Topics - NTSB

- Consider the role of pilots in autonomous ship operations?
- Assessment of training and programming – software, design, and operation in post accident analysis?
- How automation will affect interpretation of the COLREG’s? How to identify shortcomings or misinterpretation ahead of time?
Pilots and Autonomous Shipping

- All vessels in foreign trade will still need pilots
- Pilot knowledge and ship-handling will be invaluable
  - Riding gang – lower echelon crew aboard
    - Inexperienced with ship handling and waterway
    - Boarding gang – no experience with ship

- Difficult waterways
  - Houston Ship Channel/Columbia River/Mississippi
  - Vessel interaction – meeting and passing, overtaking
  - Speed of transit and cargo operations
  - Panama and Suez Canal transition from sea/canal and back to sea
Post Accident Assessment

- Shore side operations – personnel interviews
- NTSB training for ship-board programs and operating systems
- Drill down and assess how autonomous operation contributed to accident or exclude
Rules of the Road – changes?

• Any changes equally applied to manned and autonomous ships
• How to identify autonomous ships – necessary?
• Restrictive areas
  • High traffic – Singapore Straits, Dover, Gibraltar
  • Harbor limits – no closer than ……
Rules continued

- Different lighting or just new label for AIS?
- Proper lookout for autonomous ship
- Rule 2
  - Good Seamanship and Special Circumstance
    very subjective to implement in a program
- In Extremis
  - Another subjective application to the rules