

US/UK FUSION - MAINTAINING THE LEAD IN SUBMARINE WARFARE

28 May 2006

“It is not the beginning of a great endeavor, but the continuing of the same until it be thoroughly completed that yieldeth the glory”

Sir Francis Drake

Introduction

The majority of the world's population lives within one thousand miles of any coastline and are all subject to the unpredictable course of terrorism and inter-nation rivalry. In addition a great deal of commerce relies on sea transport to function. There are nations who support this terrorist course of action with capability that can be employed in the maritime arena. Presently 42 nations have submarine capability and not all of their governments crave stability. Many have the capability to land terrorist forces from the sea, to engage in acts of piracy and at sea terrorism. A key asset in the Global War on Terrorism (GWOT) is the submarine force; the strike capability alone is significant, however, in combination with their ability to deploy anywhere in the world with impunity is a strong force multiplier.

Submarine Development Squadron Twelve (DEVRON 12) continues to be, at the forefront of submarine warfare, predicting the future direction and providing tactics to ensure dominance using both this generation of equipment and the next.

Since 1955, there has been a UK exchange Officer within the squadron, whose major purposes are to act as a Command Rider while training US national tasking and to facilitate the exchange of ideas and information across the two nations forces.

Submarine Development Squadron Twelve

Captain John Richardson United States Navy is the Commodore of the Squadron. It is one of the United States East coast squadrons working for Commander Submarine Group Two (Rear Admiral Kenny). The motto “Science, Technology and Tactics” incorporates the essence of the past, present and future. The ability to use science to provide effective technology is important; the development of tactics to effectively use the equipment and the supporting training is vital. His squadron is unique across the world. Not only are the six submarines under his command engaged in the wide variety of submarine and support operations but he also has a world leading submarine Tactical Development (TD) organization.

The advantage of this squadron organization is that ideas for combating any potential threat, can quickly be brainstormed, tried out in simulators and then

taken to sea onboard the squadrons submarines. In addition the direct feedback from the units enables the process of idea to doctrine to be realized rapidly.

The division of the Tactical Analysis Group (TAG) is roughly fifty percent military and fifty percent civilian personnel. Two companies, SONALYST and Applied Mathematics, provide the civilian contingent. The employees are generally recruited from the submarine world, with many being previous US Commanding Officers. They provide not only the backbone of administration and staff work required to run many major TD exercises a year, but also a wealth of submarine knowledge.

Maritime Warfare Center (United Kingdom)

The Maritime Warfare Center (MWC) has a different organization that encompasses not only submarine warfare, but also the other spectrums of surface and air warfare. They are tasked directly by Commander In Chief Fleet (CINCFLEET) to analyze issues and develop tactics to optimize the capability of the fleet. The submarine section is considerably smaller than DEVRON 12, but continues to provide the advance in UK submarine operations required to maintain the edge against potential adversaries.

Tactical Development exchange

During the last century the development of nuclear power, the deployment and maintenance of the at sea nuclear deterrent as well as Cold War operations were conducted by the US and UK side by side. Reductions in force numbers in both countries have not hindered the ability to work together into the 21st century. Submarine forces continue to provide ASW security against the many potential adversaries proliferating submarine capability. More importantly is the impact that they have in other areas of warfare and national security.

They provide any commander an asset that is capable of working autonomously or within a force; a unit that is eminently flexible (it can role change instantaneously) and remain on station for months at a time without support. They provide covert strike capability from the sea, capable of operating close to an enemy's coast without the requirement for approval or support assets from neighboring host nations.

Continuing to remain at the forefront of general warfare faces two, not insignificant, dilemmas. First there is the paradox of retaining the covert nature of submarine operations secret and yet promoting their capability. Secondly, the issue of increasing capability within the reduced funding available. DEVRON 12 is an outstanding broker in achieving this.

TD plays a fundamental part in this process of advancing submarine effectiveness. It ensures that tactics, and if required equipment, are developed in a timely fashion to deal with the present and the future. While many countries conduct some form of TD, nowhere is it more prevalent than in the US and the UK, whose combined effort is developing peacetime theory into wartime practice.

While the UK subscribes to a different doctrine vice the US Sea power 21, there are broad ideas and specific similarities that allow development as well as economy of effort towards finding solutions. Examples of this are:

- Submarine Fire Control. Two submarine fire control systems, each developed independently with the same aim – to control the external picture for weapon employment - have been compared and the information about how the algorithms perform is being freely exchanged to ensure that both systems can improve to be able to deal with the demanding operations in the littoral.
- Information exchange to enable a co-operative next generation weapon.
- The provision of UK Periscope employment procedures adapted to US operations.
- The joint initiative towards the Automatic Identification System and its effective employment within submarines to maintain their safe insertion into any potential arena.
- Exchange of information referring to the use of non-hull penetrating visual systems (Photonics in the US and Optronics in the UK) ensuring that knowledge and lessons learned from the operation of the new non-hull penetrating masts employed within the Virginia class are passed so that the lessons do not have to be relearned in the Astute class.
- The swift development of tactics and equipment to contribute effectively to Information Operations.
- The exchange of information regarding situational awareness tools and human system interface to enable effective dominance of the littoral battle space and effective contribution by the submarine to the Joint warfare environment.

