Operational Assessment of Africa Partnership Station

APS 2011

This is an assessment of the Africa Partnership Station (APS) 2011 efforts and effects. Its primary intent is to provide planners and operators with programmatic understanding, lessons learned, and a way ahead. Following the pillars of Maritime Sector Development, this quantitative framework and qualitative narrative gives real-time program evaluation, alignment with leadership goals, and makes recommendations for programmatic success.

A product of
CNE-CNA-C6F
N52 Africa
Regional
Engagement

Information valid as of October 2011

Contents

Acronym guide

AAR: After Action Report
ACSS: Africa Center for Strategic Studies
AMLEP: African Law Enforcement Program (currently termed “Junction Rain”)
AMSI: Air and Maritime Support Initiatives
APS: Africa Partnership Station
BIR: Rapid Intervention Battalion (Cameroon)
BLUF: Bottom line up front
CAMTES: Computer Assisted Maritime Threat Evaluation System
CEFR: Commander’s Event Feedback Report
COMREL: Community Relations
CNT: Counter Narcotics Terrorism
CWOW: Community Watch on the Water
DATT: Defense Attaché
DC/FF: Damage Control/Firefighting
DCM: Deputy Chief of the Mission
DoD: Department of Defense
DoS: Department of State
EEZ: Exclusive Economic Zone
FMF: Foreign Military Financing
FPC: Final Planning Conference
GCCV: Guardia Costeira de Cabo Verde
HF: High Frequency
HSV: High Speed Vessel
KLE: Key Leader Engagement
LOE: Line of Effort
LOO: Line of Operation
MARFORAF: Marine Forces Africa
MCAT: Maritime Civil affairs Team
MIPR: Military Interdepartmental Purchase Request
MOC: Maritime Operations Center
MOE: Measures of Effect
MOP: Measures of Performance
MPC: Main Planning Conference
MPP: Maritime Partnership Program
MRS: Maritime Reaction Squadron
MTT: Mobile Training Team
MSS: Maritime Safety and Security
MSSR: Maritime Security Sector Reform
MOU: Memorandum of Understanding
NAVAF: Naval Force Africa
NMASA: Nigerian Maritime Administration and Safety Agency
NMCB: Naval Mobile Construction Battalion (SEABEE)
NCO: Non-Commissioned Officer
O&MN: Operations and Maintenance, Navy
OPV: Offshore Patrol Vessel

OSC: Office of Security Cooperation
PAO: Public Affairs Office
PASSEX: Passing Exercise
PQS: Professional Qualification Standard
RGB: USS ROBERT G BRADLEY
RHIB: Rigid Hull Inflatable Boat
RMACC: Regional Maritime Awareness and Coordination Center
SBR: USS SAMUEL B ROBERTS
SADC: South African Development Community
SAN: South African Navy
SANDF: South African Defense Forces
SITREP: Situation Report
SWG: USS STEPHEN W GROVES
TCCC: Tactical Combat Casualty Care
TSC: Theater Security Cooperation
TSCC: Theater Security Cooperation Conference
TTP: Tactics Techniques and Procedures
TTW: Territorial Waters
TTX: Table Top Exercise
UNODC: United Nations Office on Drugs and Crime
USMC: United States Marine Corps
VHF: Very High Frequency
VBSS: Visit, board, search and seizure
WATC: West Africa Training Cruise

1. Executive Summary

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BLUF

The ongoing Africa Partnership Station (APS) program, initiated in 2007, improves African partner reaction to maritime challenges by training maritime professionals, enhancing maritime domain awareness (MDA), supporting the development of maritime infrastructure, and improving partner response capability. APS 2011 was the most ambitious APS program to date, with 32 separate engagements in 19 countries in East and West Africa, and using five naval platforms including a European ship. Training hubs brought students together across the continent, and the "Train-the-Trainer" program produced African APS trainers for the first time.

An ever-accruing body of evidence indicates that the APS program is having success in achieving its intended effects. The mission has become a catalyst for cooperation; APS stimulates regional and international collaborations which support and augment maritime security efforts. By providing a forum for multinational players to create these partnerships, the impact of the mission is amplified and the prospect for self-sufficiency is increased. Additionally, graduates of APS courses use their skills in daily operations. APS also draws the attention of civilian leadership to maritime challenges and helps maritime professionals identify and correct their own procedural and structural shortfalls. Furthermore, APS boosts interoperability amongst maritime stakeholders and appears to increase partner response to maritime threats.

APS program goals for 2012 and 2013 should focus on leveraging existing institutions, information, assets and infrastructure. Programmatic objectives should support partner processes, should create the means to network systems and people, and should assist partners in developing long-term maritime development plans. Changes should be made to APS training to enhance partner-nation self sufficiency, including a "Phased Training" and "Multi-Tier training" approach, expansion of the "Train-the-Trainer" program, and support the development of African partner "regional centers of excellence" and regional leadership in key focus areas. Emphasis should be placed on hands-on training, exercises and real-world operations. Additionally, meaningful standards should be established for course curriculum and students tested for proficiency. Internal Naval Forces Africa (NAVAF) execution of the APS mission may be enhanced by augmenting existing knowledge management systems and by establishing an APS coordination website. APS execution may further be improved by increasing international participation in APS planning and execution staff, and establishing specific POCs within N52 to coordinate international efforts, to ensure student vetting, and to coordinate and direct on-the-ground training.

This in-depth assessment of APS 2011 concludes with a summary of key operational issues and a plan for upcoming iterations of the APS program. We outline recommendations for future APS activities and programmatic assessment, and give examples for tailoring operations in order to maximize the value of APS efforts.

Background

2011 marked the fifth year of APS, a program designed to increase the maritime security capability and capacity of African nations through international efforts aligned along four pillars of the NAVAF maritime sector development (MSD) model: *maritime professionals*, *maritime domain awareness*,

maritime infrastructure, and *response capability*. This four pillar model emphasizes international and regional cooperation applied in a comprehensive approach to improving maritime security. APS embodies a whole-of-government approach while supporting U.S. national security interests and the goals of the U.S. Navy. APS draws its mission and objectives from the guidance of senior officials in the Department of Defense (DoD) and Department of State (DoS) who have recognized the importance of persistent and sustained cooperative efforts to enhance maritime safety and security (MSS) in Africa. [1,2,3,4,5]

The need for effective African partner response to indigenous maritime threats is increasing. Recent surges of piracy in East African waters have drawn international attention to the scope and impact of African maritime challenges, and emphasized the complex social, political, and economic factors shaping them. Somalia's "pirate economy" has grown substantially in the past two years, with 230 piracy attacks reported in 2011[6] and ransoms averaging more than $5 million.[7] West African Piracy, born in the oil-rich Niger Delta region, has expanded rapidly into the waters of Cameroon, Equatorial Guinea, Sao Tome & Principe, Benin, Togo and Ghana. These attacks are increasing in number, scale, and violence.

Piracy is only one of many concerns in African territorial waters. Illegal, unreported, and unregulated (IUU) fishing in Africa is estimated to comprise more than one third of total catches,[8,9] creating ecological and economic pressure by drawing away fish stock and, in so doing, impacting a country's total revenue and potential for growth. Additionally, diminishing fish stocks draw vulnerable fishing communities to participation in criminal activities such as drug smuggling. The United Nations Office on Drugs and Crime (UNODC) estimates that 13% (approximately 35 metric tons or 35,000 kilograms) of cocaine reaching Europe from South America is trafficked through West Africa.[10] Human trafficking and illegal migration via African waters are also persistent maritime issues. Furthermore, recent maritime transport accidents have resulted in tremendous loss of life and equipment casualties and degradation have called attention to the need for effective search and rescue (SAR) capability and emergency response and damage control training. [11,12]

APS Program and Effects

APS is designed to enhance African response to maritime challenges, providing partnership, training and support for regional and international interoperability, and paving the way for self-sustained response. The U.S. Navy and supporting elements have gained valuable operational expertise by working in Africa, and in the concepts of capacity building with multinational partners. As these partnerships strengthen and the store of NAVAF in-house subject matter expertise increases, so does the efficacy of the mission. The message of APS resonates with our partners and the mission has

[1] http://www.dhs.gov/xlibrary/assets/HSPD13_MaritimeSecurityStrategy.pdf
[2] http://www.fas.org/irp/offdocs/nspd/nspd41.pdf
[3] http://www.dtic.mil/doctrine/new_pubs/jp3_0.pdf
[4] http://www.navy.mil/maritime/Maritimestrategy.pdf
[5] http://armed-services.senate.gov/statemnt/2011/04%20April/Ham%2004-07-11.pdf
[6] http://www.icc-ccs.org/piracy-reporting-centre/piracynewsafigures
[7] "Piracy off the Horn of Africa", L. Ploch, C.M. Blanchard, R.O'Rourke, R.C. Mason, and R.U.King, April 27, 2011, Congressional Research Service. http://www.fas.org/sgp/crs/row/R40528.pdf
[8] National Oceanic and Atmospheric Administration (NOAA), http://www.noaa.gov/
[9] International Monitoring, Control, and Surveillance Network for Fisheries-Related Activities, http://imcsnet.org/imcs/index.shtml
[10] World Drug Report 2011Copyright © 2011, United Nations Office on Drugs and Crime (UNODC). ISBN: 978-92-1-148262-1
[11] http://www.bbc.co.uk/news/world-africa-14869596
[12] http://www.habermonitor.com/en/haber/detay/28524/comoros-islands-ferry-sinks-50-dead

gained credibility and multinational support as a result of recurring presence, promises kept, and the genuine partnership between participants of different countries.

During its short life, there is growing evidence that the APS program is having success in achieving its intended effects. Indicators of programmatic success include the following:

1. **Increased regional and international cooperation.** APS facilitates, stimulates and strengthens international relationships. This is the most cited benefit of APS. Accordingly, there are strong indicators that these relationships are improving operability and response. For example, the APS-forged relationship between Benin and Togo's navy leadership enabled information sharing and coordination to prevent a ship from dumping toxic waste in Togolese waters. Similarly, APS enabled a relationship between engineers in the Ghanaian and Sierra Leonean navies, resulting in a bilateral collaboration to create a Sierra Leonean Navy fiberglass boat construction and maintenance program. The benefit of regional cooperation provided by APS is particularly apparent when there is no other mechanism for exchange and collaboration. APS and the OBANGAME EXPRESS exercise provided the Cameroonian special forces unit, the BIR, with its only mechanism for regional interaction, cooperation, and relationship building. According to one source, the BIR Delta leadership obtains regular information updates through an informal relationship between a BIR intelligence officer and his counterpart in the Nigerian Navy, a relationship made possible by APS. The number of examples of such cooperation and interoperability are increasing, and the concept of regional cooperation is taking hold, particularly in the Gulf of Guinea (GoG). In October 2011, the governments of Nigeria and Benin launched the joint patrol, "Operation Prosperity" in the Seme and Cotonou territorial waters of Benin to curb the activities of pirates and other sea criminals.
2. **Utilization of APS program graduates in duties related to APS training**. Surveys and interviews with APS trainees and partner leadership have shown that many students trained in APS courses are using and/or plan to use their skills in their regular duties to include watchstanding, MDA monitoring, patrols, and Visit, Board, Search and Seizure (VBSS). This year marked the first time African partners engaged as APS trainers. Graduates of the "Train-the-Trainer" program have been used to train members of their own and other African navies, sustaining the effort initiated by APS: Tanzanian instructors taught NCO leadership in the Mauritius hub in March 2011, and Senegalese and Cameroonian "Train-the-Trainer" graduates taught a VBSS course and Damage Control and Firefighting, respectively, in the June 2011 Cameroon hub.
3. **Use of APS training in real-world operations**. APS partners frequently observe that APS trained skills are used in real-world operations. For instance, in the month following the APS engagement in Togo, graduates of APS VBSS training successfully interdicted, boarded, and arrested an illegal vessel in Togolese waters. They attributed their success to the skills they had learned through APS. Similarly, graduates of the APS medical courses in Ghana are developing training programs to transfer their skills and have reportedly responded successfully and effectively to severe accidents. Seychellois coast guard members have used APS-trained intelligence methods to inform data collection and fusion in their anti-piracy effort.
4. **Increased leadership attention to maritime challenges & legitimization of maritime forces in an otherwise land-centric environment**. Partner participants report that APS is helping to cure the "sea-blindness" in many African countries by calling attention to maritime challenges. Where maritime response is curtailed by insufficient fuel for patrols and money

for spare parts and infrastructure development, leadership awareness and participation is particularly important. APS participants report increased attention from leadership and legitimization of maritime forces through APS. Investment decisions from partner nation leadership are particularly telling indicators of government receptivity towards maritime response. For instance, the Ghanaian government has recently purchased four patrol craft with funds from Ghana's Ministry of Food and Agriculture, and purportedly has plans to acquire ten new vessels over the next two years.

5. **Self-assessment and self-initiated maritime response improvements**. Participation in APS events, training, conferences, and APS-related exercises encourages partners to assess their own capabilities and to initiate improvements to their procedures and equipment. Difficulties in maintaining a common operating picture (COP) in the Senegalese maritime operations center (MOC) during the exercise SAHARAN EXPRESS incentivized the Senegalese navy to initiate new procedures for ensuring watchstanders are trained, and developing standard operating procedures (SOPs). Similarly, the Gambian Navy set a new room aside for their MOC in anticipation of their participation in APS and SAHARAN EXPRESS 2011. Kenyan participants in the APS East engagement with the STEPHEN W GROVES (SWG) assessed the need for indigenous trainers by observing the Tanzanian "Train-the-Trainer" graduates – and then requested participation in a special iteration of "Train-the-Trainer". Mauritian coast guard officers updated their damage control/firefighting communication methods when they observed the methods used by the crew of the USS SAMUEL B ROBERTS (SBR).
6. **Interoperability between maritime stakeholders**. The responsibility for maritime safety and security in African countries rarely rests solely on the military maritime branches. The comprehensive approach used by APS enables interaction between different maritime stakeholders, as well as other organizations and government officials whose cooperation with one another would increase partner nation ability to respond to maritime threats. Partners report that interoperability is facilitated by APS programs and that this benefit has the potential to make a significant impact in our partner MSS capability.
7. **Increased response to maritime threats.** Partners report that they are increasing their response to threats within their exclusive economic zones. It may not be possible to claim causation – to say that APS is directly responsible for this increase – but there are certainly indicators that APS has made a contribution. These include the following:
    - In October 2011, The Cape Verde Judicial Police and Coast Guard responded to the reports of a shipment of cocaine, leading the response in a U.S. donated Archangel patrol craft, the first stage of a drug bust that seized cocaine worth $100 Million U.S., weapons, luxury cars, and led to the arrest of four Cape Verde nationals.[13]
    - In July 2011, the Liberian Coast Guard demonstrated its response capability for the first time by responding to intelligence reports of the Korean fishing trawler, Seta 70, illegally fishing in Liberian and Sierra Leonean waters.[14] The Coast Guard conducted a hostile boarding of the vessel, safely subdued and arrested the Seta 70's 30 member crew, and transported the vessel into Monrovia. The fine for the *Seta 70* was $150K. In the months that have passed since this seizure, the Coast Guard has conducted two additional fisheries arrests, and two search and rescue operations.
    - The Togolese Navy has seen and responded to several incidents of at-sea robbery occurring primarily on vessels at anchor in the commercial port of Lomé during the past year. According to the base commander, a ready patrol is on standby 24 hours a day.

