. If yes, please describe.

18. Do you ever use doublers to cover large areas of wasted plate?
    Yes _____
    No _____

19. Have you ever seen a doubler on an inland towboat fail?
    Yes ____
    No _____

19 (a). What was the primary reason for doubler failures seen at your shipyard?

19 (b). What is the failure rate (or frequency) of properly installed doublers seen at your shipyard?

19 (c). What is the rate (or frequency) of doubler failures seen at your shipyard that could have led to the sinking or loss of the vessel?

20. If you could determine why the doubler failed, please describe:

21. If you use doublers, do you use plate thickness that is larger than, smaller than, or the same as the hull plating?
    Larger than hull plating _ _____
    Smaller than hull plating _____
    Same as hull plating _____

22. Please estimate the cost differential between a doubler and an insert, of the same size, in the same location.

23. Have you ever seen problems resulting from a large number of doublers being used in a relatively small given area?
    Yes ____
    No _____
    If yes, please describe:

24. Do you commonly test hull repairs?
    Yes _____
    No _____

25. If yes, do you use:
    Air/soap _____
    Hose test _____
    Non-destructive testing (NDT) _____

26. At the request of the owner, do you commonly do hull gaugings to determine the overall condition of hull plating on an inland towing vessel?
    Yes _____
    No _____

27. Are you familiar with U.S. Coast Guard Navigation and Vessel Inspection Circular (NVIC) 7-68, Notes on Inspection and Repair of Steel Hulls?
    Yes _____
    No _____

28. Are you familiar with the U.S. Coast Guard publication ñInland Tank Barge Inspection and Repair Guidelines?ò
    Yes _____
    No _____

Shipyard name/location:

Name/title of person completing the survey:

May an AWO representative contact you if we have any questions? If so, please provide contact information:

Phone:
Email address:

Participating Shipyards

Big River	Vicksburg	MS
Jantran Marine	Rosedale	MS
Jeffboat	Jeffersonville	IN
Mississippi Marine	Greenville	MS
Bludworth	Corpus Christi	TX
Bollinger	Algiers	LA
Bollinger	Amelia	LA
Bollinger	Calcasieu	LA
Bollinger	Golden Meadow	LA
Bollinger	Larose	LA
Bollinger	Morgan City	LA
Bollinger	Harvey	LA
Bollinger	Lockport	LA
Bollinger	Texas City	TX
Campbell Transportation	Dunlevy	PA
Campbell Transportation	Georgetown	PA
Campbell Transportation	Clairton	PA
Campbell Transportation	Congo	PA
Marathon Marine Repair	Catlettsburg	KY
McGinnis	Southpoint	OH
National Maintenance	Hartford	IL
National Maintenance	Paducah	KY
National Maintenance	Harahan	LA
R&D Associates	Catlettsburg	KY
Upper River Services	St. Paul	MN
A&Z Marine	Port Allen	LA
Ashton Shipyard	Harvey	LA
C&G Boat Works	Mobile	MS
James Marine	Paducah	KY
Pelican	Morgan City	LA
Verret	Plaquemine	LA
Amherst Madison	Henderson	WV
Neals Shipyard	Vienna	WV
Okan Shipyard	Gallipolis	OH
Ohio River Salvage	Belmont	OH
Bellaire Harbor Services	Bellaire	OH

Inland Towing Vessel Repair Practices
Shipyard Survey

27 of the 35 individual shipyards represented by this survey are involved in both new construction and repair work; 28 of 35 conduct repair work on tank barges.

On average, about 60% of welders employed across the shipyards counted in this survey are certified to some standard or code. However, the range varies greatly ï from 100% in some cases to 0% in others. Among shipyards that certify any percent of their welders, there is a fairly even distribution among three different standards:

- American Welding Society (AWS): 35%
- ABS: 45%
- Coast Guard: 43%

The vast majority of shipyards qualify their welders through testing in instances where the welders are not already certified. 20 of the 22 respondents that answered this question test their non-certified welders. Of the 35 participating shipyards, 29 have records that could be reviewed by outside inspectors.

Each shipyard takes a different approach to keeping records for welder qualifications. In instances where the specific certification standard has associated best recordkeeping practices (such as ABS), those practices are followed. In all instances shipyards keep personnel files that allow them to keep track of certifications (where applicable) and job performance. In instances where shipyards make welders take pre-employment tests, those are kept in the individualôs file as well.

The vast majority of respondents (77%) say they would not object to being required to test all welders working on towboats to a specific standard or code, although one respondent specified that all yards should operate under the same standard. Even more respondents (88%) say they would not object to a standard welder qualification test designed by each yard with records available for audit. However, in one dissenting view, the respondent asked why this would be necessary if a welder shows continual competence through existing means of performance evaluation.

Concerning hull repair, the majority of issues on inland towing vessels tend to be related to normal wear: indents/upsets; cracks/fractures; and plate/weld wastage. Comparably fewer casualty incidents involve punctures and buckling.

Roughly 80% of respondents answered that they commonly use doublers on towboat hull repairs, and about 40% of respondents indicated that they have a maximum and minimum size threshold for doublers. As a standard practice, all participating shipyards noted that for larger doublers, they spot or plug weld the doublers inside the perimeter welds.

