

CUTTING THE BOW WAVE

2009 - 2010



COMBINED JOINT OPERATIONS FROM THE SEA
CENTRE OF EXCELLENCE

A YEAR
IN REVIEW



CJOS COE 2008-2009 Published Work

Concept Papers

“Extended Range Guided Munitions (ERGM) Impact on NATO Operations and Tactics, Techniques and Procedures”

Delivered Jan 08, CDR Per Bakke, NOR-N

“In what way, if any, does NATO doctrine require updating to take into account the emergence of the US Navy Expeditionary Combat Command?”

Delivered May 09, LtCol Hubert Neumaier, DEU-A

“Core requirements for Allied Nations to achieve full interoperability within the global maritime information environment in support of their individual national security objectives.”

Delivered Jul 09, CDR Dimitrios Kouteas, GRC-N (TL), WO2 Seven Binks, GBR-A

“In what way could Maritime Unmanned Systems be used in Combined Joint Operations from the Sea?”

Delivered Dec 09, LtCol Antonio Casuscelli, ITA-F (TL), CDR Dimitrios Kouteas, GRC-N (TL), CDR Per Bakke, NOR-N, CDR Stephen Edson, USA-N, LtCol Hubert Neumaier, DEU-A, CDR Tanzer Orsak, TUR-N, CDR Jan Van Zanten, NLD-N, CDR David Wood, USA-N, LtCdr Dai Roberts, GBR-N

“What role would Sea Basing play in support of allied Strategic Overwatch in the Indian Ocean/ Arabian Gulf Region and what additional capabilities would be required to sustain it until regional capacity is sufficient to permit further allied withdrawal?”

Delivered Dec 09, CDR Jesse Fox, USA-N (TL), CDR Rick Adside, USA-N, CDR John Burge, USA-N, LtCdr Dai Roberts, GBR-N

Experimental Tactics

EXTAC 789 “Tactics on Maritime Counter Piracy”

Delivered Mar 09, CDR Gary Fletcher, USA-N (TL), CDR Margaret Hoskins, USA-N, LtCol Hubert Neumaier, DEU-A

ANNEX F to EXTAC 783(B), “Amphibious Force Protection during Ship-to-Shore Movement”

Delivered Dec 09, CDR Rogerio Brito, PRT-N

Point Papers

Role of “Special Forces in Counterinsurgency Operations”

Delivered Aug 08, LtCol Hubert Neumaier, DEU-A

“Maritime Security Operations Concept” (MSO) Initial draft to HQACT

Delivered July 09, LtCdr Dai Roberts, GBR-N (TL), CDR Per Bakke, NOR-N, CDR Tanzer Orsak, TUR-N

(TL) - denotes Team Leader

Cutting the Bow Wave

2009-2010

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HMCS Regina (FFH 334) Replenishment at Sea. CFB Esquimalt Imaging Services photo by Corporal Charles Barber

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Message From the Director

Vice Admiral Mel Williams, Jr., USN

Director,
 Combined Joint Operations From the Sea
 Centre of Excellence



2009 was a banner year for the Combined Joint Operations from the Sea Centre of Excellence and I am extremely proud of the Team's accomplishments. Beginning with the publication of Experimental Tactic 789, titled *Maritime Counter Piracy Operations*, followed by a highly successful maritime conference in Sorrento, Italy, in March, the standards were set very high. Momentum continued with the publishing of a superb paper on NATO's Maritime Security Operations concept and new Alliance Maritime Strategy in July, followed by studies on Maritime Unmanned Systems, Joint Sea Basing, and Interoperability.

As we look toward future transformational capabilities, being innovative in thought and action is critical. We must also be collaborative; leveraging and capturing best practices wherever they exist. It is essential to the realization of our stated vision, by reaching out to defense, government, and private agencies (i.e. comprehensive and integrated approach) and incorporating their individual and collective expertise, engaging with our Sponsoring Nations and our non-NATO Allied Partners, and building capacity to take action and achieve results.

We believe that success breeds success. As NATO continues its transformation there is a renewed appreciation for the fine work that the Combined Joint Operations from the Sea Centre of Excellence contributes with our global partners including a focus on joint maritime expeditionary operations, and maritime security. Collaborative planning and defense cooperation between Partner Nations enables expanded maritime situational awareness to identify and take action against maritime threats to a greater degree than heretofore. In this fiscally challenging environment, our careful and thorough coordination is all the more important to ensure that our limited resources are maximized for optimal readiness and performance without compromising safety and effectiveness.

I look forward with great anticipation to even more successes in 2010, continuing our efforts on transformation through best practices, and strengthening our work with Allies and Partners.

MELVIN G. WILLIAMS, JR.
 Vice Admiral, US Navy

Director's Vision

Within five years, to become the pre-eminent **source of innovative specialist advice** and expertise on all multinational aspects of Combined Joint Operations from the Sea in support of the Sponsoring Nations, NATO and other non-NATO allies.

Our Mission

Working in conjunction with the Commander US Second fleet, the CJOS COE will provide a focus for the **Sponsoring Nations and NATO in improving allied ability to conduct Combined Joint Operations from the Sea** in order to ensure that current and emerging global security challenges can be successfully tackled.

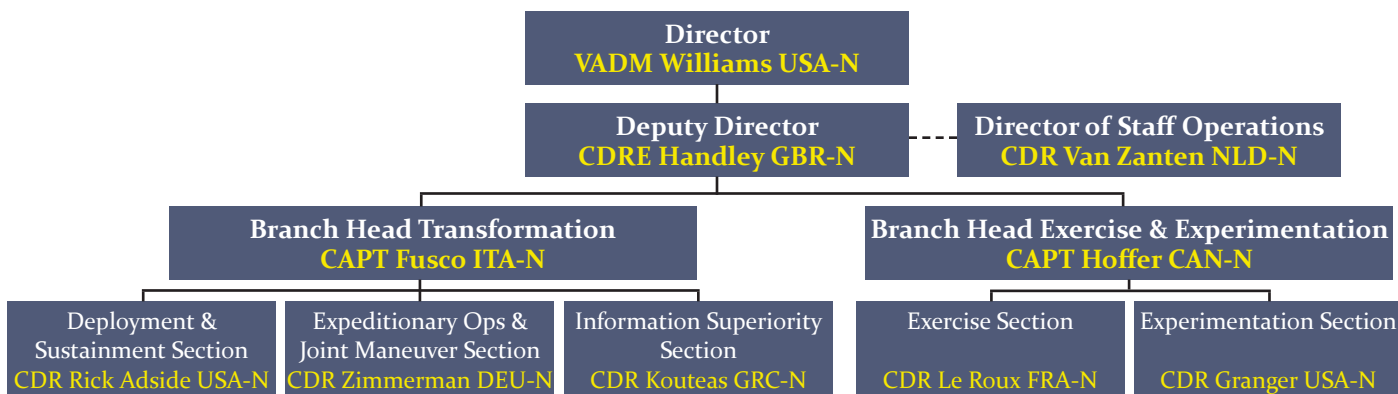


Official US Navy Photo by PH1 Darius Jackson

Who We Are And How We Accomplish Our Mission

Commander, U.S. Second Fleet established the Combined Joint Operations from the Sea Centre of Excellence (CJOS COE) in May 2006, to provide a focal point for Joint Maritime Expeditionary Operations expertise for allied nations. With 13 nations represented, CJOS is the only Centre of Excellence in the United States, and one of 14 accredited Centres worldwide, representing a collective wealth of international experience and expertise. CJOS COE draws on the knowledge and capabilities within Second Fleet, and neighboring US Commands, to promote “best practices” within the Alliance and to aid NATO’s transformational goals, specifically focused on maritime-based Joint operations. We enjoy close cooperation with Allied Command Transformation (ACT), other maritime COEs, NATO Joint Force Commands, and various national commands. Responsiveness is achieved by shortening NATO decision cycles by working without the need for consensus. We have also worked to reduce consultation timelines between COE staff and key experts in the individual Sponsoring Nations by setting up Focal Points of Contact within some of those nations who put us directly into contact with their relevant Subject Matter Experts.

Outline Command Structure



A full staff list, complete with contact details, is on page 30

How We Are Tasked

Shortfalls in current maritime capabilities/procedures are identified by ACT and our Sponsoring Nations who then task us to review them in our annual Programme of Work; this is approved by the CJOS COE Steering Committee. CJOS COE Programme of Work 2009 was focused around five main tasks: assisting ACT to produce a Maritime Security Operations concept for NATO and a new Maritime Strategy, completion of a draft Experimental Tactical document on counter-piracy, production of a NATO Capability Road map for Maritime Unmanned Vehicles and Systems, delivery of an annual maritime security conference in late March, and delivery of further work on the Sea Basing concept in support of NATO’s Joint Sea Basing initiative. Our aim is to become a pre-eminent source of innovative military advice on coalition joint operations from the sea. We intend to raise our profile by collaborating with leading-edge institutions, publishing high quality products and validating them through experimentation and exercising. This will be made possible by US Second Fleet providing the appropriate validation opportunities, thus giving us maximum leverage of our position in their headquarters. We will also work with non-military authorities to provide best practice on maritime security issues to the wider global maritime security partnership.

Message from the Deputy Director



Official US Navy photo by MC3 Brian W Goodwin

Commodore Jonathan Handley, GBR-N Deputy Director (Dec 09 - present)

It is a great honour to have been selected as the new Deputy Director, Combined Joint Operations from the Sea Centre of Excellence (CJOS COE) and I look forward to leading the myriad of tasks that are outlined in the 2010 Programme of Work, as well as those currently underway. Having come to CJOS COE from Navy Command Headquarters in Portsmouth, UK, as Assistant Chief of Staff (ACOS) Warfare, I am familiar with the excellent reputation of this COE among NATO nations and the combined and joint maritime communities. Thus, it is indeed a pleasure for me to be a part of this highly

respected organization. I also want to wish Commodore Bob Mansergh the very best in his future endeavours. His strong leadership and energetic direction of CJOS COE during the past three years has set the pace for this Centre of Excellence to continue to flourish and deliver high quality and relevant support to NATO and its allies.

Commodore Jonathan Handley, Royal Navy

Commodore Bob Mansergh, GBR-N Deputy Director (Aug 06-Dec 09)

CJOS COE is now 2.5 years into its programme *to become the preeminent source of innovative specialist advice and expertise on all Multi-National aspects of Combined Joint Operations from the Sea in support of the Sponsoring Nations, NATO and other non-NATO allies.* In retrospect, 2009 has been another excellent year for the CJOS COE. We have met many of our targets and remain totally dedicated to supporting the transformation of NATO maritime capabilities, focused particularly in the Joint Maritime Expeditionary Operations areas. As I hand over as Deputy Director to my successor, Commodore Jonathan Handley, I thought it might be useful to review progress and to highlight some of the challenges that I believe the CJOS COE team will have to face during the next 2.5 years.

Maritime Security Conferences. Since our vision was created in September 2007, we have established a significant reputation within the maritime security community as a result of our first two annual conferences in Sorrento. Our efforts in maritime security were triggered by the assessment that this is an area in which NATO lacked policy and supporting doctrine, despite being actively involved in Operation ACTIVE ENDEAVOUR in the Mediterranean after 9/11 and in Operations ALLIED PROTECTOR and OCEAN SHIELD to support the international effort to counter the rapidly increasing incidence of piracy in the Gulf of Aden. It was also apparent that this is an area where NATO's approach to such challenges will, to a large degree, be fundamental to the future relevance of the Alliance. I am also convinced that such operations fall firmly within the scope of our



Joint Maritime Expeditionary Operations mandate, as they clearly involve deploying at a strategic distance, with ground and air forces, to diminish the current threat and build regional capacity to tackle the residual threat upon withdrawal.

