



National Transportation Safety Board

CAPCA

Annapolis, Maryland

NTSB Marine Casualty Investigations

March 25, 2019

Brian Curtis

Director, Office of Marine Safety



Presentation Overview

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

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



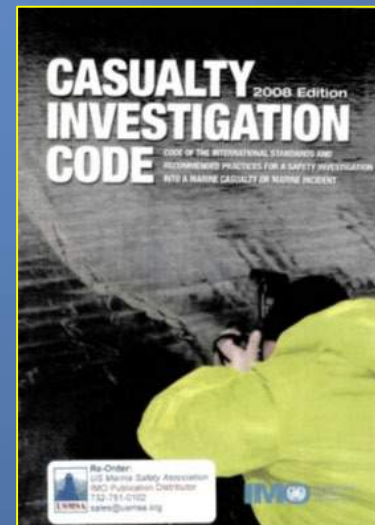
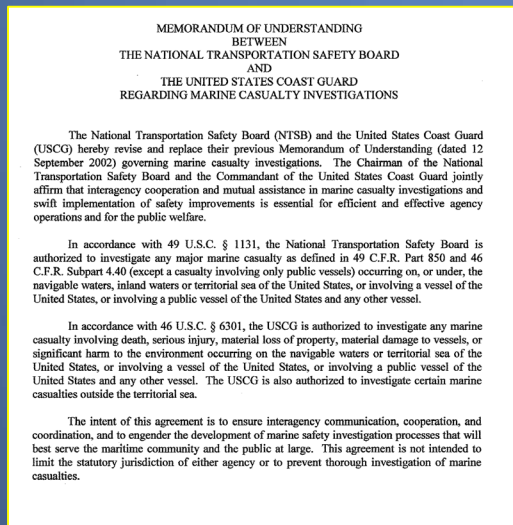
Why we investigate...