Normal procedure for using a doubler to repair a fracture involves first gouging or grinding the fracture, drilling at both ends to stop the crack, and then welding the doubler

on all sides over it. When welding the doubler, some shipyards report the standard practice of making at least two passes on all sides of the patch. 80% of the respondents indicated that there are areas of the hull in which they would not apply a doubler. Most frequently respondents cited the fuel tanks, but noted generally that any void that could or does contain hazardous materials or other such pollutants is not an area in which they would apply a doubler. In addition to fuel tanks these could also include lube tanks, hydraulic oil tanks, and slop tanks.

Regarding the size of doublers, the most common industry practice based on those surveyed is to use a doubler that is the same thickness as the hull plating. Some respondents indicated that they would use a doubler thicker than the hull plating to provide extra wear protection. Smaller doubler thickness was rare, but occasionally used to cover a difficult crack area. About 70% of respondents indicated that they have used doublers to cover large areas of wasted plate.

Roughly 80% of respondents reported having seen a doubler on an inland towing vessel fail. Among the most cited reasons for doubler failures were simple wear and tear on the vessel, improper welding, or instances where the doubler was welded to a plate that was too thin to hold it.

- In follow-up with three targeted shipyards (Bollinger Quick Repair, James Marine, and National Maintenance), respondents clarified that while they had worked on vessels in which doublers had failed, the overall failure rate when doublers have been installed properly is 5% or less.

- The likelihood that a doubler failure will result in the loss of the vessel is even less frequent, on average around 1%. This is partly due to the fact that doublers are usually installed above the loaded water line, and partly due to the fact a failure below the water line is most likely to result in a minor leak, not significant flooding.

The overwhelming majority of respondents estimated that inserts costs at least 2-3 times more than doublers. Some respondents went as high as 5-7 times more expensive. Only one respondent estimated that inserts costs less than twice as much as doublers.

All respondents reported that they tested hull repairs. Air/soap is the one method all shipyards reported using. Roughly 65% of respondents conducted hose tests, and a little more than 40% of respondents conducted non-destructive testing.

All respondents reported conducting hull gaugings to determine the overall condition of the hull plating on the inland towing vessel when the owner requests it; one respondent noted, however, that owners rarely request the gaugings.

80% of respondents were familiar with NVIC 7-68; a little more than that, 82% reported being familiar with ñInland Tank Barge Inspection and Repair Guidelines.ò

NMA Comments on the BAIT Report Submitted to Coast Guard Officials

General shortcomings of the report:

Comment #1: The report is professionally done and appears accurate. It clearly states that it deals only with inland and river towing vessels. However, all oceangoing and coastwise and many inland towing vessels operate in saltwater or brackish water that affects steelwork. Existing regulations in other subchapters allow for this, and I assume that Subchapter M will also.

Page 3. Physical features of Inland Towing Vessels:

ñLong lived vessels with no significant history of hull failure.ò

Comment #2: Please refer to Congressman Oberstarôs letter to Commandant Thomas H. Collins that stated: ñSince 1992, towing vessels have been involved in more than ***607 sinkings, 593 floodings***, 494 fires, ***115 capsizings***, 41 explosions, and 103 abandonments. I believe that these numbers can be significantly reduced by having these vessels inspected by Coast Guard personnel pursuant to the vessel inspection laws and manned in conformance with the manning and licensing requirements under section 8101 of title 46, United States Code.ò

Since towing vessels were never subject to Coast Guard ñinspectionò there was no ***consistent*** record maintained of the causes of the ñsinkings, floodings, and capsizings.ò Since it was not the Coast Guardôs job to inspect or maintain records of uninspected towing vessels, resources were not always available to do so.

ñMost plating deterioration caused by abrasion.ò

Comment #3: Abrasion implies the initial removal of a protective coating followed by rust, followed by abrasion of the rust on exterior portions of the hull that causes pitting and subsequently diminishes plating thickness. Equally important, on interior hull surfaces, especially in void areas, the presence of water and/or high humidity attacks plating from the inside. Neglecting to actively treat this rust over a long period will deteriorate plating from the inside. The void spaces in many older vessels will need to be assessed by trained Coast Guard inspectors and may require extensive gauging.

ñRugged, durable design (plus fendering) to withstand contact with the river bottomé .ò

Comment #4: Badly eroded plating has reduced ability to withstand contact with ñthe river bottomò or any other solid contact. See the ***example*** of M/V Polaris (below). *[**Editorial Note**: We furnished both M/V Polaris Newsletter articles to the Coast Guard. They are available on our website.]*

ñGenerally, older towing vessels have single-skin fuel tanks; many newer vessels have double skin fuel tanks and engine rooms.ò

Comment #5: Steel **t**anks containing fuel and lubricants and even bilges coated with oil do not rust.

Page 4. Characteristics of the Inland Towing Vessel Operating Environment

ñFresh water operation produces less hull deterioration.ò

Comment #6: Agree. However, this statement overlooks vessels that occasionally operate in salt and brackish water as reflected in current regulations for other vessel classes.

ñFrequent drydockings to address emergent need for repairsé .ò

Comment #7: Drydockings are expensive and only address those repairs that owners or operators are willing to take the time off the job to repair or have the money to pay for. Safety is ***not*** the primary consideration for owners or operators. However, it should be the primary concern of impartial Coast Guard inspectors. It will continue to be the concern of our Association.

