MEETING THE CHALLENGE OF MARITIME SECURITY



A Publication Of Second Line Of Defense

FOREWORD

The interviews and essays in this booklet have appeared in earlier versions on the web site Second Line of Defense (http://www.sldinfo.com/). SLDinfo.com focuses on the creation and sustainment of military and security capability and the crucial role of the support community (logistics community, industrial players, civilian contractors, etc.) along with evolving public-private partnerships among democracies and partners in crafting real military and security capabilities. On SLDinfo.com, articles, videos and photo slideshows on military and security issues are posted on a weekly basis.

Some of the articles and interviews in Meeting the Challenge of Maritime Security are excerpted from the longer pieces on SLDinfo.com, as indicated at the beginning of the article. The original pieces on the web site often include photos and graphics which are not included in this publication.

The cover photo is of a CASA C-212 for the Mexican Navy. The CASA C-212 is a platform for developing and integrating a wide variety of versions such as the Maritime Patrol Electronic Warfare (ESM/ECM and ELINT/COMINT), Aerial Survey, Pollution Control, etc.

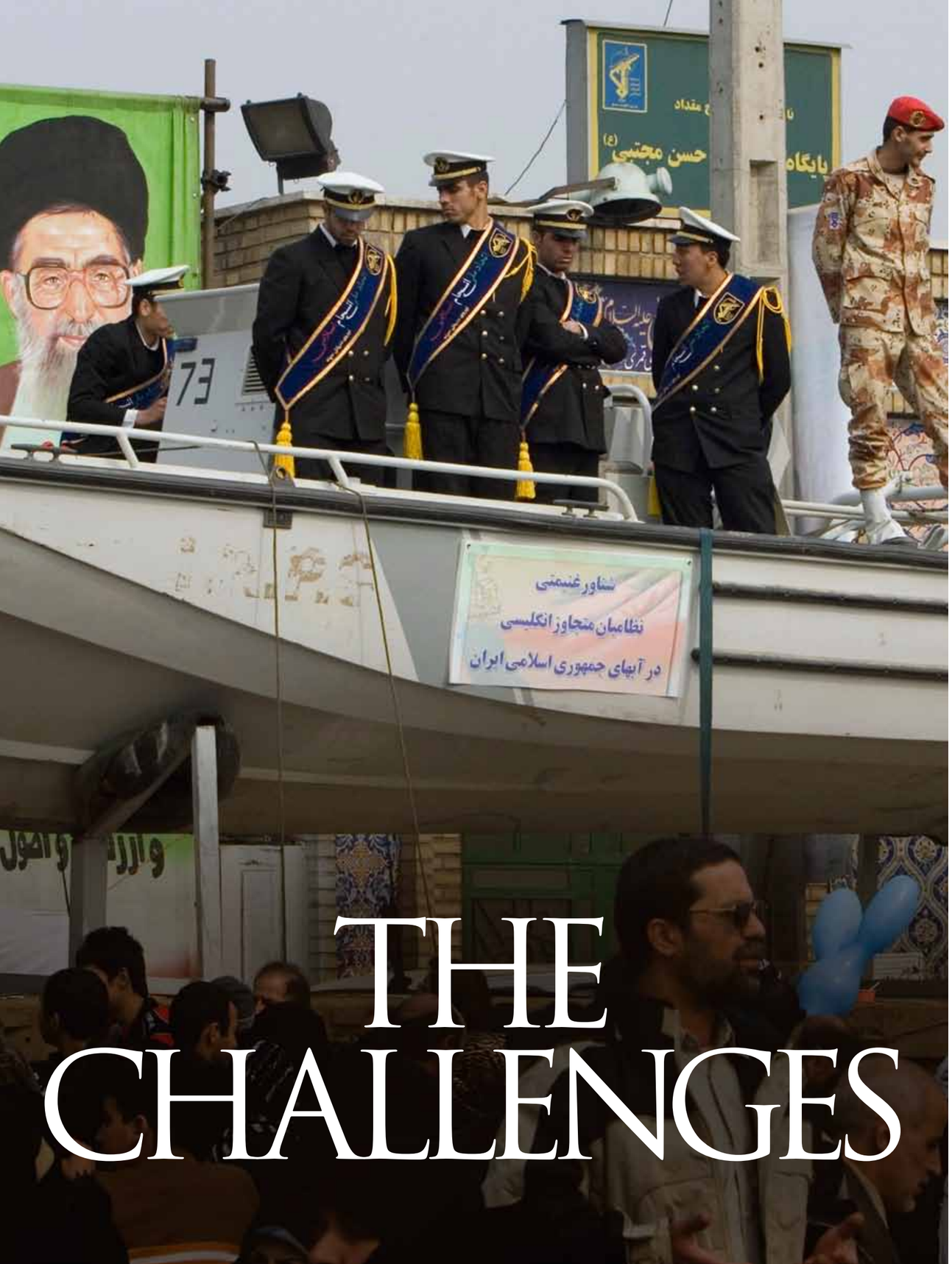
MEETING THE CHALLENGE OF MARITIME SECURITY

Section One: The Challenges

The Challenge of Risk Management 5
Protecting the Global Conveyer Belt 7
European Naval Force: A Promising "First" 9

Section Two: Shaping an Effective Tool Set

Building Maritime Security Tools for the Global Customer 12
Maritime Safety and Security: Going the Extra Mile 15
Building a 21st Century Port: The Core Role of Security 18
The Role of C4ISR in the U.S. Coast Guard 21
Shaping a 21st Century U.S. Coast Guard: The Key Role for Maritime Patrol Aircraft 23
Miami Air Station: USCG and Caribbean Maritime Security 25
Building the *Ocean Sentry* 27
The New U.S. Coast Guard Cutter: A "Chaos Management System" 28
The U.S. Coast Guard: 7,000 Foot Rescue 30



THE CHALLENGES

THE CHALLENGE OF RISK MANAGEMENT

Dr. Robbin F. Laird

The world may be flat because of globalization, but has anyone considered that we may not want it to be flattened? The trouble with analyses like Lawrence Freedman's in his article *Globalization and the War against Terror* is that if there is "globalization" with automatic effects and benefits for the "global economy" then nations disappear — and somehow the system magically works for the greater good.

The difficulty with such a presumption is that it ignores the critical role that key states play in guaranteeing global economic, military and political security. Virtually all globalization models ignore the security element. Without security for air, ground, and maritime transit, there is no globalization. Without secure cyberspace, there is no effective transfer of information and data in the worldwide web. The internet was built to secure communications, not to make the world flat.

There simply is no guarantee of freedom of commerce, information, currency and security of persons, data and goods and services. In particular, future guaranteed security will be provided by new stakeholders in this evolution of the global commons. The core challenge is to find ways to provide global security without shutting down the very openness which makes globalization work.

Inevitability of the Security Challenge

Macro-economists tend to view defense and security as drains on productive resources. Yet productivity in a nascent global system rests on security and defense. The line between defense and security capabilities is being blurred by modern states as their interests reach beyond traditional national boundaries and traditional measures of national power.

A global system in which data, currency, goods and services flow worldwide through mechanisms like just-in-time production is increasingly vulnerable to disruptions. Strategic disruptions are to be assumed in the global system. The need to manage such disruptions is a growing need in order to service the public good. Yet significant strategic thinking or investment in ways to cope with strategic disruption is lacking.

The decentralization of the global economy and global information grid is enhancing the ability of small groups and even individuals to engage in activities which disrupt the global system. The growing capability of small groups bent on disrupting the world system and seeking to divert it to their advantage is a real threat.

Meeting the Challenge

Risks need to be dealt with and managed as a normal task in coping with globalization. Clearly, it is impossible to build a completely risk-free global infrastructure. What is troubling is the lack of investment in systems to deal with crisis contingencies or "surge" capabilities to provide for short-term amelioration for the shutdown of ports, airports, train lines, or protect against what the Gartner Group calls the danger of a "digital" Pearl Harbor.