The principal conclusions from our first two conferences have been fundamental: firstly, there is a myriad of different maritime security initiatives underway across the world, but lacking coordination and no ready source of “best practice” from which emerging Regional Maritime Security Organizations (RMSO) might derive the most effective and efficient way of delivering their own support to the maintenance of maritime security. Second, there is a need to improve collective capabilities by establishing better global coordination of the various disparate initiatives already underway or proposed. Regrettably, this proved too difficult to deliver for any of the existing agencies attending the conference, most of which are tightly focused on their own Terms of Reference and all of which have no spare manpower. Set against this background, the theme of the annual conference in 2010 will be focusing on achieving an integrated approach across all elements of national power. Given the lack of any international organization to take the lead coordinating role, the alternative appears to be to establish a repository of best practice to support emerging RMSO's; this is a potential future role for CJOS COE. In parallel, and noting the UN's desire to expand its ability to direct maritime missions, CJOS COE has worked towards a long-term partnership with the UN Department of Peacekeeping Operations Office of Military Affairs, with a view to providing “best military practice” wherever it wishes to draw on it.

MSO Concept Paper. Formal tasking for the MSO Concept paper was received in early April 2009; CJOS COE led this work. It was completed and signed off by the two Strategic Commanders on 18 July 09 and was extremely well-received; it is now being staffed through NCS. In essence, it proposes: an enduring mission for the Alliance in supporting the delivery of Maritime Security inside the Euro-Atlantic area and wherever Allies' strategic interests need safeguarding, inclusion of partner and regional maritime security capacity building in MSO at a strategic distance, as this will provide the best chance of being able to withdraw once the relevant RMSO is able to maintain maritime security autonomously, and a broad policy for NATO's engagement with other military and non-military RMSOs through the mechanism of Civil Military Information and Intelligence Fusion Centres, focused not just on information sharing, but also on procedural and cultural collaboration between Agencies.

New Alliance Maritime Strategy. CJOS COE has been actively supporting ACT's development of the new Alliance Maritime Strategy (AMS). This has the potential to be a seminal piece of work, setting the scene in the maritime context for the emerging NATO Strategic Concept. The AMS will take a wide view of the future missions required to support NATO's enduring strategic objectives. It will highlight the need to prevent crises developing by engaging earlier and focusing on capacity-building in critical regions where our strategic interests may be threatened.

Maritime Unmanned Systems (MUS) Capability Roadmap. This has been our main effort this year and has been an enormously successful project. Our over-arching recommendation to NATO has been to establish an oversight body to bring together the efforts of the various existing NATO Armament Groups into a single synergistic forum, in which NATO's collective requirements for all Unmanned Systems can be defined, with a view to ensuring that every opportunity to achieve cost-effectiveness through use of common platforms and C2 arrangements can be taken. I fully expect CJOS COE to remain at the forefront of future MUS requirements development and to assist NATO taking new capabilities forward.

Joint Sea Basing. Our work on Joint Sea Basing has remained focused on the importance of the Sea Base in providing political choice and in supporting Phase 0 shaping operations as a means of preventing crises, rather than having to respond to them later and then manage them. Our paper completed for the UK on the utility of Joint Sea Basing in support of Strategic Overwatch focused on this area and highlighted its very significant utility at the lower end of the conflict intensity spectrum, a utility which is largely available NOW. Work next year will progress towards helping NATO move the NATO Joint Sea Basing concept forward.

Future Challenges. There is no doubt that our capacity to take on additional new tasks in different subject areas will reduce significantly as we follow-up legacy tasks, unless we can find innovative ways of increasing our own capacity in a very tight manpower market. We are doing this already by increasing our collaboration with a variety of authoritative civilian and military bodies as well as continuing to try to attract new Sponsoring Nations and new partners, working alongside us. I am very excited by the prospect of increasing the strength of our relationships with several RMSOs and International Organizations during 2010 and look forward to more formal linkages with a range of national subject matter experts from our Sponsoring Nations.

It remains for me to wish the CJOS COE continued success and to express my thanks to the Commander, US Second Fleet and his staff for hosting us in such a positive atmosphere and for providing so many inputs in support of our work.

Commodore Bob Mansergh, Royal Navy

CJOS COE Annual Report

2009-2010 Programme of Work



Official US Navy photo by MC1 Tiffini M. Jones Vanderwyst

2009 Programme of Work

CJOS COE Programme of Work 2009 was focused around five main tasks:

- Assisting Allied Command Transformation (ACT) to produce a NATO Maritime Security Operations concept for NATO and a new Maritime Strategy.
- Completion of a draft Experimental Tactical document (EXTAC) on counter-piracy.
- Production of a NATO Capability Road map for Maritime Unmanned Vehicles and Systems.
- Delivery of a successful annual maritime security conference.
- Delivery of further work on the Sea Basing concept in support of NATO's Joint Sea Basing initiative, as well as development of the concept within the US Navy.

To this end, the Team worked extensively on all tasks which were managed within the scope of NATO procedures and policy as they relate to doctrinal and procedural standards. The resultant products from CJOS COE were a multi-national effort from within the staff and vetted against national interests, alliance strategy and NATO governance. The goal throughout was to provide a comprehensive product that presents

a strategic way ahead or assessment to benefit the Alliance as a whole. In some cases the scope of the project warranted a tactical view as well, such as with the counter-piracy project. Regardless, the end result provided a positive impact across the spectrum of Alliance members and we are proud to feature several of this year's projects in this issue while others are highlighted below.

NATO Maritime Conceptual Projects

In January 2009, work began on defining a new concept for the Alliance to cope with the increasing complexity and importance of the maritime domain to the Allies. Following a letter to the Secretary General from the two NATO Strategic Military Commanders in December 2008 about the lack of maritime focus in the Alliance, tasking was finally agreed upon in April 2009 for two conceptual documents to be developed: a longer term Alliance Maritime Strategy (AMS) and concurrently a shorter term Maritime Security Operations concept (MSO). The formal task was sent by the Director, International Military Staff (IMS) in April with a required delivery date of July 17th for endorsement by the Military Committee (MC). CJOS COE was tasked by ACT to lead the development of the MSO concept and to support the development of the AMS with

subject matter expertise and direction. CJOS COE led the working group and provided an Action Officer for the MSO concept. Through a series of workshops with the nations and NATO commands and consultations with experts, the MSO concept was delivered at the end of June to ACT as a finished product on time. It was subsequently endorsed by SACT and ACO and forwarded as a Bi-Strategic Command document to the MC. Work on the AMS continues, supported by CJOS COE; delivery to IMS is scheduled for December 2009.

Maritime Counter-Piracy Experimental Tactic (EXTAC 789)

In November 2008, CJOS COE was tasked to analyze current piratical activity and provide recommendations for NATO in doctrinal format. In February 2009, CJOS COE completed the draft version of a Maritime Counter-Piracy Operations EXTAC to provide initial, general tactical guidance to NATO maritime forces. The draft guidance was presented to the NATO Maritime Operations (MAROPS) Working Group 14-15 January 2009, and was received positively.

The intent of EXTAC 789 is to:

- Provide guidance to NATO and Allied forces engaged in Maritime Counter Piracy (MCP) operations,

including knowledge of MCP principles and objectives and methods for achieving those objectives at the tactical or operational level.

- Lay out tactical recommendations for MCP forces conducting such operations (subject to national guidance and rules of engagement).
- Provide guidance on deterring piracy at the tactical and operational levels.
- Enhance international cooperation and interoperability by providing a source of potential actions to employ against piracy, a common vocabulary, a shared understanding of the pirate and his objectives, and a common frame of reference for the issues and challenges of MCP operations.

CJOS COE will continue to refine EXTAC 789 by analyzing and synthesizing the lessons learned, best practices and experiences of allied navies combating piracy off the Horn of Africa, Indian Ocean and in other regions. In addi-



USS Anzio (CG 68) crew search a suspicious dhow. Official US Navy photo by MC1 Scott Taylor

tion, CJOS COE will utilize opportunities to exercise the concepts developed within EXTAC 789, such as in the upcoming BALTOPS 2010, in order to ensure their validity. The end state for EXTAC 789 is to provide NATO maritime forces tested, relevant, and doctrinally sound guidance for the conduct of counter-piracy operations throughout the world.

Maritime Unmanned Systems

In the 2009 Programme of Work, ACT tasked CJOS COE to produce a capability roadmap for Maritime Unmanned Systems (MUS). This groundbreaking work has included an analysis of the current and future maritime missions which NATO forces will have to undertake, a comprehensive unclassified review of the unmanned systems technology available now and in the near term and its potential application in the maritime environment, and an assessment of those areas into which the Alliance should collectively invest to improve operational effectiveness, reduce operating costs and limit risks to human life in future operations. It has been conducted in coordination with a broad array of national subject matter experts and organizations and has involved participation in numerous technical and policy forums.

The CJOS COE team, CDR Dimitrios Kouteas (GRC-N), CDR Tanzer Orsak (TUR-N), and LCDR Willis Herweyer (USA-N), took on this very encompass-

ing and cutting-edge NATO endeavor. Their efforts are widely applauded, as they brought to life the tremendously complex dynamics associated with the analysis and compilation of a cutting-edge concept. They will stand ready to assist NATO HQ SACT and other support agencies in the upcoming year's CJOS COE Programme of Work (POW) with

expected ongoing efforts to further develop this study and take forward its very positive recommendations and important themes for the further development of Maritime Unmanned Systems. The CJOS COE team will anticipate greater discussion and collaboration from a broader and more inclusive array of NATO Alliance partners and agencies in this continued transformational endeavor.

Purple Lightning

Every three months, CJOS COE provides faculty support to the US Joint Forces Staff College (JFSC) during Phase II of Joint Service Officer qualification training exercise PURPLE LIGHTNING, a twelve-hour, faculty-guided planning exercises. Typically, two non-US officers from CJOS COE attend each exercise to reinforce the initial steps necessary to derive a mission statement, commander's intent (end state), and concept of operations for a crisis in a developing nation. CJOS COE members attend the exercise to play the role of Military Liaison Officers for their countries, joining a coalition attempting to end the crisis. Inclusion of CJOS COE personnel in the exercise helps build coalition spirit and ensures learning objectives are met. CJOS COE also works in close consultation with JFSC after the exercise to make adjustments based on observed behaviors and lessons learned.

Lessons Learned

CJOS COE has created and is building the content and usage of a Lessons Learned (LL) "portal" on the CJOS COE pages of the NATO Secure Wide Area Network and the unclassified ACT "TransNet" sites in order to link users and LL repositories and advocate information-sharing. We have proposed an "Information Sharing Initiative" in Second Fleet and discussed the issue with other US and NATO organizations. We have attempted to refocus from "need to know" to "need to share," raised the issue of coalition information-sharing in conferences, working groups, multinational exercises and operations and with organizations (e.g. Navy Warfare Development Command, US Worldwide Joint Training and Scheduling Conference), identified high-value maritime observations and lessons, and pushed those forward to those with need to know, via CJOS websites. In the future, CJOS COE will remain an involved and intelligent interface between NATO and US operating forces, will continue to collect observations and best practices with a maritime emphasis, and ensure these are known and accessible, and, perhaps most important, will push for policies which will make it easier to share Lessons Learned among coalition partners.

TRIDENT WARRIOR 2009 (TW09)/ Operational Level Command and Control (OLC2)

TW09 is an exercise that provides a platform for technical experimentation whereas OLC2 is the development of processes and procedures in support of national and multi-national Maritime Operations Centre (MOC) to MOC collaboration as a subset of the wider Maritime Headquarters with MOC (MHQ w/MOC) initiative. TRIDENT WARRIOR is the operational FORCENet sea trial experiment conducted annually, alternating between Commander Second Fleet (C2F) and Commander Third Fleet (C3F).

This year, TW09 was sponsored by C2F and tested over 100 technologies in various stages of development. National caveats dictate the release-ability of these technologies with the majority being "US Only". Some are being tested within specific Communities of Interest while others are open to a wider audience.

OLC2 was conducted alongside TW09 with the emphasis more on the experimentation and development of processes and procedures. The majority of the technologies used in OLC2 are current, however it is not so much the technology that was being tested in OLC2 but how that technology was used to enable MOC-to-MOC collaboration. A number of releasable technologies are able to filter across from TW09 in order to assess their ability to enhance this process.

The OLC2 experiment is of primary interest to the CJOS COE, in particular the MHQ w/MOC, MOC-to-MOC and MSA initiatives. Being directly involved in establishing coalition interoperability, facilitating MOC-to-MOC collaboration through a Collaborative Information Environment (CIE) and MSA through a shared Common Operational Picture (COP), it is to these areas that this report is directed.