ñ***Most*** inland line-haul towing vessels carry a skiff or utility boat.ò

Comment #8: Agree. But there is no requirement to do so or for that craft (or vessel crewmembers) to meet a safety standard. We trust that Subchapter M will treat this issue. This is what our Association previously requested in NMA Report #R-276, Rev. 8: ñLike other inspected vessels, each towing vessel should have at least one Coast Guard-

approved survival craft capable of holding all crewmembers. Unfortunately, no regulation required ANY survival craft on a towing vessel when previously classed as an uninspected vessel. In addition and respecting the views of the NTSB as repeatedly expressed for comparably sized commercial vessels, this survival craft should be able to support all members of the crew out of the water (to avoid hypothermia, shark attack, snake bite, etc.) until help arrives. We point out that traditional life floats and buoyant apparatus are not suitable because they require survivors to remain in the water and subject to hypothermia since no seawater temperature provides the heat equivalent to a personôs body temperature of 98.6°F.ò We note that the 111th. Congress took note of our concerns in Section 609 of the Coast Guard and Maritime Transportation Act of 2010 in 46 U.S. Code §3104.

Page 4. Evaluation of Effectiveness

ñInland towing vessel casualty data from the Coast Guardôs Marine Information for Safety and Law Enforcement (MISLE) database.ò

Comment #9: Our Association is acutely aware of the long-term shortcomings of the Office of Investigations and Analysis marine investigations program as reported in DHS OIG Report 08-51 in 2008 and again in OIG Report #13-93 (2013). The ñCasualty Investigations Programò is a critical part of the larger Coast Guardôs Marine Safety program ï a program that the House of Representatives voted 395 to 7 to revise from the ground up and did so in 2010. The mass closure of a backlog of 3,848 so-called ñlow riskò investigations on Sept. 29, 2006 without the proper headquarters review(1) and the presence of an even larger backlog reported in 2013, and increased difficulties in obtaining meaningful information on casualties inspires no little confidence that the Coast Guard is concerned about mariner safety issues. Unfortunately, as reported, the investigations program continued to display failing grades to the DHS from 2008 through mid-2013. Therefore, relying on any information furnished from this database is misplaced. *[(1)OIG-08-51, p. 16]*

Page 6.

ñAWO found that 30 of the 45 incidents for which the Coast Guard provided detailed information involved a subject company that was **not** an AWO member at the time of the casualtyé .ò

Comment #10: Although AWO has good reason to be proud of this statement and of their hard work, most problems do not originate from the ñgood guysò who have a degree of success and profitability that allows them to comply with existing and future regulations. Our concern is for those who persist in evading their responsibilities as in the example of the M/V Polaris (below).

Our Association is concerned with the problems that the ñ**good guys**ò inadvertently cause our mariners. For example, our campaign to improve the quality of potable water on towing vessels gained sufficient traction in Congress to require the Coast Guard to assume responsibility over this problem. When soliciting public comments, the Coast Guard heard from many of the ñ**good guys**,ò decided the problem did not exist, and dropped all further inquiry about substandard potable water systems on many towing vessels. Unless Subchapter M deals with this issue and includes close scrutiny of potable water systems on towing vessels, we will be obliged to go back to Congress.

Page 7. ñHull gaugings are not conducted at a specified interval but rather as needed based on visual observations to establish a baseline for future comparison when a vessel is newly acquired.ò

Comment #11: We note the last comment in Appendix **C** where one respondent noted that ñé owners rarely request the gaugings.ò

Page 8. ñDoubler plates are typically affixed by trained shipyard personnel.ò

ñSome welders will elect to make two passes on all sides of the patch, but ***there is no standard practice among shipyards for how a weld is to be reinforced***.ò

ñBased on the shipyard survey results, the subgroup estimates that ***it is 2-3 times more expensive to crop and renew damaged steel than to use a doubler plate***.ò

Comment #12: We assert that the expense is justified for the safety it affords our mariners who serve on these vessels. Unlike the M/V Polaris (below), not all vessels sink in only 8 feet of water.

Page 9. ñ***When installed properly***, shipyards have reported doubler failures on inland towing vessels of 5 percent or less.ò

Comment #13: Will individual Coast Guardôs inspectors will now have to determine which doubler plates are ñ***installed properly***.ò This could be a dicey proposition. The existing guidelines are in NVIC 7-68 that has been in effect for 45 years and has been successfully applied to all classes of inspected vessels. The report suggests that it is time for a new NVIC that will incorporate suggested changes. As I saw at a recent NOSAC meeting, the Coast Guard certainly has the ability to assemble a panel to look into possible changes in welding and ship repair ***if convinced that NVIC 7-68 needs revision***. However, any such revision should cover (or at least distinguish between) all applicable classes of inspected vessels.

ñSince 1968, NVIC 7-68 has supported the assumption of the Coast Guard and classification societies that doubler plates are only appropriate for ***temporary repairs***.ò

Comment #14: What is a ***temporary repair"***? Installing a doubler is expensive, but far less so than doing the job right in the first place. Delay could gain ñtimeò (and time is money) for the owner, but should never be allowed at the expense of the safety of mariners serving on the vessel. With a towing vessel coming under inspection, the inspector may have to decide what ñtemporaryò means. His judgment will affect the safety of all aboard the vessel.