The first priority is to build a capability to plan for and expect strategic disruption into our national decision-making systems. Herman Kahn, the famous nuclear strategist, called for "thinking the unthinkable." Kahn was one of the first nuclear strategists and crafted the study of how to conduct nuclear war if such a horrific problem emerged.

Iranian sailors stand on a British boat, captured by the Iranian navy in 2004, during a 2008 ceremony to mark the anniversary of Iran's 1979 Revolution in Tehran.

Photo credit: photographer Raheb Homavandi / Reuters / Corbis

If Kahn were still alive today he would write a new book about strategic disruption as "thinking the unthinkable."

The second priority — assuming we can craft decision- making systems which could plan for strategic disruption –is to encourage today's fractious societies to consider the pain of the "unthinkable". Pain avoidance is the goal of modern democratic society, unless it is self-inflicted in seeking higher metaphysical states. Before we reach this state we might find our way of life significantly threatened by small groups possessing weapons of mass destruction seeking to send us via an alternative pathway to reaching the next life!

How will we implement decisions in a timely and effective manner? What tool sets do we need for effective implementation? How can we train and prepare the public for the unexpected?

Building an Effective Tool Kit

Modern decision-making systems need to include effective tool kits for dealing with risk management. We need security and military tools that are robust and flexible enough to aid in the prevention and response to strategic disruption. Among the tools necessary are redundant and hardened communications systems and interoperable communications and information systems that enable public and private institutions to share data and to train for crisis and effectively communicate in crises.

We have to learn to be at least as effective as terrorist groups in using decentralized structures. Decentralized structures maximize survivability and the ability to be flexible — rather than presenting rich target sets associated with vulnerable networks.

Crisis leadership rooted in decentralized structures is effective for dealing with strategic disruption and deters groups from random strategic disruption attempts.

Conclusion: Crafting a Risk Management Posture

In preparing for strategic disruption, we need the right mix of response capabilities. We need to combine proactive, active and reactive elements in our decision-making and implementation capabilities.

We need to blend three core elements: robust and redundant communication and information systems; resilient organizations capable of absorbing shocks, and alternatives, particularly in crisis periods, to single-source dependencies.

The strategic challenge is to craft, forge and reinforce decision-making systems with:

- The right mix of centralization and decentralization in execution
- Fail-safe procedures
- An extensive cadre of well-trained first responders
- Significant exercises and simulations to guarantee effective procedures for the unexpected are ingrained

Strategic disruption is not a surprise in a globalized environment; it is a given. Effective risk management will be the result of extensive investment in formal policies and procedures, not chance.

It is better to plan for the unexpected … because it isn't.

http://www.sldinfo.com/?p=80



Illustration credit: Bigstock™



In May 2010, sailors from the French frigate Tonnerre boarded two pirate ships 450 nautical miles east of Somalia. The boarding party secured evidence and took the suspected pirates on board the frigate. The mother ship, a "whaler" was destroyed and two skiffs were taken aboard Tonnerre.

Photo credit: U.S. Navy Visual Service

PROTECTING THE GLOBAL CONVEYER BELT

Excerpt from *Shaping a Collaborative Maritime Strategy for the Pacific*

Shipping is at the heart of global trade. Most international trade – about 80 percent of the total by volume – is carried by sea. About half of the world's trade by value and 90 percent of the general cargo is now transported in containers. The containerization of cargos and the growth in the size of the cargo ships are important forces for change in the maritime system as well.

Containerization has been both cause and consequence of a shift in the nature of the global supply chain. Logistic supply chains that feed components and finished products to users on a just-in-time and just-enough basis have become critical to modern manufacturing and service industries.

A virtual conveyer belt of goods or a moving warehouse of components at sea have become the tissue of global production. Seaborne trade and its land connections in the global supply chain have become increasingly efficient, large-scale and thus open.

Also part of the containerization phenomenon has been the rise of the megaports. The top 20 container terminals account for more than 50 percent of world sea container trade.

The conjunction of a dramatic increase in the volume of trade, a shift towards containerization, the shift in manufacturing and production models and the rise of the mega-ports has created a new maritime trade system.



This large container ship in the Panama Canal illustrates that larger cargo ships an expanded Panama Canal will increase the challenge of managing maritime traffic and security ports. Photo credit: Bigstock™



Managing port logistics is a key part of the risk management for maritime security. Photo credit: Bigstock™

Forces seeking advantages through disruption of the maritime system have challenged the evolving trade system.

Managing and coping with these disruptions are a key part of the 21st century safety and security challenges facing global maritime powers and commercial stakeholders.

Among the most significant disruptions are the following:

- Disruptions by maritime piracy,
- Disruptions at the megaports,
- Significant environmental disasters at sea,
- And the emergence of terrorists seeking capability to operate on the seas.

An additional dynamic has been the melding of criminal and terrorists approaches to disruptions, mimicking one another to learn new approaches to shaping disruption to their advantage. Managing and coping with these disruptions defines the maritime safety and security context for the 21st century global economy.

Naturally, with the rise of commerce comes the need for increasing law enforcement operations. Interdiction of illicit drugs and illegal migrants will continue to be a major priority. Additionally, it is essential that standards of operation that affect the ecology and therefore the commercial viability of the seas and waterways be controlled and enforced….

Persistent presence is key but only a part of shaping an effective Maritime Security Regime. Persistent knowledge regarding the potential threats to the "conveyer belt" is necessary across the entire range of the "conveyor belt".

http://www.sldinfo.com/wp-content/uploads/2009/10/Shaping-a-Collaborative-Maritime-Security-Strategy-SLD-special-report-sept-09-pdf2.pdf



Security inside the port is crucial in securing transit supply chain. Photo credit: Bigstock™

EUROPEAN NAVAL FORCE: A PROMISING "FIRST"

Harry Syringas

One of the European common defense policy's main goals is to consolidate the European Union (EU) impact and role in the international scene. Apart from controlling what goes on within its borders, it also conducts operations in order to monitor and intervene, within its capacities, in a situation taking place beyond them.

One of those operations is EU Naval Force Somalia's Operation Atalanta, which is part of a vast EU action to deal with the crisis in the Horn of Africa region.

Below is a mid-course glance at the four-year mission undertaken in 2008.

Twenty years of escalating chaos in Somalia piracy around the Horn of Africa is the result of two factors: the motive of profit and political instability, the latter being the origin of escalating chaos.

Somalia is a country that has not had a functioning government since 1991. Today it is in a state of total anarchy, facilitating riots between opposite illicit groups and banditry. [1] Somalia has had no functioning government since the United Somali Congress (USC) ousted the regime of Maj. Gen. Mohamed Said "Barre" on January 27, 1991.

The present political situation is one of widespread anarchy marked by inter-clan fighting and random banditry, with some areas of peace and stability. In the wake of the collapse of the Somali government, factions organized around military leaders and took control of Somalia.

However, banditry is not confined to local clans. Pirate attacks initiated from Somali ships have increased so much over the past few years that Somalia has become the number one security challenge in the area.

The International Maritime Bureau recorded 111 attacks in the waters off the Horn of Africa in 2008, nearly double the number in 2007. Between January and April of 2009, the International Maritime Bureau counted 84 attacks, with approximately 300 non-U.S. crew members on 18 hijacked vessels remaining in Somali captivity. [2]

The absence of coastal security authorities led to unlawful fishing, waste dumping, and attacks against foreign commercial vessels and humanitarian aid missions.



In September 2008, Somali pirates in small boats hijacked the Belize-flagged cargo ship, the MV Faina, that was carrying Ukrainian tanks. The ship had no security on board and was forced to an anchorage off the Somalia coast.

Photo credit: U.S. Naval Forces Central Command

The European Security and Defense Policy (ESDP) First Maritime Operation

In response to this scourge, the UN Security Council issued four resolutions: 1816, 1838, and 1846 adopted in 2008, and 1897 adopted in 2009. Resolution 1851 allowed international naval forces to arbitrate in the open sea around the Somali coasts. The EU launched the operation in

December 2008 – the first maritime operation of the ESDP – and reached full capability in February 2009. According to the decision of the Council of the EU last June, the mandate will continue until December 2012. [3]

Its main objectives are to escort vulnerable shipping crossing the area, including vessels from the World Food Program and the African Union Military Mission in Somalia (AMISOM), repress piracy, and monitor fishing activities off the coast of Somalia.