- 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



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



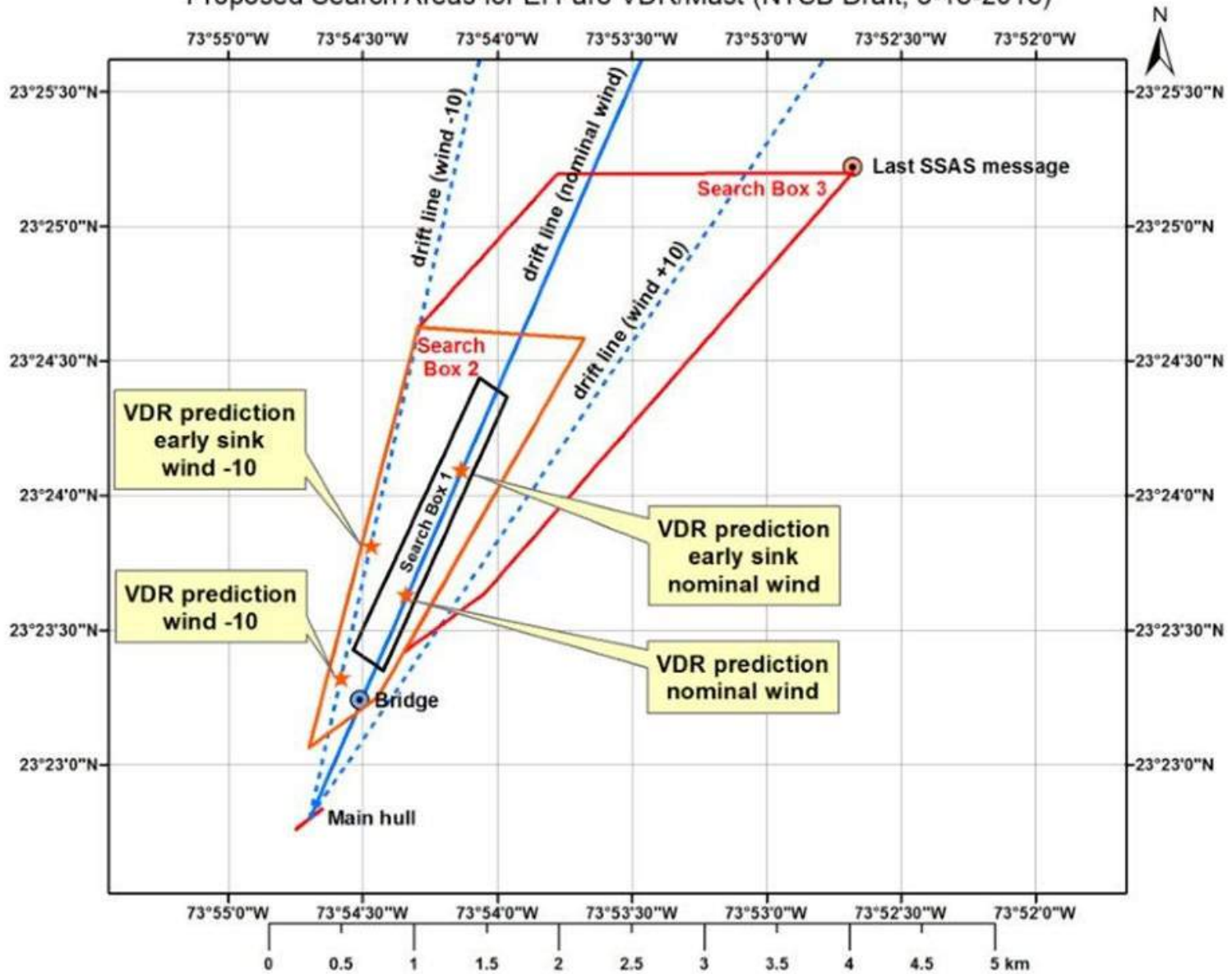
CV El Faro
Dive 02
CURV 21
USN SUPSALV

EL FARO
SAN JUAN P