ñWhile doubler plates may fail due to improper welding or instances where the doubler was welded to a plate that was too thin to hold it, when properly installed, shipyards have reported doubler failure rates on inland towing vessels of five percent or less.ò

Comment #15: Will inspectors be expected to attend the installation of each doubler plate? In the absence of an inspector, what will a shipyard be required to report or what ñevidenceò must they provide of the doubler plating work they completed?

Page 10. ñ***Previously affixed doublers***, including those in way of fuel tanks, should not be removed simply on the basis that the repair does not conform to the recommendations listed in this sectioné .ò

Comment #16: The Coast Guard probably must develop a policy to apply when the first vessel is drydocked and inspected for certification. Our Association is interested in obtaining a copy of such a policy when it is developed.

Page 13. Water in Voids.

ñCurrent industry practice is to monitor the presence of the water and take corrective action commensurate with the severity of the situation.ò

Comment #17: While vessel stability is an immediate issue, so too, is the long term creation of rust in internal areas of the vessel that may not be easily accessible.

Uninspected Means Neglected – The M/V Polaris Story

Our Association provides a Newsletter for our mariners and posts it on our website. The two articles below were written a year apart in NMA Newsletters #31 and #41 (posted on our website). We made some editorial changes to update these aging reports and in the interest of improved readability. These articles are critical of the lack of attention the Coast Guard previously accorded to reports of dangerous towing vessel operations. We believe the subsequent investigation on the Mel Oliver/Tintomara accident focused greater attention on rogue towing vessel operators as well as on the shortcomings of proposed safety management systems.[(1)] We ask our mariners to be attentive to the reports of the ***deteriorated hull structure*** on the M/V Polaris that our mariners previously reported. *[(1) Refer to NMA Report #R-225-A recently posted on our website.]*

Towboat Polaris Sinks in the New Iberia Canal – Part 1

*[**Source:** Gulf Coast Mariners Association, Newsletter #31, June 2005.]*

A regional newspaper reported that civil and possibly even criminal charges could be filed after an oil spill from the sunken towboat M/V Polaris in the channel leading to the Port of Iberia.

LCDR Andrew Sheffield, senior investigating officer for the Coast Guard Marine Safety Office in Morgan City, said 5,052 gallons of diesel were recovered from the tugboat Polaris with about 2,700 gallons recovered from the

water. Of the amount that escaped into the canal, about 50 percent of it evaporated.

Long History

The M/V Polaris was an antique single-screw towboat built in 1955 by St. Louis Ship. The vesselôs date of construction becomes significant whenever a vessel is not maintained properly throughout its lifetime.

The vessel first came to our Associationôs attention about a year ago when it leaked so badly that a diver had to be hired to plug a hole in the bottom. Fortunately, the vesselôs pumps were able to keep up with the flow until the diver inserted an all-thread rod and made a ñsandwichò patch to keep it from sinking. There also were reported to be several wooden plugs driven through the hull in other places as well.

The Coast Guard boarded the vessel in Morgan City on June 10, **2004** (i.e., a year ago) and issued a verbal Captain of the Port Order for the vessel to remain in port until they corrected the deficiencies. On learning of the boarding and the decrepit condition of the vessel, we wrote to the Commanding Officer, MSO Morgan City, stating in part:

ñWe respectfully request a copy of the boarding team report of their findings as well as any follow-up of the work completed when such work is complete.

ñOur Association is a mariner advocacy group. One of our primary projects, Report #R-276, is a request to Congress to bring all towing vessels under Coast Guard inspection standards.

ñWe believe that mariners working on uninspected towing vessels do not receive the same protections under law and regulations that are accorded mariners working on inspected vessels of comparable size and horsepower. We understand that the M/V Polaris is a particularly egregious case that your office is vigorously pursuing. We would like to follow this case as closely as possible with the full revelation of all actions taken your office has taken.

ñWe also want to review the case to see if there were any unsafe or unhealthy conditions that your boarding team encountered that could not be addressed because there were no regulations governing those areas.

We received the draft summary cited below from Coast Guard Headquarters (G-MRI-1) dated July 22, **2004**. The deficiencies were divided into two groups as follows:

Deficiencies to Correct Before Leaving Port

*[**Source:** USCG Activity #2094085. NMA File #M-477.]*

1) Provide a valid Certificate of Documentation.
2) Provide a valid radio station license.
3) Furnish a current Light List.
4) Furnish current Notices to Mariners.
5) Give portable extinguishers their annual inspection.
6) Mount protective machinery guards as specified.
7) Remove excess oil from bilges and remove oil-soaked rags from the engineroom.
8) Install flame screens on fuel tank vents.
9) Replace household navigation lights with Underwriters Laboratory UL-1104 approved lights.
10) Man the vessel with the required number of properly licensed operators

Deficiencies to Correct Within 30 Days

1) Log all required vessel tests and inspections.
2) Replace or repair the general alarm system and supplemental red light.
3) Post employee-assistance program hotline info.
4) Post a marine sanitation device placard and instructions.
5) Install remote fuel shut-off valves.
6) Insure that the vesselôs official numbers are clearly visible on interior structural part of hull.
7) Install protective globes on all exposed lights.
8) Install bug screens on potable water tank vents.

