

UDT 2019 – The Marriage of Commercial and Military Underwater Systems for the good of Defence

Abstract — The paper will seek to demonstrate the potential synergy between Commercial and Military Underwater systems specifically in the area of Mine Countermeasures. It will highlight the need for both areas to appreciate more fully one another's idiosyncrasies. It will further consider and debate whether it is viable for technology to drive maritime Mine Countermeasures doctrine.

1 Introduction

In many respects the commercial world has overtaken the military in the development and operation of underwater vehicles. The commercial customer's demands on an underwater system are very similar to, if not significantly more rigorous, than those of the Navy. Reliability, ease of operation and maintenance are the tenets of any commercial system as they are that of a military system.

The paper will consider the following:

- The Differences
- The Similarities
- Conclusions
- Author/Speaker Biographies

2 The Differences

2.1 Usage

A significant factor that differs between the military and commercial world is the usage of the systems. The commercial world uses its systems virtually 24/7, time lost on task is expensive and so redundancy must be built into the systems along with an overarching reliability.

However the often infrequent use by the military of complex systems poses a different, but equally challenging problem which is that when the system is turned on after a lengthy time of redundancy it has to work.

2.2 Operator Expertise

In general the operators of ROVs in the commercial world are much more experienced than those in the military domain because commercial operators tend to only fulfil very specific roles; an ROV pilot only pilot's ROVs. Whilst in the military operators have a wide range of roles making them Jacks of all trades and masters of none. Training is often difficult to achieve due

to other commitments whilst in the commercial world there is no need for training as the system is permanently in use. the system needs to account for this and be simple to operate and intuitive.

2.3 Key Driver

The commercial world is driven by profit and reduction in cost is a prime mover. Whilst the military's primary aim is not to make a profit it could be argued that it too is driven by cost which will always be a key factor in any equipment procurement process.

3 The Similarities

3.1 Efficiency and Effectiveness

The ability to operate in an efficient way is closely linked with profit in the commercial arena but is also relevant to operational tempo in that of the military.

3.2 Maintenance

The common requirement exists for both low levels of maintenance and ease of maintenance across both sectors. In addition emergency repairs whilst on operations should be , whenever possible,

3.3 Resilience

The systems are required to operate in all environments from sub-zero temperatures in the Antarctic to temperatures of 40C in areas such as the Arabian Gulf.

3.4 Depth

Commercial systems regularly operate at depths in excess of 3000m much deeper than those of the military which are generally constrained to the continental shelf. Although with developments in undersea warfare these

depths and the need to operate on the seabed are increasing.

3.5 Navigational Accuracy

The navigational accuracy required for a commercial oceanographic survey is equivalent to that of a military system. Whilst some of the challenges the military faces, such as action by hostile forces is clearly a significant factor which does not affect commercial operations the principals of surveying and the need for accurate navigation are the same.

4 Conclusions

The similarities between the commercial and military underwater sectors by far outweigh the differences. The ability therefore for the military sector to take lessons from the commercial world are clear. However there is frequently a reluctance to see the commercial sector as having a greater level of experience.

5 Author/Speaker Biographies

Chris Lade retired from the Royal Navy after 30 years as an Underwater Warfare Officer and Clearance Diver and joined Saab Seaeye in March 2012. He has been involved in a range of projects within SAAB one of which has been the development of an innovative Mine Neutralisation System.