[13] http://www.iol.co.za/news/world/cape-verde-s-biggest-drug-bust-1.1154124
[14] http://cryptozoologynews.blogspot.com/2011/09/illegal-fishing-trawler-seized-off.html

- The Benin Navy is increasing its response to its nascent problem of piracy, and naval officers have described intercepting pirate attacks in progress. Benin and Nigeria have initiated joint patrols to improve response.
- The Nigerian Navy uses their new Regional Maritime Awareness and Coordination Center (RMACC) and "aggressive patrols" to identify suspicious activity. Identifying the companies involved in acts of transshipment at sea, Navy officials contact the shipping agencies. When commercial companies deny the activities, data from the RMACC allow Nigerian Navy personnel to present evidence, and to levy fines. This increased naval response to illegal transshipment at sea has purportedly diminished acts of at-sea robbery in Nigerian waters, shifting both the illegal transshipping and attackers into the waters of Benin, Togo and Ghana.
- Since they became operationally active in late 2009, the maritime branch of the Cameroonian BIR, the BIR Delta, has been successful at culling piracy attacks in and around the Bakassi oil platforms, and out of Cameroonian territorial waters.

APS 2011

The ambitious APS 2011 plan included 32 separate engagements hosted by 19 countries. This year's "hub" concept brought together students from across the continent to build relationships and facilitate partner interoperability. This engagement model leveraged three U.S. frigates and the High Speed Vessel (HSV) SWIFT as well as a Belgian Naval Ship. When USS WHIDBEY ISLAND was recalled for operations in Libya, no-ship hub engagements were conducted.

More than 1300 students were trained in 99 courses spanning 37 topics, and this was the inaugural year of the "Train-the-Trainer" program, a well-received initiative designed to create organic trainer capability. Graduates of this program from Cameroon, Senegal, Nigeria and Tanzania trained other Africans in subsequent APS events, making this the first year of African partners becoming APS trainers. The Shiprider program was also active again, bringing 70 African naval officers and enlisted personnel from 12 countries aboard four platforms.

APS platforms conducted at-sea training and exercises with our partners, including passing exercises (PASSEXs) with a South African Navy (SAN) submarine, at-sea helicopter exercises with the Mauritius Coast Guard, and a MDA/VBSS exercise with the Togolese Navy. The APS-related EXPRESS series of exercises continued in 2011 with OBANGAME EXPRESS, SAHARAN EXPRESS, and CUTLASS EXPRESS. The APS-related operation, African Law Enforcement Program[15] (AMLEP) in Sierra Leone and Senegal further extended the law enforcement capability and reach of these partners.

In addition to training and exercises, APS embodied a holistic approach to partnership, engaging key leaders and hosting receptions, as well as conducting Civil-Military Assistance projects, medical courses, Marine Corps training, and a host of other events specifically tailored to the needs and desires of our African maritime partner nations.

Always an international endeavor, APS also appears to serve as a catalyst for international maritime capacity-building efforts, with an ever-widening base of support and participation. Since inception, APS has included 10 European countries, 22 African nations, the U.S. and Brazil. This international backing for the program has encouraged Australia, Norway, and Sweden to consider joining in 2012.

[15] AMLEP operations were renamed in late FY11 as "Operation Junction Rain".

In order to understand the program better and hone recommendations, the key takeaways from the analysis of each MSD pillar are summarized here.

MSD Pillar: Trained Maritime Professionals

The MSD pillar of Maritime Professionals was emphasized more than any other during APS 2011. Efforts were focused mainly on classroom training, at-sea training, and the Shiprider program. The new "Train-the-Trainer" initiative was highly successful, with graduates of this program teaching courses in four subsequent APS engagements. Additional iterations of this program will be useful in promoting the long-term sustainability of partner nation capability. Classroom training should be expanded to include different courses in a particular subject reflective of the various ranks and responsibilities of those involved with a particular area, for example, supply chain management or maritime domain awareness, an approach that referred to as "Multi-Tier Training." The concept of "Phased Training", which involves training a core group of maritime professionals through an entire continuum of courses in a particular subject area (for example, VBSS), is a recommendation that has already been implemented in APS 2012 plans. This approach confers several benefits, including continuity, standardized proficiency levels, practical training, and efficient scheduling.

African maritime partner nations have expressed a strong demand for course standardization and proficiency testing of students who complete training courses. When implemented, such evaluation would provide a clear measure of a graduate's level of knowledge and/or skill. Recommendations to improve training also included expanding the practical components of training events, establishing or augmenting maritime "centers of excellence," and creating or refining "maritime development plans" which would align the offered training with African partners' own country-specific readiness goals and objectives. From an administrative and planning standpoint, there should be more advance notice to course instructors, increased lead time to allow for Leahy vetting of participants, and greater cultural awareness and translator support for training.

APS 2011 hosted 70 Shipriders from 12 countries and implemented a Personnel Qualification Standard (PQS) for Shipriders. Participants provided key feedback which will inform future iterations of the program, and which included suggestions for running-mate assignment, managing expectations of ship's company and Shipriders, further professional development, and program oversight and support. The concept of the Shiprider program should be evolved from one of familiarization to one of robust higher-level training for career-oriented personnel.

Analyses of efforts and effects demonstrate that incorporating the following recommendations could enhance the MSD pillar of maritime professionals:

1) *Implement and expand a "Phased Training" approach, building student skill in a logical sequence with the focused goal of operational demonstration, incorporating regional interoperability, and maximizing the value of available U.S. and partner platforms in exercises.*[16]
2) *Implement a "Multi-Tier" training approach to expand skills and capability in all levels of rank and responsibility, including partner maritime leadership and government.*

[16] The "Phased Training" approach recommendation is currently being implemented in the APS 2012 plan, creating an MDA track in West Africa, and a Visit Board Search and Siezure track in East Africa

3) *Encourage, promote and support the development of African partner "Regional Centers of Excellence".*
4) *Work with partners and Country teams to develop and utilize a "Maritime Development Plan" for each country, allowing partners to create measurable short and long term goals, and a plan of actions and milestones.*
5) *Promote and expand the "Train-the-Trainer" Program, encouraging countries to use their graduates in regional, bilateral engagements.*
6) *Develop a meaningful standard for course curriculum (containing a large practical component) and conduct post-course evaluation and assessment of student capability.*
7) *Ensure that course instructors receive adequate notice before teaching courses, as well as curriculum and cultural requirements.*
8) *Re-conceptualize the Shiprider program to be considered as a means to train officers and crew to augment our forces and to act as liaisons in joint operations; include screening, detailed program planning, and well-defined expectations, PQS implementation, and adequate programmatic support and oversight.*
9) *Establish a single NAVAF point of contact with oversight on student vetting.*
10) *Create a single training POC within NAVAF to maintain only the responsibility of coordinating and directing APS training.*

MSD Pillar: MDA

APS 2011 contributed to the pillar of Maritime Domain Awareness on three different fronts: technology-focused efforts; MDA training courses; and awareness and coordination efforts.

MDA coverage in the Exclusive Economic Zones (EEZ) of many African countries is incomplete, though APS participants have at least one technology-based MDA system. There seems to be an ongoing effort to improve the common operational picture (COP), largely through international donations and training. U.S. 1206 donations in Africa improved the MDA capabilities of recipients and sometimes represent the major MDA systems that our partners use. It is important to note that these are not the only systems used, and future efforts should recognize other contributors in order to increase interoperability and avoid duplication of effort. Where partner nation MDA efforts do not appear to align with the system or metric selected for MDA, a more comprehensive view of MDA information is required.

Technology-based MDA systems in partner countries tend to be stand-alone – not networked into a larger COP. Future APS efforts should ensure that the physical infrastructure for networking exists and should emphasize the networking of existing systems. There are considerable challenges in MDA system upkeep. During upcoming APS engagements, a thorough assessment of MDA systems should be conducted by a subject matter expert in conjunction with partner nation subject matter experts.

Where APS has conducted MDA training it has been well-received. While basic watchstanding procedures constitute an important aspect of APS training, higher-level MDA operations training, including the development of standard operating procedures (SOPs) within maritime operations centers, should be incorporated into APS curriculum. Partners trained on MDA systems that they currently employ are immediately able to apply the new

skills. When MDA systems are operated by non-military groups, APS training efforts should include members of these organizations.

Future APS efforts should provide forums for interaction between navies, commercial interests and local maritime professionals (such as fishermen). We recommend that APS create opportunities, including stakeholder conferences and exercises, to facilitate the construction of memoranda of understanding, development of SOPs, and practice of information sharing.

Based on our analyses, we recommend implementing the following MDA solutions in APS 2012 and beyond:

1) Emphasize networking existing systems within each country, particularly when systems belong to separate organizations.
2) Include assessments and regular documentation of existing MDA systems (including partner nation self-assessment of these systems),
3) Assist in implementing low-tech MDA solutions, such as Community Watch on the Water (CWOW) programs
4) Conduct Multi-Tier training in MDA (e.g. development of operations center SOPs in addition to basic watchstanding procedures).
5) Train groups using MDA systems to the existing systems.
6) Facilitate information sharing between maritime organizations.

MSD Pillar: Maritime Infrastructure

APS 2011 contributed to the MSD pillar of Maritime Infrastructure through three separate efforts: engineering assessments of maritime infrastructure; ad hoc repair projects of maritime infrastructure; and training for maintenance, response and repair of maritime infrastructure.

Primary U.S. efforts towards maritime infrastructure development in Africa are through 1206 MDA donations, Counter-Narcotics-and-Terrorism (CNT) donations, and foreign military financing (FMF) projects. APS necessarily plays a small role in this pillar due to constraints on existing APS funding lines. MCAST, NMCB (SEABEE) construction projects, and Community Relations (COMREL) projects may be leveraged by APS but, due to limited funds, cannot be expected to create significant advances in maritime infrastructure.

APS staff members conducted maritime engineering assessments in Senegal, Togo, and Cameroon with planned follow-on engineering support during USS WHIDBEY ISLAND's scheduled engagements; due to her other tasking these projects were therefore not accomplished.

Maritime infrastructure improvement projects were conducted during APS West 2011, although they were not planned in advance and were taken on by motivated ship's crew as events of opportunity. These included air conditioning repair in classrooms, boat maintenance, and boat winch repair. In general, these projects were not used as training opportunities, nor were the existing training opportunities used in conjunction with repairs to or gifting of an actual system.

The main emphasis during APS 2011 was on training. Courses to support maintenance and repair capability of organic infrastructure included both specific maintenance and general damage control courses. These courses were conducted in Togo, Sao Tome & Principe, Nigeria, Cameroon, Tanzania, Seychelles, and Mauritius.

The following recommendations provide means for maximizing the existing program's value in the pillar of maritime infrastructure while remaining within the current funding constraints:

1) Conduct Multi-Tier training on maritime infrastructure repair and maintenance. Engineering and maintenance courses should include a practical portion and use host-nation equipment and supplies.

2) Where feasible, focus COMREL activities and Civil-Military Assistance construction projects towards maritime infrastructure and local fishing communities.

3) Identify partner nation goals and plans for maritime infrastructure improvements. Use existing platforms to transport equipment and materials.

4) Create opportunities for engineering assessments. Design repair and maintenance projects to include partner nation participation.

MSD Pillar: Response Capability

APS contributes to APS African partner response capability alongside other U.S. efforts and initiatives from international partners. APS 2011 contributed to African partners' ability to respond to maritime threats primarily through training and through exercises at sea. Other U.S. efforts, such as FMF projects and exercises play a complementary and significant role in improving indigenous response capability. U.S. 1206 donated Defender-class and Archangel-class boats often represent a significant component of APS African partner's maritime response capability. As with MDA systems, these 1206 donated craft are among the only functioning vessels in the maritime force. Similarly, U.S. 1206 donated MDA systems are often the only systems available to African APS partners.

According to interviews, intelligence fusion and information exchange courses have played a crucial role in partner nation response capability in the past year. Shortfalls in intelligence and communications capability were exposed during APS related EXPRESS exercises, and efforts during APS 2012 should be made to bridge these gaps – through additional courses, through tabletop exercises (TTXs), and through at-sea exercises and operations.

APS PASSEXes in 2011 occurred primarily with the South African Navy (SAN) and the Mauritius Coast Guard. These two partners are amongst the most proficient maritime forces participating in APS. While these exercises may have built partnership and interoperability, it is likely that any increased maritime capability for these forces will be incremental, at best. APS should routinely plan PASSEXes with other APS partners, and encourage South Africa and Mauritius and other capable countries to do the same.

Lack of maritime assets presents a significant factor in our partner's ability to respond to maritime threats. Future APS missions should focus increasing the life span of existing assets through maintenance and repair training, and maximize the value of existing platforms by specialized operations and planning training.

The bilateral patrols in "Operation Prosperity" conducted between Nigeria and Benin are an encouraging step towards regional monitoring efforts. Similar joint patrols have been conducted between the members of CEEAC Zone D, and we recommend that APS request that partners identify the participants of these patrols and single them out for specialized training to improve these efforts and maximize the joint capability.

Based on our analyses, we make the following recommendations for improving partner nation response capability:

1) *Bridge gaps in intelligence and communications capabilities – through intelligence fusion courses, through table-top exercises, at-sea exercises, and operations.*
2) *Account for and/or include primary international supporters already active in APS partner countries in APS engagements.*
3) *Identify the participants of existing joint, bilateral patrols and single them out for specialized training to enhance existing efforts.*
4) *Focus on maintaining the longevity and functioning of existing assets through maintenance and repair training, and maximize the value of existing platforms by specialized operations and planning training.*
5) *Routinely plan PASSEXes with APS partners, and encourage South Africa and Mauritius to engage other partners in PASSEXes.*

MSD Pillar Augment: International and Regional Cooperation

APS is a multinational partnership focused on maritime issues in Africa with global impact, necessitating a global response. It has become clear that mission success is closely linked to formal and informal relationships among all stakeholders. We conclude that long-term effectiveness and sustainability of APS depends upon international and regional players taking the lead to develop, manage and sustain the program. The 2011 APS mission successfully supported NAVAF's MSD pillar of International and Regional Cooperation.

In 2011, the APS international and regional participants embraced the "Train-the-Trainer" program, regional training hubs for students from multiple countries, and the cross-cultural APS Shiprider program. BNS GODETIA conducted APS engagements and an international staff served on the SWG during its APS East deployment. Infrastructure evaluations in APS West were conducted by French and Italian officers, and Danish and Italian Mobile Training Teams (MTTs) were employed in APS East.

APS provides a distinctive forum which encourages regional and international relationships. It enables and legitimizes military-to-military cooperation, facilitates information access and exchange, and promotes regional solutions to maritime security challenges. Regional coordination, information sharing, program creation, and operational exercises are strongly linked and often directly attributable to APS efforts.