The purpose of OLC2 is to produce single source guidance on when, why and how US Navy MOCs and partner

MOCs can instinctively collaborate on MSA/MDA and Operational Level Planning (OLP) by evolving the Draft OLC2 MOC MDA Tactics, Techniques and Procedures (TTPs) into two documents for publication. The first document is for the US in the form of a Tactical Memorandum (TACMEMO) and a second Experimental Tactic (EXTAC) document is intended for the multi-national audience for transition into NATO Doctrine (Maritime Operations at the Operational Level of War NWP 3-32 (2008)/Maritime Operations Centre NTTP 3-32.1 (2008)).

Decision Superiority

CJOS COE is completing, as part of their POW 2009, a study on "Decision Superiority" that discusses the difficulties which are emerging in the decision environment and the actions required to counter them. To succeed it will require innovation through continuous improvements and disruptive shifts in paradigm. To remain relevant in this emerging environment of more dynamic threats and general discretionary warfare, NATO will need to become a more flexible, agile force able to move fast enough to quickly develop national/strategic consensus and act to achieve the necessary effects. To reach this goal in the maritime environment, doctrine must be developed that is rooted in the emerging networked environment. A

National/Strategic decision making, but also provide the foundation for a more comprehensive approach in forming the unity of effort necessary by providing the appropriate level linkages for multi-agency and coalition integration and civil-military interactions.

Fleet Synthetic Training

In addition to setting up and supporting activities at sea, CJOS COE has worked closely with Commander, Second Fleet and his subordinate executive agent for training, Commander Strike Force Training Atlantic, to expand the Fleet Synthetic Training (FST) initiative. The principal objective of FST is to maximize the benefit of time at sea by training as much as possible while in port, so that sea time is most efficient. FST involves a very complex network of simulators or combat systems. By means of these systems, participants at the strategic, operational, and tactical levels are able to train independently or together.

The UK and Germany were the first to join and through CJOS COE efforts, Canada and France are now participating on a regular basis. (December 2008 was the first time an Allied Carrier Strike Group staff participated remotely from Toulon, France.) It is not only individual nations however that have been successfully integrated. A full NATO command, STRIKING FORCE NATO, was able to support the Combined Force Maritime Component Command (CFMCC) staff in a US-based facility in the summer of 2008. They will take on the CFMCC role in their own right in 2010. Other NATO commands (such as the Maritime Component Commands) have shown interest in using FST capabilities for their own training. Recently a Turkish Navy observation team attended a major FST event execution phase, and negotiations continue to extend the level of cooperation to integrate Turkish Navy Synthetic Training Center in the FST initiative; also on the



USS Freedom (LCS-1). Official US Navy photo by MC2 Jhi L. Scott

holistic hyper-network of Maritime Operations Centers at the Operational Level should be established, not only to better facilitate the necessary decentralized

list of future participants are Italy and Spain. In conclusion, FST has proven to be extremely effective and greatly reduced costs across all navies.

Maritime Security Conference 2009

CJOS COE returned to Sorrento, Italy, where they hosted their second Maritime Security Conference. Building on the success achieved in 2008, the theme of the 2009 conference was “Delivering Maritime Security in Global Partnership: Improving Collective Capabilities” which reflected the recognition that by improving the ability for regional initiatives to gain better understanding of existing efforts in like-minded regions, and by improving both the information sharing and lessons learned processes between regions one could greatly enhance the seemingly insurmountable task of delivering maritime security in global partnership. Following the 2008 conference, CJOS COE believed that the best opportunity of making a difference on a global scale was to work towards improving the existing regional efforts, and in particular to put in place processes and protocols that would allow regional capabilities to share information and lessons learned.

In a two and a half day program that captured the interest and attention of a very diverse and knowledgeable audience, a collection of noted experts, civilian and military, was put together to provide focused and up-to-date presentations. Two expert panels were formed to address issues relating to Maritime Security Partnership and Countering Piracy in the Gulf of Aden and West Indian Ocean. Keynote speaker, Mr. Chris Trelawny, Head Maritime Security Section International Maritime Organization, provided a backdrop and context for the first panel in his presentation titled *Building a Globally Coordinated Maritime Security Partnership*. To set the scene for the second panel the task fell to Vice Admiral Robert Moeller, Deputy to the Commander for Military Operations in Africa Command and his presentation titled *Maritime Security Issues and Challenges in AFRICOM Area of Operations*. Conference attendees were also fortunate to hear from Admiral Mark Fitzgerald, US Naval Forces Europe, addressing *The United States Navy's Emerging Approach to Maritime Security*. Attendance was diverse with a 60% increase over 2008, representing 29 different nations.



VADM Williams addresses conference attendees. Official US Navy photo.

Building on the success of past conferences, CJOS will host the third Maritime Security Conference in Lisbon, Portugal, during the period 4-6 May, 2010. The theme of this conference will be “Delivering Maritime Security in Global Partnership: A Comprehensive Approach for Mutual Benefit” and it will focus on examining how International Organizations and the emerging Regional Maritime Security Organiza-

tions have handled the challenges associated with integrating the diverse range of actors engaged in supporting the maintenance of Maritime Security and thereby to identify best practice for the mutual benefit of all. The Director and staff hope to welcome you to Lisbon. Details on the 2010 conference may be found on the inside cover flyer as well as the website: www.cjoscoemaritimeconference.org ■

2010 PROGRAMME OF WORK

CJOS COE Programme of Work 2010 is an ambitious task list, focused around the following priorities:

- Alliance Maritime Strategy (AMS) – support NATO HQ staffing, provide multinational maritime advice.
- Maritime Unmanned Systems – to act as the main POC in NATO for moving the MUS road map forward in a Joint context. Collect Lessons Learned/Identified and research future developments.
- Maritime Security Operations: Combating Piracy – deliver updated doctrine/tactical guidance to advance NATO's ability to conduct effective Combined Joint Operations to combat piracy.
- Maritime Operations: NATO Maritime Operations Working Group – prepare, chair and coordinate the MAROPS WG meeting in order to improve collaboration and integration of NATO maritime forces.
- Maritime Security Operations: Annual CJOS COE Maritime Security Conference – organize, host and evaluate the conference.

The CJOS COE Team looks forward with great anticipation to the maritime conference in May and to continued success in 2010.

Maritime Unmanned Systems

CDR Dimitrios Kouteas, GRC-N
 CDR Tanzer Orzak, TUR-N
 LCDR Willis Herweyer, USNR



Firescout. Official US Navy photo by MC2 Daniel J. McLain

There is currently an evolution in technology creating entirely new capabilities that allow unmanned systems to conduct missions saving lives, avoiding human risk, and potentially reducing operating costs. Industry, academia, and the private sector are using the rapid advancement in technology to shape the future of national unmanned systems' procurement processes. Industry in many areas is significantly ahead of military requirements definition. NATO Allies urgently need to redress this by jumping ahead and rapidly defining, as a minimum, the collective requirements for unmanned systems which will underpin Alliance enabling capabilities between now and 2030. NATO does not currently have a "road map" that allows for the establishment of these requirements, nor for defining more clearly the acquisition priorities which would allow Allies to fully harness the evolution in unmanned systems. As these capabilities continue to evolve and as unmanned systems more decisively shape the battlefield for operational commanders, it becomes an imperative for NATO to develop a proper "road map" to transform organizations and processes to fully, economically, and effectively harness the potential offered by such unmanned systems.

This imperative is not driven solely by technological opportunities or the conventional requirements definition

process: rather, it is increasingly affected by the political challenges which NATO Allies are likely to face over the next 10 years at least. After recent difficult experiences in Afghanistan, Allies' democratic populations may be increasingly unwilling to support future deployments of their soldiers, sailors, and airmen on security tasks which may not be seen as existential and where casualties will continue to occur. There will be an increasing popular demand for lower risk options which will bring the focus even more sharply onto unmanned systems, particularly where they are capable of achieving comparable effects.

NATO's Multiple Futures Project: Navigating Towards 2030 points to broad insights that include the evolving nature and blurring of the threat to the Alliance and a need to respond to this threat outside NATO's traditional areas of engagement. Advanced technology will enable adversaries to threaten Alliance vulnerabilities in new ways. This reality highlights the need to review policy, organization, operational concepts, and capabilities to shape the future force and command structure of NATO. Much of the non-traditional areas of engagement will include the maritime environment such as the enduring need to conduct sustained Maritime Security Operations inside the Euro-Atlantic area, as well as expeditionary MSO including Critical Infrastructure

Protection at Strategic Distance, and the special challenges that sustained operations within the Arctic region will pose during the next 20 years. The use of maritime unmanned systems will undoubtedly attract increased emphasis and will create a further requirement for improved coordination, more efficient command and control, and streamlined training arrangements.

To date, most of the important developments in unmanned systems have been within the realm of unmanned air systems supporting operations over the ground. With the ever-growing threats and challenges being presented to the Alliance within the maritime environment and as highlighted by the current draft NATO Maritime Security Operations (MSO) Concept, the Alliance will need a capability that will allow for rapid response to time sensitive MSO challenges in all maritime regions of interest to Allies. It will also increasingly need long dwell time Intelligence, Surveillance and Reconnaissance (ISR) support to Joint Expeditionary Operations where Alliance forces require assured access to countries of strategic concern. MUS capabilities may enhance MSA and MSO efforts with improved endurance, speed of command, reduction of risks to human life, mitigation of the numerical reduction in manned platforms, and underpin a reduction in deployment and operating costs.

Conclusions:

This paper concludes that NATO should give the highest priority to collective acquisition of two critical enabling Maritime Unmanned Systems capabilities: mine countermeasures and long endurance, high capacity ship-launched ISR vehicles. The mine countermeasures capability is critically important in assuring Joint Force access under denial conditions. The ISR platforms will be a key enabler for improved MSA in support of the enduring MSO mission inside the Euro-Atlantic area, as well as providing critical support to MSO at strategic distance, allowing early indicators and warnings of developing instability and a preventive posture to be adopted. They will also play a key role in enabling the Maritime Contribution to Joint Operations during intervention and stabilization operations. Such platforms might also usefully act as relay platforms for a range of beyond Line of Sight Communication systems in the maritime environment which are currently one of NATO's most critical capability shortfalls.

The greatest cost-effectiveness will probably be achieved by agreeing to a set of common platforms and command and control systems for such vehicles, while leaving individual Allies to procure onboard sensors and other

payloads according to national requirements. To date, surface and subsurface MUS capabilities have received less research and development emphasis than MUS air capabilities. There is also less data available from which to conduct comparisons of operational effectiveness between manned and unmanned platforms. However, such surface and subsurface capabilities should complement existing and emerging MUS air systems to ensure that NATO can effectively counter the wide range of emerging threats in the maritime environment.

During the next 10 years, NATO Allies will need to continue to transform and find solutions for operational shortfalls under unprecedented funding constraints. It will be vital that they focus their military acquisition organizations and defence research agencies on delivering the most cost-effective balance of investment into manned and unmanned platforms and systems, which must nevertheless meet the current and expected needs of operational commanders. The development and acquisition of MUS and related technology must be made a mainstream element in the near future force generation process where they offer the potential to overcome existing and projected critical capability shortfalls.

The importance of procuring common platforms and their core command and control systems wherever possible cannot be overstated: it will yield enormous collective benefits in reduced training burdens, reducing supply chain diversity and improving availability, as well as offering a cost-effective procurement path by exploiting the benefits of scale. NATO should improve the effectiveness of MUS through integration and Joint collaboration, fostering the development of policies, standards, and procedures that enable safe and timely operations and the effective integration of manned and unmanned systems. ■

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USV at Fort Monroe. Official US Navy photo by Chief Photographer's Mate Johnny Bivera

NATO Maritime Situational Awareness and Its Concept Development Plan

CDR Diego Molero, SPA-N



USS Eisenhower (CV-69), USS Vicksburg (CG-69) and FS Forbin (D620). Official US Navy photo by MC2 Rafael Figueroa Medina

The North Atlantic Treaty Organization (NATO) was established in 1949 as “an Alliance for collective defense as defined in Article 51 of the United Nations Charter”¹. Its very name addresses and stresses the relevant presence of the maritime milieu on the organization’s interests and objectives, mission and tasks. Yet, since the early 1990s, NATO has become much more “land-centric” because of the new global geo-strategic scenario and unveiled threats to regional and global security and stability. These include, but are not limited to, worldwide terrorism, organized crime and their interrelated illicit activities and proliferation of weapons of mass effect (WME), which are being exploited due to vulnerabilities, over-confidence and unpreparedness. In recent NATO documents, like the Comprehensive Political Guidance (CPG)², Military Committee (MC) Guidance for the Military Implementation of the CPG³, and NATO Strategic Military Intelligence Requirements⁴, it is emphasized that the uncertain security environment demands improvements in current capacities and the development of innovative capabilities to successfully tackle future conflicts and crises. Of these needed improvements,



the Alliance recognized that Information Superiority (IS) was paramount to support future commitments and engagements. IS addresses situational awareness in the full spectrum of military operations, from Humanitarian Assistance and Disaster Relief (HA/DR) to major combat operations, and in every single environment whether it is land, sea or air.