The French Navy arrested nine suspected Somali pirates, foiling their attempt to hijack a cargo ship in the Gulf of Aden. Photo credit: European Union

At present, the strength of EU NAVFOR – Atalanta is formed by:

- One fast frigate and one maritime patrol and reconnaissance aircraft – MP and RA – (CISNE CN235) from Spain
- One frigate from Greece
- One frigate and one MP and RA (JESTER P3C) from Germany
- One ocean patrol vessel and a MP and RA (Blue Bird Dash 8) from Sweden
- One MP and RA (Seagull Merlin III) from Luxembourg
- One landing platform Dock/Amphibious Ship from Holland
- One MP and RA (Lobo P3P) from Portugal
- One Frigate and helicopters from France

Belgium and a number of third countries, such as Norway and Croatia, are also participating, and the Ukraine and Montenegro are expected to participate.

Moreover, there is a military staff from Cyprus, Ireland, Finland, Malta, and Sweden providing aid to the team at the Northwood Operation Headquarters. The European Naval Force (EU NAVFOR) operates in a zone comprising the south of the Red Sea, the Gulf of Aden, and part of the Indian Ocean, which now includes the Seychelles. This represents an area comparable to that of the Mediterranean.

As key coordinator since November 2009, EU NAVFOR-Atalanta led the coordination of the multinational, national, and regional naval forces operating in the area. This was an important step to strengthening the EU's pivotal role, as it was the liaison for the CTF-151, the NATO Maritime Group and the Russian, Indian, Japanese, and Chinese vessels taking part in monitoring the zone.

Since the operation was initiated in late 2008, vessels of the World Food Program have stopped being attacked, making it possible for near 400,000 metric tons of food to be delivered into Somalia through the ports of Mogadishu, Merka, Bossaso, and Berbera.

The operation and, more importantly, the coordination of international forces brought fruit and showed that when there is will there is a way.

However, the fact that the presence of European and international naval forces in the Somali coasts and the Gulf of Aden is prolonged means that the primary goal is yet to be achieved.

The EU NAVFOR is a synergistic police/ monitoring mission; it's part of the global EU initiative and action in the Horn of Africa to resolve the ongoing Somalia political crisis. While this successful operation is a positive example of European coordinated, defence policy action, the root of the problem — the absence of an actual state in Somalia — is still there. Extirpating it will demonstrate that the EU is positioned for the resolution of this kind of crisis in that region.

[1] www.globalsecurity.org

[2] Congressional Research Service, Piracy off the Horn of Africa, http:// africacenter.org

[3] www.eunavfor.eu

http://www.sldinfo.com/?p=11584

SHAPING AN EFFECTIVE TOOL SET



BUILDING MARITIME SECURITY TOOLS FOR THE GLOBAL CUSTOMER

EADS is shaping several tool sets to deal with Maritime Security and to deal with the risk management challenge discussed in the lead piece.

This selection is taken from the EADS special web site posted for the Fall 2010 Euronaval Exposition where the company explains their approach and role in shaping global maritime security tools for protecting the global commons.

http://www.eads.com/eads/int/en/Maritime/EADS-and-Maritime-Security.html

As a baseline approach, and as a Lead Systems Integrator (LSI) the company can provide an overall management perspective to shape approaches to maritime security and to help clients manage risk.

This approach is further underscored in the next two chapters, first with an interview with Sofrelog's CEO that was conducted by *Second Line of Defense* at the Euronaval Exposition. It is further underscored by the partnership with the Tanger Med authorities in building a 21st century port complex.

Counter Piracy

The act of piracy creates ripples that can be felt beyond the oceans themselves. If food is hijacked at sea, for example, prices for everyday commodities could rise if the total cost of transporting these commodities rises because of increased risks, growing insurance rates and time-consuming detours.

The International Maritime Bureau recorded as many as 239 attacks in 2006, equaling the number of attacks in just the first half of 2009. Somalia, the Gulf of Aden and the Straits of Malacca have become the most dangerous waters in the world today. A solution needs to be found through greater international regulations and preventive humanitarian actions.

Page 11 Photo credit: Shutterstock™

To protect ships and international trade, EADS offers system solutions that safeguard both surveillance and reconnaissance and help to enforce international regulations.

EADS can design, deliver and maintain system solutions tailored to the needs of its customers. All elements of such a network solution are interconnected to allow quick communication and decision-making on launching the appropriate type of action.

EADS offers space-based, airborne and sea-based surveillance capabilities along with communications solutions for authorities and coastal surveillance with radars. Rapid action can be taken with the help of radars such as the TRS-3D.

The border security applications developed by Cassidian merge information derived from airborne sensors and sensors in space or on the ground-- alerting authorities in cases of illegal immigration,



The multimode radar system TRS-3D – pictured here on a Danish Stanflex 300-class ship — is specially suited for deployment in littoral waters and has been deployed successfully on several types of naval ships worldwide. Photo credit: EADS

smuggling or pollution and providing efficient tools to coordinate responses to such threats.

As for coastal surveillance systems, Cassidian has taken a decisive step towards the protection of coastal sovereignty by improving the ability to respond rapidly against smugglers, pollution, illegal coastal activities and piracy….

Economies

The standardized container is a symbol for a globalized economy. Ships transport roughly 98 percent of all commodities that are conveyed around the globe, more than two thirds of them are in containers. But such a success story relies on safe transport and the management of threats from pirates or accidents at sea.

A growing world economy calls for safe waters on the open sea, in harbors and in narrow straits. System solutions are required to ensure that a maximum number of container ships can reach their destination and pick up their shipment for the next journey.

EADS offers system solutions for naval and coastal security, comprising airborne solutions as well as coastal systems or surveillance from space.

Sofrelog and Cassidian have supplied Vessel Traffic Systems (VTS), coastal surveillance systems and port security systems to 40 countries, installing more than 60 control centers that are connected to more than 400 radars.

Additionally, Cassidian acts as prime contractor for mission-critical systems that have been developed for its customers. Cassidian assumes all risks incumbent on a lead systems integrator, providing interoperability between deployed systems and subsystems as well as the necessary integration for decision-making chains that involve many parties.

Airbus Military has supplied several Coast Guards with CN-235 and C-295 maritime patrol aircraft versions. Eurocopter helicopters have saved many sailors lives after their ships have capsized.

Territories

Natural resources are limited. Every state has the right to protect them, not only on their own



Unmanned vehicles are becoming a critical capability for use in maintaining port survivability and security. Photo credit: Cassidian

territory and the territorial waters off their own coasts, but also in their exclusive economic zones. This 200 nautical mile-wide sea zone grants every coastal state unique rights to explore and exploit marine resources.

These constitute huge areas that call for constant surveillance missions in order to prevent illegal fishing or the exploitation of resources such as oil from the sea shelf or monitor oil spills from tankers. These tasks and the protection of boundaries and territorial waters from illegal intrusion require network solutions that offer surveillance, communications between all security forces as well as authorities and support for law enforcement units.

EADS designs, delivers and maintains complete system solutions that establish interconnections between surveillance capabilities, provide protected communications between all involved parties and enable authorities to decide and launch necessary actions.

They include airborne or space-based surveillance using remote sensing satellites such as TerraSAR-X or maritime patrol aircraft such as CN-235 or C295.

In the long term, UAVs will also support national and international authorities.

Communication between all necessary authorities can be facilitated with Professional Mobile Radio communication systems. Cassidian has set up coastal surveillance solutions for several countries including radar systems for permanent surveillance.

Environment

Shipwrecks may be a new underwater home for plant and fish species, but not every piece of waste is a welcome addition to the marine ecosystem. Illegal dumping is a severe hazard to the environment. Effective surveillance can detect who is responsible for what damage to an ecological system.