Implementation of the following key recommendations will further enhance the critical component of international and regional cooperation:

1) Maintain a full time NAVAF N52 APS international maritime outreach coordinator.
2) Support partner-led engagements and partner participation.
3) Improve coordination by creating and maintaining an APS coordination website

and regularly holding the "Enduring Partners Synchronization Conference."
4) Include international partners in APS planning and execution staff and involve N52 planners in NATO and other international partner working groups.
5) Evolve the APS program into a concept of "Regional Leadership", allowing each APS participating country to become a Regional Lead in a focus area supporting regional cooperation in maritime security efforts, developing regional maritime response capabilities, conducting regional assessments, and recommending a way ahead (to include a plan of action and milestones).
6) Expand involvement in APS mission by conducting Multi-Tiered engagement with partners, leveraging APS receptions as opportunities to include personnel from partner embassies, and arranging relationship-building visits with current or future partner nations.

Future Assessment Requirements of the APS Mission

To ensure program sustainment, APS must consistently demonstrate its success in promoting U.S. national security interests, in achieving its desired end-state, and in providing a positive return-on-investment. An effective APS assessment will give this strategic evaluation, while also providing regular, real-time, tactical and operational feedback to inform mission command decisions. These dual tasks cannot be achieved through use of existing assessment models alone. This document lays out a framework for conducting routine, robust, and accurate operational and strategic assessments of the APS program, following the guidance for assessments provided by AFRICOM. Accordingly, two questions must be answered:

1. **Operational Assessment**: *Are we doing the right things to achieve our effects?*
2. **Strategic Assessment**: *Is progress being made in the theater toward achieving our effects?*

An effective operational assessment will both provide an operational environmental assessment before APS engagement and evaluate the value and contribution of APS activities to the maritime sector development model. This two-pronged approach will ensure that mission plans adequately address environmental requirements and challenges, and it will provide real-time operational feedback to permit alterations in execution. In addition to this operational assessment, there are two separate but complementary methods for conducting the strategic assessment. The first is the development, tracking and coordination of *Maritime Development Plans*, as achievement of MDP milestones demonstrates improved partner nation capabilities. The second method applies a set of criteria to observed instances of operational success in order to determine APS contribution to partner nation development. We recommend routinely capturing strategic indicators of partner capability. These include the following:

- performance in maritime exercises,
- real-world response to maritime threats,
- investment decisions to improve maritime capacity, and
- results of surveys and polling data that indicate improved relationship amongst partners with whom APS has engaged.

These indicators would then be subjected to criteria to articulate whether APS played a causal role in these partner capabilities. For both methods, we recommend that strategic indicators of partner capability be routinely captured in a database.

Conducting the routine analytical assessment outlined in this document for the APS mission will provide the operational and strategic feedback necessary for APS planners to make valuable course corrections in an on-going mission and to demonstrate the long-term success of the APS program.

Conclusions

In this report, we provide an assessment of the APS 2011 efforts and effects. Its primary intent is to provide planners and operators with programmatic understanding, lessons learned, and a way ahead. Following the pillars of Maritime Sector Development, this quantitative framework and qualitative narrative gives real-time program evaluation, alignment with leadership goals, and makes recommendations for programmatic success.

The APS program in 2012 and 2013 should focus on leveraging existing institutions, information, assets and infrastructure. Recommendations for future APS iterations therefore align themselves in the categories of 1) Program goals, 2) APS training program, and 3) Internal NAVAF APS execution. These are outlined here.

The *program goals* for APS should be established in the following areas:

1. Assisting partners in establishing and reinforcing processes – such as tactics techniques and procedures (TTPs), institutional processes for information sharing and training, and SOPs -- for maintaining and operating existing equipment, conducting routine patrols and boardings, managing intelligence, and working regionally. Aiding in the systematic establishment of rigorous processes will ensure maximum use of existing infrastructure, assets, personnel, and training, and help create long-term self-sufficiency.
2. Create a "Regional Lead" program whereby functional, rather than country, lines would be the emphasis for engagement and training. Each APS participating country would become a Regional Lead in a focus area supporting regional cooperation in maritime security efforts, developing regional maritime response capabilities, conducting regional assessments, and recommending a way ahead (to include a plan of action and milestones).
3. Assisting partners in creating short- and long-term maritime development goals, supporting partners in conducting regular self-assessments, and tailoring APS operations to support each country's maritime development plan.
4. Creating opportunities to conduct engineering and operational assessments. All assessments activities in country (such as pre-deployment site surveys, hydrographic surveys, and MDA and engineering assessments) should contain an element of partner training and participation in order to build and reinforce an indigenous self-assessment capability and to create reach-back for future activities and operations.
5. Creating opportunities for relationship building, coordination, and training between in-country maritime stakeholders, and among regional partners. An emphasis should be placed on practical activities such as tabletop and at-sea exercises in order to create enduring and robust relationships between participants and establish coordination for real-world operations.
6. Focus on maintaining the longevity and functioning of existing assets and infrastructure through maintenance and repair training and networking existing systems within each country (particularly when systems belong to separate organizations).
7. Identify participants of existing joint, bilateral patrols and single them out for specialized training to enhance existing efforts.

8. Focusing COMREL activities and Civil-Military Assistance construction projects towards maritime infrastructure and local fishing communities. Emphasize and support low-tech MDA solutions which reach back to local communities, such as CWOW programs

Applying the following recommendations can enhance the *APS training program* and support partner-nation self sufficiency:

1. Implement and expand a "Phased Training" approach, building student skill in a logical sequence with the focused goal of operational demonstration, incorporating regional interoperability, and maximizing the value of available U.S. and partner platforms in exercises.
2. Promote and expand the "Train-the-Trainer" program, encouraging countries to use their graduates in regional and bilateral engagements.
3. Encourage, promote and support the development of African partner "Regional Centers of Excellence" and regional leadership programs to form self-sustaining capability and to leverage the expertise and training of APS graduates.
4. Implement a "Multi-Tier" training approach to expand skills and capability in all levels of rank and responsibility, including partner maritime leadership and government; Multi-Tier training should include MDA and VBSS development, as well as training on maritime infrastructure repair and maintenance to maximize the value of existing assets and infrastructure.
5. Routinely plan PASSEXes with APS partners, and encourage South Africa and Mauritius to engage other partners in PASSEXes.
6. Develop a meaningful standard for course curriculum (containing a large practical component) and conduct post-course evaluation and assessment of student capability.
7. Ensure that course instructors receive adequate notice before teaching courses, as well as curriculum guidance and cultural requirements.
8. Re-conceptualize the Shiprider program as a means to train officers and crew to augment our forces and act as liaisons in joint operations; include screening, detailed program planning, and well-defined expectations, PQS implementation, and adequate programmatic support and oversight.

The following recommendations would enable better *internal NAVAF execution* of the APS mission:

1. Enhance existing knowledge management systems to include the following:
    a. Track and coordinate international efforts in each partner country.
    b. Track APS efforts in each engagement, noting contribution to each pillar of MSD, systems emplaced, skills trained, and relationships built.
    c. Track assessments and and maintain an information database to include the following:
        i. Existing partner systems and assets (including partner nation self-assessment of these systems).
        ii. Partner nation capability (exercise performance, operational successes and maritime investment decisions),
        iii. Relationship strength and quality (polling, survey and interview data)
2. Account for and/or include primary international supporters already active in APS partner countries in APS engagements.
3. Improve coordination by creating and maintaining an APS coordination website and regularly holding the "Enduring Partners Synchronization Conference."
4. Include international partners in APS planning and execution staff and involve N52 planners

in NATO and other international partner working groups.

5. Identify partner nation goals and plans for maritime infrastructure improvements. Use existing platforms to transport equipment and materials.
6. Maintain a full time NAVAF N52 APS international maritime outreach coordinator position.
7. Establish a single NAVAF point of contact with oversight on student vetting.
8. Create a single training POC within NAVAF to maintain only the responsibility of coordinating and directing APS training.

This in-depth operational assessment of APS 2011 concludes with a summary of key operational issues and a plan for future iterations of the APS program. We outline recommendations for future APS missions. A case study of Cameroon, provided in the final pages of this assessment, illuminates the efforts and successes of APS in Africa, and highlights the need for more complete understanding of operational environment as a means to tailor efforts. Through creative solutions to real-world challenges and persistent effort in concert with our international partners, the goal of self-sustaining African maritime security may become reality.

2. APS History

Elizabeth Heider & George Tsukatos

The concept of African Partnership Station developed in 2006 with a series of conferences in West and Central Africa; African leadership articulated an urgent need to improve maritime security in their territorial waters (TTW), their EEZs and their inland waterways. The United States and Europe, recognizing the significance of this issue and understanding that global maritime issues mandate global response, joined forces under the direction of NAVAF to begin this effort.

This concept had precedent. As early as 1976, Naval assets had conducted the West African Training Cruise (WATC) exercises and port visits, conducting training, medical engagements and SEABEE projects.[17] U.S. Navy and Coast Guard presence increased in West Africa between 2004 and 2006 with the deployment of several ships.[18] But the driving force of the APS mission became more focused than previous engagements, with an emphasis on building maritime capacity.

The APS mission focuses on building the capability and capacity of our African partners to ensure maritime safety and security. Operational guidance for this effort is based on the MSD model which focuses on building Maritime Professionals, MDA, Maritime Infrastructure, Maritime Response Capabilities, Regional Integration and International Cooperation, and a Comprehensive Approach (to include interagency cooperation and non-military maritime stakeholders).

The first major APS effort was the deployment of a large amphibious ship, the USS FORT MCHENRY with a multinational staff including representatives from Britain, Germany, France, and Ghana, and , and HSV SWIFT (a smaller "High Speed Vessel") to the GoG for seven months in 2007/2008. This was part of the U.S. Navy "Global Fleet Station" initiative designed to bring a platform with sufficient capability to provide both training and persistent presence, and to facilitate regional collaboration between West African countries. The USS FORT MCHENRY and HSV SWIFT made repeated visits to multiple nations in concert with other partner assets including the French ship, TONNERRE, visiting Senegal, Liberia, Ghana, Cameroon, Gabon, and Sao Tome & Principe.

In January to May 2009, the amphibious ship USS NASHVILLE deployed to Africa under the APS banner, visiting Senegal, Liberia, Ghana, Nigeria, Cameroon and Gabon. The ship embarked a large multinational staff with more than 70 officers (representing Africa, Europe and Latin America). The staff also included personnel from African nations, European military commands, interagency and nongovernmental organizations (NGOs), the USMC and Coast Guard, and the US Army and Air Force. The deployment with the USS Nashville visited Senegal, Ghana, Lagos, Nigeria, Cameroon, and Gabon and then traveled back through Dakar, Senegal. In addition, the ship conducted an offload of a small Marine training team to work with the Liberian military. Training and engagements were conducted in every port, with much longer time spent in port than in the 2008 engagement. Pallets of Project HANDCLASP goods were transported in the large hull, and donated by ship's crew as the mission progressed.

[17] In 1979, the USS TRIPPE conducted the West African Training Cruise, which took her to ports in Senegal, the Gambia, Guinea-Bissau, Liberia, and Cape Verde; in 1982, USS COONTZ also conducted a West African Training Cruise

[18] USS EMORY S LAND (2005), USCGC BEAR (2006), USS GUNSTON HALL / HSV SWIFT (2005), MV TSGT JOHN A CHAPMAN (2004/2005/2006), USS MT WHITNEY (2006), USS EMORY S LAND (2006), USS CARR (2006), USS BARRY (2006), USCGC NORTHLAND (2006), MV CAPE DUCATO (2004), USS ELROD (2006), USNS APACHE (2006)

In 2010, a deployment by the USS GUNSTON HALL on the west coast brought "the Hub concept" approach to APS. Recognizing that regional participation and regional relationships were the key to maritime capacity, students from many countries were brought together. International ships also participated, with the HMS OCEAN deployed to Nigeria, Sierra Leone, and Liberia, the HMS PORTLAND visiting Ghana, and the ESPS CENTINELA visiting Senegal. The APS concept also extended geographically to include the east coast of Africa with deployments by the HSV SWIFT and the USS NICHOLAS to Tanzania, Kenya, and Mauritius.

In 2011, the "Hub" concept of APS was expanded, bringing many more countries together to train, and the "Train-the-Trainer" initiative was introduced. Five vessels were deployed. In West Africa, the frigate USS ROBERT G BRADLEY (RGB) visited Senegal, Togo, Sao Tome & Principe, Sierra Leone, Gabon, Angola, and Nigeria. This was followed by the BNS GODETIA in Cameroon, Gabon, ROC (Brazzaville), and the HSV SWIFT in Gabon, ROC (Brazzaville), Nigeria, Ghana, and Senegal. There were two frigates on the East: the USS STEPHEN W GROVES and the USS SAMUEL B ROBERTS. Flexing to adjust to the loss of the USS WHIDBEY ISLAND (which was recalled to support U.S. operations in Libya), Hub engagements were also conducted in The Gambia and Cameroon without a naval platform.

Table 2.1: Summary of APS mission since 2007; dates and platform

Dates	Platform
NOV 07 – APR 08	USS FORT MCHENRY, USS FORREST SHERMAN, USS SAN JACINTO, USS JOHN L HALL, HSV SWIFT, and FS TONERRE
JAN 09 – NOV 09	USS NASHVILLE, HNLMS JOHANN DE WITT
JAN 10 – NOV 10	USS GUNSTON HALL, USS SAMUEL B ROBERTS, BNS GODETIA, HSV SWIFT, USS NICHOLAS, HMS OCEAN, HMS PORTLAND, ESPS CENTINELA
JAN 11 – SEPT 11	USS ROBERT G BRADLEY, USS STEPHEN W GROVES, BNS GODETIA, HSV SWIFT, USS SAMUEL B ROBERTS

Plans for APS 2012 are already well underway. With continual assessments feedback to the program, planners have adjusted the mission to address key lessons learned. These include increased international program management, "Phased Training" evolutions on the east and west coast, "Multi-Tier" engagements including stakeholder conferences and table-top exercises, and joint exercises and operations with African partners.

Throughout the evolution of the APS mission, the U.S. Navy and supporting elements have gained valuable operational expertise in working in Africa, and in the concepts of capacity building with multinational partners. As these partnerships strengthen, and the store of NAVAF in-house subject matter expertise increases, so does the efficacy of the mission. The reasons for this are varied, but one thing is clear: the intention of the mission appears to resonate with our partners. This is due to the persisting presence of APS, and the genuine partnership between participants of different countries. This was perhaps best expressed by Alfonso E. Lenhardt, Ambassador of the United States of America to the United Republic of Tanzania, during a 2011 assessments interview. The Ambassador noted:

> *"No one wants to admit that things aren't working well, but as partners, you are forthright - sometimes even painfully direct…We want people of like minds to say, "we stand with you."…We are direct with our friends, and also respectful and diplomatic. If you develop respect, then you call it as it is. Friends should understand that. We undertake to use a direct approach, and to work with one another as equals."*

3. Overview of APS 2011 Mission

Elizabeth Heider

The APS plan executed in FY2011 was the most ambitious and comprehensive set of APS engagements to date. In FY2011, APS held 32 separate engagements in Africa (nine on the East coast and 23 for APS West) hosted by 19 countries (see Table 3.1 for a complete list of engagements).

