

TECHNOLOGICAL ADVANCES IN SURVEYING – SECURING EVIDENCE IN THE ERA OF ELECTRONIC REPORTING



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OLD STAYS – WHILE “NEW” IS IRRESISTABLE

- Activities centred around sail boating, kayaking and kite surfing are still enjoyed, yet jet skis and power boating also have their place in today’s modern world of maximising experience. The two systems can exist side by side with their values.

That’s exactly the point of this presentation.

Maritime claims and oil contamination analysis – spill response and cargo claims need technologically advanced skills than past years.

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ROBOTICS

- These technologies will integrate assets with other emerging technologies, such as big data and the internet of things (IoT) to reduce human interaction with dangerous processes in the surveying field. DNA mapping, Automation of bridge and machinery, self-cleaning tanks, bridge electronics and DGPS systems will be increasingly seen on vessels as with machines increasingly conduct more tasks on board vessels.

Today's surveyors need to be familiar and acquainted with robotics.



SENSORS AND WIRELESS MONITORING

- Understanding fuel consumption and efficiency issues is dependent on sample analysis of fuel supplied. These records and feedback can be used in understanding a survey outcome of contaminated cargo, or fuel claims.
- Thermal cameras can be applied in nonintrusive ways to ascertain leakages, knocking, machine bearing heating, electrical connection continuity, or misfiring engines and motors. Vessels are benefitting from energy efficiency and are able to operate at optimal RPM on board because of wireless monitoring. Attending surveyors have to be aware these are an important source of data collection opportunities.

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PROPULSION

- New technologies including intelligent engines and hybrid propulsion for improved emission characteristics and lower specific fuel oil consumption (SFOC) are now anticipated for a range of vessels.

Oil transfer records and sludge transfer inter tanks ashore is recorded via flow meter logs which are to proof on board ships, coastal states effortlessly track these logs.



DRONES OR UNMANNED AERIAL SYSTEMS

- These tools are useful to help improve safety cultures; they are economical, can speed up processes and make access to information much easier for humans. Regulators appreciate the need and use of these in the offshore industry and on the high seas.
- Drones can be used in areas that are hazardous, difficult to access or inaccessible for humans - not least in toxic tanks, the upper extremities within tanks or holds and over the side for hull condition verification. This will reduce risks faced by surveyors.



THE INTERNET OF THINGS (IOT)

- IoT is set to play an increasing role in shipping, especially for high net worth cargoes.
- IoT means cargo will have a voice and will be able to inform claim investigating surveyors at the receiver end- how cargo was treated *en route*. Temperature data transmitters and recorders and live GPS trackers and transmitters have given high net-worth cargo owners tools to track the history during transit and transfer between international borders. (Pollution mitigation and spill control and detection with DNA tagging has made investigations easier and less

litigious)
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DATA SECURITY AND CYBER HYGIENE

- Technology makes it easier to collect, catalogue and analyse data and more and more electronic data is being captured during evidence collection. Care and diligence is needed in keeping this data secure if it is to be accurate and useful.
- So surveyors need to develop the ability to properly archive and catalogue data with a view to its re-use for reference or precedent analysis. Therefore, it is imperative that all steps are taken to keep the data safe and secure from cyber predators.
- A sound data security plan is built on four key principles: identify and catalogue, scale down, lock it and housekeeping.:

**“THANK YOU FOR YOUR
PRECIOUS TIME”**

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