



National Transportation Safety Board

Washington, D.C. 20594

December 5, 2016

CAPT Jason Neubauer
U.S. Coast Guard Headquarters
Chief, Office of Investigations and
Casualty Analysis (CG-INV)
2703 Martin Luther King Jr Ave SE
Washington, DC 20593-7501

Re: Tech review of the Engineering Group Factual Report

CAPT Neubauer:

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.

Sincerely,

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

Page/Line	NAME OF PARTY COMMENTS: USCG	NTSB – Disposition of Party Comments
21/1	<p>How often was periodic testing of the emergency generator conducted? Did the test include the automatic starting arrangement? Who carried out the test? What do the ABS Rules/SOLAS require for testing a EDG? Were there any Emergency Battery banks and what did they feed?</p> <p>SOLAS 74 (amended) II-1/43 (7) Test before entering or getting underway 33 CFR 164.25 (3) What does their SMS require for testing?</p>	Included monthly testing / backfeed / battery start
22/4	<p>Comment on why the EL FARO was allowed to burn heavy fuel oil RMK500 when they were operating in the ECA zone. Were they on a waiver to burn it? Did the EPA require an offset? When did the waiver expire?</p>	To be included in analytical report.
24/8	<p>Lube Oil System: The description of the system does not include anything about circuitry or how the power was feed to the pump motors. Were the motors for the standby and primary independent of each other? Protected by Fuse or Circuit breakers? Power by the emergency generator? Some details on the electrical feed would be beneficial in this section.</p>	Concur. Updated in factual report: New sentence reads: According to the electrical power distribution diagram, 1252-938-1, lube oil service pump No. 1 was powered by the main 450-volt switchboard, and protected by a 100 amp breaker. Lube oil service pump No. 2 was powered by the emergency 450-volt switchboard, and also protected by a 100-amp breaker.
30/4	<p>Lube Oil Sump level - 26" level equals 1,345.67 gallons of oil for a sump that is designed to hold a maximum of 2870 gallons. If the pumps fail, the gravity tank discharges 3,200 gallons of lube oil to the bearings and it ends up in the sump, where does the extra capacity end up? What was the actual capacity of the sump? I know the report discusses the change in capacity for hulls 662, 663, and 664. Why the change?</p>	To be included in analytical report.
30/16	<p>4,60-8 gallon should read 4,608 gallon.</p>	Corrected in factual report. Typo.
N/A	<p>A description of Engineering L/O alarms should be included in section 5.7. In the event of a Loss of lube oil pressure/suction, how did the engineer on watch or the bridge receive indication?</p>	Added description of alarms from El Faro comms drawing and El Yunque ship visit.
41/4	<p>Was AMOS managed by a 3rd party vendor? Who had authority/permission to change parameters or request changes to maintenance intervals? The report mentions data entry by the C/E and 1st A/E and stops short of describing the levels of authority within management?</p>	Included AMOS reviews based on NTSB interviews and MBI transcripts. Analytical report to include changes/authority.