What Was Omitted and Why

A Coast Guard regulation supports each of the 18 items that appears on the deficiency list. Unfortunately, there (are) no Coast Guard regulations that require the Coast Guard to inspect the hull and machinery of an ñuninspectedò towing vessel.

Our Association is aware of the large number of ñsinking, flooding, and capsizingò towing vessels from our large number of accident files. We asked the Coast Guard to provide the raw data on a number of occasions. We published the raw data in our Newsletter #28 (Feb./Mar. 2005, p.6). We then asked Headquarters to evaluate the raw data as part of its work on creating the new towing vessel inspection regulations. Whether they do or not, Congress expressed its concern on the public record on the ñ**607 reported sinkings, 593 floodings, 115 capsizings, as well as 41 explosions and 103 abandonments**ò as reprinted in our Newsletter #29 (Mar./Apr. 2005, p.4). This is a big problem the Coast Guard ignored for years. It speaks volumes about the Coast Guardôs ñsuperintendenceò of uninspected towing vessels ï and our mariners who serve on them.

Since there are no regulations governing the hull, the Coast Guard made no mention of the temporary hull patches and wooden plugs. We do not know what expenses or inconveniences the owners of the vessel experienced as a result of having their **2004** voyage terminated, but we know their **2005** voyage may have been an even larger disaster. The rest of what we know we gathered from the newspapers.

Newspaper Accounts

The boat sank about four miles from the port's public dock in 11 feet of water, (Sheriff Sid) Hebert said during a trip to the spill site Thursday afternoon. The 93-foot tug jutted half out of the water, its hull resting on the bottom and blocking two-thirds of the width of the channel. The water around the tugboat had an iridescent sheen and appeared darker near the boat's hull where clean-up workers in small boats used special sponges to soak up the oil.

The canal is the only water access to the port and was closed for over 4 days. The public boat dock is also closed, he added.

After the tugboat sank, Iberia Parish Sheriff Sid Hebert said the pilot was Daniel Bashinelle, 46, of Franklin and that ***he did not have a valid operating license***. A spokesman for the tugboat's owner, Viking Marine of Chalmette, said Bashinelle was the engineer, not the pilot, and that the pilot was James McCray, who was licensed by the Coast Guard. Sheffield would neither confirm nor deny that information, but said the incident was still under investigation. Pending the investigation, the company and personnel could face civil penalties for the accident and revocation or suspension of their licenses, "if they do have licenses," Sheffield said.

Viking Marine Transportation will, at the least, face fines for "pollution aspects," Sheffield said, but environmental damage appears to be minimal.

"The charges will possibly be civil penalty violations, and any criminal referrals will be made to the U.S. attorney," he said.

The sunken tugboat was finally removed from the canal June 5th and taken to Morgan City where it was scrapped.

ñMarine traffic in the port was at a standstill since June 1st when the accident occurred but returned to normal four days later.ò said Roy Pontiff, executive director of the port. Many of the 100 businesses at the port reportedly used trucks to get their products to customers, mostly pipe and oilfield equipment. The Port Director said it would be difficult to estimate the economic impact of the accident. About 100 supply boats, barges and pleasure boats use the port's channel.

Our Mariners Report

While we have heard from a number of our people about this accident, one reliable mariner with contacts in the port of New Iberia passed along information that the cost of salvaging the M/V Polaris was $117,000 plus the cost of cleaning up the oil spill. He also opined that the person operating the vessel had never held a Coast Guard license and that the Coast Guard was investigating the matter very carefully.

Towboat Polaris Sinks in New Iberia Canal – Part 2

[Source: *Gulf Coast Mariners Association Newsletter #41, July 2006, based on MISLE Activity #2383735, MISLE Case #235164, June 1, 2005. Release Date, June 22, 2006. FOIA #05-1781. Our Files #M-477 & M-574. Excerpts, necessary rewording, opinions, comments, and emphasis are ours.].*

The Uninspected Towing Vessel Polaris, Official # 270483, was built in 1955 in St. Louis, Missouri. The vessel was 211 Gross Tons (143 Net Tons) and was 93.2 feet in length.

In 2004, ownership of the vessel was transferred from Acme Towing of Paducah, Kentucky to K. P., Inc of Baton Rouge, Louisiana. K-P. Inc. acquired the Polaris along with two other vessels, the UTV Mama Lere (Official # 264863) and the UTV Elizabeth Marie (Official # 264533).

