M/V St. Clair Fire Case Study

USCG MSU Toledo

Objectives:

- Overview covers the response only
  - Vessel specifics
  - Timeline
  - Weather
  - Challenges
  - Lessons learned
- No discussion of
  - Ongoing investigation

Vessel Specifics

- M/V ST CLAIR (U.S.)
- 770’ Bulk Carrier
- O/O: American Steamship Company
- Year Built: 1976
- Twin conveyor system below cargo holds to transport cargo to inclined conveyor belt to deck-mounted boom conveyor.
- Long-haul transport of iron ore pellets, coal, & limestone.


Hopewell Heights
Alexis Addition
Shoreland
Harbor View
Maumee Bay
Maumee Bay State Park
BP Toledo Refinery
Toledo
Oregon
Pearson
Navarre Ave
EAST TOLEDO
Curtice
24
184
75
280
51
120
25
246
2
202
203


Legend
= ICP
= Staging
17 Feb 2019 1800 Local - RTA
JOHN J. BOLAND
ST. CLAIR
GREAT REPUBLIC
Winds out of the North
Google Earth
N
Not to scale

Response - Timeline

- Fire broke out on vessel at approximately **2015 (local) on 16Feb19.**
- Vessel moored at the CSX Torco Iron Ore Terminal.
- Vessel in caretaker status during winter layup – no personnel on board/no cargo with the exception of 69,000 gallons residual fuel oil onboard.
- Oregon OH Fire Department – first responders (assumed Incident Commander).
- Incident Command Post established on site.
- Eight other local fire departments assisted through mutual aid request.
- **0800 18Feb19 -** Unified Command formally established (CG MSU Toledo, Oregon FD, Ohio EPA, RP American Steamship)
- Fire continued to burn for over 36 hours and smoldered for 8 days.
- **27Feb19** – Unified Command stood down

2300 – 16 February 2019

2200 – 16 February 2019

2300 – 16 February 2019

0200 – 17 February 2019

0900 – 17 February 2019


17 February 2019

17 February 2019


18 February 2019

Initial Fire Response Challenges:

- **Firefighting**
  - General shipboard knowledge / layout / experience
  - Close proximity of vessels (cooling)
  - High winds/cold temperatures
  - Stability of vessel
- **Water Availability**
  - Hydrants on pier frozen / vessel in layup
  - Over 12’ of ice surrounding vessel and pier
  - Tank trucks to bring in water / flush jams
- **High burn temperature**
  - Dual rubber conveyor belts (tire fire)
  - 500 gallons of Aero-Foam XL 3% deployed

UC Challenges/Concerns:

- Vessel Stability (draft loss 4’ / list starboard)
- Close vessel proximity to other vessels during layup
- Caretaker status of ST CLAIR and surrounding vessels
- Weather
- Activation of Vessel Response Plan
  - OSRO (booming in ice, air boats)
  - Qualified Individual (QI)

- 69,000 gallons fuel oil onboard
- Flooding - #5 center ballast tank (rate of 1,000 gallons/min).
- Ongoing Dive Operations
- Security at the scene

UC Considerations / Challenges

- Direct overboard discharge 1.5 million gallons water (after-the-fact discharge permit – Ohio EPA) from #5 center ballast tank only

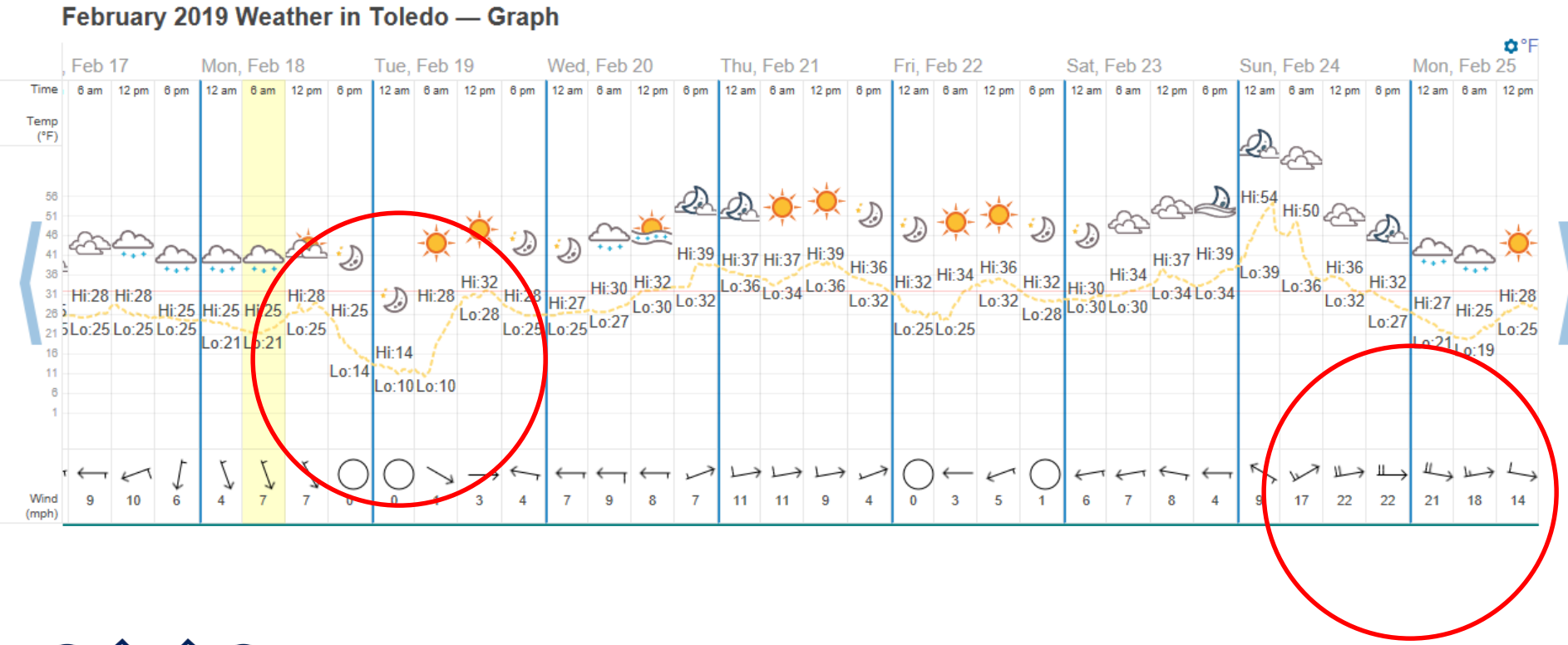
- NOAA Scientific Coordinator: Section 7 ESA Consultation and Resources at Risk requested and Best Management Practices for dewatering of AFFF contaminated water