There were five models for APS 2011. These included two models with the frigate (with and without multinational staff), the HSV, a partner platform model, and the no-ship engagement.

According to collected data, 37 topics and 99 courses were taught to more than 1300 students in subjects ranging from Small Boat Maintenance, Search and Rescue (S&R), Non Commissioned Officer (NCO) Leadership, and Combat Casualty care. This year also saw the introduction of a novel and extremely well received training initiative designed to create organic trainer capability, the "Train-the-Trainer" program. Graduates of this program trained others Africans in subsequent APS events, making this the first year of African partners becoming APS trainers. On the west coast, Train-the-Trainer graduates from Nigeria went on to teach an NCO leadership course, Cameroonian Trainers taught a Damage Control Firefighting (DCFF) course, and Senegal taught a Vessel Board Search and Seizure (VBSS) in the Cameroon hub. In APS East, Tanzanian trainers taught an NCO Leadership course in the Mauritius hub. Due to the popularity of the program, an additional "Train-the-Trainer" course was added last minute to the Kenya hub as part of the USS SBR engagement.

The Shiprider program was also active again this year, training a total of 70 naval officers from Togo, Ghana, Liberia, Sierra Leone, Nigeria, Republic of Congo, Gabon, Djibouti, Kenya, Tanzania, Mauritius, Seychelles and Uganda aboard naval vessels underway. The Shiprider program was active on the USS RGB, the BNS GODETIA, the USS SWG, and the USS SBR.

Medical courses were taught during the APS hubs. Additionally, independent medical training and medical engagements were conducted in Ghana and Cameroon. The U.S. Marine Corps (from Marine Forces Africa, MARFORAF) also conducted separate training engagements in Ghana, Senegal and Gabon.

Depending on requirements and availability, APS representatives from CTF-60, CTF-63, APS Planning staff, and/or ships' company conducted Key Leader Engagements (KLE). Half of all APS venues held receptions. The NAVAF Public Affairs Office (PAO) provided press support alongside local Embassy PAOs, covering opening/closing ceremonies, training, and COMREL events. To enhance awareness and coordination amongst different maritime entities, a maritime law seminar was hosted in Nigeria, and a maritime stakeholder conference was hosted in Cameroon. 14 maintenance and repair projects of local maritime infrastructure were conducted by shipboard engineers and by Pre-Deployment Site Survey (PDSS) officers. Civil Military assistance projects were held in Togo, Sierra Leone, Nigeria, Gabon, the Republic of Congo, Seychelles, Mozambique, Tanzania, Kenya, South Africa, and Mauritius. In most instances, work was conducted by U.S. Sailors. However, in South Africa, Seychelles, and Mozambique Civil Military Assistance projects, however, African partners also volunteered during the events. The SEABEEs also designed and constructed a sidewalk and ambulance pad at a hospital in Douala, Cameroon.

Table 3.1: Summary of APS 2011 engagements conducted on the East and West coasts of Africa during APS 2011.

APS East			
Platform	Start Date	End Date	Location
Pre-HUB Training	*7-Feb-11*	*18-Feb-11*	Dar Es Salaam, Tanzania
SWG APS kick off	*7-Feb-11*	*16-Feb-11*	Simonstown, South Africa
SWG HUB #1	*22-Feb-11*	*4-Mar-11*	Dar Es Salaam, Tanzania
SWG TSC	*8-Mar-11*	*14-Mar-11*	Port Victoria, Seychelles
SWG HUB #2	*21-Mar-11*	*31-Mar-11*	Port Louis, Mauritius
SBR HUB #1	*19-Jul-11*	*22-Jul-11*	Mombasa, Kenya
SBR HUB #2	*1-Aug-11*	*5-Aug-11*	Dar Es Salaam, Tanzania
SBR HUB #3	*12-Aug-11*	*18-Aug-11*	Port Victoria, Seychelles
SBR TSC	*26-Aug-11*	*29-Aug-11*	Maputo, Mozambique
SBR HUB #4	*5-Sep-11*	*12-Sep-11*	Port Louis, Mauritius
SBR HWU	*20-Sep-11*	*20-Sep-11*	Dar Es Salaam, Tanzania

APS West			
Platform	Start Date	End Date	Location
RGB Kick off	*26-Jan-11*	*28-Jan-11*	Dakar, Senegal
RGB HUB #1	*1-Feb-11*	*18-Feb-11*	Lomé, Togo
None (Train-the-Trainer)	*14-Feb-11*	*28-Feb-11*	Doula, Cameroon
None (Medical)	*19-Feb-11*	*4-Mar-11*	Sekondi, Ghana
RGB TSC	*23-Feb-11*	*25-Feb-11*	Libreville, Gabon
RGB TSC	*28-Feb-11*	*3-Mar-11*	Sao Tome & Principe
RGB HUB #2	*7-Mar-11*	*16-Mar-11*	Freetown, Sierra Leone
RGB TSC	*23-Mar-11*	*31-Mar-11*	Luanda, Angola
None (MARFORAF)	*28-Feb-11*	*19-Mar-11*	Sekondi, Ghana
GODETIA	*23-Mar-11*	*23-Mar-11*	Douala, Cameroon
GODETIA	*26-Mar-11*	*28-Mar-11*	Port Gentil, Gabon
RGB	*29-Mar-11*	*31-Mar-11*	Luanda, Angola
RGB Bilat HUB	*4-Apr-11*	*14-Apr-11*	Lagos, Nigeria
None (MARFORAF)	*12-Apr-11*	*31-May-11*	Senegal
GODETIA	*7-Apr-11*	*9-Apr-11*	Pointe Noire, ROC
None (Hub)	*11-Apr-11*	*21-Apr-11*	Dakar, Senegal - shifted to The Gambia
None (Hub)	*6-Jun-11*	*17-Jun-11*	Doula, Cameroon
HSV SWIFT & MARFORAF	*30-Jul-11*	*15-Jul-11*	Libreville, Gabon
HSV SWIFT Bilat	*17-Jul-11*	*29-Jul-11*	Pointe Noire, ROC
HSV SWIFT Bilat	*01-Aug-11*	*13-Aug-11*	Lagos, Nigeria
HSV SWIFT Bilat	*14-Aug-11*	*20-Aug-11*	Sekondi, Ghana
HSV SWIFT Bilat	*11-Aug-11*	*11-Aug-11*	Cotonou, Benin
HSV SWIFT Bilat	*05-Sep-11*	*16-Sep-11*	Dakar, Senegal
SWIFT Bilat	*06-Sep-11*	*27-Sep-11*	Banjul, The Gambia
None (Medical)	*20-Sep-11*	*24-Sep-11*	Bakassi Peninsula, Cameroon

One notable advantage of a ship's presence was made clear in South Africa, Mauritius and Togo when the U.S. Frigates conducted bilateral exercise with those country's maritime units. A crew exchange and PASSEX took place between a South African Submarine and the USS SWG, and also with the USS SBR. Mauritian Coast Guard units exercised with the USS SWG, conducting Helicopter operations to simulate a medical evacuation as the ship left port for blue water. More advanced planning and Helicopter VBSS vertical boarding exercises were conducted with the Mauritian Coast Guard and the USS SBR. On the west coast, the USS RGB planned and executed a PASSEX with the Togolese Navy, and followed this up with play in the APS related exercise OBANGAME EXPRESS.

4. Strategic Guidance and Operational Goals of APS

Elizabeth Heider & Ann Siders

APS supports U.S. national security interests and the goals of the U.S. Navy. Senior officials in the DoD, DoS, and the Department of the Navy have recognized the importance of persistent and sustained cooperative efforts to enhance maritime safety and security in Africa. APS draws its mission and objectives from the guidance of these offices and therefore embodies a whole-of government approach. We outline this guidance here.

Strategic Guidance

National Guidance

The 2004 presidential directive[19] established U.S. policy, guidelines, and implementation actions to enhance U.S. national security and homeland security by protecting U.S. maritime interests. This directive emphasized the role of maritime security to U.S. interests and forwarded an effort to ensure maritime security initiatives as part of a comprehensive national effort. This directive acknowledged the global nature of maritime security, directing U.S. Government agencies to enhance international relationships and promote the integration of U.S. allies and international and private sector partners into an improved global maritime security framework.

The National Strategy for Maritime Security[20] draws a connection between maritime safety and security, homeland security, and economic prosperity ashore. According to this strategy, Maritime security is essential in order to "facilitate the vibrant maritime commerce that underpins economic security." There are eight supporting plans to implement this strategy, two of which are directly applicable to APS. First, the DoS international outreach and coordination strategy gives a framework that covers all maritime security initiatives with foreign organizations and governments. Next, it solicits international support for increased maritime security.

DoD

Security cooperation is codified in U.S. Joint Doctrine. Joint publication 3-0[21] outlines six phases of a campaign model, all incorporating security cooperation. Security cooperation is the major portion of the "Phase 0" or the campaign model shaping phase. Shape phase missions, such as APS are designed to deter adversaries, assure friends, and to set conditions for contingency plans. A major portion of the shaping mission is to develop allied and friendly navy capabilities for self-defense and multinational operations. This would also include information exchange and information sharing, providing U.S. forces with peacetime and contingency access, and mitigating conditions that could lead to a crisis. Most commanders now view Theater and Global shaping operations and security cooperation as key components of the entire campaign continuum and this perspective is outlined in the joint doctrine. The lessons learned from the APS missions, determining the most effective means

[19] http://www.fas.org/irp/offdocs/nspd/nspd41.pdf
[20] http://www.dhs.gov/xlibrary/assets/HSPD13_MaritimeSecurityStrategy.pdf
[21] http://www.dtic.mil/doctrine/new_pubs/jp3_0.pdf

of engagement, and developing an accurate means to test effectiveness have strategic implications for other joint shaping missions.

The Navy's perspective is ultimately reflected in the new maritime strategy, called "A Cooperative Strategy for 21st Century Seapower."[22] The strategy was introduced in October 2007 by the Chief of Naval Operations and the Commandants of the Marine Corps and Coast Guard. It proposes a unified maritime strategy to achieve six key tasks: limit regional conflict, with forward-deployed, decisive maritime power; deter major power wars; win our nation's wars; contribute to homeland defense in depth; foster and sustain cooperative relationships with more international parties; and prevent or contain local disruptions before they impact the global system. These tasks are to be accomplished through forward presence, deterrence, sea control, power projection, maritime security, and humanitarian assistance and disaster response.

This strategy takes into account the long-term effort needed to sustain and build partnerships with other nations, and incorporates an interoperability approach to capacity building through the Global Maritime Partnership. APS is part of this larger initiative.

Africa Command (AFRICOM)

Africa Command theater security objectives support national guidance. In his April 2011 statement to the Senate Armed Services Committee, General Carter F. Ham articulated Africa Command guidance as focusing on building partner capacity:

> "*The Command is helping African states transform their militaries into operationally capable and professional institutions that are subordinate to civilian authority, respect human rights, adhere to the rule of law, and are viewed by their citizens as servants and protectors of the people. We assist our African partners in building capacities to counter transnational threats from violent extremist organizations; to stem illicit trafficking in humans, narcotics, and weapons; to support peacekeeping operations; and to address the consequences of humanitarian disasters—whether man-made or natural—that cause loss of life and displace populations. In many instances, the positive effects we achieve are disproportionate to the modest investment in resources."*[23]

The guiding principles of AFRICOM were articulated in a theater strategy update at the October 2011 Theater Security Cooperation Conference (TSCC) in Ramstein. These were:

1. A stable, secure Africa is in U.S. National Interests
2. There is a mandate for African Solutions to African challenges

These guiding principles underlie AFRICOM's theater campaign plan, subordinate campaign plan, and country work plans. These feed into six lines of effort (LOE) for AFRICOM (also defined as "most important tasks") which are given as:

- Deter or defeat al Qaeda and other violent extremist organizations operating in Africa and deny them safe haven.
- Strengthen the defense capabilities of key African states and regional partners. Through enduring and tailored engagement, help them build defense institutions and

[22] http://www.navy.mil/maritime/Maritimestrategy.pdf
[23] http://armed-services.senate.gov/statemnt/2011/04%20April/Ham%2004-07-11.pdf

military forces that are capable, sustainable, subordinate to civilian authority, respectful of the rule of law and committed to the well-being of their fellow citizens. Increase the capacity of keystates to contribute to regional and international military activities aimed at preserving peace and combating transnational threats to security.

- Ensure U.S. access to and through Africa in support of global requirements.
- Be prepared, as part of a whole of government approach, to help protect Africans from mass atrocities. The most effective way in which we do this is through our sustained engagement with African militaries.
- When directed, provide military support to humanitarian assistance efforts.

In a follow-on Commander's intent document released in August 2011, and in the October 2011 TSCC, General Ham articulated four distinct end states, which are supported by the above LOEs or AFRICOM "most important tasks":

- *America, Americans and American interests are protected from threats emanating from Africa.*
- *Africa is not a safe haven for al Qaeda or other violent extremists.*
- *African militaries contribute to the safety, security and stability of their nations and of their regions.*
- *African peoples are protected from the threat of mass atrocities. African authorities are adequately supported to prevent mass atrocities and to mitigate the consequences of catastrophic events*

These end states, therefore, must be the end-states which APS and other security cooperation efforts work towards. In APS, maritime safety and security building efforts in Africa may be said to most directly support the AFRICOM end state, "African militaries contribute to the safety, security, and stability of their nations and their regions."
In the following section, we articulate the operational guidance for these efforts.

Operational Guidance

Operational guidance for APS is based in the NAVAF Maritime Supporting Plan (MSP) and outlines a model called maritime sector development (MSD). The goal is to help build and sustain maritime security under the following pillars:

1. Maritime Professionals: *Our partner nation's maritime professionals are trained for maritime security operations*.
2. Maritime Infrastructure: *Partner nations acquire/sustain maritime infrastructure needed for maritime security operations.*
3. Maritime Domain Awareness: *Partner nation's maritime domain awareness capability to support maritime security operations is enhanced.*
4. Maritime Response Capabilities: *Partner nations develop a maritime response capability to support maritime security operations.*

Along with the four pillars, MSD includes efforts to promote Regional Integration and International Cooperation, and a Comprehensive Approach (to include interagency cooperation and non-military maritime stakeholders). For the purposes of analysis, we have found it useful to treat these as separate pillars of MSD and include these as independent analytical pieces.

Under the MSD model, the program may be delivered in many forms such as ship visits, aircraft visits, training teams and SEABEE construction projects. It would then expand into joint exercises, hands-on

practical courses, NCO leadership training and community relation projects throughout the coastlines of Africa.