In the maritime realm, Operation Active Endeavor (OAE)⁵ became a breaking point in the manner NATO carried out naval operations. There was no longer a formation of warships against an identified opponent using the principles of war. The 21st Century opponent encompasses terrorism and illegal activities (ex.: piracy, drug trafficking, weapons smuggling, illegal immigration, etc.) aimed at causing broad effects on our societies, not only kinetic but also economic, social, etc. Maritime Component Command (MCC) Naples, who took responsibility for conducting and executing OAE, soon realized that the tools were unavailable to maintain the Recognized Maritime Picture and the sources of data or previous stakeholders were invalid. The extant Maritime Command and Control Information

System (MCCIS), which was designed to operate on the NATO Secret WAN, handling only NATO classified data, was focused on military information and not the appropriate instrument. Further, data and information related to maritime activities were collected from open sources such as the Internet, shipping and insurance companies (ex.: Lloyd’s), Maritime Safety and Security Information System (MSSIS) and Automated Information System (AIS) databases, and national and multinational law enforcement agencies, and while informative was often disjointed and incomplete.

The new tool to deal with distinct data and information is shown in figure 1, called Baseline for Rapid Iterative Transformation Experimentation (BRITE) which encompasses three information management areas: non-classified⁶, NATO unclassified, and NATO Secret. The node has the suitable mechanisms to protect classified information and the so-called Smart Agents that identify anomalous behaviors that generate warnings and reports for planning purposes, to facilitate the decision making process, and support proper responses.

On 14 January 2008, after almost one year of discussions, the Military Committee directed Allied Command Transformation (ACT) to develop a NATO Maritime Situational Awareness (MSA) Concept in order to allow further

technical developments in this area. The Combined Joint Operations from the Sea Center of Excellence (CJOS COE) took part in the development of the initial concept providing inputs and comments through ACT's Implementation Project Team (IPT). Endorsed by the Military Committee, it was agreed that NATO's security is defined as "the ability to acquire appropriate situational awareness and understanding of the maritime environment in which it operates and the threats to friendly forces in its area of interest" and NATO's MSA "is an enabling capability which seeks to deliver the required Information Superiority in the maritime environment to achieve a common understanding of the maritime situation in order to increase effectiveness in the planning and conduct of operations"⁷. Subsequent to the endorsement, the North Atlantic Council (NAC) agreed on the development of a comprehensive and integrated implementation plan that established "a clear vision of the required capability"⁸.

The first stage of that process, the Precursor Phase, was a NATO MSA Concept Development Plan (CDP)

drafted jointly by ACT and Allied Command Operations (ACO) under the scrutiny of the International Military Staff (IMS)⁹, and approved on October 14, 2008. The CDP outlined two phases for the implementation of MSA. Phase I describes a number of study areas, including resource requirements and risk

study area devoted to Experimentation.

In summary, the CDP is an initiative to implement MSA concept within NATO as well as in NATO Nations. The approach chosen handles the implementation as a whole, since interoperability should not be seen only in respect of the technology side. In

this case interoperability means that doctrinal and organizational aspects have to be aligned among the actors in building and maintaining MSA, that the legal framework has to have common grounds to facilitate information sharing, and personnel have to have a standardize training profile to promote collaboration when planning or executing a response to an operational event. The process is not exempted of road blocks and hurdles,

but our security and stability are at stake if nations do not take the initiative to protect their populations, infrastructures, economy and trade, and the rule of law from the tyranny that threatens our freedom. ■

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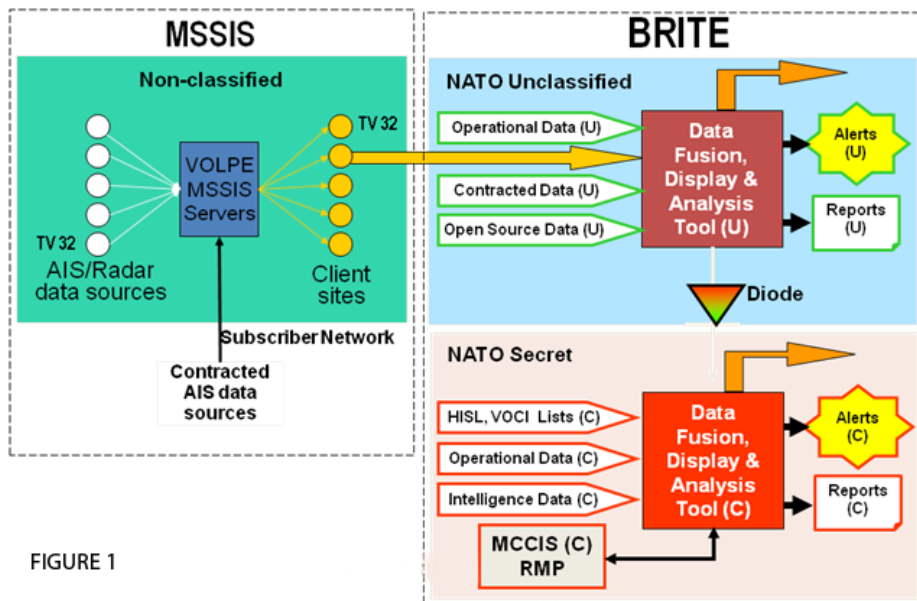


FIGURE 1

assessment, to be dealt with in order to produce a Capability Implementation Plan (CIP) and a MSA Capability Demonstrator, and Phase II, based on the CPI, which defines the longer term implementation of the full MSA Capability. The research areas described in the CDP followed the Doctrine, Organization, Training, Material, Leadership Development, Personnel, Facilities, and Interoperability (DOTMLPFI) organization although adding a further

¹ SG (2005) 0918, dated 07 Dec 05 NATO Handbook.

² NATO Office of Information and Press, 2001

³ MC 550 (Final) (Revised), dated 11 Sep 06

⁴ MC 0553/06 (Final), dated 22 Sep 06

⁵ Under Operation Active Endeavour, NATO's immediate response to the terrorist attacks against the US on 9/11, NATO ships are patrolling the Mediterranean, monitoring shipping and providing escorts to non-military vessels through the Straits of Gibraltar to help detect, deter and protect against terrorist activity. Source NATO Tidepedia: <http://tide.act.nato.int/>

⁶ Although described as non-classified, this sort of data and information is considered sensitive by commercial partners

⁷ NATO MSA Concept Development Plan Amendment 1, dated 15 Aug 2008

⁸ NATO MSA Concept Development Plan Amendment 1, dated 15 Aug 2008

⁹ In accordance with IMSM-0038-2008 of 12 Mar 2008

Interoperability within the Global Maritime Information Environment

CDR Dimitrios Kouteas, GRC-N
WO2 Steven Binks, GBR-A



Operation SEXTANT, USS Boone (FFG 28) and HMCS Iroquois (DDH 280) RIB. Photo by MCpl Kevin Paul, Canadian Forces Combat Camera

In the 2008 CJOS COE Programme of Work, France requested a study on core requirements for allied nations to achieve full interoperability within the global maritime information environment in support of individual national security objectives. In further discussions, the French desired to focus on those aspects of maintaining national security within the maritime environment which currently affect nations on a daily basis, rather than on examining the requirements for participation in very specific contingent Major Combat Operations (MCO). It was also acknowledged that the basic requirements for achieving military interoperability within a “defence” military context are well understood and are founded on the other seven Defence Lines of Development: Doctrine, Organization, Training, Materiel, Logistics, Personnel, and Facilities (DOTMLPF). While all nations inevitably approach these seven lines of development in slightly different ways, NATO allies have worked consistently to develop common procedures and equipment compatibility, and to facilitate cooperation and interoperability within the context of Collective Defence missions in support of Article V operations.

Particular attention has been focused on the issues of Doctrine, Organization and Training, both in the Joint and coalition environments, to establish a required commonality. This has been

partially achieved, although cultural differences, lack of common terminology in some areas, and varying degrees of Jointness continue to contribute to challenges when Alliance members closely integrate, as seen in ground operational areas. Achieving significant commonality within the other four Lines of Development has historically proved even more difficult, as these are often influenced by additional political, national industrial capacity, and affordability, which differ widely across the multinational environment. While these requirements to achieve military interoperability are well understood and the restrictions on full compatibility are generally managed effectively, the same cannot be said for interaction between military forces and interagencies or the wider civil sector, including Non-governmental Organizations and Private Organizations, as stated in the French white paper:

“One novel aspect is that operational goals in protection missions are now assigned jointly to both internal security services, civil security services and the armed forces. Coordination between civilian and military departments and agencies is one of the fundamental principles of the new strategy.”¹

¹ The French White Paper on Defense and National Security of 17 June 2008, p.6, Para 5.

There is also a growing divergence between the way US forces and Allies operate in an increasingly network-centric information-sharing environment. This is particularly true in the maritime environment, where communications between US ships, traditionally conducted on covered tactical radio circuits, are now conducted via limited access web-based chat rooms, portals and databases using satellite bearers, and containing vast amounts of information from which the war-fighter draws down what he needs. This allows greater flexibility, efficient use of bandwidth and ready access to large volumes of information, but also creates new challenges in terms of operating procedures, the maintenance of appropriate formality when issuing orders, and in ensuring force-wide awareness of critical information in a timely manner. Other Allies who have not yet achieved this level of network-centric connectivity are increasingly disadvantaged when operating in a coalition environment.

Conclusions and Findings

CJOS COE focused on identifying the requirements to achieve interoperability between the military and non-military authorities involved routinely in Maritime Security, within the existing globalized and international context and predicted to exist over the next 15

years. It concluded in its findings, the following:

The maritime security and associated information environments are characterized by intense complexity, relatively weak regulation (particularly on the High Seas), and differences in approaches to information-sharing which have made collaborative efforts between the navies of the world and their inter-agency counterparts challenging. The scale of these challenges to maintain maritime security in the globalized trading environment exceeds the capacity of any single nation or organization to tackle with any chance of success. It is, therefore, imperative to collaborate and build mutual trust and interdependence, if we are to maintain maritime security globally, preserve the freedom of use of the High Seas for peaceful purposes and maintain the security and economic prosperity of our nations with a very limited number of assets at our disposal. In the European context, this will involve NATO establishing a supportive relationship with the key EU law enforcement agencies.

The core requirements for interoperability within the maritime security context and within the very complex maritime information exchange environment must take into account two fundamental differences from conventional maritime operations:

- a. Enduring Maritime Security Operations in the future will routinely be led by non-military/interagency authorities and will involve significant non-military input.
- b. Most of the barriers to successful information exchange between interagency authorities and the military cannot be broken down quickly, but can be partially circumvented by establishing a very clear, common purpose, an agreement for a collaborative framework for action, and ensuring that all authorities work towards it.

Additionally, there is a growing gap between the US and other Allies in their ability to operate effectively in a network-centric environment. As the geo-strategic and maritime information exchange environments are exceedingly complicated, it is unlikely that such differences can be overcome or circum-

vented using technical solutions, which would also be unaffordable in the current economic climate. Use of humans in the loop in Civil-Military Information and Intelligence Fusion Centres (CMI+IFC), modelled on the prototype established by ACT for MCO in Afghanistan, would offer an affordable immediate solution to this challenge. However, additional training would also be required.

