PACIFIC BALLAST WATER WORKING GROUP
2018, SEATTLE

PLANNING TO FAIL (compliance alternatives)

SWATH Small Water Area Twin Hull

Voyage	Operations	Ballast
Depart	Getting underway	Partially full
Hour 12	Burned fuel	Take on ballast
Hour 24	Launching equipment	Discharge ballast
Hour 30	Retrieve equipment	Take on ballast
Hour 36	Burned fuel	Take on ballast
Hour 48	Arrive port, take on fuel oil	Discharge ballast

https://www.platypusmarine.com/navy-swath-catamaran/

Problems:
- Transport NIS
- Complications with management
- Partial tank mixing, mixed ballast water
- Size restrictions

Solutions:
- Ignore if under 300 Gross Tons
- Alternative agreements
- Identify key sensitive areas to avoid, i.e. toxic algae blooms

Considerations
- X
- X
- X

Unmanned Barge – Coastal Voyages

Voyage	Operations	Ballast
Loading	Heavy cargo forward	Shift ballast aft
Loading	Heavy cargo aft	Shift ballast fwd
Tides	Rising tide, ramp angle too steep	Take on ballast
Transit	Unmanned Operation	No movements
Arrival	Unload cargo	Shift, Discharge??

Problems:

- Arrival it is discharging
- Problems with shifting ballast
- Ballasting tied closely with safe operations
- Unmanned, only access when in port

Solutions:

- Remotely operations from the tug
- Transfer ashore (to what facility?)
- Fresh water for ballast, municipal
- Mobile ballast water treatment system
- Dedicated discharges/uptakes to one COTPZ, with only internal transfers outside of that zone.
- Just install a system!!!
- Plug and play system to be located in single port, use with multiple vessels

Considerations

Heavy Lifters, Rapid Loaders

Voyage	Operations	Ballast
Transit	Cross shallow drafts	Deballast
Arrival	Lower for ramp or submergence	Heavy ballasting
Lift Load	Counter balance cargo, or raise load	Deballast
Transit	Cross shallow drafts	Maintain
Departure	Ready for heavy seas	Heavy ballasting

Problems:

- Massive amounts of ballast water
- Mixing local ballast water with left over residual in the ballast tanks
- Extreme volumes in short times
- Could increase sediment resuspension
- What about risks from the lifted cargo, i.e. hull fouling and ballast water

Solutions:

- Transfer the needed ballast from another vessel
- Clean tanks before this in-place transfer
- If partial deballast/ballast – dedicate

Fail?

Failure Mode	Solutions?
UV Lamp is Blown	
Treatment System 72 Hour Hold Time – Need to Deballast Now	
Mississippi Mud Alarms Low UV Transmittance	
Tank Switching Results in High TRO Overboard	
Low Tide Sediment Plugs Filter, Backflush Overwhelmed	
Treatment System Not Installed, No Extension	

Opportunities and Challenges

Tool	Discussion
Ballast Management Plan	Opportunity – Clear direction on contingency measures in case of failure. Challenges – Regulatory acceptance of challenges
Compliance Extension	Opportunity – More time to develop compliance plan, proper equipment Challenges – Harder to obtain, pushes out improvement to ecology
Prototype Installation/AMS	Opportunity – Continued development of technology, especially to suit challenges Challenges – Costly and burdensome, without certainty of compliance
Shore-based Treatment Barge Network	Opportunity – Reliable treatment with local oversight on treatment plant Challenges – Nine years to implement, infrastructure costs, not currently available
Shore-based Mobile Kit (inResponse)	Opportunity – Quick deployment, minimizes risk Challenges – Cost of deployment, less than USCG treatment standard

Notes:

- X
- X
- X