5. Assessment of the APS Mission

Elizabeth Heider

There are two major purposes of assessing the APS mission. The first is to provide valuable, real time feedback to mission planners and operators. This sort of feedback gives both a mirror and a blueprint, allowing participants to see and understand what they have accomplished in the context of a complex and dynamic operational environment. These short-term assessments have been provided to mission planners and operators throughout FY11 in the form of informal "quicklook" reports. This assessment builds off of these mid-term reports, and consolidates many of the lessons learned into a single picture. The second purpose of this assessment is to show the relative success of the APS program and, ultimately, to provide lawmakers and mission operators an accurate "Return on Investment" analysis. Where it is possible for us to give such an analysis, we provide it. Perhaps more importantly, we use the operational analysis of this report to provide guidance for generating a return on investment estimate on a regular basis.

Methodology and Data collection

This assessment is intended to provide a comprehensive in-depth operational assessment of the APS 2011 mission. Each section provides unique, modular analysis along a separate topic. A discrete analytical framework is developed for each module, based on the topical requirements and available data. Each analysis should stand on its own merit and as its own product, distributable to our partners and to APS operators on an as-needed basis. Each section has been reviewed by subject-matter experts and participants and is a separate analytical piece. Taken together, these assessments will provide a perspective on how APS achieved its operational and strategic goals during 2011. This is intended to provide way-ahead for upcoming years.

The first analyses fall along the pillars of Maritime Sector Development. Following this, we extract several key takeaways that do not necessarily fall under these pillars but which were, nonetheless, important topics that emerged during the APS 2011 mission. We develop a separate analysis for each topic. We use the scientific method to rationally trace through each section, develop a clear and comprehensive picture of operations, and to provide recommendations that necessarily address every issue that arises.

We use several data sources to conduct this assessment, and we outline them here:

1. **On-scene observation**. In several of the APS engagements, an assessments officer observed and recorded operations. Dedicated assessments personnel were deployed in Senegal, Tanzania, South Africa, Seychelles, Mauritius, Togo, The Gambia, and Cameroon.
2. **After Action Reports (AARs), Commander's Event Feedback Reports (CEFRs), and situation reports (SITREPs)**. Because there is insufficient staffing to cover every APS event with a dedicated assessor, we rely on reporting from on-scene personnel including MPPs, Embassy Personnel, APS staff, and CTF staff. Such reporting comes in the form of AARs, CEFRs, and Daily SITREPs.
3. **Surveys**. For most APS training events and during the APS conferences, we administered surveys. We derive demographic information and participant opinions from these surveys.
4. **Structured Interviews**. During APS 2011, assessments personnel conducted interviews of host nation participants, instructors, DoS personnel, and maritime and government stakeholders. Interviews took place in-country, and during the APS planning conferences.

Interviews were designed to gain a clear picture of the operational environments of each country, and to assess any shift in partner nation capability due to APS involvement.

5. **Secondary sources**. We draw from secondary sources such as open-source reporting to provide context and substantiation to what we have learned in surveys and interviews, and to learn of partner nation operations.

6. Assessment of APS 2011 Engagements within MSD Model

In the following sections, we evaluate the APS 2011 mission as it relates to the Maritime Sector Development model, the NAVAF command guidance. This is the designated method by which the APS mission is to fulfill U.S. strategic endstates. For each pillar of the MSD model, we evaluate the following:

1. What is the history of APS engagement along this pillar?
2. What was the APS 2011 contribution to this pillar?
3. What (if any) indicators exist that the APS 2011 efforts were successful?
4. What challenges exist to satisfying this pillar of MSD?
5. Given the successes and challenges, what are recommendations for moving forward?

A comprehensive look the pillars taken together allow us to gain a perspective about the success of the APS program, and a look at the way ahead. But it is important to note again (as we have already articulated) that such a comprehensive look may not be necessary for all readers, and each analysis may stand on its own.

6A. Maritime Professionals: Assessment of Efforts and Effects

Richard Amerine, Elizabeth Heider and Eve McAnallen

Section Summary

The Maritime Sector Development (MSD) Pillar of *Maritime Professionals* was most emphasized during APS 2011. This emphasis was realized through three main efforts: classroom training, the Shiprider program, and training at sea.

During APS 2011, there were 99 classroom-based courses taught, with topics sorted in the following categories: *Response Capability, Maritime Infrastructure, MDA, Comprehensive Approach,* and *Training Program Sustainment*. Courses that aligned under the categories of *Training Program Sustainment* and *Response Capability* were the most frequent courses.

This was the first year of the "Train-the-Trainer" initiative. Graduates of this program instructed in four subsequent APS engagements. In Cameroon, Cameroonian instructors taught DC/FF and Senegalese instructors taught VBSS; in Nigeria, Nigerian instructors taught NCO Leadership; in Tanzania and Mauritius, Tanzanian instructors taught NCO Leadership.

Four of the APS 2011 platforms participated in the APS Shiprider program, hosting a combined 70 Shipriders: USS SWG (21 Shipriders), USS RGB (18 Shipriders), USS SBR (12 Shipriders), and BNS GODETIA (19 Shipriders). Program participants originated from 12 countries: Togo, Ghana, Liberia, Sierra Leone, Nigeria, Republic of Congo, Gabon, Djibouti, Kenya, Tanzania, Mauritius, and Uganda.

APS platforms were leveraged on five separate occasions to conduct at-sea training and exercises with our partners. The SWG and SBR each conducted a PASSEX with the SAN, and separate at-sea helicopter exercises with the Mauritian Coast Guard. The RGB conducted a MDA/VBSS exercise with the Togolese Navy.

Success Indicators APS training has improved our partner's ability to respond to real-world situations. We cite the following examples:

Graduates of APS VBSS training in Togo successfully interdicted, boarded, and arrested an illegal vessel in Togolese waters. Participants directly credited the successful operation to the VBSS training they had received through APS.

Graduates of APS medical courses in Ghana, Ambulance Drivers, Nurses, and Emergency Workers are developing training programs to transfer their skills and are able to successfully respond to severe accidents including: a three-car accident involving severe casualties, a gas explosion in a transport vehicle resulting in traumatic injuries and burns, and resuscitation/stabilization of a man shot with a high-velocity rifle, an injury which severed two major blood vessels. A Ghanaian APS participant wrote: "Through all of this, my staff and I continuously laud the United States Navy and their efforts through APS."

Shiprider Lessons Learned The Shiprider program enjoyed some successes this year, particularly as participant feedback informed ongoing operations. This year saw the first implementation of a PQS for APS Shipriders, a requirement that was highly successful and which should be expanded in future programs. Shipriders who used the PQS were able to govern their time more effectively than those who did not, and the use of the PQS helped clarify expectations and relieve pressure on both Shipriders and Ship's crew. Recurrent concerns about the Shiprider program need to be addressed in future missions. These include 1) Assigning appropriate number of Shipriders for the platform, 2)

Adequate preparation of Ship and Shiprider expectations including physical preparation, cultural preparation, and professional expectations (through the PQS). We recommend that APS staff re-conceptualize the Shiprider program, away from the concept of a familiarization experience. We recommend that the Shiprider program be considered as a means to train officers and crew to augment our forces and to act as liaisons in joint operations. Such a program requires screening, detailed program planning, and well-defined expectations. We also recommend that the program receive adequate support and oversight.

Course Instructors Instructors selected for APS were knowledgeable and capable, and elicited confidence in students. Specifically, courses that had a practical component and which were interactive gained positive feedback from students and instructors. Unfortunately, some instructors were not informed of their assignment until the days and weeks leading up to the course, and were sometimes not provided with curricula requirements, impeding their ability to teach. We recommend that all course instructors receive at least 3 months notice about courses they will be required to teach, and that curricula requirements be standardized for easy distribution.

Vetting On average, half of all participating countries have not submitted student names, or the names have not been vetted on the Friday prior to the event. This causes difficulty in managing expectations and maintaining good relationships with partner nation participants, strains NAVAF relationship with the U.S. Embassy, diminishes the effectiveness of the program (e.g. fewer number of students trained), and increases overall program cost (total cost per student is amplified). Until this issue is addressed by greater accountability, greater visibility, and greater priority, we may expect that it will have lasting impact for the APS program. Although NAVAF is not ostensibly responsible for vetting APS participants, NAVAF bears the brunt of the cost for vetting failure. We therefore recommend that NAVAF establish a point of contact whose primary responsibility is working with the Desk officers and Embassy (when necessary, traveling to country to provide additional support to the Embassy) ensuring that the names are received and vetted on time.

Maritime Development Plan APS faces a persistent challenge in ensuring that its courses are in line with the training objectives of partner nations, and surveys have shown that student skills and job descriptions are often mismatched with the APS training course. African partners have expressed an increased desire to understand APS training, and to synchronize that training with their own readiness goals. In order to provide appropriate synchronization, we recommend that Desk Officers and the Embassy's Office of Security Cooperation (OSC) work with partner maritime officials to develop and utilize a Maritime Development Plan for each country (explained in greater detail in Section 7). It will be important to assist partners in creating measurable short and long term goals, including systems, skills, and relationships they believe necessary to reach these goals, and a plan of actions and milestones. To evaluate progress

Standardization and Testing There exists no consistent method by which APS may evaluate the skills and/or knowledge level of trainees of the program, and there is often significant variation in the background knowledge of students. African partners have been the greatest advocates for administering standardized tests of their sailors. We recommend that NAVAF develop a method for this testing. African partners have also signaled a demand to conduct post-course evaluation and assessment of student capability. Future missions should develop a meaningful standard that would allow particular courses to serve as prerequisites for other courses. Curriculum should be well understood by all participants and instructors, and should contain large practical component, with a real-world method to test the skills taught in the course.

Cultural Awareness There is a need for greater cultural awareness on the part of U.S. instructors, and a high demand for African trainers and translators. We recommend that course instructors and APS planners be given access to relevant operational environment information, as recommended in section 7 of this document, and use this information to adjust course material. Further, we believe that greater use of the "Train-the-Trainer" graduates as instructors will help to maximize the value of APS courses. Continuation and enhancement of the "Train-the-Trainer" program will also enhance the sustainability of APS efforts.

Phased Training The 2011 model of hub engagement suffered when the USS WHIDBEY ISLAND was reassigned to operations in Libya. This event emphasized the need to develop a model that mitigates the effect the loss of a ship would have on training efforts. Additionally, surveys and interviews have revealed that a persistent cost for a mixed student hub concept is variety in baseline knowledge and backgrounds, making it difficult to bring everyone to the same level. To address these challenges, we have recommended (and this model is currently planned for APS 2012) a Phased Training approach. A phased approach to training would mitigate many of the problems faced by the current hub training structure. The concept of Phased Training allows the regional interaction to occur, while ensuring an even playing field. It further allows students to build their skills in a logical sequence. An added advantage of this concept is that the platforms which are available for APS operations will be used to maximum value. There are several benefits to be had from the Phased Training approach, including continuity, standardized proficiency levels, practical training, and efficient scheduling.

Multi-Tier Training Course demographics have shown an emphasis on providing familiarization courses to students at the most basic level, with a majority of students as Junior Enlisted, followed by nearly co-equal participation from Junior Officer and Senior Enlisted. Senior officers rarely participate in APS training. If this trend continues, it is unlikely that APS will succeed in assisting the creation of a highly trained force of maritime professionals. Staff officer planning and logistics and supply-line training should be incorporated (perhaps leveraging existing training programs such as ACSS courses and IMET funded courses) as well as including other maritime stakeholders and government officials in maritime planning process. Long-term effectiveness of APS effort requires buy-in at all levels of government and maritime stakeholders, not just military personnel. Awareness of maritime challenges and response capability amongst these stakeholders is a crucial piece of APS engagement. Exercise planning should be leveraged to include African partners and give experience in staff planning and logistics. Table-top exercises with multiple invested organizations will work to raise awareness and serve as a vehicle to improve efficiency in operations by clarifying roles and responsibilities, developing protocols and procedures, and identifying weakness and gaps.

Regional Maritime "Centers of Excellence" Some countries have expressed the desire to act as regional training hubs for African partners. An example is the DC/FF school in Cameroon, whose staff members were the instructors for the DC/FF course held during that hub. Similarly, Nigerian participants have expressed the desire to train regional students in MDA. APS can act as a catalyst to increase recognition and visibility of these schools, and can provide oversight and help create standards. The ship's visit would reinforce the training through offering more advanced training, and through providing students an opportunity to exercise their skills.

Promote the Train-the-Trainer Program This new program was very successful in APS training efforts. Additional iterations of the Train-the-Trainer program will be useful in promoting long-term sustainability of partner nation capability.

Create a single training POC within NAVAF This POC would maintain only the responsibility of coordinating and directing APS training.

Background and Introduction

The Maritime Sector Development (MSD) Pillar most emphasized during APS 2011 was that of *Maritime Professionals*. This emphasis was realized through three main efforts: classroom training, Shipriders at sea, and training at sea.

APS training should, in theory, serve a critical role in the development of trained professionals amongst our African partners. In this section we explore the question of how closely reality came to matching this theory. It is simple to assume that training courses will inevitably lead to increased knowledge and ability but there may be many factors that may influence the value and effectiveness of training. Our goal in this section is to use data from multiple sources and perspectives to produce a realistic portrayal of the effectiveness of APS 2011 training efforts. The primary purposes of this assessment and the structure of this section therefore, falls along the following lines:

1. Describe how training was structured and implemented during APS 2011,
2. Quantitatively and qualitatively approximate the success of these training efforts,
3. Determine trends in both positive and negative influences on training efforts, and
4. Make recommendations that we believe could improve both the short-term and long-term effectiveness of future training programs.

We have gathered information from several data sources to inform our assessment. These include: AARs, CEFRs, and SITREPs from various sources, and direct assessments observation from training events held in 14 countries. It is important to acknowledge that we do not have complete data from every event; we therefore treat existing data as case studies whose trends may reasonably be extrapolated to represent all events.

Description of Effort

In this section, we summarize the training effort for APS 2011. APS training events were organized in several different structures, depending on requirements and platform availability: Ship Hub, No-ship Hub, Pre-Hub Training, US Marine Corps Engagement, and Theater Security Cooperation (TSC) Engagement. This training is easily categorized into three main efforts: classroom training (including the Train-the-Trainer program), Shiprider training, and at-sea training. We discuss these efforts in APS 2011 in the following subsections.

Classroom Training

According to collected data, APS instructors taught 99 classroom-based during APS 2011. These courses may be sorted into the following categories (most of which follow the MSD pillars): *Response Capability, Maritime Infrastructure, MDA, Comprehensive Approach,* and *Training Program Sustainment*. Table 6A.1 below lists the course titles sorted within these pillars; along with the total number of course titles given per pillar. This type of analysis is useful in determining the primary focus of APS training efforts. For instance, in Table 6A.1, it may be seen that the pillar of *Response Capability* was attributed to in more than twice the number of course titles as the next most prevalent pillar, *Maritime Infrastructure*, and more than three times the number of the remaining pillars. The following pages show Charts 6A.1 and 6A.2, which graphically represent the total number of courses attributed to each pillar

per host nation, the total number of courses given per pillar, and the average number of times each course was given per pillar, respectively.