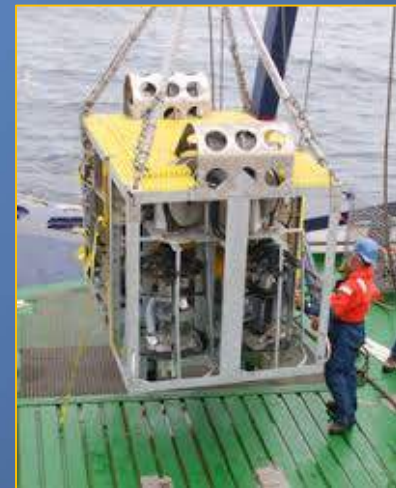
CV El Faro
Dive 08 Debris field survey
CURV 21
USN SUPSALV



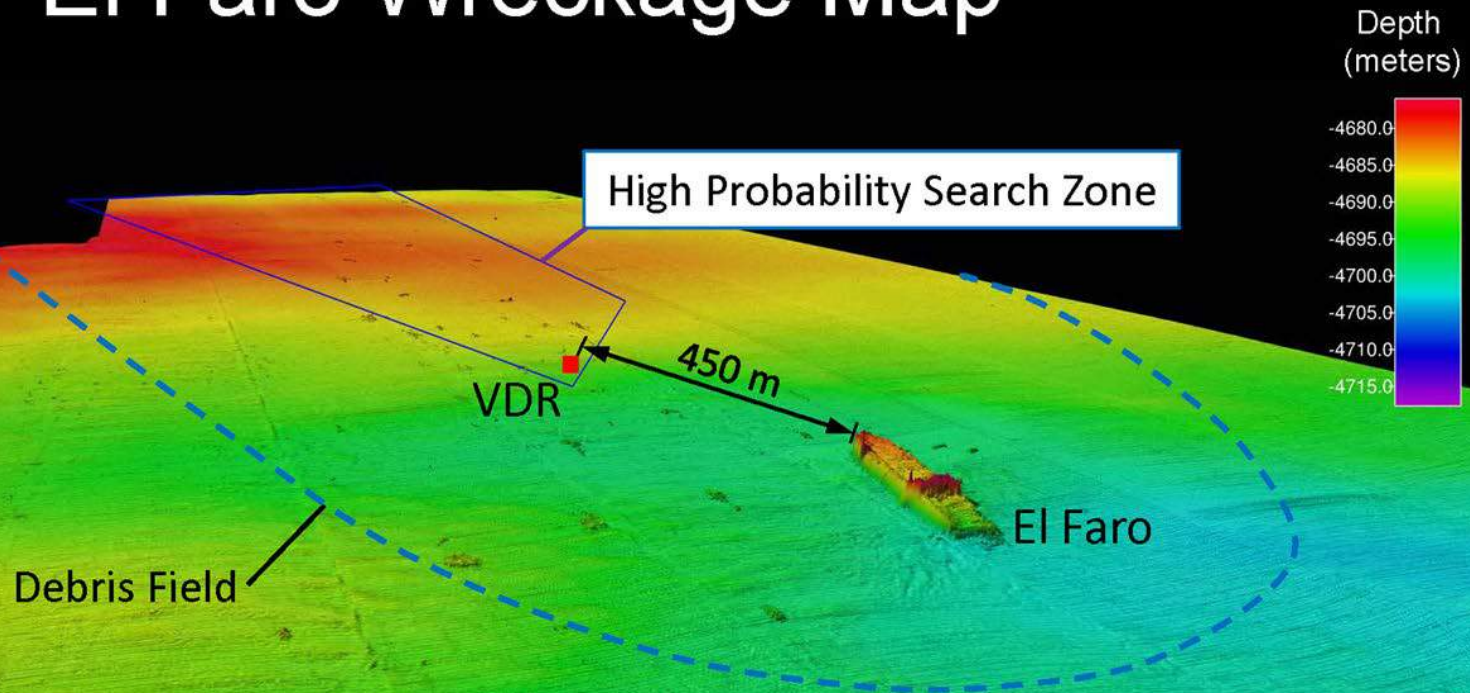
Proposed Search Areas for El Faro VDR/Mast (NTSB Draft, 3-18-2016)