Solutions are needed to ensure that international treaties against waste dumping, for example, in the North Atlantic are upheld. Satellites can detect pollution from space while maritime patrol aircraft can conduct close-up surveillance of vessels that are suspected of spilling used oil. UAVs will be used in the future for long-range airborne surveillance to support mission control centers, offering the ability to keep an eye on huge sea zones. Illegal fishing is a threat for any country that tries to protect endangered species.



Nearly 70 percent of the Super Puma fleet is operated in offshore transport. Large sliding doors allow for the transportation of bulky freight and rear access enables large loads. It is widely used by firefighters, police and emergency services. Photo credit: EADS

MARITIME SAFETY AND SECURITY: GOING THE EXTRA MILE

An Interview with Rémi Julien, President and CEO of SIGNALIS

At Euronaval in October 2010, *Second Line of Defense's Murielle Delaporte* interviewed Rémi Julien while he was still the CEO of Sofrelog. Julien is now the CEO of SIGNALIS which was officially launched on January 10, 2011. SIGNALIS is co-owned by Cassidian and Atlas Elektronik, and combines competencies in the security domain, with a special emphasis on maritime safety and security.

SIGNALIS has a workforce of more than 190 maritime surveillance specialists in Germany and France, as well as on its large customer base with more than 210 VTS (Vessel Traffic Service) and CSS (Coastal Surveillance Solutions) systems in use in some 50 countries. The new company provides small-scale vessel traffic service systems and coastal surveillance solutions in addition to solutions for harbor security, port management and information systems and other related radar processing applications.

In this article, the key themes which were discussed are summarized with the complete interview in French to appear later on the *Second Line of Defense* website.

At the crossroads between domestic security and naval defense, maritime safety and security is a growing global market. Until recently, maritime border control had been largely defined as an element of anti-terror policy, which has called for a specific military approach especially since the attacks on the U.S. on 9/11.

This market has emerged through the involvement of small and medium sized companies that are providing traffic control services for strategic areas, such as maritime straits. Traffic safety systems have been relying on the four following tools:

- Radars allowing target detection
- Communication
- Control centers
- Accident monitoring system

Since 2000, mass terrorism, piracy, illegal immigration, smuggling and environmental hazards have been rampant. Such rising threats demand higher levels of protection for citizens and the environment but also for economic assets such as strategic offshore oil and gas. Through integrated and interoperable safety and security systems, stakeholders can demonstrate their ability to react rapidly and prevent a major crisis. Maritime security is a three-dimensional business as it relies on space assets, sea-based platforms as well as land-based systems to provide for security monitoring and control.

Born Out of a Fragmented Market

Besides the new threat requirements, the evolution of technology has revolutionized a market which, before the 1990's, was fragmented. Except for Panama Canal-like customers, the cost barrier was too high for the broader use of maritime security

controls. This changed with the emergence of digital technologies. These technologies drove down the cost of acquisition of maritime security devices, which provide for live traffic control via VTS systems (Vessel Traffic Services). Many harbors, such as Calais, France, started to invest in such technologies with SOFRELOG in the early 1990s.



SYTAR is based on sophisticated real-time software and an advanced networking architecture. SYTAR systems are being used by port authorities, navies and coast guards in Benin Republic, Canada, China, Denmark, France, Malaysia, Mexico, Morocco, Qatar, Spain, Taiwan and the United Kingdom.

Monitoring the straight of Malacca was one of the first endeavors that Sofrelog initiated in 2000. The system of controls provided capabilities to meet two demands, the domestic military police's requirements and global traffic monitoring. Implementing such a system over the last decade has been a major factor behind the reduction of piracy in this part of the world.

The beginning of the 21st century witnessed the growth of terrorism and piracy, and it became necessary to merge civilian domestic aspects with security and defense considerations. The need for a new organization and a common operating picture based on the synergy of available assets has been more apparent in order to manage the variety and fragmentation of the players involved in maritime safety and security. The same technologies and capabilities are required, whether detecting a benign sailboat or a potential threat, even if the actual response to the latter, once identified, is significantly different.

CROSSing Over

Another factor, which has revolutionized the maritime security market has been the upgrade of Spationav (Système naval de surveillance des approches maritimes et des zones sous juridiction nationale) in 2005.

Spationav is a system aimed at federating all of the means of the French Ministry of Transportation as well as of the maritime centers called CROSS (Centres Régionaux Opérationnels de Surveillance et de Sauvetage). The system enhances surveillance of maritime straits and coastal regions along France's thousands of miles of sea borders.

The system was developed in order to deal with the variety of challenges encountered along the coast, whether it be illegal immigration, drug trafficking or environmental issues such as maritime pollution.

Spationav is a multi-phased system whereby radars of two ministries are networked to provide integrated capabilities. Currently, the data collected by 70 radars from the two ministries – Transportation and Customs – as well as data from Automatic Identification Systems is collected into a common operational picture for four Centers of the French Navy, including the Paris base of the French Navy, as well as five CROSS and three Customs centers.

What Spationav has been pioneering is the notion that maritime security, as well as land border security, can be managed over a vast amount of territory and able to cover significant distances. The success of Spationav has led to other contracts to manage territorial security such as with Saudi Arabia.

The demand for comprehensive security has provided a growing marketplace. As a result, SIGNALIS has been involved in various major international projects driven by a confluence of economic, political and security considerations, such as oil platform security in the Middle East and Schengen immigration control requirements in Europe.

Some of these projects are as follows:

- Qatar's National Security Shield offers coastal and EEZ (exclusive economic zone) monitoring, as well as monitoring of offshore oil platforms and storage facilities, which need full protection from air, sea and land-based threats;
- A similar project is underway to protect Saudi Arabia's 2,000 kilometers of coastline;
- Private oil companies are also requesting help in this area. Aramco's main oil facility has, for instance, been protected for years via a system of four naval radars capable of identifying low-altitude threats, such as helicopters, and securing a vast zone;
- Enhancing the security in the straight of Ormuz for Oman, where Oman's and Iran's territorial waters meet, is being addressed by SIGNALIS;
- In Spain, assistance to the Guardia Civil to combat illegal immigration and trafficking has been underway for five years, especially in the Canaries and Baleares Islands and the Gibraltar straight;
- SIGNALIS is also assisting the Danish Navy with maritime safety and security programs in the North and Baltic seas;
- The security of Mayotte Island is another challenge being addressed;
- The Schengen treaty and the necessity for EU entry candidates to comply with immigration control minimum requirements has resulted in Bulgaria requiring border control that was actually funded by the European Union itself.

The Ikea of Maritime Security : Shaping a Effective Total Cost of Ownership Approach

According to Rémi Julien, "We are in a way the 'Ikea of maritime security' in the sense that we build the 'kitchen' at the factory as well as the missing parts if need be; we assemble it and then deliver it ready to go. It would indeed be much more expensive to do so on site."

"A simple project, the installation of a few radars aimed at monitoring a hundred kilometer zone, can be implemented over a twelve to eighteen month period from the signing of the contract till the delivery of the system per se," explains Rémi Julien .

A customized maritime security contract will also typically include the training of future operators in accordance to existing international standards (AIALA; IMO). The training can be accomplished in one week.

Even though a 100 percent readiness is required — missing the deadline for one container delivery translates into the loss of hundreds of thousands of dollars for the Port of Tangiers for instance — maintenance per se is rather light since the systems are mostly computer and radar-based.

No specific norms exist for maintenance and all options are possible as far as maintenance is concerned. Basically, readiness is ensured via a redundancy and automatic shift system.

"We have machines which in the past five years have never stopped once and have demonstrated a high level of reliability, even long after they were no longer covered under guarantees. However, we are extremely concerned to keep it that way and, given our high pace of development, maintenance teams have tripled over the past two years," the SIGNALIS CEO underscored.

As far as Spationav is concerned, the acquisition cost is significant, but the total ownership cost is competitive, since maintenance mainly consists of preventive visits.