■[1] of Baton Rouge owns K.P., Inc. However Mr. ■ was not involved in the day-to-day operations of these tugs.[2] Mr. ■ purchased the tugs to lease for operation. The Polaris was leased to Viking Marine Transportation of Chalmette, LA. This lease also covered the Mama Lere. ■■ was the President of Viking Marine Transportation and leased the vessel from K-P., Inc. Viking Marine Transportation was operating the vessel at the time of the sinking. *[[1]Information shown by these symbols was redacted from the report. These redactions challenged us to keep the story straight. [2]These vessels are inland towboats, not tugs.]*

MISLE History of the UTV Polaris

The Polaris had a Coast Guard MISLE record going back to 1987. In October of 1997, the Polaris was originally documented under the name Red Marvel. In that month, MSO Paducah issued a Captain of the Port Order (COTP) to the Red Marvel. Among the citations in the COTP order were ñ...leaks in hull, excessive amounts of slop oil in bilges, and inadequate fire fighting appliances.ôô

On June 1, 2004**,** MSO Morgan City boarded this scruffy vessel, now named the Polaris, and issued another COTP order. One of the deficiencies listed in this case was that the vessel was not under the control of an individual licensed for that vessel. The vessel was also cited for rigging a submersible pump in the engine room to pump an oily water mixture directly overboard.

On Jan. 22, 2005, the Polaris was involved in a marine casualty where one of the barges she was pushing allided with a bulkhead in MSO New Orleansô Area of Responsibility (AOR). Further investigation after the casualty revealed that the POLARIS was under the control of an unlicensed individual at the time of the allision. MSO New Orleans initiated civil penalty action on the owner of the vessel because of this investigation (MISLE Activity 2326400). We have no idea how large this civil penalty was, or whether it was ever collected, but it apparently was not sufficient to dissuade the owner of the vessel from manning the vessel with unlicensed personnel. Two violations of the same law within a year and a half within a hundred miles of each other should have raised red flags and sounded alarm bells. However, the towing industry in the Eighth District appears to have had immunity to such scrutiny.

Personnel Onboard POLARIS on June 1, 2005

There were four persons on-board the Polaris on the night of June 1, 2005. The person at the wheel of the vessel was ■■■ who had assumed the identity of his brother who was issued a Coast Guard License in Feb. 1995. ■■■ never had a Coast Guard license of his own. In 1999, the Coast Guard revoked his brotherôs license. The MISLE activity indicates that the original copy of that license was destroyed by MSO New Orleans.

On the night of June 1, 2005 ■■■ was operating the vessel with a forged copy of his brotherôs original license in which the dates had been ñòxò-ed over and altered. The brother is currently in prison for life on double murder convictions, narrowly avoiding execution for the crimes. It is unknown how ■■■ came to possess his brotherôs altered documents. We can only assume that someone in authority at least asked him about this forgery, but nothing in the record indicates this ever happened.

On May 24, 2005, ■■■ applied for a job as a pilot for Viking Marine Transportation. He provided his brotherôs birth certificate and a copy of his Coast Guard License and used these documents to obtain a false Louisiana identification card.

■■■■ was on board the Polaris serving as an unlicensed engineer. Logs sheets obtained from the vessel also indicate that ■■■■ was paid to operate the Polaris for 53 days although he did not have a valid Coast Guard license to do so. At one time ■■■■ did possess a valid Coast Guard license but it was revoked in 1995 for refusal to submit to a reasonable cause drug screen.

There were two unlicensed deckhands on board the vessel. Neither had a prior record with the Coast Guard and, as deckhands on an inland towing vessel, neither was required to have a merchant mariner document. In this time of heightened security, our Association expressed our concern that the ñcast of charactersò found on this particular vessel can continue to exist without adequate safeguards to protect the thousands of qualified, trained, and law-abiding mariners who follow the rules.

The UTV POLARIS Sank on June 1, 2005

According to Polaris logs for that date, the vessel arrived in the Port of Iberia at or about 12:30 and offloaded its barges. This was the last logbook entry anyone bothered to make for the day. The vessel logs were handwritten on unlined computer paper. They did not list such details as who was operating the vessel or any kinds of drills or

required tests.

According to crew interviews after the accident, the Polaris departed the Port of Iberia ñlight boatò and was to transit southbound on the Port of Iberia Canal to the Intracoastal Waterway where it was to pick up a load of four rock barges. At least that was the extent of the ñvoyage planò ï if that is the term for the regulations that the inland towing industry neatly avoided several years ago.

At or about 20:20 that evening, ■■■ was at the wheel of Polaris. The other three crewmembers were in the galley preparing dinner. At that time, ■■■■ noticed that the stern was lower than usual. Upon further examination of the aft lazarette and engineroom ■■■■ noticed a large amount of water coming into the vessel. ***Because the flooding had already progressed into multiple compartments, the source of the flooding could not be located***. Other crewmembers were then alerted and they began rigging a three-inch pump. However, the pump, once operable, was not effective. ■■■ was not immediately notified of the problem while at the wheel. This would have been a significant oversight on any vessel other than the raggedy Polaris.

The vesselôs history shows that the vessel had an outstanding deficiency for not having a General Alarm. There is no record of installation of a General Alarm and the crew stated that no such alarm was in place. This could have had serious consequences if the vessel had sunk in deep waters of the Atchafalaya or Mississippi Rivers.

At or about 2025, ■■■ lost power on the bridge and assumed that the generator had failed. He exited the pilothouse, at which time ■■■■ told him the vessel was flooding and possibly sinking. ■■■ noticed the stern low in the water and then began to attempt to maneuver the vessel to the west bank of the canal to shallow waters. However, before he could do this, the vessel sank in approximately eight feet of water at the center of the channel. As ■■■ was attempting to back the vessel into the bank, it sank perpendicular to the waterway effectively blocking the Port of Iberia Canal. This brought access to many businesses and operations at the port to a halt and generated considerable local interest in the fiasco.