Second Mission April 2016 ATLANTIS/SENTRY/CAMPER



El Faro Wreckage Map



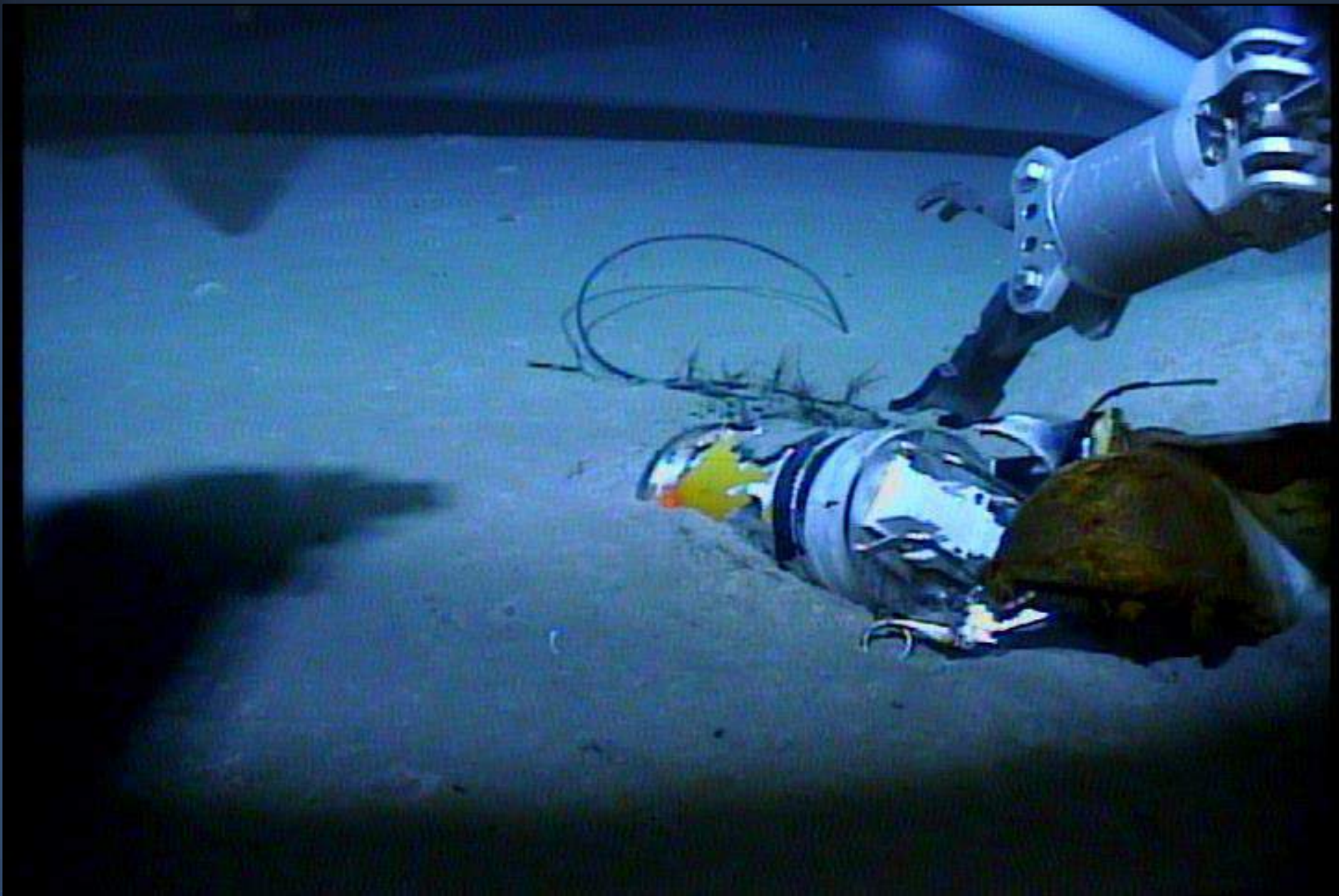
El Faro VDR found



Tuesday, April 26, VDR found at 0206
CAMPER imagery

Third Mission August 2016 USNS APACHE, CURV21







VDR Memory Capsule



Investigation Issue Areas



NTSB

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.

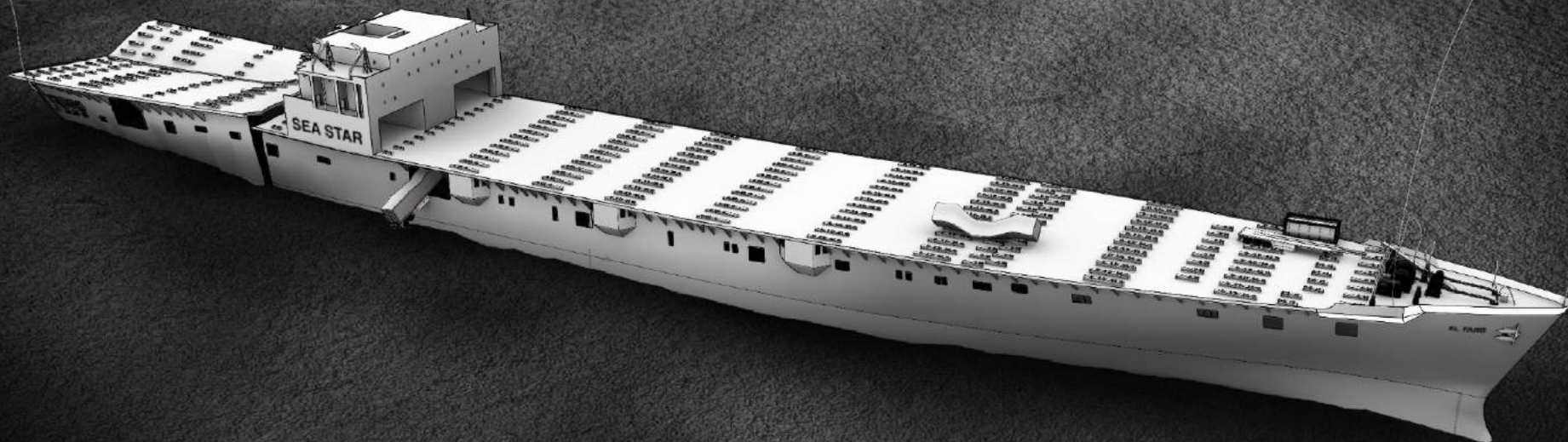
El Faro Recommendation Recipients

- 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)



NTSB





NTSB



To find us, and more info...

WWW.NTSB.GOV

- NTSB Reports
- Accident dockets

brian.curtis@ntsb.gov
202-314-6456



NTSB