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National Transportation Safety Board

Annapolis, Maryland

NTSB Marine Casualty Investigations

March 25, 2019

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Presentation Overview

- NTSB- Who we are...
- What does the NTSB investigate?
- Ongoing investigations and causal trends
- El Faro investigation overviewQuestions?



Agency Makeup

- 400 employees
- HQ in Washington, DC
- \$110M Budget
- Conduct ~2,000 inv's per year
- Respond to accidents 24/7/365





NTSB Investigative Modes 5 Modal Safety Offices:

- Marine
- Aviation
- Highway
- Rail





Pipeline & Hazmat









Marine investigative staff

- 12 investigators
 - 4 CG-licensed chief engineers
 - 4 CG-licensed unlimited tonnage masters
 - 3 Survival Factors
 - 1 Human performance





Why we investigate...

- Authority: 49 USC 1131;
- Establish facts and circumstances, and;
- Establish cause or probable cause...
- To prevent re-occurrence of similar accidents.





Other NTSB investigation Guidance

- 49 CFR 831 & 850
- MOU NTSB / USCG
- IMO Casualty Investigation Code

MEMORANDUM OF UNDERSTANDING BETWEEN THE NATIONAL TRANSPORTATION SAFETY BOARD AND

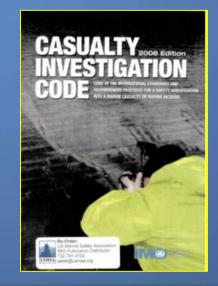
THE UNITED STATES COAST GUARD REGARDING MARINE CASUALTY INVESTIGATIONS

The National Transportation Safety Board (NTSB) and the United States Coast Guard (USCG) hereby revise and replace their previous Memorandum of Understanding (dated 12 September 2002) governing marine casualty investigations. The Chairman of the National Transportation Safety Board and the Commandant of the United States Coast Guard jointly affirm that intergency cooperation and mutual assistance in marine casualty investigations and swift implementation of safety improvements is essential for efficient and effective agency operations and for the public welfare.

In accordance with 49 U.S.C. § 1131, the National Transportation Safety Board is authorized to investigate any major marine casualty as defined in 49 C.F.R. Part 850 and 46 C.F.R. Subpart 440 (except a casualty involving only public vessels) occurring on, or under, the navigable waters, inland waters or territorial sea of the United States, or involving a vessel of the United States, or involving a public vessel of the United States, or involving as vessel of the

In accordance with 46 U.S.C. § 6301, the USCG is authorized to investigate any marine casualty involving death, serious injury, material loss of property, material damage to vessels, or significant harm to the environment occurring on the navigable watters or territorial sea of the United States, or involving a vessel of the United States, or involving a public vessel of the United States and any other vessel. The USCG is also authorized to investigate certain marine casualities outside the territorial sea.

The intent of this agreement is to ensure interagency communication, cooperation, and coordination, and to engender the development of marine safety investigation processes that will best serve the maritime community and the public at large. This agreement is not intended to limit the statutory jurisdiction of either agency or to prevent thorough investigation of marine casualities.





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What we investigate...

- Major Marine Casualties (MMC's)
- Public/Non-Public casualties
- Substantially Interested State casualties





Major Marine Casualty

- More than \$500,000 in damages
- 6 or more fatalities
- Loss of a mechanically-propelled vessel over 100 GT





Public/Non-Public casualty

- Involving a US government-owned & a non-public vessel
- More than \$75,000 in damages
- 1 or more fatalities





Substantially Interested State Investigations

- Conducted under IMO rules of investigations;
- Vessel Flag State leads investigation;
- Flag states with onboard interests participate





55 Ongoing Investigations

- 26 Towing Vessels
- 12 Fishing Vessels
- 3 Cruise Ships
- 1 Small Passenger/Ferry
- 1 Container Vessel

- 3 Bulk Carriers
- 2 Offshore Supply Vessels
- 1 Tank Vessel
- 5 Public/Non-Publics
- •1 Recreational Vessel





Current investigation issues/causes

- Distracted operators;
- Lack of proper vessel maintenance;
- Lack of crew training for emergencies;
- Fatigued operators.