To achieve adequate situational awareness to support this interoperability, and thus effective maintenance of maritime security, requires continuous provision of 'locational' information and a persistent effort to identify anomalous behavior which will give first indications of a developing threat. This information can only be sufficiently and effectively collated to allow successful law enforcement action to be taken when the non-military maritime authorities work together with the military and other agencies. The CMI+IFC would also support this requirement in the short term. In the longer term, as the levels of trust and understanding between agencies and the military increase, the need for humans to facilitate information sharing should reduce, allowing a more affordable approach, based on a common technical solution.

In terms of achieving collaborative planning and response actions, extension of the use of the CMI+IFC to include a role in planning and execution would allow most of the cultural and philosophical differences between military actors and non-military law enforcement agencies to be overcome and trust to be established. Again, over the long-term, the bonds established should permit agreement on common procedures and training to be reached allowing a comprehensive approach to the traditional defence lines of development outside the purely military environment.

The further challenge for allied militaries is to extend their operating capabilities to encompass this requirement, without losing sight of their primary role as defence forces capable of conducting major combat operations. Given the current economic climate and pressure on defence budgets, the challenge also extends to achieving the majority of these capabilities without the acquisition of additional costly as-

sets. To enable immediate interoperability and develop enhanced technical civil-military fusion, within the global maritime security information environment, that also overcomes cultural and information exchange barriers, regardless of system capabilities, both short and mid/long term, non-classified and classified strategies are recommended:

- a. The short term solution is to utilize the most widely available and affordable, common-to-all non-classified network. Internet based, US hosted and protected web portals exist to enable collaboration and information exchange at the non-classified level. For the exchange of classified data, interoperability matrices of currently available circuits need to be established to ascertain which agencies and organizations can share information via what means. Although, there are security risks associated with this approach, the Internet is the only common, worldwide-accessible network that is immediately available to potential civil-military counterparts.
- b. The mid/long term solution would be to develop a two-tier (non-classified and classified) domain utilizing Internet access, open standards and Commercial Off the Shelf (COTS) based technologies to facilitate direct interoperability between civil-military agencies and across national domain and organizational network solutions, where required.

In conclusion, a strategy of adopting a net-centric architecture that exploits the unique benefits of COTS and open standards is strongly recommended. This type of architecture must be de-centralized so that it can ultimately provide the robust foundation for a civil-military/interagency network that will be not only more interoperable but more survivable. ■

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Maritime Security

An Old Challenge in a 21st Century Setting

LtCdr Dai Roberts, GBR-N



Operation SEXTANT, HMCS Winnipeg (FFH 338) crew off Somalia. Canadian Department of National Defence photo by WO Carole Morissette

There is little doubt by now that our global economy relies on maritime trade routes and shipping to function. It is not that a percentage of raw materials or commodities or energy supplies could not be moved from source to market without the maritime dimension; it is simply that the volume of global commerce cannot happen without the maritime industry. Yet as you would expect, most of the global interests are focused on land and to a lesser extent air. This is where people live, work and travel, so it is only natural that this land centric view is central to society. When goods are purchased in local markets little thought by consumers is given to the many thousands of nautical miles that the products have travelled. However, to forget or dismiss the maritime domain is done so at peril, for 70% of the Earth is covered by water. Sea-beds and oceans are a primary source for energy, foods, minerals, and the principal routes for most globally traded goods. But, we have or maybe had forgotten this watery dimension until the recent growth of armed robbery and piracy on the high seas and in territorial waters which headlined the threats and the risks of operating on the high seas or in littoral areas. So for trade to continue and the global economy to flourish one needs to consider the seas and the security of maritime business; in other words, maritime security.

There are many definitions available and many ways to describe maritime security, so let us pick one for arguments sake: *Maritime Security (MS) is that condition in the maritime domain where international and national laws are adhered to; the right of navigation is preserved; and citizens, vessels, infrastructure, and resources are protected.* If we accept this as a definition we need to understand a little about maritime laws, which are like all laws, complex in nature and not necessarily applied in the same way by all nations and governing bodies. In fact, although there is broad agreement with the United Nations Convention on the Law of the Sea (UNCLOS), not all nations and governing bodies accept all aspects. So consequently, these conventions are applied differently across the globe in each region. The High Seas, basically areas of sea outside the territorial waters of coastal nations, are open for free navigation and the right to do so is generally accepted. Interference with shipping on the high seas is thus generally condemned to include universal crimes like piracy and slavery.

There is a long and rich tradition of allowing free and unimpeded travel of trade on the high seas. Today, of course there are recent laws, treaties and conventions that are gradually becoming accepted to a majority that apply some further restrictions on what can and

cannot be shipped. An example is the trade in illegal drugs, small arms, weapons of mass destruction (WMD) and people being moved against their will.

Maritime operations to counter illegal activity at sea are difficult to coordinate between nations, governing bodies or their security agencies, law enforcement organisations, and armed forces. They are even more difficult to coordinate in an international setting, which of course is the realm of the maritime domain. Responsibilities, jurisdiction, coordination, information and intelligence exchange, and the command and control of units conducting or supporting law enforcement operations are a maze of classifications, information systems, hierarchies and varied forces. None of the groups alone can provide all the necessary capabilities and coordination needed to succeed against these 21st century threats.

The Strategic Environment

Major factors affecting the strategic environment include:

- Threats from non-state actors are focused on exploiting media and populations in the West, making the battle for the narrative critical; a battle for hearts and minds/ideas.
- Globalization has created complex inter-dependencies which makes economic security more vulnerable to events.

- Growing realisation that most current strategic challenges cannot be resolved with military force alone – regional economic organizations and international civil society may both have key roles to play in future conflict resolution.
- Determined adversaries, enabled by readily available technologies, will attack vulnerabilities in unexpected ways.
- It is increasingly difficult to delineate defence from security threats.

Changes in the Short-Term Security Environment

- Increasingly blurred and hybrid nature of threats.
- The risk of instability caused by failing states, or determined non-state adversaries enabled by readily available technologies
- Ill-defined adversaries will focus their efforts against perceived vulnerabilities especially in the maritime domain, through which much of our commerce is conducted.
- Opening of commercially viable transit routes across the Arctic Ocean (High North) will create an additional vast area of ocean which will need to be protected.
- Greater probability of mass migration as a result of instability caused by state failure, conflict, poverty, natural disaster or disease.
- Non-state actors will increasingly operate on a global scale.
- The risk of acquisition of WMD by non-state actors and their likely movement by sea will increase if they are proliferated.
- The willingness of nations to contribute to global stability for their own or collective aims has increased and will probably continue to do so.

Terrorist Use of the Sea

- Increasingly global in scope and lethal in results, terrorist attacks have increased in reach, sophistication and lethality.
- The sharing of technology enabling attacks and the global criminal arms market which provides such weapons and capabilities, adds severe risk.
- Actual or potential threats include the use of nuclear devices, radiological weapons, and explosives hidden in vessels, law abiding vessels car-

rying legitimate but dangerous cargoes, sea-mines, missiles, rockets, manned and unmanned ships, and boats and aerial platforms at sea.

Maritime Movement of WMD

- The illicit movement at sea of WMD including chemicals, chemical precursors and nuclear materials has already happened and will happen again.
- Locating such material is extremely challenging.
- Disruption to flow of vital resources.
- Maritime choke points offer adversaries the opportunity to disrupt global commerce.
- Inability to transit certain areas through mining or threat of piracy by non-state actors with sophisticated, potentially long range missiles; the closure of a port or refuelling facility may have far reaching consequences.

Attacks on Critical Infrastructure

- Deliberate targeting of maritime infrastructure and networks, such as ports, energy platforms or undersea pipelines and information system.

Piracy

- Attacks by criminals are disruptive and can prove expensive.
- Increasingly lethal and attacks are occurring at longer ranges from shore.
- Use of sophisticated weapons - likely.
- Cheap to conduct with limited resources needed.
- Simple and stealthy surveillance and approaches are possible.
- Pirates are adaptable; change to area of operations is likely.

Illegal Immigration

- Movement by sea is often essential to evade law enforcement agencies.
- Vessels are unsafe and overcrowded.
- Occupants are sick and in ill health.
- Threats to all maritime members.
- May harbour terrorists who do not use conventional travel.

Human Trafficking

- Increasingly used for profit by global criminal networks.
- Use of all vessel types for transport.

Drug Smuggling

- Increasing across oceans.

- Use of all types of vessels including submersibles.
- Linked to armed robbery and piracy.
- Funding source for terrorism and other criminal activity.

Resource Exploitation

- Criminal exploitation to increase.
- As resources become scarce, access to new areas will be competitive.
- Exploitation of the continental shelf or even deep ocean areas will increase.
- Instability in resource-rich areas will lead to increasing use of force to harness these resources.
- Nations inability to protect or defend their own strategic resources.

Current Lack of National and International Law Enforcement Capacity

- Lack of law enforcement command and control capability in depth.
- Law enforcement capability has not kept pace with the criminal's use of the maritime environment.
- Existing National maritime police forces have limited jurisdiction and scarce assets.
- Few Coast Guards have long-range capacity or the ability to sustain operations in the open ocean.
- Lack of law enforcement surveillance capability at sea to detect and track threats at range.
- Limited law enforcement information is available at source of supply chains outside the Euro-Atlantic area.
- Ability to prosecute criminals operating on the seas remains problematic due to policy and logistic issues.

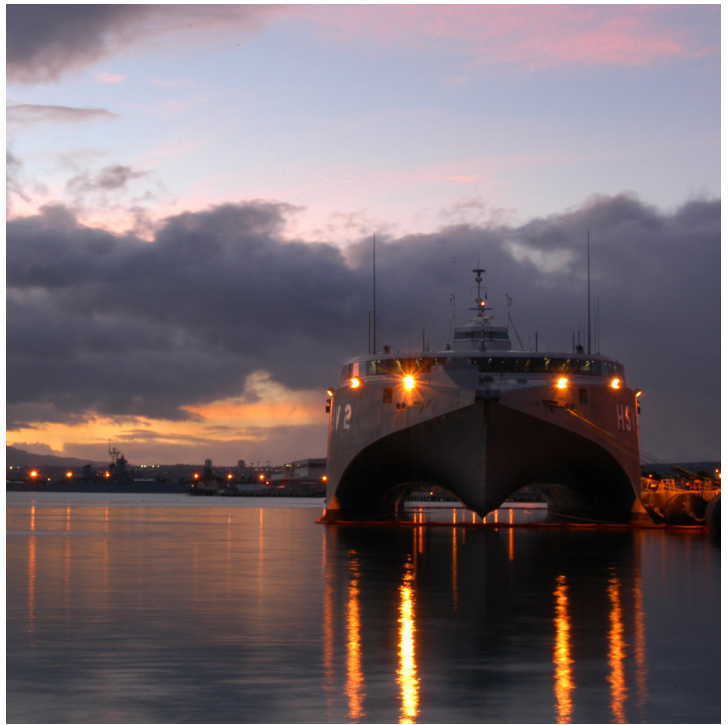
In conclusion, common interest in protecting commerce on the high seas is the thread that holds many of these coalition efforts in place. We must strive together to develop ways and means to enhance security and provide a safe and secure environment for the thousands of people working in the maritime domain and those that rely on the seas for their food, energy, transportation, and lifestyle. ■

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JOINT SEA BASING

The Utility of Joint Sea Basing in Support of Strategic Overwatch

CDR Jesse Fox, USA-N
CDR Rick Adside, USA-N



USS Swift (HSV-2). Official US Navy photo by Journalist Seaman Ryan C. McGinley

To achieve mission success, the ultimate goal of a military posture for an individual nation, a coalition of nations, or an alliance of nations, is to attain advantages in strategic reaction time, geographic positioning of forces, force concentration and support. Within a comprehensive approach or integrated framework, the military forces contribute to a favorable strategic balance which serves as the driver for a stable security environment. Globalization has been eagerly embraced by NATO nations, providing expanded economic influence and social opportunities, but with it comes increased interests that extend far outside of the Euro-Atlantic area. These expanded interests, and the complex and uncertain security environment of the 21st century, highlight the need for a more robust collective expeditionary capability that can respond to a wide range of missions from Humanitarian Assistance, at the low end of the military operations spectrum, to Forcible Entry/direct military action at the higher end.