Every five years an upgrade is required for sensors and software, but the emergence of new technologies or new missions can also trigger upgrades. Enhanced ergonomic and algorithmic development, data management and decision-making assistance are the usual areas of improvement requested by customers.

From the outset, SIGNALIS has been at the cutting edge with the development and application of open source software since 2001. Radar integration and signal digitalization are also areas of expertise. The level of sophistication of radars — usually civilian radars — varies ranging from simple radars for port security to extremely sophisticated systems that are adapted to coastal monitoring requirements , such as small target detection

"It is SIGNALIS' mission to fit and anticipate each customer's specific need and to provide an overall approach whenever customers task us to do so," concludes Rémi Julien.

BUILDING A 21ST CENTURY GLOBAL PORT: THE CORE ROLE OF SECURITY

Tanger Med is the evolving port complex in Morocco which is providing a new capability for global trade.

As *The Economist* put it in a 2008 article on the Mediterranean economies, "Look southward from the southern tip of Spain, across the strait of Gibraltar. There, only 14km (nine miles) away through the slight sea haze arises the vast construction works of a new seaport to the east of Tanger in northern Morocco."

Tanger Med opened its first docks last July (2007). Handling 3.5m containers a year, it is already as big as Felixstowe, Britain's biggest port. A second terminal opens this summer, and within seven years its annual capacity will rise to 8.5m. It will be the largest container port in the Mediterranean, not far behind Europe's biggest, Rotterdam (although merely one-third the size of the Asian giants of Singapore, Shanghai and Hong Kong). Similar ports are being finished in Algeria, Egypt, Malta and Tunisia.

One-third of the world's container traffic already passes through the Mediterranean, bringing manufactured goods from China and South-East Asia to Europe and the east coast of America. The Moroccans, spending some € 3.5 billion ($5.5 billion) on Tanger Med, and others along the coast hope that if they build, a big slice of global commerce will come to their shores. Goods will arrive to be broken down into smaller loads and sent around Europe. Manufacturers will set up factories in tax-free zones planned around the docks, bring in components for assembly and serve the huge market across the water.

The Economist (July 10, 2008)

Building a new port facility in such a strategic location requires considerable attention to the security dimension. The entire infrastructure of the port and its maritime traffic situation requires an extremely sound security system. The Tanger Med complex is managed by the Tanger Mediterranean Special Agency (TMSA) on behalf of the Moroccan Government. Cassidian has built a trusted partnership with the TMSA since an initial contract was signed in early 2008 to work on security with the TMSA.

The partnership has entailed *three* core efforts.

The *first* was crafting architecture for the Tanger Med security system as a lead systems integrator working with the TMSA. Such an approach allowed the port authorities to determine the most effective way to proceed with the security approach, rather than simply adding ad hoc systems to provide for security in a jury-rigged manner.

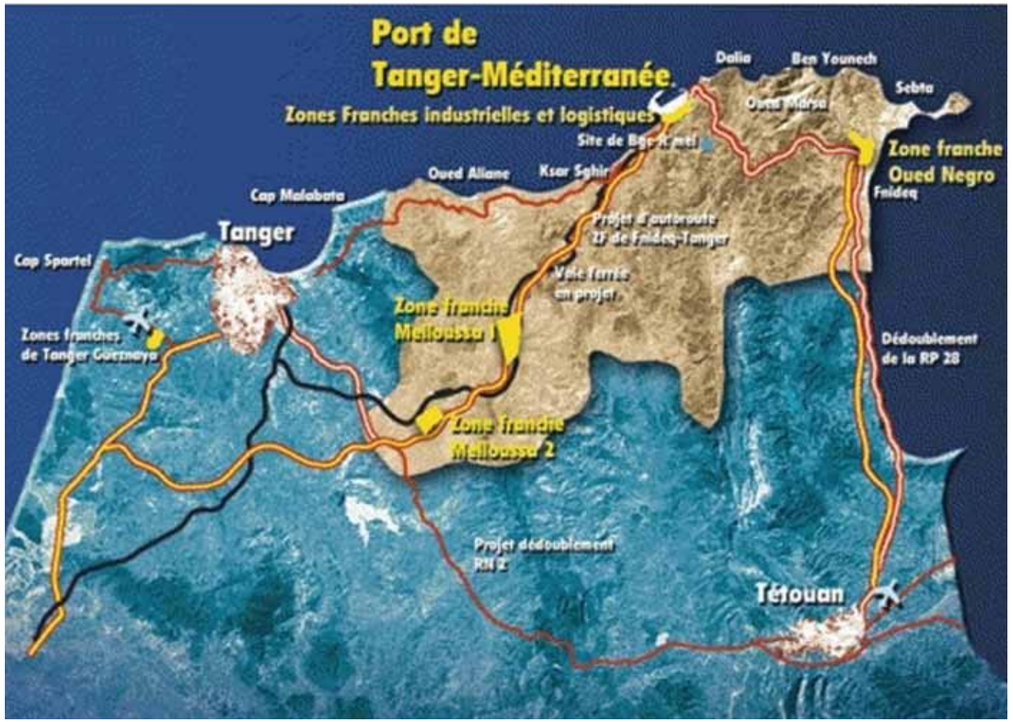
The *second* was to shape an approach to container security for the port. Given that a core raison d'etre of the port was to manage container ships, and especially the new giant container ships, this is a key element for secure operations of the port. Cassidian worked with the TMSA to determine which systems needed to be put in place for the authorities to successfully establish a command post with capabilities to provide for container security.

The *third* was to shape other security tools and capabilities to ensure efficient protection of the port.

In late December, *Second Line of Defense* spoke with Cassidian's maritime security expert, Emmanuel Villers, to discuss the Tanger Med port project and the role of Cassidian in crafting a 21st century port security solution set.

SLD: Could you describe the importance of the Tanger Med port project?

Villers: The project reflects the intent of the King of Morocco to develop the North of Morocco. It is located in a key strategic location in the Gibraltar



The Tanger Med project will shape a major hub in global maritime traffic and will become a major part of the global conveyer belt.

Straits. More than 30 percent of global container shipping passes through the Straits. Shipping from Asia goes through the Suez Canal and passes through the Mediterranean en route to North and South America. The port is also at the crossroads of north-south shipping, and has great growth potential as 21st century trade increases.

SLD: Is security a high priority for the TMSA?

Villers: Security of the port is one of highest priorities for the TMSA, which has decided to entrust its security system to one integrator instead of several companies. In part, it is because of the magnitude of the investment – more than three billion euros to date. The shipping companies require a high level of security, thus the port's economic viability will depend on reliable security.

SLD: I understand that you started with a comprehensive assessment for the customer. Could you describe the approach?



Shaping a comprehensive security regime in viewed by the TMSA as a bedrock of effective operation of the port and their ability to create a core hub in the global conveyer belt.

Villers: The first thing we did was provide a threat assessment . The key contribution of a lead systems integrator is not just to provide tools, but first of all to provide a security solution. And this solution needs to be efficient. The key difference here is between a system integrator and a product manufacturer. The customer wanted at the outset to look at an integrated solution, rather than just

buy separate products. TMSA understood that they have a significant range of threats and wanted a security for the specialist to shape a comprehensive and integrated solution. This was our initial and baseline role.

SLD: It sounds like the project started with shaping a trusted partnership with the customer.

Villers: Yes. We worked with the customer to shape an operational concept (con-ops) — to design the approach to comprehensive port security. A key challenge is to draw an approach that provides comprehensive security to the various stakeholders. There are many actors ranging from port authority, port facilities, shipping companies, industries, maritime police, and more. We needed to shape an operational concept that could bring together a threat assessment plus clearly define the stakeholder roles in the overall concept.

SLD: When was this done?

Villers: The baseline assessment was done in 2008. Based on this, we recommended a range of solutions to implement the con-ops. We determined that there were two types of threats that needed to be addressed. First is the safety of the shipping based on the fact that the Strait of Gibraltar is relatively narrow with various wind and sea conditions. A good traffic surveillance system is essential. The Cassidian VTS system is used to provide for this basic capability.

