



National Transportation Safety Board

Washington, D.C. 20594

December 5, 2016

Louis O'Donnell
ABS Americas Division
Assistant Chief Surveyor
16855 Northchase Drive
Houston, TX 77060

Re: Tech review of the Engineering Group Factual Report

Mr. O'Donnell:

The NTSB investigative team has reviewed all factual comments submitted by the parties as part of the technical review and has decided on a disposition for each one, as reflected below.

All editorial suggestions have been considered and will be incorporated as appropriate. The deadline for providing party submissions pursuant to 49 CFR 831.14 is March 17, 2017.

Best Regards,

Brian Young
Investigator in Charge
National Transportation Safety Board
490 L'Enfant Plaza, S.W.
Washington, DC 20594

Page/Line	ABS' COMMENTS	NTSB – Disposition of Party Comments
5 / 3	<p>Comment: The vessel was not lengthened in 2006.</p> <p>Requested Change: Delete the words, “lengthened and”.</p>	<p>Concur: Deleted “lengthened and”.</p>
13 / 5	<p>Current Draft: “boilers ... were being operated at about 860 psi at 900°F at the time of the accident.”</p> <p>Comment: The operating pressure at the time of the accident is simply not known.</p> <p>Requested Change: Replace “at the time of the accident” with “in the time frame prior to the accident voyage.”</p>	<p>Concur: New Sentence reads: The two Babcock and Wilcox boilers installed aboard <i>El Faro</i> had a design steam pressure of 1,070 psi, but they were being operated at about 860 psi at 900° F in the time frame prior to the accident.</p>
15 / 12-14	<p>Current Draft: “Economizers perform a key function in providing high overall thermal efficiency by recovering low-temperature energy from the flue gas before it is exhausted to the atmosphere, and by transferring the energy to the incoming feedwater.”</p> <p>Requested Change: After the above sentence, add: “While economizers decrease fuel consumption, they are not necessary for operation of the boiler, and economizer tubes may be bypassed if need be.”</p>	<p>Factual wording to remain: From MBI: C/E stated that the “economizer preheats feedwater to the boiler, makes it more efficient for operation. It’s not a safety issue or whatever, it’s just for the efficiency of the boiler. “</p>

	[See MBI testimony of James Robinson, a former Chief Engineer of the EL FARO who was on board the vessel as a supernumerary from August 25, 2015 through September 22, 2015.]	
20 (footnote 35) and 22 (footnote 38)	Comment: It appears that “197” should be “1973”.	Concur, corrected to 1973.
22 / 15 through 23 / 3	Comment: Whereas the fuel capacity is said to have been 11,757 bbl, the sum of the stated capacities of the double bottom tanks is approximately 14,800 bbl. Perhaps a typo.	Updated in factual report: Tote provided fuel capacity in <i>El Faro</i> Vessel Information Booklet Rev-1 “ <i>El Faro</i> had a capacity of 11,552 bbl of fuel. ¹ ”
27 / 4-8	Requested Change: At the end of the paragraph, insert: “ABS has no record of Tote reporting these issues with the lube oil service pumps.”	Sentence to remain as is.
30 / 16	Comment: “4,60-8 gallon” appears to be a typo – perhaps it should be “4,608-gallon”.	Concur, corrected to 4,608 gallon.
43 / 6-7	Comment: believe “waterside” should be “water side”. As ABS was conducting it, it should be a “survey” rather than an “inspection” and a “survey checklist” rather than an “inspection checklist”.	Concur: New sentence reads: The last water side survey of the <i>El Faro</i> propulsion boilers was conducted by ABS in December 2013. The survey checklist stated that both boilers had been surveyed...
43 / 9	Current Draft: “The checklist indicated that a hydrostatic test had been completed on December 9, 2013, but contained no comments or numerical data.”	See below:

¹ El Faro Vessel Information Booklet Rev-1

	Requested Change: “The checklist indicated that a hydrostatic test had been completed on December 9, 2013, but the checklist sheets were not used by the surveyor to include comments or numerical data concerning the tests, so these pressures were not included in the documentation.”	Concur: New sentence reads: The checklist indicated that a hydrostatic test had been completed on December 9, 2013, but the checklist sheets were not used by the surveyor to include comments or numerical data concerning the tests. As a result, the pressures were not included in the documentation.
44 / 8	Comment: believe “watersides” should be “water sides”.	Concur: New sentence reads: Drew Marine recommended that the boiler water sides be
44 / 15	Requested Change: Should be “port” rather than “starboard” boiler economizer. [Although the report states starboard, the surveyor clarified that it should be port. Consistent with the Walashek report’s finding of 7 jumpers in the port economizer.]	Concur: New sentence reads Water leaks developed at the port boiler economizer in August 2015
45 / 1	Requested Change: After, “The repairs were examined and tested to 800 psi by ABS on September 8, 2015, about a week after the repairs were done.”, insert: “The test pressure took into account the discretion afforded by the ABS Rules for such testing, the fact that the vessel had made a round trip to San Juan the previous week at operating pressure, and the working pressure on the boiler while the vessel was in port.”	Updated: According to the ABS surveyor, the repairs were tested to 800 psi on September 8, 2015, about a week after the repairs were done. ² The test pressure took into account the discretion afforded by the ABS Rules for such testing, the fact that the vessel had made a round trip to San Juan the previous week at operating pressure, and the working pressure on the boiler while the vessel was in port.
48 / 14	Current Draft: The program is intended to reduce the regulatory burden on the maritime industry while maintaining equivalent	See below:

² Interview: ABS surveyor.

	<p>levels of safety and providing increased flexibility in the construction and operation of US-flagged vessels.</p> <p>Requested Change: In order to more accurately reflect what is stated in the U.S. Supplement and the MOU, replace with:</p> <p>“The program is intended to avoid redundancies in the inspection regimes of the Coast Guard under the Code of Federal Regulations and international conventions and by the classification societies under their class rules, while maintaining equivalent levels of safety for US flagged vessels. In effect, the Coast Guard delegates to the class society the authority to conduct vessel inspections and tonnage measurements, and the acceptance of plan reviews and approvals.”</p>	<p>Updated: The program is intended to avoid redundancies in the inspection regimes of the Coast Guard under the Code of Federal Regulations and international conventions and by the classification societies under their class rules, while maintaining equivalent levels of safety for US flagged vessels. In effect, the Coast Guard delegates to the class society the authority to conduct vessel inspections and tonnage measurements, and the acceptance of plan reviews and approvals</p>
<p>48 / 16</p>	<p>Current Draft: “Instead of requiring full compliance with the <i>Code of Federal Regulations</i> (CFR), the ACP consists of class rules, international conventions and an approved US supplement that together are equivalent to the CFR.”</p> <p>Comment: This statement is not correct.</p> <p>Requested Change: “The inspection and survey requirements for a vessel enrolled in the ACP program would be governed by international conventions, class rules, and an approved US Supplement. The US Supplement was established to reconcile the different standards provided by the CFR and class rules for surveys, tests or inspections.”</p>	<p>Updated: The inspection and survey requirements for a vessel enrolled in the ACP program would be governed by international conventions, class rules, and an approved US Supplement. The US Supplement was established to reconcile the different standards provided by the CFR and class rules for surveys, tests or inspections</p>