After the vessel settled on the muddy bottom, the crew was able to launch a small skiff with an outboard motor. The crew also had a small boom available. They deployed this inadequate boom downstream of the vessel to attempt to control the diesel fuel and oil that was beginning to leak from the engineroom and vents. In particular, the starboard side vent was leaking diesel fuel into the waterway. The boom was not large enough to reach around the entire vessel. The crew did not attempt to light or mark the vessel to warn approaching vessel traffic. The crew then took the skiff back to the Port of Iberia.

The crew traveled to MSO Morgan City where a Coast Guard Investigating Officer interviewed them. At the time of the casualty, ■■, the owner of Viking Marine told the Investigating Officer that the required drug and alcohol testing had taken place. This later proved to be false. Verbal conversations with ■■ on June 5, 2005 revealed that ***no organized drug testing was completed***. However, ■■■■ did submit a sample of his own to Bourgeois Marine Clinic in Morgan City, LA. The custody and control form from ■■■■ was shown to the Investigating Officer on scene for the salvage. However, the Coast Guard received no evidence regarding any other drug and alcohol testing for the other crewmembers. ■■ was asked repeatedly to submit a ***CG-2692B*** (Report of Chemical Testing Following a Marine Casualty ***but none was ever received***. We assume that this must have raised some doubts as to his credibility. It is no wonder that the Coast Guard instituted tough new alcohol testing requirements for all mariners effective June 20, 2006 because of cases like this one.

At 04:30 on June 2, 2005, the Iberia Parish Sheriffôs Department closed the Port of Iberia Canal to marine traffic and the Coast Guard issued a Broadcast Notice to Mariners. An Investigating Officer from MSO Morgan City arrived on scene or about 06:00 on June 2nd. The officer observed the vessel partially submerged and boomed. The contracted pollution clean-up company, AMPOL of Lafayette, LA, was on scene and started containment operations.

Because the vessel was only partially submerged, the Investigating Officer was able to get on the oily wreck and do a visual inspection of the bridge. At this time, the Coast Guard removed the vessel logs, Certificate of Documentation, and Radio License from the vessel for further investigation.

Salvage Operation of June 4 & 5, 2005

Salvage of the Polaris began on June 4, 2005. One crane, the Salvage Chief, was on scene for the operation. The plan for salvage submitted to MSO Morgan City by Coral Marine Services of Amelia, LA indicated that the plan would be first to lift the vessel off the bottom. Once the first deck was above the waterline, the salvers planned to use a six-inch pump to dewater the vessel. They would then secure and patch any leaks and make the vessel ready for transport by tow.

Attempts to lift the vessel off the bottom on June 4th were unsuccessful, and it was determined that the Salvage Chief was not rated to lift the vessel. On June 5th, a second crane arrived on scene to aid in the salvage. The cranes worked together to lift the vessel at which time dewatering operations commenced. After dewatering, personnel were able to begin a visual inspection of the vessel and its hull. The investigation report contains no mention of the vessel ownerôs participation in the salvage efforts ï if it even occurred.

Visual inspection of the Polaris revealed that the towboat was in an extreme state of disrepair. There was evidence of ***deteriorated steel plates both above and below the waterline***. In particular, one approximately 18ò x12ò hole was found on the starboard quarter of the vessel. Further investigation found that someone had ***attempted to patch this hole in the hull with a makeshift soft patch. This patch consisted of boards with rags nailed to the bottom. The boards were then secured by 2"x4"s***. ■■■■ stated he did not know who installed the patch. Apparently, nobody pursued that issue so we conclude that the patch was applied by a benevolent tooth fairy.

There also was evidence of damage to the port side accommodation space. ■■■■ told the Investigating Officer that this damage was the result of an allision with a moored barge while the Polaris was transiting through New Orleans in Feb. 2005. ***There is no evidence that anyone ever reported this incident to the Coast Guard in New Orleans***. ***The damage caused a large puncture hole to the accommodation space covered by a tarp that was weighted down with old tires – plainly visible for months***.

Enclosure (5) to COMDTINST 16200.3A shows under ñTable 5-Aò recommends a maximum civil penalty of $1,000 for failure of a marine employer to report a marine casualty in writing to the OCMI in violation of 46 CFR §4.05-10. Yet in both Polaris cases ï the allision in New Orleans and the sinking ï there is no mention of the Coast Guard even seeking a minimum civil penalty for failing to report the accidents.

At a recent TSAC meeting our Association attended at Coast Guard Headquarters, the use of CG-form 2692 was treated by participants in the meeting as an open joke! Our Association watched the Coast Guard wave its magic wand when ENSCO failed to report 44 personal injuries to the Coast Guard that were serious enough for maritime workers to take to court.

