

CYBER SECURITY AND TRADITIONAL NAVIGATIONAL SKILLS



Cyber security breaches - the most modern threats on board commercial ships



Present cyber security measures

- The Guidelines on *Cyber Security Onboard Ships* (the guidelines) [International Chamber of Shipping](#)



Present cyber security measures

- Company's procedures
- Service providers
- ...

People on board and cyber security

- Personal behaviour about information systems
- Members of IFSMA associations in comparison with the Nautical Institute for example (Bulgarian Shipmasters' Association – more retired members than active ones)
- Perception of the older colleagues;



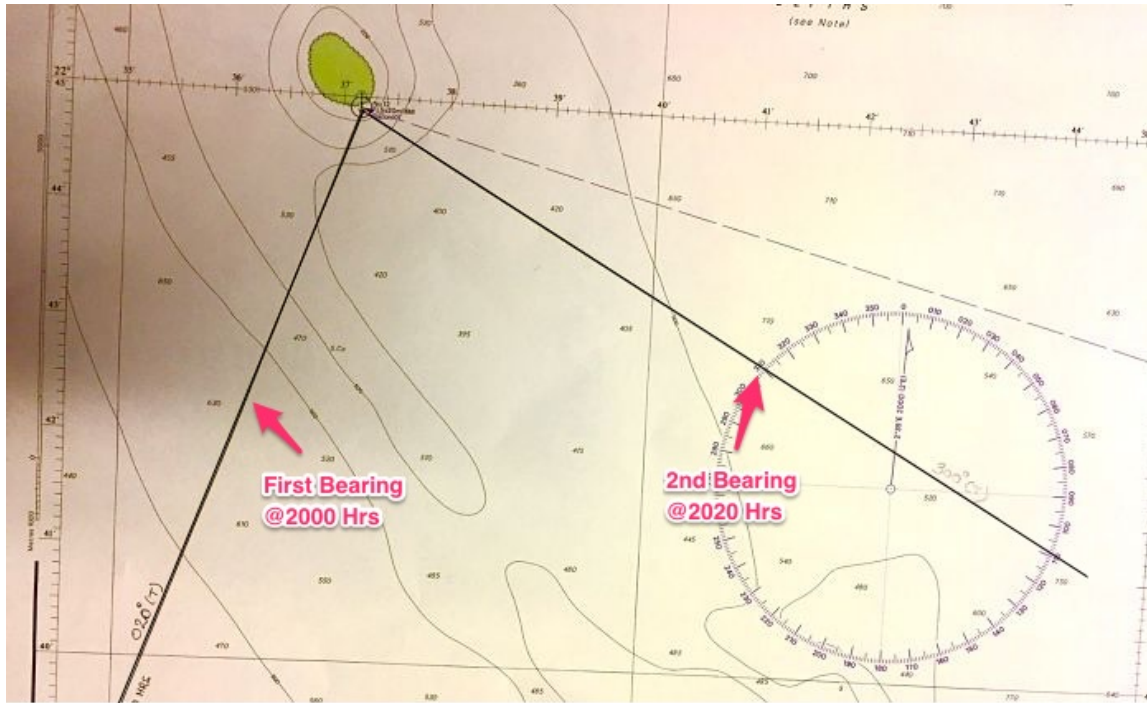
People on board and cyber security

- Perception of younger colleagues



Traditional skills – are they going to disappear

- Balanced use of electronics and visual lookout
- Availability of electronics – less experience in traditional navigational skills – how often modern ship mate is doing traditional fix – taking bearings, radar distances, etc.



Solutions

- Training
- During school / academic period – is there enough time for the traditional navigation and cargo handling knowledge without skipping new technology
- During apprenticeship / cadetship – supervision of the master / chief officer
- During employment on board

Solutions

- The developers and operators of the autonomous ships will need the knowledge on traditional skills to create and use necessary tools to navigate the ships
- Managers need to have knowledge on traditional skills to manage the entire process properly

Solutions

- **“Compass Error Log Book”** – Why not **“GPS Position Verification Log Book”**
- Purpose
 - to keep traditional navigational skills – how many officers nowadays are able to make a fix with visual aids to navigation;
 - to create database about GPS reliance

Solutions

- **IFSMA RES .../2018 (AGA 44) – GPS RELIANCE**
- On the occasion of the 44th AGA the delegates of IFSMA assembled in Buenos Aires, Argentina, noted with great concern the decrease of traditional navigational skills among young officers and shipmasters. Latest progressive development of ships' electronics made life of navigational officers on board easier and position fixing quick and easy but latest breaches of cyber security and especially jams of GPS system raise the importance of reliance in position fixing on one only system.
- IFSMA calls upon relevant actions of IMO to make proper changes in international legislation regarding safe watchkeeping and use of GPS systems together with traditional position fixing.
- In this process, IFSMA encourages maritime educational and qualification institutions to pay attention in their curriculum to traditional methods of position fixing and necessity the officers and shipmasters to be able to do it in ample time in case of GPS failure.
- IFSMA also encourages sextant generation of seafarers to use all efforts via mentoring at sea and any other means to transfer their knowledge and perception about safety to ECDIS generation.

The END – Thanks for Your Attention