The White Paper, formally requested by the UK to provide critical insight on the utility of Joint Sea Basing (JSB) in support of Strategic Overwatch, is also intended to assist NATO in decision making for the transformation of its maritime capabilities. It therefore routinely alludes to NATO issues as required to provide a comprehensive

analysis. In conducting an analysis of the utility of JSB there can be quite a substantial difference of viewpoint from nation to nation when looking at the question “What role should JSB play in a Strategic Overwatch posture?” The answer will vary for each nation based on factors such as: current assets/capability, current and future resource availability, national strategy, economic stability and geography, etc. The focus of this paper is to frame the answer to the “should” viewpoint for NATO-at-large as no nation has the ability to conduct all aspects of Joint Sea Basing.

The paper begins by providing an overview of the current geopolitical environment, the expected future security challenges and the evolution of the NATO defence posture, to illustrate the conditions under which a posture of Strategic Overwatch might be required. From there, the paper defines and specifies the demands and core missions of such a posture, reviews the JSB concept as a key future Joint maritime capability, uniquely suited to deal with the potential security challenges of the future, and assesses the potential effectiveness of JSB in supporting a representative group of core missions likely to be required within the generic Strategic Overwatch posture previously outlined. Finally, the paper identifies subjects for further discussion before drawing key conclusions about the utility of JSB in

support of Strategic Overwatch and making limited recommendations for further action.

Strategic Overwatch is a posture that provides proactive response options to safeguard vital national, coalition or Alliance strategic interests. It is a complex defense/security posture involving political, economic and military mechanisms. The military mechanism consists of forces, capabilities and base structures arranged to allow timely intervention in a defined geographical area of operations to safeguard strategic interests. These can vary widely in their physical nature, from a small choke point to a large geographical area, and can vary in functional mission, from maintaining surveillance on nuclear rogue or failed states, to ensuring the security of major oil producing regions, to maintaining freedom of navigation on the High Seas and in International Straits. Strategic Overwatch involves the provision of reassurance to partner nations, deterrence against hostile action by potential enemy nations and non-state actors, and the ability to move in quickly to prevent or interdict threatening activity and prevent escalation to conflict or insurgency. Its focus is on the early stages of preventing conflict rather than resolving it after the event, but it can also be used very effectively to facilitate earlier withdrawal off the ground. It represents an outstand-

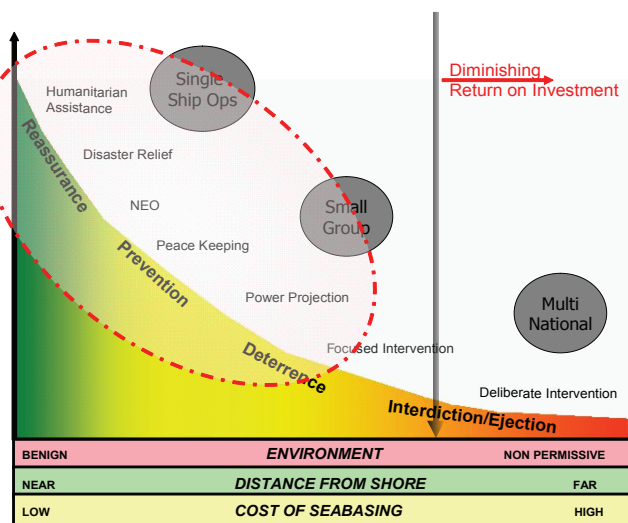
ing investment in further proactive exploitation of existing western asymmetrical military advantages at sea and offers the operational commander the option to avoid being drawn into a fight against hybrid enemies who will have an asymmetric advantage ashore.

The military demands of a Strategic Overwatch posture include the need for a capability to project task, or mission-tailored, forces rapidly to remote or austere crisis areas and the ability to sustain those operations autonomously for extended periods. Joint Sea Basing is an inherently Joint, transformational concept, which offers a scalable expeditionary capability that is designed to deal with anti-access/area denial challenges in many regions of the world and to facilitate Strategic Overwatch. JSB is more than bringing Joint forces to the fight in ships. JSB utilizes the manoeuvre space of the sea to provide a secure base of operations for all types of forces; allows an operational commander access at the point and time of his choosing; offers the tactical mobility and flexibility required to seize the initiative; offers a scalable method of commanding and supporting Joint / Multi-National / Inter-Agency (IA) forces without the need for any associated air and/or sea ports of disembarkation ashore. This

substantially reduces the current high demands on ground forces to provide Force Protection to such “fixed” sites and more importantly, JSB offers the strategic commander the flexibility to avoid embroilment on the land by minimizing his footprint ashore. A smaller footprint reduces the risks of inflaming an already volatile situation which often leads to insurgency. This strategy also improves his chances of winning the “hearts and minds” of local populations for whom a fear of occupation will be a major concern. Detailed analysis by various organizations concludes JSB is well-suited to achieve these requirements in support of Strategic Overwatch. Specifically JSB has exceptional utility at the lower end of the conflict spectrum in proactive Phase 0 shaping operations, sustained protection of critical maritime infrastructure and in providing a reassuring presence to

partner nations, while offering a secure platform from which to mount low footprint programmes of defence /security capacity building ashore and/or in reactive low intensity military activities such as Humanitarian Assistance and Disaster Relief operations.

The NATO Maritime Security Operations Concept has identified the need for sustained engagement at strategic distance and envisages Joint Sea Basing as a potentially critical enabler to allow Allies’ strategic interests to be safeguarded. Several individual Alliance member states including the UK, Netherlands, France, Germany, and Canada are evaluating national concepts for Joint Sea Basing. The US has identified JSB as a critical capabil-



ity, uniquely suited to address current and future security challenges for expeditionary operations. As the US continues to invest in expeditionary force capability and strategic mobility, with Joint Sea Basing as a key component, there is an excellent opportunity for Allies to develop modest complementary capabilities and work with the US to establish a more flexible global maritime security and wider defence posture.

The most promising point of the conclusion is that investment on the low end can be minimal, contrary to many views that JSB requires significant infrastructure investment. A single ship either pier-side or with a connector capability such as airlift or surface lift (Joint High Speed Vessel) can effectively perform capacity building missions, provide humanitarian assistance, disaster relief or a small non-combatant evacuation operation.

So within the demands of Strategic Overwatch posture we see significant application in Reassurance and Prevention with possible low cost investment (depicted in the center page graph). As we move into Deterrence and Interdiction/Ejection there are significant requirements to conduct successful JSB to include specialized logistic support like selective off load, high speed connectors from the logistics site to the sea base and the sea base to shore, considerable interoperability and C2 requirements that incur high fiscal investment. The cost versus return on investment (ROI) is a moving line. Each nation will have to determine where the investment costs exceed capability ROI.

There are no additional investments toward benign JSB assets that must be borne by a single nation. It is a matter of redirecting current assets into an area of interest. The investment is very low but the potential for return on that investment is significant. If this reassurance or prevention JSB effort is successful during benign Strategic Overwatch operations, it will not only show immediate gains in bolstering host country confidence, it will reduce future and larger JSB needs in that area as the host country is now better equipped to handle situations itself, which is the goal of Strategic Overwatch.

Joint Sea Basing has its greatest utility in supporting low-to-medium intensity operations including Phase 0 preventive presence and deterrence. This utility extends to support for MSO at strategic distance, and the associated capacity building ashore without significant long-term increases in military footprint in politically sensitive areas of the world. ■

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Maritime Security Consortiums

Leveraging Commercial Industry for Global Maritime Awareness

Captain Gordan Evans Van Hook,
USN (Ret.)



MV Sirius Star. Official US Navy photo by OS2 (AW) William S. Stevens

A Strategy based on the Global System

The newly-released strategy of the maritime forces of the United States, *A Cooperative Strategy for 21st Century Seapower*, opens with a powerful introduction that highlights the importance of the world's oceans to the global system that links the world's nations interdependently.¹ Over 90% of the world's trade now travels by sea and no one can question the importance of that trade in powering our global economic system. Currently, there are over 50,000 merchant ships trading internationally, transporting every kind of cargo. The world's commercial fleet is registered in over 150 nations, and manned by over a million seafarers of virtually every nationality.² Yet, often these commercial vessels travel within their own domes of awareness, sharing very little with each other or maritime security forces operating within the same region. At the same time, maritime security forces maintain their own surveillance pictures, and sharing information, even amongst allies, presents unique operational and technical challenges.

Partnerships in the Global System

At the International Sea Power Symposium (ISS) in September 2005, then Chief of Naval Operations, Admi-

ral Mike Mullen, unveiled his vision for "The Thousand Ship Navy," describing cooperation between the international navies of the world to ensure security of the global maritime commons.³ The concept of the Thousand Ship Navy immediately caught the imagination of navies and coast guards around the world. VADM Morgan and RDML Martoglio elaborated on the concept further in their November 2005 Proceedings article, "The Thousand Ship Navy: Global Maritime Network,"⁴ and the CNO, in a December 2005 speech to the Royal United Services Institute (RUSI) Future Maritime Warfare Conference in London,⁵ specifically laid out guiding principles for a "Global Network for Maritime Security." The strength of the concept was not the number 1000, or the concept of a physical network, but rather the shared interests and cooperation of maritime nations in maintaining security of the vital sea lines and commons that are the backbone of the modern global economy. The term "Thousand Ship Navy" has evolved into the US Navy's "Global Maritime Partnerships" (GMP), and those shared interests originally highlighted by Admiral Mullen are now considered to go beyond nation states and their navies to include "a diverse array of multinational, federal, state, local and private sector entities."⁶ If this includes the entire commercial maritime industry and its multinational

conglomerates whose interests span beyond national boundaries, there is still a great deal of work to be done to leverage their collective awareness for enhanced international maritime security. To best leverage the awareness of the commercial maritime industry requires new thinking on public/private cooperation in the form of Maritime Security Consortiums.⁷

The Challenge of the Environment

Our vital oceans and their highways of maritime commerce constitute a massive ungoverned space and the globe's only truly free commons. The global system's pulsing lifeblood traverses it, but on the ocean's surface, even in an age of satellites, 24-hour news service and with a growing and unparalleled awareness of our universe, we are still largely ignorant of events at sea beyond our visual horizon. We have aerial reconnaissance and intelligence satellites that can show us impressive wide-area swaths of data, bands of electronic emissions, and pathways of global commerce. We can use these assets to zero in on many discrete parts of the globe that we may want to monitor or investigate, but any Carrier Strike Group's Sea Combat Commander (SCC), charged with Surface Surveillance Control (SSC), knows all too well how difficult it is to maintain a coherent surface picture around the assets under

his charge, even with constant vigilance and dedicated surface and air surveillance assets. When transiting a busy geographical chokepoint such as an international strait, the problem of maintaining maritime situational awareness can become insurmountable. As an example, a chokepoint such as the Bab el-Mandeb has over 22,000 transits per year of commercial vessels, and the problem intensifies upon entering the Gulf of Aden, with its thousands of small fishing and trading vessels weaving through the thousands of square miles that comprise the entire gulf. It is no wonder that piracy has flourished in this area, despite the efforts of over 25 naval ships from 12 different nations.

Gaining Awareness Despite the Challenges

Known as Maritime Domain Awareness (MDA), or Global Maritime Situation Awareness (GMSA), depending upon the government agency or country discussing the topic, understanding the traffic traversing the world's oceans is a vital environmental, economic, and security concern for all states, as well as a safety and security concern for individual mariners. Yet, although greater situation awareness enhances the global system's security and stability and the economic progress of all the world's nations, there are significant barriers to greater awareness due to commercial and national competition and distrust, as well as the sheer challenge of millions of square miles of ocean and a paucity of open ocean surveillance assets. Combine these factors with the technical and legal barriers to data sharing, and the challenge is daunting.