Second is the security for the port, which is challenged by various potential threats such as theft, illegal immigration, drug trafficking, smuggling, and terrorist organizations. Tanger Med is a major trans-shipment port for shipments coming from east to west and north to south. As such, it is an attractive location for illegal and terrorist activities.

SLD: What are the major tools you are shaping for the port?

Villers: First we are providing the Vehicle Traffic Services (VTS) system. The customer operates a control room within which VTS operates. The main mission is to follow big vessels or container ships to provide for vessel safety — against collision, for example. We have built the infrastructure for the VTS and have put SOFRELOG tools in the control room, which the customer then uses to provide for the safety for the large ships. The customer runs the VTS, but we provide training for the staff as part of the global contract.

SLD: Do you have a security plan beyond VTS?

Villiers: We have a second pillar to provide for security which focuses on the malevolent threats, notably those associated with small targets. We are focused on following small boats, swimmers and individuals trying to penetrate the port. This is a complex challenge. We have to manage threats from the water side using radars, cameras and other tools – day and night — to detect persons seeking to penetrate the port. We have to manage the land side as well. We have to take care of the perimeter of the port with various integrated systems such as intelligent video, access control, biometric controls, truck traffic controls including cargo and driver, and verification. There are other systems, as well, such as scanners and secured communications.

This complex and diverse effort is centralized in a security control room that is tasked to monitor security activity based on the flow of data from the various security systems. This security control room is focused on managing the data and alarms from the diverse systems to ensure that we are making the best decisions in dealing with the various threats. All of these subsystems are integrated in the security control room, which increases efficiency while reducing the number of operators and patrol teams, and enables the port security forces to focus their attention on threats in real time.

THE ROLE OF C4ISR IN THE U.S. COAST GUARD

An Interview with Admiral Robert E. Day, Jr. USCG

In the fall of 2010, *Second Line of Defense* interviewed Rear Admiral Robert E. Day, Jr., USCG and discussed the challenges of building effective C4ISR for the U.S. Coast Guard (USCG). The discussion underscored how important it is for the USCG to have capabilities to network the force, and the challenges of getting folks to understand the importance of investing in the connectors.

The USCG puts personnel on target via its ISR systems. Thus, without effective ISR, the effectiveness of the personnel and resources are undercut. With C2, the deployed force, after getting to the assignment, can effectively organize the most appropriate response. The use of efficient C4ISR systems is essential to mission success. Because C4ISR is less visible than physical assets, it tends to receive less support than it should.

SLD: How does C4ISR work in the USCG?

RADM Day: Drastic changes in how C4ISR is used in support of Coast Guard missions have occurred in the last 10 years, and drastic changes are going to be needed even in the next five years.

SLD: C4ISR is essential for a modern Coast Guard to function. Although ethereal to many, the glue, which holds the platforms together, is clearly C4ISR. Could you provide a sense of the shift in performance enabled by the new C4ISR systems?

RADM Day: Consider the Eastern Pacific drug mission. In the old days, we literally went down there and bored holes in the water, and if we came across a drug vessel, it was by sheer luck. It might be on a lookout list, and we might just happen to see it. Fast forward to the 2000s. We are now able to fuse actionable intelligence and communicate that intelligence at light speed. So now we can order a Cutter to go to point A and pick up smuggler B with load C. And we're doing that in real time with delivery of a common operational picture, which has been fused with intelligence. That was unheard of 10 years ago.

SLD: So now you have the information you need to actually target a problem.

RADM Day: Not only that, we are taking information from a wide range of intelligence sources and agencies and fusing it. We are leveraging these tools and processing the information to figure out anomalies and initiate these interdictions.

SLD: Could you contrast your experiences as a young sailor and a sailor doing the mission now?

RADM Day: It's a whole different framework. The framework is shaped by the fusion of the information, which is not being done on the Cutter.



The Cutter is merely a delivery mechanism for the capability, in essence, the point of the spear. This has enabled the networks and all the systems ashore at our Command Centers and our Intelligence Coordination Centers, whether it's from the Joint Inter-Agency Task Force (JIATF) South or our own centers. This ability to communicate in real time allows us to transmit a common operational picture; the X is already on the cutter's radar screen they are simply told to go to that target.

SLD: So the difference here is that in the first case, you're just throwing a spear out to the ocean.

RADM Day: And hope you hit something.

SLD: So now there is a virtual grid over an area, and your platforms are the enforcers.

RADM Day: Absolutely. They execute the mission that results from the information we are producing.

SLD: Are the C4ISR systems essential to the USCG in its joint role as well?

RADM Day: Yes. For example, in the eastern Pacific, that's done in JIATF South, which is an interagency taskforce, they're doing the lay-down based on the information that they've got. They're getting the intelligence feeds as well we're getting intelligence feed and feeding into it.

http://www.sldinfo.com/?p=13429

SHAPING A 21ST CENTURY U.S. COAST GUARD: THE KEY ROLE FOR MARITIME PATROL AIRCRAFT

Dr. Robbin F. Laird

The U.S. Coast Guard (USCG) is at the vortex of commercial, law enforcement and military activities. It is tasked with a multi-mission focus in support of the protection of the homeland, securing global trade, protecting against terrorist threats at sea, interdicting the sea-borne drug trade, assuring the safety of shipping, and participating in global collaboration in securing the global commons. At the same time, with the global financial downturn, the Coast Guard like most other U.S. agencies, must accomplish this with constrained resources.

Providing for operational flexibility with limited resources within a constrained budgetary environment is challenging. To do so requires shaping highly connected forces around capable multi-mission assets. Connectivity is central to effective knowledge shaping action; multi-mission assets are necessary to execute on the basis of that knowledge in a variety of different circumstances.



The Ocean Sentry *and its mission systems pallette provide significant new capabilities for the U.S. Coast Guard in executing maritime security missions. Photo credit: EADS*

Without the physical assets required to operate in a more effective connected environment, enhanced connectivity will not lead to effective action. The ability to cover territory with aviation assets to work with surface assets — whether on-ship or on-shore capabilities — is central to the success of the maritime security and safety team, of which the USCG is the pivotal player.

The maritime patrol aircraft, the HC-130s and the helicopters, form the surveillance, lift and action team which extends the reach of the USCG and joint surface assets. With the new platforms, now being introduced into the USCG — the Maritime Patrol Aircraft (MPA), the upgraded HC-130s and networked enabled helicopter assets — the ability to work with the joint team is significantly enhanced.

In an era of financial restrictions, making use of joint U.S. Navy, U.S. Air Force and U.S. Coast Guard assets is essential. The new connectivity-enabled air assets enable this. A key provider for such capability will be the systems on the new MPA.

Too often when one thinks of a maritime service, one thinks largely of ships. Yet in a 21st century maritime enterprise, data, communications, and integrated air and surface systems are really at the heart of effective operations…..

The USCG uses its aviation assets to extend the reach of its other assets to craft greater operational capability. The aviation assets – helicopters and MPAs – exist as an extension of the ground and surface fleet capabilities.

For the USCG this means a simple truth: a surface ship without the long reach of an MPA or a UAV cannot see very far. By extending the sight and reach of a ship or a fleet, the ability to act and to protect and provide for maritime security are enhanced.



The range and endurance of the new Ocean Sentry enable the reshaping of U.S. Coast Guard concepts of operations for maritime security. Photo credit: EADS

With the addition of the multi-mission capabilities to the MPAs, and with the ability to integrate the information gained by those systems within shipboard operations and decision making, notably with the new USCG cutter, the MPAs become especially significant extenders of fleet activity.

Without this extended reach, drugs may well enter the U.S., illegal immigrants may well not be seen, and illegal shipping may enter U.S. waterways. Inadequate resources leads to the inability to acquire assets. As a result the USCG will not be able to see and act on the intelligence that enablesthem to protect the U.S. homeland or forces operating abroad.

The new MPA's concept of operations is essential as well to the functioning of the 21st century USCG. The new MPAs are significant enablers for the legacy and modernized fleet.