Our mariners need adequate protection offered by adequate penalties to ensure that employers report each and every accident and injury promptly to the Coast Guard. It is about time that accident reporting be no longer treated as a joke. Cut the slack for the scofflaws.[1] *[[1]NMA Report #R-350-Y, Revision 1.]*

Conclusions

The Polaris was a vessel in substandard condition when it left the Port of Iberia on June 1, 2005. (ñSubstandardò is a euphemism for vessels that do not have to meet enforceable inspection standards. Our Association and the Coast Guard both knew this towing vessel was in deplorable shape before it ever arrived in New Iberia. Prior MISLE history and on-scene inspection after the sinking show a repeat pattern of violations of law and regulation that are supposed to ensure safety of life at sea. Our Association questions why nothing effective was done to curb the rogue operations of this unreliable outlaw towing company.

Prior to the Polaris sinking, further evidence surfaced that the vessel was in a state of disrepair. After she sank, Captain□, a licensed towing vessel Master who worked on the vessel a year earlier, submitted a written statement to the Coast Guard. It appears that on June 3, **2004** (a year earlier) Captain □ began work on the Polaris. From his personal logs, he explained on June 9, **2004**, he was relieving the watch when he noticed an unusually large amount of water in the lower engineroom ï in fact, water was up to the deck plates. When Captain □ alerted the officer on duty, he was told that a wooden plug had likely worked out. This statement is perfectly logical since the Coast Guard did not have the job of inspecting the hulls of ñuninspectedò towing vessels. On that same date, a diver came to the vessel and installed a ***soft (sandwich) patch consisting of two steel plates, all-thread, and rubber gasket***. (Could that same diver be the benevolent tooth fairy that patched Polaris with 2ò x 4ò s a month before it sank?)

As stated previously, the Coast Guard boarded the Polaris on June 10, **2004** and issued a COTP order. As a result, the vessel went into dry dock in November 2004 to repair holes in the bottom of the hull. Evidence of hull deterioration from this drydocking appears in photographs enclosed in the Coast Guard report.

After salvaging the vessel from the Port of Iberia Canal, a survey revealed that the vesselôs hull was in serious disrepair. Surveyors located two holes in the bottom of the hull toward the stern of the vessel. It appears as if this is where the flooding originated as described by ■■■■. Evidence of a makeshift soft patch was found on the largest hole. ***The survey also revealed that the vessel had no watertight integrity below deck***. Wiring for electricity and cable for the rudder created holes in the bulkheads that allowed flooding to progress through compartments. This is quite common on uninspected towing vessels simply because these vessels do not have to go

through the rigors of a thorough Coast Guard inspection. This hides accumulations of unsafe practices by vessel owners unwilling to spend the money to make proper repairs, renovations, maintenance, and equipment installations.

On June 10, 2005, the Coast Guard cited the Polaris for not having an operable General Alarm or Public Address System. It is fortunate that all the crewmembers were awake at the time of the sinking, since no alarm could alert them of any danger. There was also evidence of damage to the accommodations spaces because of an unreported marine casualty. Rather than make a proper repair to the superstructure, the company chose to cover the space with a tarp and caulk it. According to ■■■■, the damage to the space occurred in February 2005, approximately five months before the sinking. Survey of the vessel also shows that water entered through holes in the tarp thereby facilitating flooding.

The logs from the Polaris also show repeated violation of law and regulation by use of unlicensed individuals as Masters of the vessel. On these logs, ■■■ identifies himself as being on the wheel of the vessel. ■■■ did not have any Coast Guard license.

The evidence in this case reveals misconduct on the part of the crew and the operator of the vessel. Management addressed repeated vessel safety and integrity problems in a substandard manner that led to the condition under which the vessel sank. The crew knowingly violated regulations in relation to operation without proper documentation. Civil Penalty violations were filed against the lessee of the vessel, but ■■ passed away in an auto accident on Sept. 21, 2005. The Coast Guard initiated civil penalty action against ■■■■ for unlicensed operation.

On June 1, 2005, the UTV POLARIS, owned by Viking Marine Transportation, discharged 3,000 gallons of diesel fuel into the Gulf Intracoastal Waterway, a navigable waterway of the United States, in a harmful quantity in that it created a sheen of oil on the waterôs surface. The incident occurred because of the vessel sinking due to the failure of the bottom plating of the vesselôs hull in which holes were patched improperly with boards and rags. The responsible party reportedly conducted the site cleanup.

Part 3 of this Soap Opera

We would like to wrap up the story since cutting torches have already reduced this rust bucket to scrap iron. However, like a good Keystone Cops drama from the 1930ôs, the movie just keeps bouncing across the screen.

- We are still awaiting word on whether the proposed ñslap on the wristò civil penalty against ■■■■ was effective. Did this former druggie ever have to pay for operating Polaris for 53 days without a license?
- We are waiting on a reply to our letter to the National Pollution Funds Center in Arlington, VA, to see whether the company or its insurer (if any) ever paid to clean up the pollution POLARIS created. On the other hand, did Viking stiff the American taxpayer to clean up its mess?
- We were also told that the Coast Guard turned its case against ■■■ over to the elite Coast Guard Investigative Service for forging and falsifying his brotherôs license. We will ask them if their investigation is complete and whether they ever did anything to the ñbad guys.ò

All of this is of more than casual interest to the ñgood guysò who often have the impression that they are treated worse than the ñbad guysò by the Keystone Cops. *[**2013 Editorial note:** We never received an answer to any of these inquiries. This treatment was typical of that reported by VADM James Card in 2007 as described in NMA Report #R-401-E.]*