A view from space of the electronic emissions emitted from the worlds transiting commercial ocean vessels shows the depth and breadth of their persistent coverage of the earth's maritime environment. The vast majority of this traffic is required for International Maritime Organization (IMO) compliance to carry collision avoidance equipment in the form of radars, emergency beacons, satellite communications, and for vessels displacing over 300 gross tons, a system known as the Automatic Identification System (AIS). AIS is a

shipboard VHF radio broadcast system that automatically transmits a ship's identification, position, course, and speed to surrounding vessels and shore stations within the ship's visual range or horizon, or occasionally far greater distance if atmospheric conditions allow ducting. A relatively recent requirement, AIS can greatly enhance the safety of ocean traffic, but it has yet to be fully leveraged to provide a regional awareness to enhance regional stability and security.

The Volpe Center, long a leader in developing marine traffic management systems for specific geographic straits and waterways, under the Department of Transportation (DOT) Research and Innovative Technology Administration (RITA), saw the potential for AIS in meeting the challenges posed by the 2005 *National Strategy for Maritime Security* and its supporting plan A

“The strength of the concept was not the number 1000, or the concept of a physical network, but rather the shared interests and cooperation of maritime nations in maintaining security of the vital sea lines and commons that are the backbone of the modern global economy.”

National Plan to Achieve Maritime Domain Awareness. This plan directs the Department of Defense (DOD) and Department of Homeland Security (DHS) to achieve maritime security through MDA, and the Volpe Center provided the technological foundation for this effort.⁸

In the meantime, then Commander of US Naval Forces in Europe (CNE), ADM Harry Ulrich, had for several years been working on an initiative to link the surveillance systems of NATO allies in the Mediterranean Sea to provide an unclassified common operational picture of the maritime environment. Seeing the possibilities of AIS to complete the awareness in this picture, CNE embarked on a cooperative effort with VOLPE to develop an unclassified network to collect and share AIS data to enhance the safety and security of all participants. Known as the Maritime Safety and Security Information System (MSSIS), the system quickly demonstrated its usefulness in enhanced

awareness for maritime security forces, and also in enhanced international cooperation and trust in the region.

AIS provides a quantum leap in the consistency and quality of information available to commercial and government mariners. When collected and distributed by MSSIS, it provides an increased regional awareness to both operators and maritime security forces through the power of the network. However, experienced mariners know that AIS has its limitations. It can easily be spoofed, altered, or simply malfunction to provide misleading or erroneous information. Professional mariners treat AIS as only one fallible piece of data, and they constantly scan the horizon visually and electronically with their installed radars to gather, correlate and cross check all surface contacts.

How can government maritime security forces leverage the local and regional awareness of professional

mariners at sea to enhance their own awareness of the maritime environment within their area of responsibility? What if they could see the correlation and comparison of a ship's AIS with its other shipboard sensors? There is certainly current technology that can be paired with satellite communications and the

MSSIS to provide this local awareness to regional maritime commanders and their operational centers. As one example, Maersk Line, Limited (MLL), the largest US flag carrier for the US government, collaborated with Lockheed Martin's MS2 Tactical Systems in 2007 and 2008 to conduct their own feasibility demonstration of this concept. Several MLL ships hosted a MS2 prototype AIS and radar correlation system known as "Neptune." The system compared the ships' AIS data to its organic radar system's contacts and beamed the information via INMARSAT satellite into a networked data services and analysis system that could conceivably be used by a maritime operations center. The results of this demonstration showed the potential of such a system in the thousands of discrete ship identifications made outside of the range of shore-based AIS systems, as well as a number of anomalies detected through analysis: misidentified ships, ships changing their names in transit, ships

not transmitting AIS, and visual identifications that did not match their AIS data.

Clearly, such information could greatly enhance regional maritime awareness and security for transiting commercial vessels as well as for those of transiting maritime security forces. As an example, such information could greatly increase the fidelity and quality of the surface surveillance picture for a carrier or expeditionary strike group transiting a heavily trafficked choke point, or provide invaluable data at the approaches of harbors and ports. However, it is critical that we approach the formulation of such systems with the right mind-set. These systems must evolve into totally free and open self-regulating networks, available to all mariners with minimal technical and financial investment. Built upon internationally agreed upon and IMO-sanctioned standards, they cannot be considered as intelligence or surveillance systems, but rather as awareness enhancing systems, providing vital situation awareness to all mariners, much as most international air traffic control systems function today. As with air traffic control, the benefits of such a system could include greater coordination of efforts, greater safety and reduced risk of collisions and near-misses, by identifying larger area patterns of high-traffic and congestion, and assisting in finding potential solutions through analysis and modeling and simulation.

Maritime Security Consortia

The power of networks of shared data and information, combined with fresh new approaches to maritime security partnerships, incorporating both government and commercial entities into maritime consortia for mutual security, can lead to a new era of assured maritime awareness at a time when our reliance on our global maritime highways is only expected to grow. To form such partnerships, we must follow principles of cooperation and collaboration that accentuate the mutual benefit of greater situational awareness while minimizing potential distrust and regional conflict. Expanding participation in information sharing networks such as MSSIS beyond government entities incrementally to selected commercial

partners, enhanced with their shipboard radar correlators, could greatly improve the quality of data on the network. The standardization of this equipment through multinational organizations, such as the IMO could also improve the reliability of the network. Participation in the network would be strictly voluntary for all, but the attraction would be greater safety and security. The organization of a given commercial maritime security consortium could be regionally based and coordinated through regional maritime security operational centers. A present day example would be how ships coordinate their movements through the pirate infested Gulf of Aden by checking in with the United Kingdom's Maritime Transportation Office (UK-MTO) in Dubai UAE, or the European Union's Maritime Security Centre Horn of Africa (MSCHOA) located in Northwood, UK. With voluntary participation in MSSIS and the enhanced situation awareness of commercial mariners, the regional operations center, and regional maritime security forces, could perform their own additional analysis, separate from the network and all could benefit from the greater safety and security. To join a regional maritime security consortium would only require the proper equipment, and a dedication to accurate self reporting and reporting of contacts within your vicinity in a region, resulting in a voluntary maritime form of a "neighborhood watch."

In keeping with the principles of Global Maritime Partnerships, participation in Maritime Security Consortia would be voluntary, self-regulating and self-governing. The price of admission would be investment in additional equipment and communications, well worth the benefits of greater security and awareness. Maritime nations of the world would need to take the lead in investing in such equipment and encouraging commercial participation through regional maritime security operations centers. However, the maritime nations should consider adoption of such systems through their commercial maritime administrations and regulatory organizations, not solely through their defense administrations or military services. In this manner, the misperception of such systems as surveillance or intelligence systems can hopefully be avoided.

The commercial maritime industry could be further encouraged to equip their assets on a selected and evolutionary basis and participate through tax breaks, contractual preferences on government cargo, and other financial incentives. As an example, the concept of a maritime security consortium could start with certain trusted companies, carrying government cargo for coalition participants in a region such as the Gulf of Aden where enhanced awareness is desperately needed.

In an interconnected world, dependent on our maritime highways of commerce, we can no longer afford to consider our oceans as the great unknown.

Captain Van Hook, a retired Naval Officer of 29 years experience in Surface Warfare, is currently Senior Director for Innovation and Concept Development with Maersk Line, Limited, and a guest speaker at the 2009 CJOS COE Maritime Conference in Sorrento, Italy.

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The Contribution of UNSCR 1540 to Non-proliferation and Maritime Security

Mr. Toma Galli



Weapons Cache, OIF. Official US Navy photo by Capt Howard G. Mariott

Resolution 1540 (2004) is a strong testimony of our common quest for the prevention of the proliferation of nuclear, chemical, biological weapons and their means of delivery, in particular for terrorist purposes. The nexus between the proliferation of WMD and terrorism may take place anywhere in our globalized world. It is therefore imperative that every nation be solidly committed to, and involved in, a global cooperative effort to prevent such activities.

Resolution 1540 is the first formal decision of the Security Council, taken under Chapter VII of the United Nations Charter, affirming that the proliferation of nuclear, chemical and biological weapons, as well as their means of delivery, constitutes a threat to international peace and security. The resolution affirms its support for the multilateral treaties and conventions (e.g., Nuclear Non-Proliferation Treaty, Chemical Weapons Convention, and Biological and Toxin Weapons Convention) whose aim is to eliminate or prevent the proliferation of nuclear, chemical and biological weapons and calls on States to promote the universal adoption and full implementation of those treaties to which they are parties. Resolution 1540 (2004) was adopted in the wake of the revelations stemming from the A.Q. Khan proliferation network and was mindful of the concerns that most

international non-proliferation treaties focused only on the behavior of States, and did not cover the illicit activities of non-State actors. Resolution 1540, therefore, has an explicit focus to prevent the proliferation by non-State actors of nuclear, chemical and biological weapons and their means of delivery. It complements, while also differing from, the international counter-terrorism instruments which require specific intent. The unanimous adoption of resolution 1540 in April 2004, as such, was a major step for the entire global framework of non-proliferation undertakings. Resolution 1540 (2004) is also significant for expressing grave concern by the threat of illicit trafficking in those weapons, their means of delivery and related materials, which adds a new dimension to the dangers of proliferation. Controls on transportation therefore constitute one of the requirements of 1540 Resolution.

Arising from these objectives of non-proliferation, the resolution, which was reaffirmed through resolutions 1673 (2006) and 1810 (2008), requires all States:

- To refrain from providing any support to non-State actors who attempt to develop, acquire, manufacture, possess, transport, transfer or use nuclear chemical, biological weapons and their means of delivery (operative paragraph 1);

- To adopt and enforce appropriate effective laws and controls which prohibit non-State actors to conduct such activities or use such weapons and their means of delivery, in particular for terrorist purposes, and attempts to engage, participate in as an accomplice, assist or finance such activities (operative paragraph 2);

- To take and enforce effective domestic control measures to account for, secure and physically protect such weapons, delivery means and related materials (operative paragraph 3 a) and b));

- To improve border and customs controls to detect, deter, prevent and combat illicit trafficking and brokering in such items, establish export, transit, trans-shipment, re-export and end-user controls and controls on providing funds and services (operative paragraph 3 c) and d)).

Operative paragraph 3 of resolution 1540 commits States to enforce effective measures to establish a series of domestic controls over related materials to prevent their proliferation. To the extent that such domestic controls of accounting and physical protection do not altogether ensure that sensitive materials are illicitly trafficked across borders, the resolution requires the

strengthening of border and export controls to prevent and detect illegal cross-border movements of such cargo.

Customs and other law enforcement agencies should play a vital role to secure and facilitate global trade, because of its unique authority and expertise to inspect cargo shipped in, through, and out of a country. It is well known that there has been a rise in maritime criminal incidents occurring off the Pacific Coast of Latin America, as well as Somalia, Nigeria, etc. Numerous attacks, ship hijackings, and kidnappings have occurred, and continue to occur in different regions, with the risk that more portable cargo could be targeted for specific purposes. The new measures which focus on border and export controls are not, however, intended to hamper international trade and cooperation in materials, equipment and technology for peaceful purposes. Many of the related materials are used for economic development, commercial, and public health purposes.

In considering the large-scale damage to society and the economy with any threat or attack from nuclear, chemical and biological weapons, the need to enhance related controls is inevitable. Implementing resolution 1540 can contribute to enhancing security, including in the maritime environment, as well as increasing efficiency of customs control and compliance, for trade facilitation and increased revenue. Resolution 1540 does not, however, prescribe to the last detail specific standards that have to be implemented at the national level. Nor does it specify how, and to what extent these measures should be implemented, as this is within the sovereign jurisdiction of States. Ultimately, the implementation of resolution 1540 (2004) is a national function and responsibility.

On the other hand, the 1540 Committee sees great value in developing cooperative arrangements with international and regional organizations that play a complementary role in

some of the implementation process of relevance to 1540, operating under their respective mandates. In particular resolution 1810 (2008), calls for enhanced cooperation with international and regional organizations and to promote the sharing of experience and lessons learned in the areas covered by resolution 1540 (2004). Additionally resolution 1810 calls for such organizations to liaise with the 1540 Committee on the availability of assistance programmes which could facilitate States implementation of their obligations under resolution 1540 (2004).