El Faro investigation overview







Parties to the Investigation

- United States Coast Guard
- TOTE Services
- American Bureau of Shipping
- National Weather Service
- Herbert Engineering
- Palfinger Marine





National Transportation Safety Board

Recovery of *El Faro*'s Voyage Data Recorder (VDR)





First Mission Oct/Nov 2015 USNS APACHE, ORION, CURV21





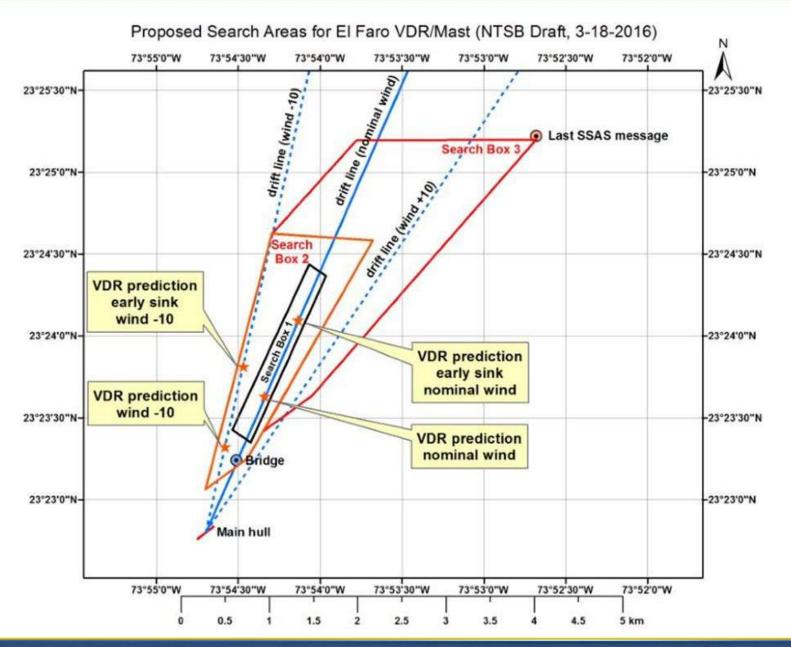
CV El Faro Dive 02 CURV 21 USN SUPSALV



CV_EI Faro Dive 08 Debris field survey CURV 21 USN SUPSALV



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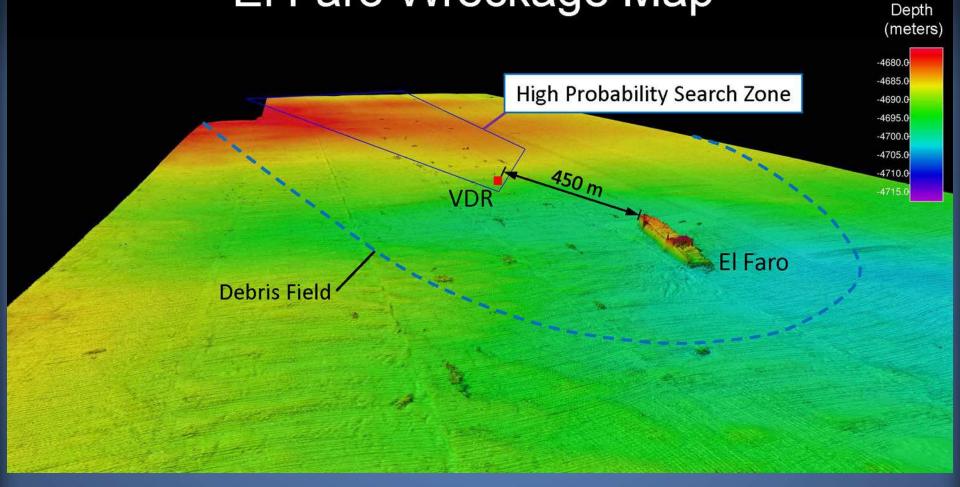