The con-ops typically depends on the mission and is essentially the same as the

HC-130. Part of this calculation is the determination of proper track spacing (distance between search legs), which is a function of the size of the target (man in the water would require a very small track spacing for example), sea state, visibility, cloud cover, etc.

Night searches are done if the target is thought to be capable of detection by radar, possess radio or signaling equipment. Typically a ship would be controlling one or more MPA/helicopters and continuously updating which areas have been searched and the results.

This function can be done by a shore station as well. The primary purpose the ship is involved at all is to be available as a helicopter platform and/or to launch a boarding party or engage the target, if hostile, or to recover survivors.

However, the HC-144 or *Ocean Sentry* can do more than just pass target position information or provide vectors. It has the ability to take photos and download them.

So the ship can have information on the number of people aboard the target craft (good to know if they are bad guys) and perhaps even information on arms.

Finally, fixed-wing MPAs are often required to loiter over targets or follow them until a surface can intercept. Endurance is critical here and a major shortcoming of the HU-25. The HU-25 has about four hours of endurance regardless of the altitude. It can fly much further high up than down low, but four hours is what you get. The HC-144 can provide ten hours….

MIAMI AIR STATION: USCG AND CARIBBEAN MARITIME SECURITY

In June 2010, SLD talked with the USCG Miami Air Station Commander, Captain Richard Kenin, USCG and staff about their Area of Operations (AOR), their con-ops and the coming addition of the latest USCG aircraft, the *Ocean Sentry*. The Air Station faces a challenging AOR with significant maritime and air traffic that shapes commerce, law enforcement and environmental challenges. Dealing with illegal immigration and drug trafficking is a major concern and because many of these migrants come from outside the region, in areas of known terrorist activity, even "normal" immigration issues carry with them national security concerns…



The first Ocean Sentry for the Miami Station in June 2010. Photo credit: SLD

SLD: How many aircraft do you have at the air station currently?

Captain Kenin: Right now, we have ten aircraft. When I was here in 1991, we had 21 aircraft at this unit.

SLD: And presumably, your geographical area of responsibility has not shifted?

Captain Kenin: No. What has changed is that the interdiction mission has shifted to Jacksonville and our helicopters were sent away. But those helicopters did a lot more than just drug interdiction. They did all the other missions for the air station. So they really downsized our air station in favor of standing up a single mission unit. We are phasing out the *Falcons* in favor of the *Ocean Sentry*. Our first *Falcon* has already left.

So we now have five, and as the HC-144's come online, these aircraft will depart.

We have 430 days away from home station (DAHS). We have an aircraft deployed 24/7 somewhere down in the Caribbean. So we typically have four aircraft here and on a good day, we have three of those aircraft available for flying. The HC-144 that you saw out there is coming online here.

SLD: What are the major threats which you face in your AOR?

Captain Kenin: We have to cover a large and busy AOR with these aircraft and face a diversity of threats. The biggest threat right now is migrants. And the threat is not the Cuban migrant coming up from Cuba. They come across for economic reasons; that is really not a threat. The real threat for us from a Homeland Security perspective is people coming over from the Bahamas. It is very easy to get into the Bahamas, and then it is only 40 miles across from the Bahamas to the U.S. We have picked up boatloads of Sri Lankans, Nigerians, and Pakistanis. These are people with the national security threat that we are really concerned about. The 40 mile boat ride from Bimini is only an hour and a half away. And there is a serious threat from a search and rescue perspective as well.

SLD: How will you shape your ISR mission with the new aircraft?

Captain Kenin: When the HU-25 came online in 1980 it was designed for a mission that we do not have anymore. We needed an aircraft that could locate a vessel in distress quickly and then we needed a helicopter that would find them and then pick them out the water. It was designed for that, and it did it very well. It had very good sprint capacity to do search and rescue at distance. It had great dash speed, and it was designed for a minimal amount of loiter time, and then it had to come back.

SLD: Presumably then you are saving the cost of the surface ship as well by using this aircraft.

Captain Kenin: Exactly. You had a plane that was the taking the search out of search and rescue. The Coast Guard air force does it all. That was the leadership's thought in pushing us towards a jet and it did that mission very well. And it also moved into the air interdiction mission very well when we started interdicting drug smugglers, as it did that very well with a different radar.

But now the Coast Guard's mission for its fixed-wing aircraft has changed. We are now about maritime patrol. That aircraft cannot give you the endurance to do the new Coast Guard mission. We need an aircraft that has the sophisticated sensor packages. What we have done all these years with all the different things on that aircraft has made the aircraft much more complicated. The avionic system was much more complex, taking more maintenance and care to operate as it has many add-on capabilities.

SLD: But these capabilities are not integrated.

Captain Kenin: Right. We have hung more things on them. Individually, these packages are good. It is good radar and it is a good FLIR, but they do not integrate well. Plus the aircraft just cannot stay out there long enough to do the mission. When we find a go-fast mover, we cannot stay on scene with that aircraft to wait for the surface fleet to make the interdiction. We can find it, and we do that pretty well. But after we find it, if we have already been flying 2-1/2 hours, well, all we can do is report a position and then go back and get fuel. The aircraft was optimized for a particular mission set and now we have a multi- mission set.

SLD: Do you mean multi-mission in terms of not just ISR but multi-mission in terms of lift and carry as well?

Captain Kenin: Yes. That gives us a lot of the flexibility given that we are a smaller air force — a lot of flexibility built into the new aircraft. Multi-mission is huge especially in this AOR because there are so many different places that we need to reach and we need to shift tasks in flight.

SLD: The CASA aircraft was designed in part to operate in the Mediterranean and the Caribbean, and has a great deal of similarity. Is that a good fit?

Captain Kenin: It is and we need the loiter time that this aircraft has. We really need an airplane that can stay out seven or eight hours for a number of important reasons. First, it can cover the ground that we need to cover and it can get there fast. We have had problems in the past when we found the ship, but then lost it because we had to leave. By the time the rescue ship or another asset came, whether it was a Customs and Border Protection asset or another Coast Guard asset, it is either too difficult to find or it is simply gone. We play a lot of cat and mouse with smugglers in the Caribbean, so it is important to be able to track these folks and stay with them because they will dodge and hide until we are forced to leave.

SLD: So the multi-mission capabilities of the aircraft coupled with the loiter time of the aircraft fits your AOR and you multi-mission con-ops well?

Captain Kenin: We believe so. Our resources are multi-mission, our people are multi-mission. The Navy and DOD and the other services have that luxury of having specialized people. We don't. Our guys are running up front dropping a pump, going back to fill the aircraft, and doing all kinds of other stuff at the same time….

http://www.sldinfo.com/?p=8625

BUILDING THE OCEAN SENTRY

http://www.sldinfo.com/?p=9101



A new Ocean Sentry being built for the U.S. Coast Guard as seen in May 2010. Photo credit: SLD



The Ocean Sentry production process takes approximately 40 days. Photo credit: SLD

On May 18, 2010, SLD visited the factory in Spain where the CN-235 is built. The USCG variant is called the *Ocean Sentry* and two planes were being built on the 4 station line in Seville at the time.

Prudencio Escamilla, site manager as well as the Head of the Light and Medium aircraft Final Assembly Line (FAL) for Airbus Military, provided the tour of the FAL.

Several things were evident from touring the factory.

First, the USCG has bought an aircraft from a mature production facility. The heritage company has built more than 300 light and medium aircraft.

Second, the CN-235 has been purchased by many countries, several of which are partners with the USCG in providing for security in the Caribbean.

Indeed, the first Mexican CN-235 Maritime Patrol aircraft was parked on the tarmac outside of the FAL. This aircraft is virtually similar to the *Ocean Sentry* with the obvious exception of the mission systems.

Third, the factory uses modern production techniques, as one would expect, notably lean manufacturing techniques.

Fourth, the CN-235 is built with a mature, multi-national supply chain.