- Oil Trajectory Modeling

- Staffing ICP / ICP locations

- Pollution Mitigation Strategies (cut through ice / airboats)

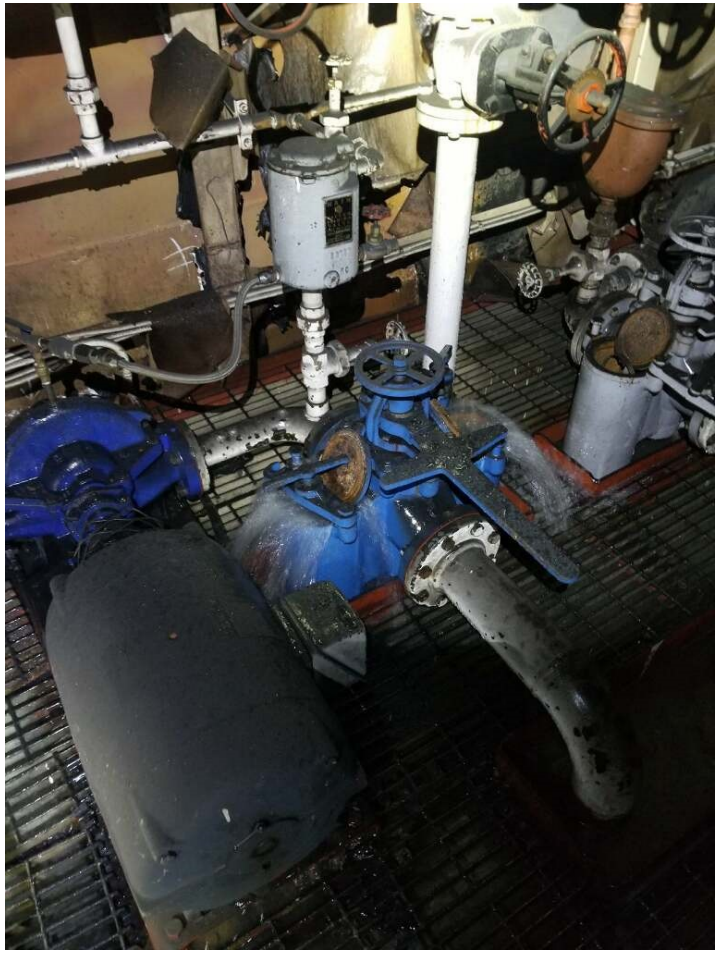
Weather


February 2019 Weather in Toledo — Graph
°F
Feb 17
Mon, Feb 18
Tue, Feb 19
Wed, Feb 20
Thu, Feb 21
Fri, Feb 22
Sat, Feb 23
Sun, Feb 24
Mon, Feb 25
Time
Temp (°F)
Wind (mph)
6 am
12 pm
6 pm
12 am

19 February 2019

Pollution Response Challenges:

- Vessel Stability
  - Locate and Stop water ingress
    - Emergency pumping required
      - Ballast tank access (cut hole)
      - Permit required
    - 2 Sea Chest openings
      - Dives Ops poor conditions
    - Engine Room flooded
      - Unknown Air Quality
      - Pollution in water



Pollution Response

- Oil Spill Liability Trust Fund (opened to augment ICS positions)
- OH EPA “After-the-fact” direct overboard discharge permit – 1.5 million gallons of water to preserve stability of vessel at 0300 on 19Feb19.
- Sampling of direct overboard discharge water from #5 center ballast tank
- Air Quality Monitoring

Starboard Conveyor Tunnel Deck Fracture - amidship

Pollution Response

- Contaminated Water Storage (183,000 Gallons)
  - 8 Frac-Tanks
    - Limited Space
      - Continued engine room pumping to identify ingress
      - 1 containment for a frac-tank was damaged
    - Disposal
      - Categorization of Hazard
      - Freezing Temperatures

25 February 2019

Safety Challenges

- Multiple agencies/companies working under different policies.
- Constant changes in weather
- Adequately assessing the air quality on board for damage control and investigations.
- Balancing damage control priorities with site preservation for investigation purposes.

Initial Lessons Learned

- Need for **regional firefighting and command platform**
- Maritime Administration's (MARAD) recent closing of the Great Lakes Fire Training Center (FTC) in 2016 created a training void - standardized vessel firefighting training and familiarization necessary in the Great Lakes MTS
- Updating layup dead ship tow contingencies
- Expectations of Qualified Individual – Vessel Response Plan

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Questions?