Establishing the special relationship

The predecessor to the MWC, the Submarine Tactics and Weapons Group (STWG) was established using Submarine Development Group Two (DEVGRU 2) as its model. Cdr Jim Conway USN and Maurice Fox, a civilian analyst, both from DEVGRU 2, aided the RN in the formation of STWG. STWG conducted torpedo firings and analysis, which DEVGRU 2 did not. However DEVGRU 2 had its own submarines which was a critical advantage to TD. In the early 1960's, DEVGRU 2, realizing the benefits of Tactical analysis established a TAG due in large part to the strong recommendations and influence of the RN Exchange Officers, Lt Cdr Robin King and Cdr Peter Hamilton-Jones.

The process of effective tactical cross-pollination was already in place when STWG and DEVRON 12 started working together; of note that some of the Officers who had served as RN exchange officers in the US went on to Command STWG and some who served as USN exchange officers in the UK went on to Command DEVRON 12 thus aiding the process further.

The importance of civilian support was realized in the 1970's and from 1974 until 1995, TD contractors¹ supported the joint US/UK TD project. This project funded by both the USN and the RN addressed tactical projects of joint interest. TD exercises focused towards dealing with the Cold War threat and units from both nations exercised in well-structured exercises. The successful analysis resulted in the establishment of effective tactics to deal with potential enemy submarines, particularly in the realms of close encounters, active search methods, initial towed array tactics and the Target Motion Analysis algorithms.

In addition annual meetings were conducted at DEVRON 12 and STWG as a formal method of aligning the state of tactical development and support of both nation's doctrine.

The Exchange Officers

The Coordinated Operations (N74) post (Originally the RN Exchange Officer post) working for CSDS 12, was established in 1955 and has always been manned by a command qualified (post Submarine Commanding Officers Course) Lieutenant Commander. In previous years when the UK diesel submarine capability was still maintained, the chances were that the Officer had already been in Command. Lt Cdr Ramsey RN (current N74) and his two direct predecessors have all been employed as one of three Command Riders for Flag Officer Sea Training (FOST) in the UK prior to the CSDS 12 appointment. An exceptionally demanding appointment, the responsibilities as a sea trainer are to train a submarine command team at sea for operations as directed by Chief of Staff Warfare for Fleet HQ.

This process is similar to a Pre Overseas Movement Work Up. The Command Rider and his team of up to twelve officers and senior ratings are generally embarked for a period of 4 weeks providing "cradle to grave" training in the full spectrum of submarine operations.

In addition the FOST Command Riders also provide training, guidance and acclimatization to a variety of nations diesel submarines and crews (e.g. Canadian, Dutch, German, Italian, Norwegian, Polish, Pakistan, etc) who operate in UK home waters, NATO exercises or have requested the basic training.

This experience has proven vital in ensuring well-structured exercises, effecting good liaison with a variety of nations and providing an insight into the mind of diesel submarine commanding officers. His responsibilities have diverged from the initial exchange program, and in addition to TD, he also assists training DEVRON 12 submarines at sea.

The US Officer serving in the MWC is a post Department Head and pre Submarine Command Course. He works alongside UK and Australian counterparts (The Australian in a post Command tour). He works in complete union with the UK TD program. He and the CSDS 12 RN officer liaise continually to ensure that the correct level of collaboration is achieved within a variety of organizations; to the point of being a broker between various agencies.

¹ Analysis and Technology, Wagner Associates, and Applied Mathematics.

In addition to the almost weekly liaison between both units, yearly a series of joint talks is organized alternating venues between the US and the UK. These provide a face-to-face opportunity for both organizations to align the state of progress in a variety of spectrums and develop a coordinated approach where possible.

Continuing to enhance the exchange

There are many programs to ensure that the coordinated approach to warfare dominance continues and develops. One of those is the cross pollination of students in the UK and US submarine Command Courses.

The UK Submarine Command Course is referred to as the “Perisher”. It is exceptionally demanding and has produced submarine CO’s revered across the world. It teaches the potential Commanding Officer absolute limits both mentally and physically as well as how to operate his unit effectively. There is no second chance and the standards are exceptionally high – failure means there is no future in your submarine career.

In a bold initiative signed up to in 2001, forces from the US, UK, Netherlands and Norway offered available places on each other’s Command course. The UK and NL have sent personnel to the US Command course. The US has sent personnel to all three nations courses. Discussions with all students who have attended the UK course indicate that they have gained a great deal from the course; the same is true of the UK personnel who have attended the US SCC. This exchange of students will continue ad infinitum; it is another medium to exchange ideas, processes and experience at the front line.

At the beginning of this year and for the first time, CSDS 12 was invited to speak at the UK submarine warfare conference. The conference provided a fantastic medium to realize the individual efforts of both nations within submarine warfare and determining how, together, we can progress development and operations.

Rear Admiral Submarines and Commander Operations, Rear Admiral Paul Lambert Royal Navy, hosted a dinner for all RN command qualified officers and their command qualified guests. Among the attendees were five previous and present RN exchange officers in DEVRON 12.



Figure 1. CSDS 12 and RN Exchange Officers:

LT CDR Ryan Ramsey RN, CAPT Steve Garrett OBE RN, CAPT John Richardson USN, CDR Richard Allen RN, CDR Iain Breckenridge RN, LT CDR Richard Lindsey RN

The future

It is certain that this dual approach to ensuring submarine capability at least matches and at best exceeds future expectations will continue. In a further initiative, CSDS 12 is in the process of extending his hand to other close partners in the GWOT and general submarine operations. The efficiency of combining ideas will without doubt pay dividends. It will ensure streamlined and effectual procurement of equipment and the production of tactics to fight this generation of warfare and the next.

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