The origin of the CN-235 was a joint program between Spain and Indonesia, which the N represents. There are separate series numberings represented the Spanish and Indonesian based production runs.

During the visit, *Ocean Sentry* 10 was viewed and this represented series production 183 in the Spanish production run. The Indonesian numbering is more than 50 and is numbered as such.

The day of the visit there were two *Ocean Sentry*'s in the bays being worked on. The production rhythm is 10 days on the line after which the planes move to the flight test lines for testing and then preparation for customer acceptance. The entire process takes approximately 40 days.

THE NEW U.S. COAST GUARD CUTTER: A "CHAOS MANAGEMENT SYSTEM"

In June 2010, the *Second Line of Defense* team visited the latest National Security Cutter, the USCGC Waesche (WMSL-751). The team toured the vessel while it was ported in San Diego for a training and repair mission. Captain Lance Bardo, the Commanding Officer of the Waesche, who retired in late 2010, provided an overview on the ship, its con-ops and missions.

EADS provides a significant piece of the Cutter's capabilities, namely the shipboard multimode acquisition radar, the TRS-3D radar. As of August 2010, a total of three National Security Cutters had been outfitted with the TRS-3D radar for air and surface search operations, with another two systems in the process of integration.

The TRS-3D is also aboard the Lockheed Martin version of the U.S. Navy's Littoral Combat Ship – a fast, agile platform designed for operation in near-shore environments with additional aptitude for open-ocean missions. It is designed to defeat asymmetric "anti-access" threats such as mines, quiet diesel submarines and fast surface craft.

The new U.S. Coast Guard cutter is a significant improvement over the existing legacy cutters, and is designed to provide capabilities, which allow the service to operate less large cutters.

The new cutter includes significant C4ISR capabilities, digital capabilities for operations and maintenance, an ability to operate much larger helicopters on its decks, an ability to operate remotely piloted vehicles, significant endurance, and an ability to operate for extended period of time at sea.

In crises such as Hurricane Katrina or the Gulf oil spill, the new cutter brings significant command and control capabilities to any task force managing a disruptive event.

SLD: Can you summarize what sets this Coast Guard asset apart and its value to the nation?

Captain Bardo: When you have an event like Katrina, you don't have power lines. I can push through the Panama Canal and be up there in a day and a half and when I arrive I have the ability to make my own water. I have three months worth of food on board. I can talk to anybody in the world, literally, continuously. I can fly helicopters. I can launch boats. I can rescue people. I can coordinate significant numbers of aircraft because I'm basically a miniature airport with a control tower.

In a crisis you need to build and coordinate a coalition of different agencies in a scenario where there is no power, which means there's no ability to communicate. The cell towers are down so you have to figure out how to communicate with other folks. We can easily move this platform to the area to manage a crisis event, so it's a chaos management system.

This asset is large enough with enough capability built into it actually to manage the response. I mean that literally. We have nothing else in the Coast Guard or the Navy, for that matter, to manage domestic response the way this platform can. The Coast Guard has demonstrated over and over again -- as recently as the current Deepwater Horizon oil spill and the Haitian earthquake -- that we are at our best when we respond to domestic emergencies, and a major offshore cutter is often the center of that. The Navy is a great partner in those emergencies but it's just not their primary mission.

SLD: What are the unique features of the ship you would underscore?

Captain Bardo: Endurance; if you have endurance you've got stability. You've got command capabilities. You've got a lot of flexibility inherent in the ship itself and the crew. The platform enables this kind of tool set; the toolset synergistically interacts with the platform.

SLD: What other capabilities would you emphasize?

Captain Bardo: Our flight deck is literally twice as big as our older cutters; four-thousand square feet versus twenty-three hundred on a High-endurance Cutter (378), and I can land a "sixty". I can land all variety of helicopters on the 751 that I can't on the 378. When the sea is tossing the ship around, I have the stability to allow helicopters and UAVs to operate.

On a 378, I had to make really hard decisions by taking saltwater into my fuel tanks; it took three days to get rid of that water when you wanted to then fill up the tanks with fuel. With this ship I don't have that problem because I have a segregated tank.

I don't know what helicopters we will have in the future but I can tell you this, I can operate with a lot more flexibility with the 751. I always had to manage my fuel on a 378; for aviation I had eight thousand gallons of fuel. I've got a 35,000 gallon aviation fuel capacity on this ship, so I can fly those helicopters for a long, long time on four times the amount of fuel. This really gives us a tremendous amount of flexibility; it's definitely not a platform-for-platform placement for a 378. It's a tremendous leap ahead in terms of growth capability as well.

SLD: How would summarize the impact of the new cutter on operations?

Captain Bardo: We can be fifteen hundred miles from where a crisis is occurring and be there in a matter of two days. We have the ability to talk to anyone anywhere in the world. We have the ability to organize a lot of different agencies because of the ability to communicate. We have the ability to put people on the scene with boats and aircraft. We have the ability to remain on station for up to ninety days. We can make our own water; we make our own electricity; we're essentially a small city and a small commanding tool that can function as a global command and control platform.

http://www.sldinfo.com/?p=10225

THE U.S. COAST GUARD: 7,000 FOOT RESCUE SHOWS IMPACT OF NEW EQUIPMENT ON LIFE SAVING CAPABILITIES

In March 2010, Second Line of Defense talked with the current Executive Officer of the USCG Aviation Technical Training Center (ATTC) at the Elizabeth City USCG facility about a dramatic rescue conducted three years ago at 7,000 feet on the West Coast, in which he played a key role in hoisting an injured climber to safety.

On May 27th, 2007, the Coast Guard hoisted a person off of Brother Mountain in Port Angeles, Washington, after local authorities notified Coast Guard Sector Seattle that a 64-year-old male had been injured and was immobile on the summit. A HH-65C *Dolphin* helicopter crew from Coast Guard Air Station Port Angeles hoisted the injured male from an altitude of just over 7,000 feet, the highest altitude rescue ever performed by the Coast Guard in the region.

This rescue demonstrates the synergy between man and machine in delivering capability for public safety and security. For many years the U.S. Coast Guard have operated helicopters and fixed wing aircraft capable of water landings under certain conditions. Advantages for this capability and its limitations are obvious.

During the early 1980s, the Coast Guard selected the HH-65 *Dolphin* as its short-range recovery helicopter, and it has been the workhorse of the services short-range fleet for years. More than 90 HH-65s are currently in service.

Before the recent introduction of the National Security Cutter produced by the Deepwater Program, the *Dolphin* was the only Coast Guard helicopter capable of routine operations from its ships. It has an empty weight of slightly more than 6,000 pounds and a maximum gross weight of more than 9,000 pounds. It was the first of the service's helicopters that did not have the ability to land on the water.

Amphibian helicopters were phased out with the transition to the HH-60 for medium range search and recovery. This created a need for the rescue swimmer program made famous by hundreds of real-life dramatic rescues, as well as Kevin Costner's movie, "The Guardian."

The *Dolphin's* weight grew over the years because of mission changes. More powerful engines were required, and the Turbomeca 2C2 engine was selected: two were installed on each *Dolphin* helo with funding from the Deepwater Program.

Coast Guard helicopters routinely respond to land emergencies. The higher-powered engines provide vital extra margins of safety should there be a problem during critical evolutions, such as hoist operations. While the *Dolphin's* new and more powerful engines enabled this miraculous 7,000-foot rescue, the skillfed Coast Guard crew — with nerves of steel — made it happen.

A senior USCG official added further insight into the significance of the modernization effort:

The difference between the Alpha and Charlie model and putting new engines is this: in the old days when we used to do hoists and the engine failed, we knew we were going in the water, period. There was no chance that we were going to swim out of this. And now if the engine fails, you have a 50/50 or better chance that you are going to fly it out on a single engine. That is the difference in the C model aircraft versus the old engines. You could not do that with an A model. With the A model, the crew died if you lost an engine. And we lost engines routinely.

The issue of hoisting at 7,000 feet, I do not know how many rescues we actually do with that altitude. But every day we go out and we hoist with that aircraft low over the water.

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