Table **6A.1**: Course topics used during APS 2011 sorted by pillar

Comprehensive Approach	Maritime Infrastructure	MDA	Response Capability	Training Program Sustainment
Command and Control	DC/FF - Basic DC	Maritime Intelligence	Defensive Tactics	Leadership - JO
Fisheries	DC/FF - Advanced Shipboard DC	MDA	Hand & Arm Signals	Leadership - NCO
Naval Operational Planning	DC/FF - Helicopter FF	AIS/RMAC	Marine Corps Martial Arts	Leadership - Senior Enlisted
Operations Orders	Maintenance - Shipboard Electrical	METOC	Medical - Basic EMT	Retention and Career Development
ORM	Maintenance - Advanced Shipboard Electrical		Medical - Combat Casualties	Train-the-Trainer
	Maintenance - Small Boat Engine		Medical - Combat First Aid	
	Maintenance - Small Boat Hull		Medical - Combat Life Saver	
			Oil Platform Defense	
			Patrolling	
			Physical/Port Security	
			Search and Rescue Planning	
			Small Boat Operations Level I	
			Small Boat Operations Level II	
			VBSS	
			Weapons Combat Marksmanship	
			Weapons Handling	
5	7	4	16	5

In Chart 6A.1, we sort the number of courses both by pillar and by country. This allows us to see both the level of partner nation participation, and the level of their involvement along a particular training emphasis. For instance, it becomes clear that the countries which had maritime infrastructure specific training were Cameroon, Mauritius, Nigeria, Seychelles, Sao Tome & Principe, Tanzania, and Togo. Those with an emphasis on MDA were Cameroon, Nigeria, Seychelles, Sierra Leone, Tanzania, The Gambia, and Togo. Tanzania, Mauritius and Ghana held the greatest emphasis on response capability (it should be noted that medical training and USMC courses were responsible for this emphasis in Ghana). This type of graphical representation provides an interesting first look at effort, but additional information is needed in order to give context to these data.

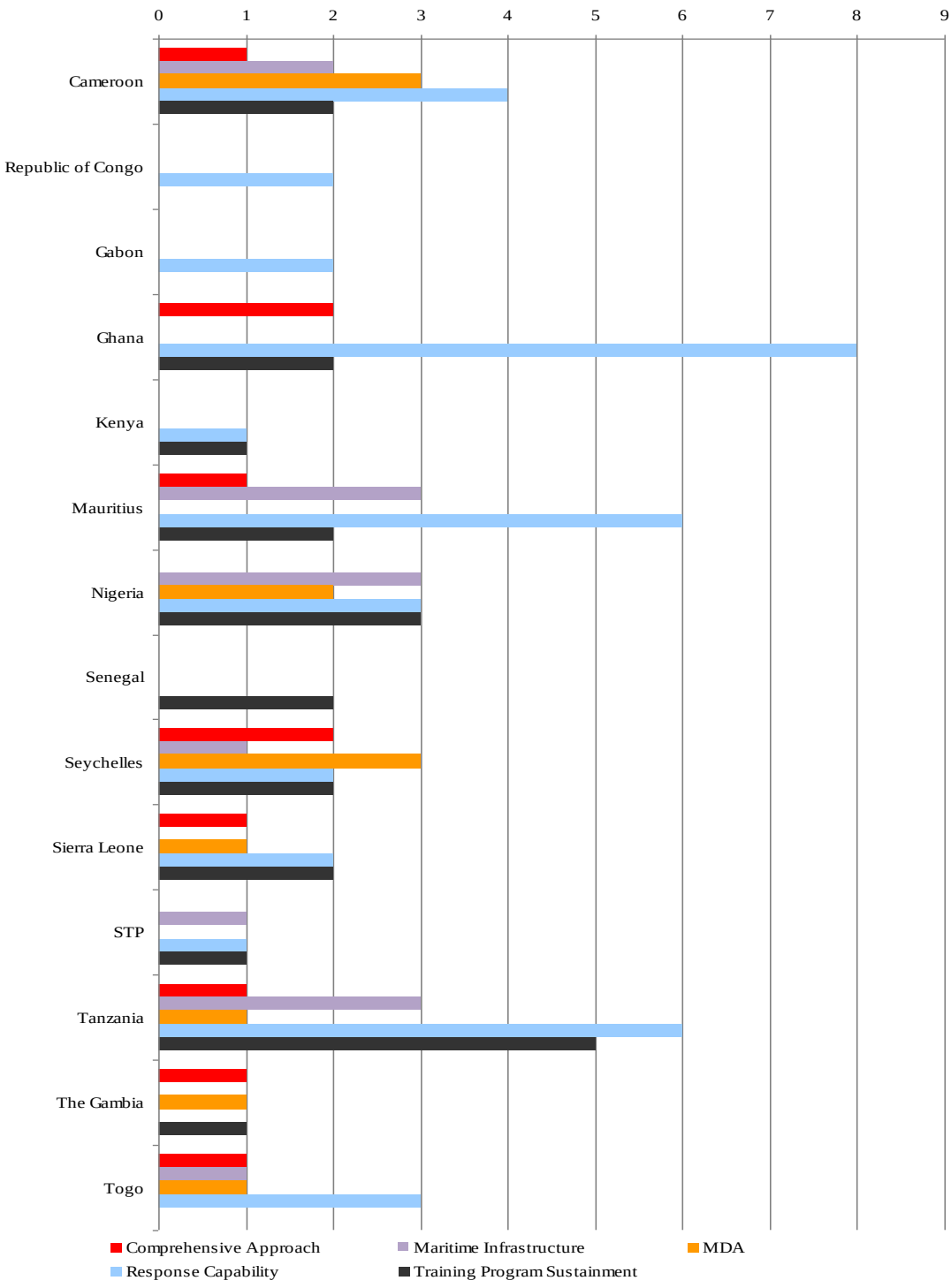
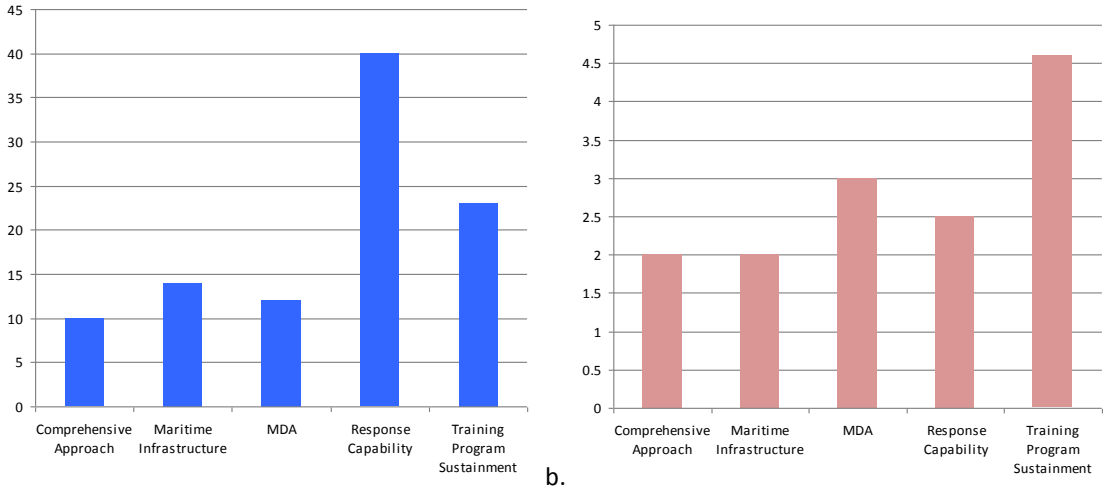


Chart 6A.1: Number of courses per pillar (sorted by country)



a. b.

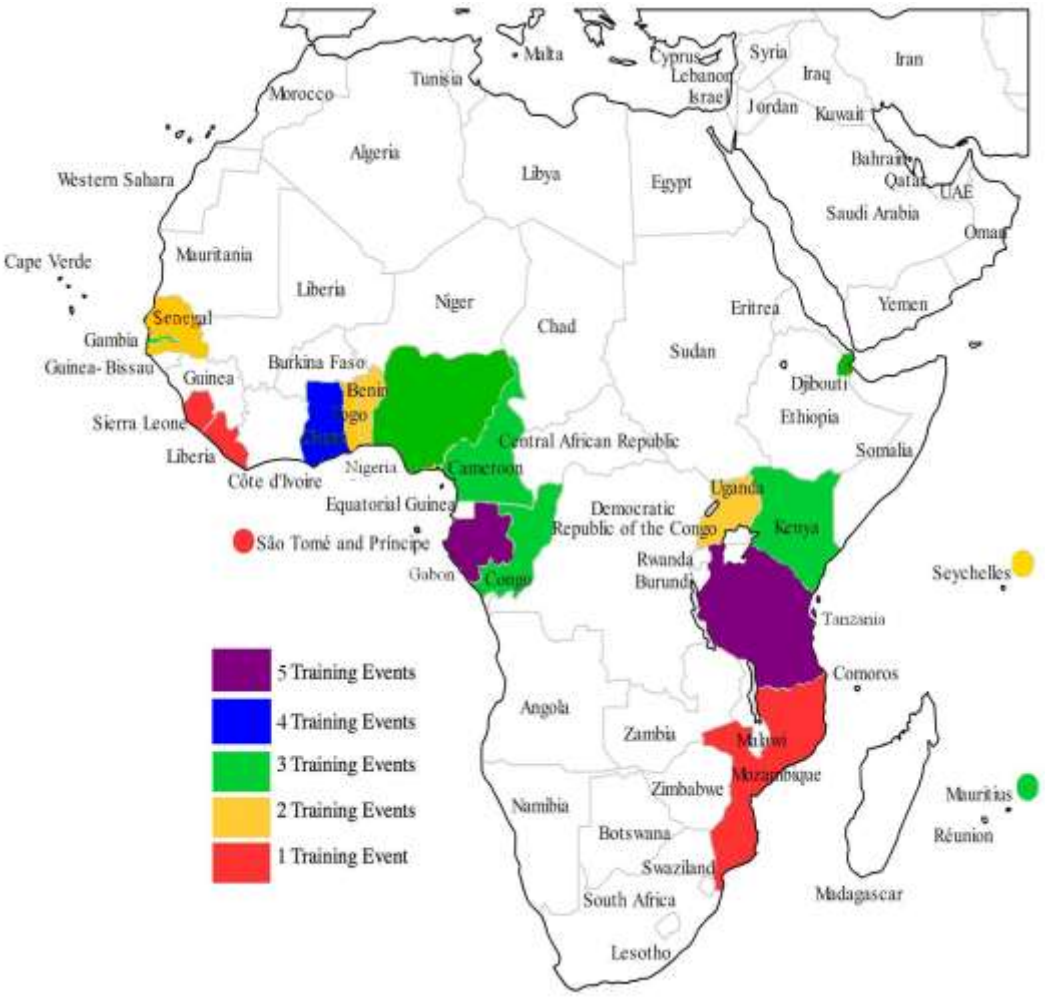
Chart 6A.2: **a.**Total number of courses given and, **b.** Average number of times each course topic was given. The course topics are sorted along the pillars of Maritime sector development, and along the additional topic of "Training Program Sustainment" which includes "Train-the-Trainer" courses.

Chart 6A.2a and 6A.2b give a topical analysis of the training effort of APS 2011. These charts break down the courses by topic and frequency of occurrence. For instance, Chart 6A.2a gives the total number of times a course was given, and Chart 6A.2b shows the average number of times each course topic was given. In Chart 6A.2a, we see that courses attributed to *Training Program Sustainment* were given more frequently than three of the other pillars, despite having the least amount of variation in course topics as shown in Table 2.1. This signifies uniformity for that pillar in the sense that the same objectives were taught across an array of training events. Following this same analysis for the rest of the pillars, Chart 6A.2b shows the average number of times each course topic in its respective pillar was taught. Comparison of these charts (6A.2a and 6A.2b) reveals that not only was *Response Capability* the pillar most contributed to as a whole, but it also had one of the widest varieties of course topics and objectives.

This type of analysis is illuminating for several reasons. First, it allows us to see that the APS program emphasizes the response capabilities of our partners. These response capabilities are generally focused on maritime security operations, but may also include physical security operations, particularly when the courses are taught by the U.S. Marine Corps.

Many of the training events contributed to the MSD Pillar *Regional and International Cooperation* with the combined participation of regional and host nation students in the same classrooms. Students from a total of 19 countries were trained between APS West and APS East, with many countries participating in multiple events. In Map 6A.1, we depict the countries involved in APS training, with a color showing the level of each country's participation in training events. Countries participating in one training event are depicted in red, those participating in two events are given in yellow, and countries participating in three events are shown in green.

This graphic is useful in depicting the scale and scope of APS training engagement, and may be useful in assessing the role of APS training in future operations.



Map 6A.1: Participation in APS training events (according to country)

Train-the-Trainer. This initiative to develop self-sustainability and effective training continuation was initiated in APS 2011. Like the related ACOTA "Train-the-Trainer" effort, this rests on the premise that long term effectiveness of the APS program lies in the ability of our partners to train themselves and one another. There was a concerted endeavor this year to train partners to instruct APS course. Benefits of this initiative were immediately apparent in student feedback from the courses.

This was the first year that African partners were employed as APS instructors. Cameroonian instructors taught DC/FF and Senegalese instructors taught VBSS in Cameroon, Nigerian instructors taught NCO leadership in Nigeria, and Tanzanians taught NCO leadership in Tanzania and Mauritius.

APS Shiprider Program

Five ships participated in APS 2011: USS SWG, USS RGB, USS SBR, HSV SWIFT, and BNS GODETIA. With the exception of the HSV SWIFT (which is not well suited for the program, due to limited U.S. Navy crew to serve as mentors), all ships participated in the APS Shiprider program, hosting a combined number of 70 students: 19 onboard BNS GODETIA, 18 onboard RGB, 21 onboard SWG, and 12 onboard SBR. Participants in the program spanned 12

countries: Togo, Ghana, Liberia, Sierra Leone, Nigeria, Republic of Congo, Gabon, Djibouti, Kenya, Tanzania, Mauritius, and Uganda.

The APS Shiprider program is designed to give sailors from African navies the opportunity to learn and train with U.S. sailors. It also provides these sailors with sea time and naval experience to which they might not otherwise have access. The goals for this program may therefore be said to fit into two separate categories of the MSD model:

- *Maritime professionals*: Trained and capable of conducting maritime security operations, and
- *Regional Integration*: Development of regional command centers and procedures, command and control, and sub-regional interoperability.

In the past, the program has received positive feedback from ship's crew and from the Shipriders themselves. APS participants have lauded the opportunity APS provides in giving at-sea training. During APS 2011, we found that, on average, surveyed Shipriders had 12 years experience in their respective services. Their areas of expertise included navigation, communication, engineering, maritime law, technician, etc.

In most instances Shipriders were interviewed when they came aboard in order to ascertain their skills and experience. Shipriders were assigned to running mates from ship's crew and were expected to shadow their running mates in order to gain an understanding of crewmember responsibilities. This includes personal professional responsibilities such as qualification and workcenter familiarization, and operational responsibilities such as watchstanding, safety standards, damage control, and first aid.

The APS Naval Liaison Officer (LNO) on board the USS SBR implemented a PQS for the SBR Shipriders. This helped clarify expectations for both Shipriders and Ship, and allowed the Shipriders to have greater control of their own performance and work.