<p>49 / 15</p>	<p>Current Draft: “According to Coast Guard inspectors and ABS surveyors interviewed after the accident, ACP examinations are similar to a foreign flag vessel’s port state control exam, but are less stringent than a full inspection of a US vessel not enrolled in the ACP.”</p> <p>Comment: ABS disputes this statement, and does not recall any ABS surveyor agreeing with that statement during an NTSB interview or the MBI hearings. ABS believes that, at a minimum, “and ABS surveyors” should be removed from the draft, and would characterize the statement as an opinion rather than a fact. ABS suggests that an opinion should not be in the factual report at all.</p> <p>Requested Change: “According to Coast Guard inspectors, the Coast Guard’s oversight of an ACP vessel may include inspections which are less stringent than what would be required of a vessel not enrolled in the ACP program.”</p>	<p>Updated, new sentence reads: According to Coast Guard inspectors interviewed after the accident, the Coast Guard’s oversight of an ACP vessel may include inspections which are less stringent than what would be required of a vessel not enrolled in the ACP program, since the ABS is conducting surveys on their behalf.</p>
<p>50 / 17</p>	<p>Current Draft: “<i>El Faro</i> was slated to be added to the 2016 ACP Targeted Vessel List for several reasons, including age, classification society reports, deficiencies, operational controls, and casualties. <i>El Faro</i> had recently reported a medical emergency that moved it onto the targeted list. (The Coast Guard used an automated risk matrix to determine whether a vessel</p>	<p>Updated based on ABS and USCG info provided: The Coast Guard maintained an “ACP Targeted Vessel” list which was updated annually on October 1. The Coast Guard used an automated risk matrix to determine whether a vessel should be on the targeted list. Point values were assigned to the matrix for issues such as age of the vessel, classification society reports, deficiencies, operational controls, and casualties. Ten percent of vessels with the highest aggregate score are added to the list. According to the Coast Guard, at the</p>

	<p>should be on the targeted list.) According to the Coast Guard, no operational controls were placed on the <i>El Faro</i> at the time.”</p> <p>Requested Change: “According to the Coast Guard, at the time of the accident the <i>El Faro</i> had not been added to the 2016 ACP Targeted Vessel List so it was not subject to any operational controls/limitations and no increased oversight of this ACP vessel was ever implemented by the Coast Guard.”</p>	<p>time of the accident, <i>El Faro</i> had not been added to the 2016 ACP Targeted Vessel List, but was slated to on October 1, 2015, the day of the accident. <i>El Faro</i> had recently reported a medical emergency, which was scored as a “marine casualty” under Coast Guard regulations, and added enough points to include the vessel on the targeted list for 2015. However, there were two additional casualties (one loss of propulsion as a result of crew error and an oil spill) that would have added additional points to the vessel’s total. These were not scored by the automated risk matrix because the Coast Guard’s data system (MISLE) was in transition at the time of casualty which prevented timely data entry. According to the Coast Guard, no operational controls were placed on <i>El Faro</i> at the time. Vessels on the targeted list are subject to additional oversight at the 6-month mark of the examination cycle. The scope of examination can be increased if inspectors find safety issues on board. The classification society can attend the required 5-year drydock examinations if a vessel is not on the targeted list. However, the Coast Guard is required to attend drydock examinations for targeted vessels.³ The classification society can attend the required 3 year drydock examinations if a vessel is not on the targeted list. However, both the Coast Guard and the classification society are required to attend drydock examinations for targeted vessels.</p>
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³ Interviews: Coast Guard inspector.

Comment: The first paragraph's quoted section from the IACS website discusses the development of classification rules. In order to provide a complete description, the next paragraph of the IACS website, concerning what Class does not do and the Owner's obligations to properly operate and maintain a vessel, should be included.

Requested Insert between lines 11 and 12: "A classification certificate should not be construed as a warranty of safety, fitness for purpose or seaworthiness of the ship. It is an attestation only that the vessel is in compliance with the Rules that have been developed and published by the Society issuing the certificate. Further, Classification Societies are not guarantors of safety of life or property as sea or the seaworthiness of a vessel because although the classification of a vessel is based on the understanding that the vessel is loaded, operated and maintained in a proper manner by competent and qualified personnel, the Society has no control over how a vessel is operated and maintained between the periodical surveys it conducts."

- Footnote: "See Website of International Association of Classification Societies <iacs.org.uk>"

Inserted: A classification certificate should not be construed as a warranty of safety, fitness for purpose or seaworthiness of the ship. It is an attestation only that the vessel is in compliance with the Rules that have been developed and published by the Society issuing the certificate. Further, Classification Societies are not guarantors of safety of life or property as sea or the seaworthiness of a vessel because although the classification of a vessel is based on the understanding that the vessel is loaded, operated and maintained in a proper manner by competent and qualified personnel, the Society has no control over how a vessel is operated and maintained between the periodical surveys it conducts."