In this context, the work of the International Maritime Organization (IMO) is valued for its contribution and is particularly noted in the July 2008 Report of the 1540 Committee to the Security Council. The Report noted the particularly important role of the IMO in establishing practices of interest to the secure transportation of nuclear, chemical and biological weapons-related materials and items, especially as the majority of international trade moves by sea. In particular

the IMO has developed and oversees the International Maritime Dangerous Goods (IMDG) Code as well as the International Ship and Port Facility Security (ISPS) Code. Part A of the ISPC Code became mandatory in 2004 and many States noted their compliance with it in submissions to the 1540 Committee. Additionally, the IMO adopted two new instruments in 2005 that particularly concern non-proliferation:

- The 2005 Protocol to the 1988 Convention for the Suppression of Unlawful Acts (SUA) Against the Safety of Maritime Navigation provides the first international treaty framework making it an offence for anyone who uses a ship as a weapon or as a means to carry out a terrorist attack, or who transports by ship persons or cargo destined to support weapons of mass destruction (WMD) programs.
- The 2005 Protocol to the 1988 Protocol or the Suppression of Unlawful Acts Against the Safety of Fixed Platforms Located on the Continental Shelf, which provides similar to above with respect to fixed platforms.

National implementation to enact SUA Convention and its Protocols, and prosecute offenders under related national legislation, will definitely facilitate the implementation of 1540 resolution while also contributing to improving maritime security. Implementation by all States of the SUA Convention and its Protocols, as well as adopting the good practices of the IMO in security of dangerous goods, ships and ports, and within the context of regional and international organizations and their members thus contributes to improving maritime security at the global level. ■

Mr. Toma Galli is the Vice Chairman of the 1540 Committee and guest speaker at the 2009 CJOS COE Maritime Conference in Sorrento, Italy.



Weapons Cache, Operation IRAQI FREEDOM.
Official USN photo by MC1 Sean Mulligan

Impact of US Navy Expeditionary Combat Command Capabilities on NATO Doctrine

LtCol Hubert Neumaier, DEU-A



Riverine Squadron 1. Official US Navy photo by MC2 Kevin S. O'Brien

The question was posed to CJOS COE: “in what way, if any, does NATO doctrine require updating to take into account the emergence of the US Navy Expeditionary Combat Command?” The following is a brief summary of our response.

Navy Expeditionary Combat Command (NECC) was established in 2006 and serves as a single functional/type command to centrally manage the current and future readiness, resources, manning, training, and equipping of the US Navy Expeditionary Force. NECC’s primary role is to provide units combat-ready for tasking to the Joint Force Maritime Component Commanders (JFMCCs)/Navy Component Commanders (NCCs) across a wide range of Joint and service-specific expeditionary missions. Most of the capabilities grouped within NECC are capabilities that have existed for many years, but did not have an administrative parent organization focused on facilitating the train, man and equip functions.

Based on operational requirements, NECC will deploy mission-specific units or multi-mission integrated Adaptive Force Packages (AFP). NECC is also developing an expeditionary Command and Control capability in order to support the JFMCCs/NCCs with a tailored command headquarters element, to provide mission planning, oversight, and execution of a deployable AFP, mul-

multiple AFPs, or all NECC forces assigned to a given theatre.

Alliance strategy requires NATO forces to undertake three military missions of Article 5 Collective Defence (CD); Non-Article 5 Crises Response Operations (CRO); and Consultation and Co-operation. During the study it was apparent that almost all of NATO doctrine is related to Collective Defence or CRO while the mission of Consultation and Co-operation is not reflected either on an operational or tactical level. Most of the NECC capabilities, except Coalition Maritime Security, are already covered by NATO doctrine and do not have any impact on it.

Even though most capabilities are covered by NATO CD and CRO Doctrine, several of the units have additional capabilities in support of Consultation and Co-operation. Some of the new NECC units (e.g. MCAG and Expeditionary Training) were stood up in order to enhance the US maritime capabilities of engagement with other nations in developing their maritime security. These further developments in NECC capabilities as the Command evolves, with impact on NATO doctrine, will be incorporated through the already established NATO Standardization Agency’s process for updating doctrine.

Concerning the capability of NECC Adaptive Force Packages, this can, in some ways, be compared to the NATO

approach to build their force structure through Force Generation Process, where different capabilities from different nations are put under one command for a specific purpose/mission. The NECC capability to put together AFPs as such is not a new concept for NATO.

In conclusion, the new capabilities in NECC, and the transformation of existing NECC capabilities, are primarily focused on supporting the US Theatre Security Cooperation Missions in the maritime environment, which broadly equate to NATO’s Consultation and Cooperation missions. While NATO doctrine supports Article 5 CD, and Non-Article 5 CRO missions, there is a lack of NATO doctrine in support of the NATO Consultation and Co-operation mission. Whether or not NATO should develop a separate doctrine for the Consultation and Co-operation missions requires additional analysis. However, our assessment indicates that, based on today’s security situation and current operations, the effort of producing such operations doctrine would be worthwhile. The experience gained by NECC would be a valuable input to developing such doctrine. ■

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Expanding Influence in the Maritime Environment

LTC Mark Murphy, USA-A
LtCdr Dai Roberts, GBR-N



Solomon Islands, USNS Stockham (T-AK 3017) medical team. Official US Navy photo by MC2 Andrew Meyers

The seas are the world's lifeblood. The coastlines and maritime domain are central to the prosperity of all nations – they are the trade routes, climate regulators, sources of food, energy and resources and a favoured site for recreation of the global population. The maritime dimension is critical to global trade and is a significant source of employment for people who exploit the marine resources, transport commodities and manufactured goods and protect the coastlines, sea lanes and choke points.

For those readers new to maritime issues, the maritime domain can best be described as: **all areas and things of, on, under, relating to, adjacent to or bordering on a sea, ocean or other navigable waterway, including all maritime-related activities, infrastructure, people, cargo and vessels.** So when we think of the maritime environment, we cannot just consider ships and bodies of water, we need to consider perhaps the most important element: that is, the people that occupy this environment and who are affected and influenced by the activities at sea and events on land. This mixture of people is influenced to some degree by deliberate or accidental events and activities. It is these influences that we will explore further.

Understanding the power of influence is critical to understanding the

limits and possibilities open to governments, organizations and individuals with these responsibilities. Simple visual and cognitive forms of influence can change human behavior and serve as the strategy for operations, actions and activities which encompass “maritime influence”.

Components of Influence

- People - Narrative
- Capabilities - Domain
- Interpretation
- Events & Actions
- Themes & Messages

The ability to project the truth to a variety of groups, leaders, individuals, and organizations is central to an ability to influence them positively. The idea of “absolute truth” is difficult, as perception of what has happened, what might happen or what is actually happening is uniquely personal. A person's perception of an event or situation is what he or she will base their decisions upon and depends on information available, experience and understanding that leads to decision making.

Decision making can be captured in the sense of the “will” of the individual or “collective will” of a group and in the understanding present in the people affected. Affecting “will”, which is based on the ability to make a conscious choice from the options available, requires direct contact with the target audience to be successful. However the influ-

ence of understanding can be achieved through indirect contact and information systems. This may include misdirection, deception or denial of accurate facts and thus the truth may be hard to come by and an image or perception of the truth is formed which leads to an “understanding of a situation.

Possible Effects on Will

- Undermine cohesion
- Question legitimacy of leaders/actions
- Undermine moral power base
- Separate leaders from supporters
- Weaken the desire to continue

In 2008, United States Joint Forces Command published a study entitled *The Joint Operating Environment (JOE) 2008: Challenges and Implications for the Future Joint Force*. According to the authors, in 2007, 50% of the world's population lived in cities. By 2030, 65% of the world's populace will be urbanized, accounting for approximately 5.5 billion living in mega-cities near coastlines and subjected to severe environmental, social, and political pressures.

If these predictions are correct, then the role and importance of maritime forces will increase, but their capacity for influence will be significantly stressed as they are called upon to conduct such a broad array of operations including combat, combat-support, humanitarian assistance and disaster relief, while

continuously providing assets to safeguard the commercial vessels that pass along the sea lines of communication on which the global market relies.

Influence through Assistance and Support

On April 29, 1991, a major tropical cyclone slammed into Bangladesh causing extreme human suffering and damage. Based on a request for assistance from the Government of Bangladesh, a Joint Task Force (JTF) was organized to coordinate military disaster relief operations in conjunction with other international relief efforts. Because this effort was based from the sea, it significantly contributed to the overall relief that was supplied while maintaining a small foot-print ashore. This ensured the population saw the Government of Bangladesh leading disaster relief vice the intrusion of foreign actors. The positive effects felt included minimizing cultural clashes and maximizing health of the force by reducing personnel exposure and presence ashore.

Influence through Security

A combination of new and not so new challenges continue to confront the International Community. Use of the maritime domain for the trafficking in persons, narcotics and arms, the mass migration of people, attacks on sea-based energy or resource exploitation infrastructure such as oil platforms or shipping terminals, as well as piracy and other illicit and destabilizing activities have all become front-page head-lines over the past few years. As a result, there is a renewed global focus on improving maritime domain security, while the conduct of national and international Maritime Security Operations has increased and is becoming more coordinated and comprehensive.

Since 2005, acts of piracy have significantly increased in many of the world's oceans and seas. Nowhere has this been highlighted more than in the Indian Ocean, Gulf of Aden, and off the shores of Somalia. Since then, over 100 ships have either been attacked or captured with their crews and cargo held for ransom. Other than defensive measures and maritime operations, the payment of a ransom

has resulted in the release of cargo and crews. This method of influencing the captors has immediate benefits, but also perpetuates and exacerbates the problem. A truly comprehensive approach to this complex problem and the objective of persuading the leaders of the criminal cartels to abandon this lucrative, illegal practice are desired.

Influence Through Training

Ungoverned or under-governed environments, including maritime and littoral regions, offer violent extremist organizations, traffickers, criminals, and others to exploit the lack of control and security. The opportunity to act only for self-purpose, in support of illegal activities associated with greed, power and subjugation is readily seen and taken. The rise of piracy off Somalia is one clear example of all these opportunistic activities with the resulting stress on the global maritime system. In order to mitigate the vulnerabilities that these spaces create, several nations and organizations have implemented programs to train developing partner nations' capacity to protect their own territorial sovereignty, key and critical infrastructure (ex.: oil fields, pumping stations, etc.) and natural resources in their exclusive economic zones, such is happening with Yemen's Coast Guard. The positive results of these training efforts have seen an increase in seizure of narcotics and an increase in the Yemeni Coast Guard's response to piracy incidents in the Gulf of Aden. In addition to training, the Yemeni Coast Guard also received several small patrol boats and associated equipment aimed at complementing the training and safeguarding of Yemen's rugged coast and Socotra Island in the Gulf of Aden.

Influence through Defense

Maritime forces can project power and influence through presence or action and serve as a credible deterrent to act decisively in support of strategic objectives. A strong defence demonstrates willingness and capability and can influence another's decision not to take hostile action. The recent decision to station US Navy ships at sea in positions to effectively counter hostile ballistic missile launches is a good example of influencing activity

at sea. Knowledge that the defensive capabilities are effective and can negate offensive weapon attacks will influence all but the most determined or ignorant from launching such an attack. Ensuring potential adversaries are informed and educated about these defensive capabilities should be included in an overall strategic communications policy.

Maritime activities can positively influence people, leaders, forces, and events on land in many ways. The role of maritime forces to influence friends, allies, the uncommitted, criminals, and potential adversaries is clear. Deployability of maritime forces that deliver the message through presence is important for achieving desired effects without a large ground footprint. The ability for maritime forces to influence, not just through force, fear or threat but also through provision of training, capability and resources may have an even greater effect on local citizens and their leaders. Altruistic support when disaster strikes or aid is needed may have the greatest effect of all; thus, maritime forces and capabilities in support of these aims need to be focused, readily deployable and well trained in order to achieve these non-traditional military roles. The combined coordination of maritime, police and security service units will be the most successful comprehensive approach. Deploying a force by sea or deploying forces together with the proven ability to generate and use competent maritime capability across the oceans to another's shore, adds substantially to the credibility of the delivered message and provides a key component for deterrence. ■

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¹ United States Joint Forces Command, The Joint Operating Environment 2008: Challenges and Implications for the Joint Force," (Norfolk, VA: U.S. Joint Forces Command, 2008), 41. <http://us.jfcom.mil/sites/j5/j59/default.aspx>.

² *Ibid.*, 15.

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