

## **Autonomous Ships – Fact or Fiction?**

In late 2015, the London Branch of The Nautical Institute convened a two-day seminar entitled “Autonomous ships; what does the future hold?” with speakers from, inter alia, Class, The Regulatory Authorities, Developers and Operators.

Each was invited to predict the impact that the introduction of unmanned vessels globally would have on the shipping industry and the scene was set by James Fanshawe, Chairman of the UK’s Maritime Autonomous Systems (MAS) Regulatory Working Group in his keynote address.

“Automated ships are here today, already, in all sorts of shapes and sizes, used by science for research, for defence and in the oil and gas industry, among other things.

As vessel sizes increase, they will have to be integrated into a well-established maritime world with many complexities in place. The MAS is determined that they should be brought in sensitively - and recognising the concerns of all involved”.

Successive speakers highlighted other viewpoints viz.

\* Autonomous ships are not a thing of the future; in many sectors small autonomous vessels are already a reality for both subsea and surface work.

\*The move towards fully automated vessels is likely to be driven by insurance and increasing public demand that no accident is acceptable. However, while it reduced risk in some areas, including keeping seafarers out of harm’s way, it may increase it in others.

\*Interaction between manned and unmanned vessels is likely to be a major point of risk,

\*Existing Conventions and regulations will need to be updated to take the existence of autonomous vessels into account, including SOLAS, The Colregs. and national regulations.

\*While autonomous merchant vessels are unlikely to be a reality for many years yet, onboard systems are increasingly becoming automated, which demands a new set of skills and aptitudes from seafarers.

The seminar concluded that, while it will be many years yet before fully unmanned merchant ships become a reality –if they ever do – it is vital that the industry starts thinking about the implications of the potential change at an early stage. Only in this way can it ensure that the training, skills and knowledge are in place to maintain the safety and profitability of the industry.

In early 2016 – Rolls-Royce “lifted the lid” on their research into their vision of a land-based Control Centre for the operation of “Autonomous Drone Cargo Ships” wherein a small “crew” of 7 to 14 people monitor and control the operation of a fleet of vessels across the world using interactive smart screens, voice recognition systems, holograms and surveillance drones to monitor what is happening aboard the ship, and its environs. Explaining the motivation for the research, the General Manager, Remote & Autonomous Operations (Ship Intelligence) R-R. commented, “We are living in an ever-changing world where unmanned and remote-controlled transport systems will become a common feature of human life. They offer unprecedented flexibility and operational efficiency. Our research aims to understand the human factors involved in monitoring and operating ships remotely. It identifies the way crews ashore use tools to get a realistic feel for what is happening at sea.”

Rolls-Royce suggest that they will construct a “Remote Operations Test Centre” before the end of this decade and their Finnish partner in this research (The VTT Technical Research Centre) confirms that “The autonomous ship does not mean removing human beings entirely from the picture, as is sometimes stated. Unmanned ships need to be monitored and controlled requiring new kinds of work roles, tasks, tools and environments. The future shore control centre concept has been designed by emphasising the user experience of the human operators. By focussing on the operators point of view it is possible to introduce meaningful, pleasurable and engaging new roles for the ships’ shore control centre professionals”.

The research was undertaken by VTT and The University of Tampere Research Centre (TAUCHI) in collaboration with Rolls-Royce with the aim to explore the lessons learned from other industries such as aviation, energy, defence and space exploration, where remote operation is more widely used.

Undoubtedly, this research will provoke great excitement in certain segments of the maritime industry but, in others, the reaction is likely to be one of alarm and dependency. To read that a shore-based “crew” of seven to fourteen technicians will operate a FLEET of ships will ring alarm-bells throughout SE Asia – and beyond.

Shipping today is international, multinational and transnational with crews comprising six or more nationalities and 60% + wearing an ensign that is not that of their owner.

The vast majority of seafarers – Officers and ratings – hail from poor countries whose economy is, to a high degree, dependent on the money they send home.

In her book “Deep Sea and Foreign Going” Rose George writes “Most populous of all are Filipinos, who are lured not only by the wages (Government officials back home earn £200 a month, while the sailors’ minimum pay is meant to be £354) but by aggressive advertising that casts mariners as “patriotic heroes” whose remittances – amounting to billions of USD annually – support the nation.”

Some 25 years ago ICS/BIMCO initiated a study to quantify the global demand for seafaring Officers and ratings and their most recent findings make intriguing reading. Their current report suggests that the global demand for seafarers is 774,000 Officers and 873,500 ratings – with the demand for Officers outstripping supply by about 16,500. A worrying projection suggests that within a decade the Officer shortage will rise to “92,000 by 2020 and 147,500 by 2025”.

The report points out that it takes a minimum of 10 years to produce an Officer of “Senior Management Level” and adds “The amount of money that goes into seafarers today is enormous, but far too often we squander the investment by not doing enough to retain them – retention is vital”.

Unfortunately, there is a universal viewpoint that “A maritime career isn’t attractive any more – they must improve shipping’s image” so campaigners hope that the suggested looming manning crisis will be the pressure point for the industry to clean up its act.

Retention IS the problem (and it is difficult to see how the majority of today’s young seafarers will elect to make it a career) and that, coupled with recruitment difficulties just might convince the doubters that the autonomous ship HAS a future.

The August 1924 edition of “Sea Breezes” included a poem entitled “ A Forecast – The Crewless Wireless Craft” (published in full in “Cachalot” No. 49, Sept.2013).

Herewith, a brief excerpt:

“Today, with myriad cathode rays, atomic forces splitting  
Electron speed to unseen craft are from the land transmitting  
A tube in shape, no deck, no keel, no funnel, ventilator  
No rudder, engine, mast or screw, nor even Navigator  
So here we have the future ship, unloseable we deem her  
No longer need we navigate with paddle, sail or steamer”

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