At-Sea Training

One particular benefit of utilizing a ship for an APS engagement lies in its capability to conduct at-sea training and exercises. This was seen five times during APS 2011: two PASSEX opportunities with the SAN, two separate at-sea helicopter exercises with the Mauritian Coast Guard, and a MDA/VBSS exercise with the Togolese Navy. This last exercise was scheduled spontaneously between Togo and the RGB, and involved the RGB simulating an enemy ship while the Togolese Navy would collect intelligence leading to identification, inquiry, and escort. An additional VBSS component with a Togolese boarding team was added into the planning effort, but ultimately did not occur due to collision/safety concerns from the RGB Commanding Officer. The two helicopter exercises with Mauritius were planned and operated with Mauritian helicopters and U.S. vessels. One of the exercises simulated a medical evacuation at sea and the other an advanced VBSS.

Another opportunity for at-sea training was realized through the VBSS and Small Boat Operations courses, where in some cases students were able practice the classroom training on host nation small boats. Although we have incomplete knowledge of the use of at-sea training for all courses, we have captured the data for many countries. Table 2 below shows the host nation for each country receiving VBSS and Small Boat Operations training, and whether or not training at sea with small boats conducted. One purpose of this table is to

draw attention to the value of at-sea training. This provides experience that cannot be reproduced through land-based mock training efforts.

VBSS		Small Boat Operations	
Country	**At Sea**	**Country**	**At Sea**
Cameroon	No	Cameroon	Yes
Republic of Congo	Yes	Nigeria	n/a
Mauritius	No	Sierra Leone	n/a
Nigeria	No	STP	n/a
Tanzania	No	Togo	n/a
Togo	Yes		

Table 6A.2: Countries in receipt of VBSS and Small Boat Operations Training, correlated with whether or not training at sea was conducted as a part of the course, or as a follow-on.

Student Demographics

Surveys were given to the approximately 400 students throughout APS, and the following two charts (6A.3 and 6A.4) display the rank structure and previous APS participation among surveyed students, respectively.

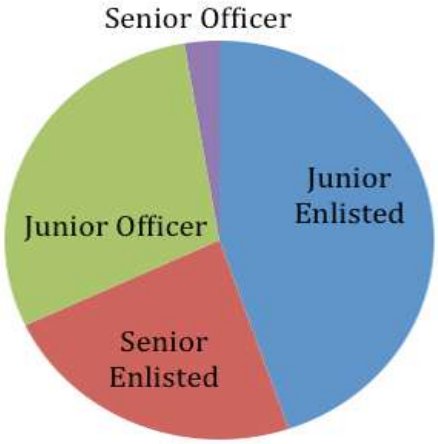


Chart 6A.3: A demographic examination APS 2011 trainees, sorted according to rank

In chart 6A.3, we see that the majority of students trained by APS are Junior Enlisted. The next largest groups (nearly co-equal) are Junior Officer and Senior Enlisted. Senior officers were rarely participatory in APS training. These results are unsurprising as they reflect a reality of the focus of APS training program that has remained consistent during recent years of the APS program. In general, the courses are aimed towards skill building amongst the lowest ranks.

This has interesting implications for long-term capacity building. APS is currently providing basic familiarization courses for students who have limited knowledge and understanding in the topic. If this trend continues, it is unlikely that APS will succeed in assisting the creation of a highly trained force of maritime professionals. Partner nation leaders who were subsequently interviewed expressed a misunderstanding about the role that APS should play in reinforcing their existing training programs.

These observations will, in part, lead to recommendations later in this section regarding the structure of APS training, and creation of both "Phased Training" and "Multi-Tier training" approaches for APS. They also call for a synchronization with other training programs in Africa, including Africa Center for Strategic Studies (ACSS) training courses, and IMET funded courses. There is obviously also a need to communicate clearly with partner nation counterparts in order to select the best student for the course, and to ensure that the student has the appropriate background and career track.

In Chart 6A.4, we show the percentage of those who participated in APS 2011 who had also participated in previous APS engagements. Although the overall amount of previous participation remains low (never above 20%) the percentage has grown steadily over the past four years. This may indicate a growing understanding of the program, or a greater willingness to participate from amongst the student body with previous participation.

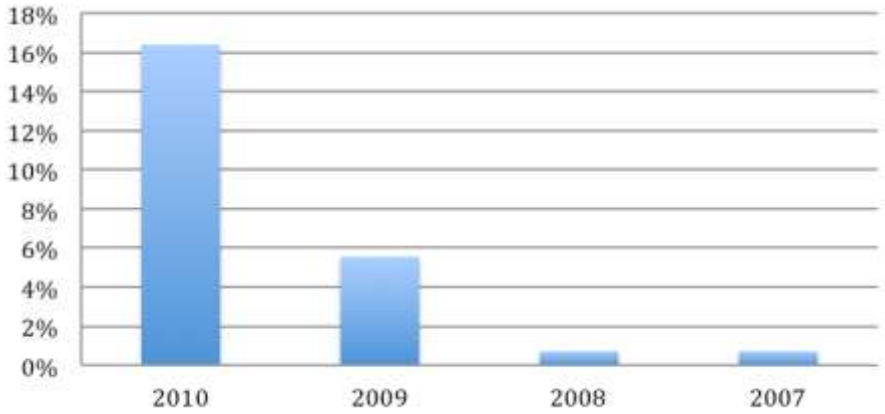


Chart 6A.4: This chart shows the percentage of APS 2011 students who had some participation in previous APS engagements.

Evaluating the APS Training Program

Determining the success in APS training is a difficult task, simply because of the high number of variables outside our cognizance. For instance, it is not possible to know what happens after the completion of a training event, and few ways to determine how or if the specific students we trained were able to use the skills they acquired.

During training events, we attempt to assemble a complete picture of the training efforts through direct observation, student and instructor surveys, and post-course interviews. Of course, an understanding of the relative success of these efforts cannot necessarily be derived from this picture, but can be gleaned through the students' employment of their acquired skills over the weeks, months and years following the event.

After the training has occurred, it is possible to obtain reports during the course of partner nation interviews which may indicate the way in which the training has been used. A less direct method is to acquire anecdotal information of maritime safety and security operations through news reports, discussions, etc. But the primary difficulty with this method is in determining causation, rather than simply correlation (note, in section 7, we recommend a method that may assist in determining causation).

Table 6A.3: This list of key elements for a successful training program was generated by Bryant Consulting Group, LLC, and provides an initial set of criteria for evaluating APS training efforts.

14 Key Elements of a Successful Training Program

1. The objectives of the training program must reflect the objectives of the organization.

2. Training program objectives should be limited, focused and practical in nature.

3. A training program is not effective unless the skills and/or knowledge level of each individual trainee is assessed prior to the trainee's participation in the training program.

4. A training program is not effective unless it is tailored to the unique culture of the organization.

5. The training program goals and objectives must be communicated to the trainee to create a clear understanding as to why the trainee is participating in the class.

6. The training must have real life application to the trainee's job and the utilization of such real life applications should be visible to the trainee.

7. The training program must be related to real life job specific functions.

8. The training program must be taught in a way to address all different learning styles.

9. A training program should be instructor facilitated, but trainee led.

10. The training program is geared towards individual departments/positions and not a general audience.

11. The training program must apply a varied approach to address the varied requirements of the organization's culture and trainee population.

12. Training programs must be taught by instructors that are not only knowledgeable in the subject matter, but certified and experienced in adult learning principles.

13. All training programs must be interactive.

14. A training program must have a transfer of learning component to evaluate the knowledge transfer to the job.

APS is not the only maritime safety and security training effort in Africa. Nearly all U.S. military forces in Africa (Army, Coast Guard, Marines, and Air Force) conduct training in African countries, and independent organizations such as the ACSS also conduct training in centers in the U.S. and on the African continent. Only rarely do these organizations synchronize their efforts. To add to the confusion and complexity, European and Asian countries give training and conduct repairs; we rarely, if ever, have good visibility on these efforts. It is not uncommon to learn of other training efforts when interviewing partner nation personnel. For instance, during the APS hub in The Gambia, assessors learned that a Spanish training team was simultaneously conducting dive training in a nearby location, and that a USCG team had taught an advanced boarding course only three weeks previous. It is therefore not entirely accurate or helpful to attribute the operational success of a particular maritime force to the training efforts of APS alone. Where we can make such an attribution, we do so, but we also realize that it is important to develop a framework for training success that does not rely exclusively on such anecdotal information. We provide such a framework here, and discuss the elements of APS 2011 training within this model.

Evaluation: Key Elements of a Successful Training Program

Our initial judgment regarding the relative success of the APS training effort is drawn from the framework of an outside source. Bryant Consulting Group, LLC, a training firm with multiple large-scale government and corporate clients, composed a list of 14 *Key Elements of a Successful Training Program*[24] which we include in Table 6A.3. This provides a good starting point for conducting an evaluation of the APS training program, an effort that we begin here.

Using instructor surveys and interviews, student surveys and interviews, and direct observation we evaluate the implementation of each of these criteria in APS training efforts. For the purposes of this analysis, we group many of the elements together, particularly when the data is not specific enough to apply to each element individually.

CRITERIA 1. The objectives of the training program must reflect the objectives of the organization.

Multiple APS planning conferences throughout the year are designed to gain an understanding of partner nation readiness needs, and to identify the courses that would be most helpful in meeting existing requirements. Partner nation participants are asked to bring these objectives to the conferences, and courses are planned accordingly. Feedback to assessors has indicated that this process shows some success in identifying and synchronizing efforts, but that there exists room for improvement.

Post training interviews with officials tended to indicate that the APS courses provided were in line with the country's training plans; however, assessors felt that the lack of specificity and the overall nature this response was often born from a desire to support the program, rather than as an honest assessment.

In some instances, there were examples that seemed to indicate that there was a misalignment with partner nation training programs. For instance, course instructors expressed frustration at being asked to train students from partner nations to use equipment to which the students did not have access. However, this complaint was not universally expressed by partners. In many cases, partner nation participants expressed enthusiasm about the way that APS reinforced their own training goals. Consider, for example, the feedback we received from the instructors of the Cameroon DC/FF course; the Commander of the DC/FF training facility stated that his goal was to create a hub for regional and possibly continental DC/FF training, and that his participation as an APS instructor was a positive step towards achieving his goal.

Cases where course material did not align with partner nation training objectives may have been due to course modifications that occurred without knowledge of other APS participants. For instance, during the Togo and Tanzanian engagements, the small boat maintenance courses which were originally designed to be separate courses in hull maintenance and engine maintenance were combined by instructors without discussion with APS planners and against the requests of the host nations.

[24] ©2004 Bryant Consulting Group, LLC, http://4-bcg.com/index.htm

As partner nations become more involved in the APS mission, there appears to be an increasing desire to understand APS training, and to synchronize with their own training. Training officers request course curriculum, and several officials have requested that APS trainers test course participants in order to determine their level of proficiency and the benefit of the course.

CRITERIA 2, 9 and 13: 2. Training program objectives should be limited, focused and practical in nature; 9. A training program should be instructor facilitated, but trainee led; 13. All training programs must be interactive.

These related criteria are focused on the concept of eliciting student participation in all training to ensure that the course material is effectively imparted. To ascertain whether the APS training program was successful in meeting this criteria, we examine instructor interviews and surveys, and direct observation feedback. Data from 18 courses attributed to these elements is given in Table 6A.4.

Table 6A.4: Positive and negative feedback along the lines of criteria 2, 9, and 13 of the key elements for a successful training program: that a training program objectives should be limited, focused and practical in nature; that a training program should be instructor facilitated, but trainee led; that all training programs must be interactive.

Positive feedback	Negative feedback
• *DC/FF (Mauritius)*: Instructor noted that the Mauritian maritime forces were eager to plan and demonstrate the practical skills they learned. • *Tanzania*: Instructors noted that there was a level of friendly competition between Kenyan and Tanzanian students, which led to good participation. • *Shipboard Electrical (Tanzania)*: Students were noticeably enthusiastic about the practical portion of the course, which involved taking them onboard the SWG and demonstrating the use of real equipment to troubleshoot and repair. • *VBSS (Tanzania):* Students who seemed initially hesitant to participate in the course noticeably opened up and became more eager to learn once the practical portion began. • *Cameroon*: Due to a lack of available translators, multiple courses used student translators. These students were noticeably proud of their new responsibility. • *Security Response Force course (Mauritius)*: NCIS instructors noted the students were "receptive and really eager to learn," and that "participation was excellent." • *Train-the-Trainer course (The Gambia)*: The interactive environment set by the instructors clearly resulted in camaraderie building	• *Maritime Intelligence (Togo):* Did not contain a practical component. • *Small Boat Maintenance (Cameroon)*: Training aides (boat motors, etc.) were not available to train with, limiting the ability to put theory to practice. • *METOC (Cameroon)*: The instructor felt there wasn't much value in the course because he was unable to demonstrate any of the equipment he discussed. • *MDA (Cameroon)*: The instructors felt the course needed more practical application, as participation was minimal. They desired the ability to demonstrate the MDA software and websites discussed during the course. • *Oil Platform Defense (Cameroon)*: Instructors felt the course would have been more effective with more scenario-based training, vice strictly PowerPoint. • *VBSS (Cameroon)*: Instructors noted the lack of practical teaching aides was detrimental to the value of the course. • *Fisheries (Cameroon)*: Participation was noticeably low; students were observed to frequently fall asleep in this PowerPoint-only course. Instructors felt that it would have been beneficial to include a practical portion to the course; it would have broken the monotony and brought a sense of familiarity to the topics

between the instructors and the students, and among the students themselves. • *DC/FF (Mauritius)*: One instructor noted: "I've taught 1000 classes in DC/FF. This was the most rewarding and funnest [sic] of any I've taught. Students wanted to learn. They took notes and answered questions. As a teacher, I felt that I made a difference." • *DC/FF and VBSS (Cameroon)*: Partner nation instructors taught both courses in French with no translators. Interactivity was excellent, and students were engaged.	discussed. • *Cameroon*: An instructor noted that he had not observed significant improvement in the students he had taught during his four-year participation in APS. He believed that lack of training aides and practicality in training may have played a role.

The divide in both positive and negative response for these criteria is useful in understanding the context of the APS training. It is clear that the courses which had a practical component (criteria 2) and which were interactive (criteria 13) had positive feedback from students and instructors, while those which fit into a strict classroom based model were less well received. Interestingly, the majority of negative feedback comes from the instructors and from observers, and not from students. It appears that the extent to which the course met the criteria depended on the subject matter and the level of preparation for the course.

Another related observation centers around spontaneous repairs conducted by staff members and crew during APS events, repairs that were helpful in improving maritime infrastructure and training facilities, but which were not used as training opportunities. When computer systems or classroom improvements were conducted, partner nation participants were often not included in the activity. There may have been many legitimate reasons for this exclusion, but we note it as a missed opportunity for training and partner-nation sustainment.

The issue of practical training has been called out as a driving need by APS medical instructors. One instructor noted: "students may understand the theory of CPR very well and describe it on a written exam. But when they have the opportunity to demonstrate CPR, they have no experience and they often have difficulty. The value of practical training cannot be overemphasized."