53 (footnote 114)	Comment: The website should be “iacs.org.uk” not “acs.com”.	Corrected
54	Requested Change: Replace all instances of “he” and “she” with “the surveyor”.	Corrected in 11 instances
55 / 12- 15	Requested Change: After, “The tank coating was still noted as poor after the inspection”, replace the remaining text with: “During the inspection of the No. 1 port double bottom ballast tank frames 50 and 51 were found to detached at the outboard connection to the tank top. The fillet welds were fractured from the the tank top plating between the rat hole on the frame at the side shell to 2 feet inboard terminating at another rat hole. The surveyor recommended that the area be repaired but Tote was not required to perform any temporary repairs at that time. The welds were to be repaired at the special periodical survey which was due on February 26, 2016.”	Updated: new sentence reads: The tank coating was still noted as poor after the inspection. During the inspection of the No. 1 port double bottom ballast tank, frames 50 and 51 were found to detached at the outboard connection to the tank top. The fillet welds were fractured from the tank top plating between the rat hole on the frame at the side shell to 2 feet inboard terminating at another rat hole. The surveyor recommended that the area be repaired, but Tote was not required to perform any temporary repairs at that time. The welds were to be repaired at the special periodical survey which was due on February 26, 2016.

55 / 16-18	Requested Change: Replace with: “On March 10, 2015 an ABS surveyor attended <i>El Faro</i> to verify repairs of the steering system to correct a problem with a faulty potentiometer that caused an error in the ship’s heading of 3 to 4 degrees. The repairs were completed and the system tested properly.”	Updated: On March 10, 2015, an ABS surveyor attended <i>El Faro</i> to verify repairs of the steering system that were identified during the COI inspection to correct a problem with a faulty potentiometer that caused an error in the ship’s heading of 3 to 4 degrees. The repairs were completed, and the system tested properly
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Technical Review of Draft Factual Reports: ABS,

Party Comments by email/letter dated: November 17,

56 / 1-5	<p>Requested Change: After, "... in way of", replace remaining text with, "the hatch in the bosun's store room. The area and the related hatch were not 'watertight spaces' in that they were above the waterline and the vessel's watertight deck. The area was repaired to the satisfaction of the surveyor and no pressure tests were needed to test the sufficiency of the repair to this non-watertight area."</p>	<p>Updated: On April 14, 2015, an ABS surveyor attended <i>El Faro</i> to survey repairs completed on the overhead of the forepeak space in way of The area and the related hatch were not 'watertight spaces' in that they were above the waterline and the vessel's watertight deck. The area was repaired to the satisfaction of the surveyor and no pressure tests were needed to test the sufficiency of the repair to this non-watertight area</p>
56 / 9-12	<p>Requested Change: After first sentence, "On September 8, 2015 ... economizer tubes", replace remaining text with, "The welding repair to the tubes was inspected and found to be to the satisfaction of the attending ABS surveyor. The repairs had been carried out approximately two weeks earlier. The vessel had made a round trip to San Juan the previous week under normal operating pressure with no reported problem. A hydrostatic test was performed at 800 psi which the surveyor considered to be sufficient based on the examination of the repair, the pressure at which the boiler was operating at the time of survey, and the discretion provided by the ABS Rules and the ACP Supplement to determine the testing pressure."</p>	<p>Updated: On September 8, 2015, an ABS surveyor attended <i>El Faro</i> to survey repairs completed on the port boiler in which Jacksonville Machinery and Repair installed jumpers on seven leaking economizer tubes. The welding repair to the tubes was inspected and found to be to the satisfaction of the attending ABS surveyor. The repairs had been carried out approximately two weeks earlier. The vessel had made a round trip to San Juan the previous week under normal operating pressure with no reported problem. A hydrostatic test was performed at 800 psi which the surveyor considered to be sufficient based on the examination of the repair, the pressure at which the boiler was operating at the time of survey, and the discretion provided by the ABS Rules and the ACP Supplement to determine the testing pressure.</p>

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