Second Mission April 2016 ATLANTIS/SENTRY/CAMPER





El Faro Wreckage Map





El Faro VDR found



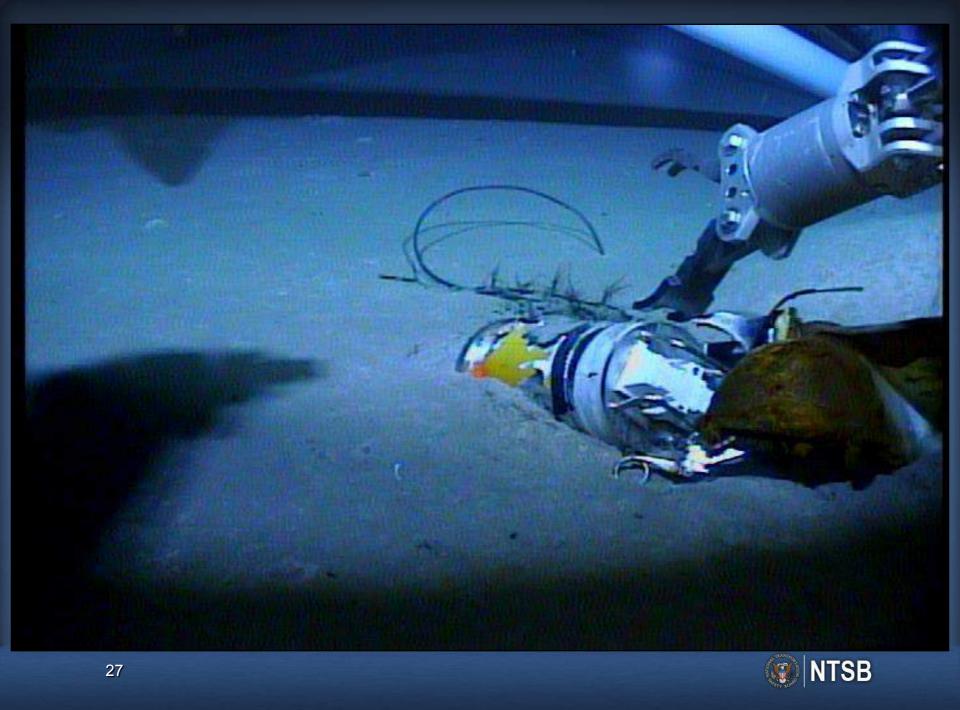
Tuesday, April 26, VDR found at 0206 CAMPER imagery



Third Mission August 2016 USNS APACHE, CURV21











VDR Memory Capsule





Investigation Issue Areas



Report's Probable Cause

The National Transportation Safety Board determines that the probable cause of the sinking of El Faro and the subsequent loss of life was the captain's insufficient action to avoid Hurricane Joaquin, his failure to use the most current weather information, and his late decision to muster the crew. Contributing to the sinking was ineffective bridge resource management on board *El Faro*, which included the captain's failure to adequately consider officers' suggestions. Also contributing to the sinking was the inadequacy of both TOTE's oversight and its safety management system. Further contributing factors to the loss of El Faro were flooding in a cargo hold from an undetected open watertight scuttle and damaged seawater piping; loss of propulsion due to low lube oil pressure to the main engine resulting from a sustained list; and subsequent downflooding through unsecured ventilation closures to the cargo holds. Also contributing to the loss of the vessel was the lack of an approved damage control plan that would have assisted the crew in recognizing the severity of the vessel's condition and in responding to the emergency. Contributing to the loss of life was the lack of appropriate survival craft for the conditions.



Investigation's Root Cause

Of the sinking and loss of life: ...was the captain's insufficient action to avoid Hurricane Joaquin, his failure to use the most current weather information, and his late decision to muster the crew...



Other Safety Issues identified:

- Ineffective Bridge Resource Management;
- Inadequate company oversight and SMS;
- (Continued)



Safety Issues (Continued)

- Flooding in cargo holds;
- Loss of propulsion;
- Lack of a damage control plan;
- Lack of suitable survival craft.



El Faro Recommendation Recipients

- US Coast Guard
- National Oceanic and Atmospheric Administration
- Int'l. Ass'n. of Classification Societies
- American Bureau of Shipping
- Furuno Electric Company, Ltd.
- TOTE (Vessel owner/operator)









To find us, and more info...

WWW.NTSB.GOV

NTSB ReportsAccident dockets

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