	Example - Did management conduct any type of periodic review of AMOS maintenance reports to ensure overdue items were being properly addressed or extended?	
42/6	Report by Walashek does not discuss the individual qualification of the representative sent to do the boiler exam. He testified he had no formal qualifications, certifications, or training other than on the job experience. How long had he been working for Walashek? How long had he been in the industry? Is there any recommended education or training from the boiler manufacturer for representatives? Is there an industry accepted standard?	Updated based on MBI transcript
48/12 - 15	<p>7.1.1 page 48 line 12- Alternate Compliance Program and Authorized Class Society are titles and should be capitalized.</p> <p>Would consider describing ACP in line 13 -15 as a program by which a company operating a US flagged vessels can voluntarily participate in by choosing to have its vessel(s) which are required to be certificated by the Coast Guard under Title 46 U.S.C. Chapter 33 alternately surveyed by an Authorized Class Society pursuant to issuance of a Coast Guard Certificate of Inspection, eliminating the regulatory burden of duplicative plan reviews and inspections while maintaining a equivalent level of safety. The program relieves the burden of duplication. However, it should also state that a Class Survey and Coast Guard inspection are different in that – While a vessel inspected by Coast Guard marine inspectors for a traditional Certificate of Inspection the US Coast uses the Code of Federal Regulations as the source for authority. By voluntarily entering into ACP the vessel is surveyed using Class Rules, International Conventions, and the applicable US Supplement. As stated by ABS surveyors and USCG witnesses they are not a line by line equivalency to the Code of Federal Regulations. They are by design considered to provide an equivalent level of safety but are very different. A statutory survey conducted by an Authorized Class Society coupled with an annual Coast Guard examination is different than the traditional Coast Guard Inspection for Certification.</p> <p>Example – EL Faro under ACP with ABS as the ACS, no boiler hydro testing standard exist for repairs or at a scheduled interval. Under 46-CFR part 61.05-10 boiler inspection intervals are defined and would be required at specified intervals. ABS Rules, International Conventions, or the US Supplement applicable to EL FARO has no equivalency. The program is an “alternate to” traditional Coast Guard inspection which means they are not expected to be line by line the same.</p> <p>Reference Federal Register Vol. 61, No.250 (pg 68515 1st column, 1st paragraph)</p>	<p>Corrected capitalization</p> <p>ACP info/comparison to be part of analytical report.</p>
50/1	Add to the CG-840 ACP FV a revision date of 1/01 highlighting the fact it has not been revised in 15 years. Also Inspectors use USCG Navigation and Vessel Inspection Circular 02-95 change 2 with an issue date of 5 May 2006. The NVIC is an important reference.	Updated: According to the Coast Guard, inspection book CG-840 ACP FV has not been revised since January, 2001. Coast Guard

		inspectors reference USCG Navigation and Vessel Inspection Circular 02-95 change 2 with an issue date of 5 May 2006.
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<p>7.1.2</p>	<p><i>El Faro</i> was slated to be added to the 2016 ACP Targeted Vessel List for several reasons, including age, ship type, and marine casualty history. These metrics are assigned certain point values within an automated risk matrix and those ten percent of vessels with the highest aggregate score are added to the targeted list. <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. However, there were two additional casualties (one loss of propulsion as a result of crew error and one small 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. 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 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>	<p>Updated in factual report. 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 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.¹ 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>
<p>51/3-5</p>	<p>Just because a vessel is on the targeted list does not mean the CG has to or will attend the dry-dock. Message R 221722Z - states - NOTHING IN THIS GUIDANCE IS INTENDED TO LIMIT THE DISCRETION OF THE OCMI. IN DETERMINING WHETHER OVERSIGHT ATTENDANCE IS NECESSARY, THE OCMI SHOULD CONSIDER OPERATIONAL CONCERNS, UNIT RESOURCES, AS WELL AS</p>	<p>Added: The Coast Guard had guidance stating that the Officer in Charge of Marine Inspection (OCMI) had the discretion to determine whether oversight attendance is necessary considering operational concerns, unit resources, as well as the extent and reasoning of repairs.²</p>

¹ Interviews: Coast Guard inspector.

² Message R 221722Z from USCG

	THE EXTENT AND REASONING OF REPAIRS.	
51/11	<p>Proper description of CG qualifications would be - including machinery, machinery steam, and drydock. There is a Machinery qualification and a separate Machinery Steam qualification which are different, the steam is an extension to the basic Machinery Qualification. Once a Marine Inspector completes the steam syllabus they are referred to as a Machinery Steam qualified inspector. The Drydock qual is called Drydock, not Drydock and Repairs.</p>	<p>Corrected in factual report: He had numerous qualifications at the time of the 2015 COI exam, including machinery, machinery-steam, (which is an extension of the basic machinery qualification), and drydock</p>
51-52/17, 1-2	<p>CWO Machinery Inspector with 27 years of experience had not completed any of the requirements for his Machinery Steam Qualification at the time of the inspection. He had not completed his required Performance Qualification Standards required. He was there gaining experience in the Steam Plant but had not officially received any sign offs to become qualified because it was not a priority of his training program. We can provide evidence of this if needed through a statement from Andrew.</p>	<p>Updated: According the Coast Guard, this inspector had not completed any of the requirements for his machinery steam qualification at the time of the inspection. He had not completed his performance qualification standards that were required to receive command approval for the qualification. He participated in the <i>El Faro</i> inspection in order to gain experience in a steam plant, but had not officially received any sign offs to become qualified.</p>
N/A	<p>Observation – There is no description of the engine room ventilation system within the report. Description of intakes size, location, closing appliance locations would provide some insight.</p>	<p>Added section for engine room ventilation.</p>