Autonomous Vessels: A Future of Unmanned Vessels Imagined
Ready or not - here they come!

Andrew Kinsey, September 2017
The Five W’s of Autonomous Vessel Development

• The Who includes: Rolls-Royce, Inmarsat, Wartsila, Norsafe, Kongsberg
• Significant Financial Gain in play for stakeholders.
• Headlines sound a lot like ads at times.
• Is there a real need, or could this technology be better utilized to make current ships safer?
The What of Autonomous Vessels

• It is more than semantics – Autonomous vs. Automated.

• Autonomous - self-governing.

• Automated – to install automatic procedures.

• SAE (J3016) Autonomy Levels (Automotive) – 0 to 5.

• Lloyd’s Register’s ShipRight design - six autonomy levels: AL 1 though AL 6.
When & Where: Change is coming to a Fjord near you.

• Trondheimsfjorden - ASTAT - Autonomous Ship Transport at Trondheimsfjorden

• The goal is to develop *methods for assessment* of autonomous ship transport systems.

• Distances are between 80 and 90 kilometres for all cases (43 to 48 nautical miles). This is about 8 hours at 6 knots. The routes are in sheltered waters without excessive waves or currents. The project will run until March 2019.

The Why of Autonomous Vessels.

• Safety, Emissions, Manpower Shortage…or
• Cost Savings & Revenue Production
• According to Allianz Global Corporate & Specialty, between 75% and 96% of all accidents in the shipping sector can be attributed to human error.
• Let take a different view on that figure – not “get rid of the Human Element, eliminate the loss” but “There are so many areas where Human Interaction is needed to operate a modern ship”.
The How of Autonomous Vessels.

• Challenges of developing and testing autonomous maritime technology.

• Addressing the reliability of onboard systems to even support this type of operation.

• Reliability of Satellite Communications.

• Deterioration of systems – maintaining accuracy.

• SOLAS - PRINCIPLES OF MINIMUM SAFE MANNING.
The Questions of How

- This is about so much more than the COLREGS.
- Interaction with Manned Vessels.
- Arrivals & Departures.
- Choke Point Transits / will Pilots now be needed?
- How many remote operators will be needed?
- Vessel manning is based around the number of crew you need when things go wrong.
Summary

If you want to make ship’s safer and address human error, let’s talk about:

1. Manning Levels
2. Pay Scales
3. Training
4. Work Schedule
Progress is impossible without change, and those who cannot change their minds, cannot change anything.

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