Criteria 3. A training program is not effective unless the skills and/or knowledge level of each individual trainee is assessed prior to the trainee's participation in the training program.

There currently exists no consistent method by which APS may evaluate the skills and/or knowledge level of trainees of the program. Program managers may request students of a particular rank for a course, but the ranking systems of our partners diverge from one another, and from the U.S. system. This limits our ability to predict the skill level and expertise of the students. Furthermore, the prerequisite training of each country differs from another, so there is significant variation in the background knowledge of students in a particular course.

Many of the APS 2011 instructors expressed frustration that they did not know in

advance whom they would teach, the skill level of the students, nor their professional match-up with the course material. This information was often unavailable upon request. For example, in the weeks and months leading to the Shipboard Electrical course in Tanzania, instructors asked, "Who will we teach? Do they have any shipboard knowledge? What are they expected to learn? What are the learning objectives?" They were surprised to discover that some students had no subject matter experience at all, and that the students were mismatched in the course. Alternatively, the instructors of the DC/FF course in Mauritius were told and prepared to train "guys who didn't know anything," but were surprised with "seasoned sailors….hungry for knowledge."

This issue was not uncommon. It was repeated in all the hubs, and resulted in frustration on the part of the instructors and students alike, and meant that the courses were not as successful as they could have been. For example, instructors of the Physical Security Course in Mauritius noted that the course could have been a certification course, but lack of information about the make-up of the student body rendered establishment of certification impossible .One instructor noted, "If the students don't make the prerequisites we can't teach them. This is why we can't make it a full course."

Not only have APS planners expressed a desire to more closely understand the skill levels of our partners, but the leadership of partner nations themselves has articulated an urgent need for self-evaluation. Surprisingly, African partners have been the greatest advocates for administering standardized tests of their sailors. "Test us," said one APS conference participant. "We want to know where we stand." In the future, developing a method for such testing (administered in advance of the training event, possibly by the partner nation itself) might be desirable.

Criteria 4, 8, and 11. 4. A training program is not effective unless it is tailored to the unique culture of the organization; 8. The training program must be taught in a way to address all different learning styles; 11. The training program must apply a varied approach to address the varied requirements of the organization's culture and trainee population.

During APS 2011, efforts were made to adjust the training schedule to cultural requirements (for instance, coffee breaks and afternoon tea). Assessments personnel possess insufficient cultural knowledge to be able to note obvious divergences between training and local culture and learning methods. Student feedback has indicated, however, that when African trainers present or translate material, the material and the course itself is very well received. This would seem to indicate that there is a need for greater cultural awareness on the part of U.S. instructors, and a high demand for African trainers.

We recommend that course instructors and APS planners be given access to relevant operational environment information, and use this information to adjust course material. Further, we believe that greater use of the "Train-the-Trainer" graduates as instructors will help to maximize the value of APS courses.

Criteria 5, 6, 7, and 10. 5. The training program goals and objectives must be communicated to the trainee to create a clear understanding as to why the trainee is participating in the class; 6. The training must have real life application to the trainee's job and the utilization of such real life applications should be visible to the trainee; 7. The training program must be related to real life job specific functions; 10. The training program is geared towards individual departments/positions and not a general audience.

Student surveys spanning the past five years of APS have shown that student skills and job descriptions are often mismatched with their course. This is certainly not a universal issue but is widespread enough to notice and draw concern, particularly in courses where the training is specialized, such as VBSS, and electrical. We note concerns by course topic.

- **MDA**: Instructors sometimes felt that students did not possess prerequisite knowledge nor did they have jobs that would require the information. Furthermore, courses were sometimes taught to students who did not have access to the necessary equipment (such as AIS).
- **Shipboard Electrical**: Many students had no background in the subject matter (e.g. some of the students were divers). Additionally, they were concerned that the equipment the trainees possessed "might be totally different" from what they used for training.
- **VBSS**: Many of the participants' backgrounds were unsuited for the course. One instructor noted that many of the students were too old for VBSS training, and another instructor said, "they just threw bodies in the class."

Given course survey feedback, we conclude that these problems may not be generalized to all courses. For instance, surveyed students often projected that they would use the training they received in their jobs. In some instances, there was special effort made to identify appropriate students for each course. In training in The Gambia, for instance, students were identified who had recently received advanced boarding training, and a request was made to include these students in an APS fisheries course.

Criteria 12. Training programs must be taught by instructors that are not only knowledgeable in the subject matter, but certified and experienced in adult learning principles.

The instructor selected to teach APS courses were taken from accredited institutions and organizations, and we conclude that this criteria was met. Student surveys reveal that students were confident that their instructors understood material well. Furthermore, the APS "Train-the-Trainer" program was designed to confer adult learning principles and teaching skills to African APS instructors. Instructor qualifications, therefore, were met during APS 2011.

It should be noted that instructors were often not informed of their assignment until the days and weeks leading up to the course, and were sometimes not provided with curricula requirements. This may have impeded their ability to instruct. For instance,

instructors of the Shipboard Electrical and VBSS courses in the Tanzania hub were taken from the SWG crew, and informed of their responsibility two months previous. They requested, but did not receive, course curricula. Similarly, in the Togo hub, ship's personnel were given short notice to teach a VBSS course, due to difficulties in acquiring the scheduled instructors.

Criteria 14. A training program must have a transfer of learning component to evaluate the knowledge transfer to the job.

There currently exists no consistent method for post-course evaluation of students. Some instructors independently institute practical "tests" into their curricula, but this practice is neither regulated nor monitored, and the results of such testing are not shared with partner nation training personnel. Interviews with African partners (most explicitly with the Cameroonian Ministry of Defense personnel) reveal a demand signal for this information. This interesting result provides us with the recommendation that APS develop a standard for training, with consistent testing procedures allowing us to build upon the skills that we know our partners possess, based upon their history of previous APS training.

It is not necessary that a post-course evaluation require a written examination. APS courses are designed to improve the response capability of our partners and an appropriate test is in a real-world environment. We observe that such testing was highly successful when instructors had practical application of the material, such as a simulated VBSS boarding on ships in dock, or when patrols were planned to test fisheries enforcement. Consider, for example that the Fisheries course in Togo required that course participants plan and conduct patrols and boardings. In similar vein, the impromptu at-sea exercise that the RGB worked with the Togolese Navy seems to be a particularly inspired method for rehearsing the skills taught in the classroom, reinforcing the practices, and assessing the extent to which students have acquired the necessary expertise. The apparent benefit gained from this type of testing/ practical training seems to beg the recommendation that all courses retain such an element (in fact, this was one of the April 2011 recommendation for a "Phased Training" concept of operations for APS 2012).

Primary issues identified through evaluation of APS Training Efforts

We have used an independent set of criteria for training[24] that allows us to investigate the major elements of the APS 2011 training program. We summarize some of the findings here.

- The existing process for synchronizing training with partner nation requirements has demonstrated some success. Post training interviews with officials indicate that APS courses were in line with each country's training plans. Our analysis shows that there exists room for improvement, however. Our partners have given a demand signal to understand APS training, and to synchronize with their own training efforts. Partner nation training officers request course curriculum, and request that APS trainers test course participants in order to determine their level of proficiency and the benefit of the course.
- There currently exists no consistent method by which APS may evaluate the skills and/or knowledge level of trainees of the program and there is often significant variation in the background knowledge of students. African partners have been the

greatest advocates for administering standardized tests of their sailors. In the future, developing a method for such testing (administered in advance of the training event, possibly by the partner nation itself) is recommended.

- Practical student participation, interactive, and focused training is necessary for a successful course. During APS 2011, courses that had a practical component and which were interactive had positive feedback from students and instructors, while those which fit into a strict classroom based model were less well received. The extent to which the course met this criteria was dependent on subject matter and instructor.
- Student feedback indicates that when African trainers present or translate material, the material and the course itself is very well received. This would seem to indicate that there is a need for greater cultural awareness on the part of U.S. instructors, and a high demand for African trainers. We recommend that course instructors and APS planners be given access to relevant operational environment information, as recommended in section 7 of this document, and use this information to adjust course material. Further, we believe that greater use of the "Train-the-Trainer" graduates as instructors will help to maximize the value of APS courses.
- Student surveys spanning the past five years of APS have shown that student skills and job descriptions are often mismatched with their course. Even when student job descriptions do not match course material, however, surveyed students often project that they would use the training in their regular jobs.
- The instructors selected to teach APS courses were knowledgeable and capable. Student surveys reveal that students were confident that their instructors understood material well. Furthermore, the APS "Train-the-Trainer" program was designed to confer adult learning principles and teaching skills to African APS instructors. It should be noted that instructors were often not informed of their assignment until the days and weeks leading up to the course, and were sometimes not provided with curricula requirements. This may have impeded their ability to instruct.
- There is a demand signal from African partners to conduct post-course evaluation and assessment of student capability, however there are no consistent methods in place to enable this. We recommend that APS develop a standard for training with consistent testing procedures allowing us to build upon previous APS training. Post-course evaluation should test in a real-world environment.

Evaluation: Anecdotal Indicators of Success

The ultimate value of APS training lies in its ability to inform real-world operations. It is unsurprising, therefore, that we rely on anecdotal examples of successful implementation of APS skill transfer to evaluate the success of the APS training program. We describe these indicators here:

- In March 2011, immediately following the APS hub in Lomé, a Togolese patrol vessel successfully completed a VBSS on the trawler Guao Jin 80, which was fishing illegally, escorting the vessel ashore. Participants of this boarding directly credited the successful operation to the VBSS training they had received through APS.
- Ghanaian Doctor, John Carroll wrote to a NAVAF medical trainer, describing the success of the APS medical training (in BLS/ALS, basic EMS) to Ambulance Drivers, Nurses, and Emergency workers in Sekondi-Takoradi. We summarize some of the highlights here:

- The civilian National Ambulance Service at the Ghana National Fire Service and the ambulance drivers of the Ghana Armed Forces coordinated and undertook multiple training sessions in BLS/ALS and triage, and adapted the concepts of Tactical Combat Casualty Care (TCCC) and Combat Life Savers for use in the Ghanaian environment, covering both civilian and military conditions. The military nurses and military ambulance drivers also re-formulated lessons learned in their courses taught by APS's teams, adapting all to make usable presentations for ship and shore training.
- Recipients of APS medical training have been able to respond effectively to accidents, and have saved lives.
    - A three car accident resulted in seven severely injured casualties with skull fractures, cervical spine fractures, bilateral femur and bilateral humoral fractures, broken ribs, and compromised airways. Ambulance worker who, before APS training, had only been trained as mechanics and drivers, were able to observe C-Spine precautions, safely apply ridged cervical collars, secure airways, and assess casualties.
    - A gas explosion in a transport vehicle resulted in several people thrown clear and suffering first and second degree burns between 10 and 25% on their bodies. Nurses and paramedical staff used what they learnt from the APS courses and triaged the cases in a fast and efficient manner, saving life, and reducing pain and suffering.
    - A young man was shot with a high-velocity rifle, severing two major blood vessels. When the ambulance arrived, he had lost two liters of blood, and was unconscious with no discernable peripheral pulse or blood pressure, and with uneven gasping respiration. Using their APS training, a nurse and ambulance driver applied a Combat Application Tourniquet (CAT) above the wounds, and administered two large bore venous cannulae, resuscitating the patient. By arresting the hemorrhage, and re-establishing a functional circulatory volume, the man returned to consciousness and began to talk.
- Dr. Carroll's letter praised the efforts of APS. He wrote: "Through all of this, my staff and I continuously laud the United States Navy and their efforts through APS. From the patients we have saved, to the families and friends who come to check on them, to the many people these patients and friends talk to, so many have heard of the great work you at APS are all doing here in Sekondi at the Naval Base Sick Bay, not just to secure our maritime environment, but secure the structures for continued security and safety on lands adjacent to these waters as well."

Evaluating the APS Shiprider Program

Reporting from the various platforms indicate that the Shipriders had widely varying experiences. In this section, we attempt to characterize some of the major aspects of execution, identify challenges, and make recommendations for improvement. For this analysis, we use feedback from the leadership of each platform and ship's crew, feedback from Shipriders, and observations of assessments personnel.

Shiprider Case Studies by Platform

We begin by noting some key elements of the Shiprider program for each platform, and then gather some key issues that have arisen from the program in APS 2011.

USS SWG Shipriders were initially excited and eager to learn, but grew discouraged as time passed. The ship's CO noted that the ship had been given little guidance regarding the Shiprider program, and scheduled few training events, feeling that the ship's natural training was unsuitable for the African partners. Drills were fast-paced and geared towards unit training or very specific tasks not applicable. Wardroom training was generally ship-specific as well. Many of ship's company were concerned that the participants were ill-prepared to embark (particularly regarding personal items). The ship felt that they had insufficient space to accommodate the Shipriders, and the Shipriders were discouraged because they felt they had no place to go when not shadowing their running mates. Running mates were not relieved of any daily responsibilities, making it difficult for them to keep the Shipriders occupied. Oftentimes the responsibility of having a Shiprider to look after became a hindrance when faced with completing daily duties; Shipriders were often left behind. When possible, Shipriders were folded into the on-shore training, although it was clear that many of them had little interest, particularly those who had been on the ship for a long time. In the instances where Shipriders were particularly focused or dedicated, the training was felt to be highly successful. For instance, one Shiprider (from Mauritius) was lauded by the Ship's Captain for his professionalism and dedication. Unlike his counterparts, he stood every watch with his running mate, and took opportunities to learn Conning and Shipboard Navigation. He was also the only APS Shiprider to participate in the ship's COMREL activities.

USS RGB The Master Chief of the RGB was made the training officer for the Shiprider program. He interviewed each participant, and worked to find suitable running mates and training. As with the SWG, Ship leadership felt that they had been given insufficient guidance for the program, and Shipriders came to the ship unprepared for shipboard living. Shipriders did not come aboard with personal hygiene items (such as soap, toothbrush, flip-flops for the shower, deodorant, etc). The expectation that the ship would provide these items was a result of conversations the Shipriders had with previous year's participants. The Shipriders had running mates, but they often did not stand watch with them. The APS liaison officer for the ship worked to help enforce training standards. It is interesting to note that standards were met when the senior Shiprider began to take ownership and lead the other participants.

BNS GODETIA As with the U.S. platforms, the Belgian Navy did not receive any goal or guidance from NAVAF for its Shiprider program. Shipriders had little understanding of the purpose behind APS before they embarked but feedback from the students was positive. Shipriders felt that they had come to the platform with good theoretical backgrounds but little practical experience. The opportunity to receive the practical training through APS was a good experience. Students noted that they would have liked to have additional time on board.

USS SBR The Liaison officer on board the SBR, recognizing the need for PQS for Shipriders, developed a version of this form, modified from the U.S. sailor PQS. This alleviated some of the burden on running mates to conduct training most of the

time. Ownership of the program became the responsibility of the Shipriders, and many participants took the responsibility very seriously. Shipriders were required to earn the ship's ball cap, by understanding and reciting knowledge of the SBR. This instituted a sense of belonging and also helped them gain an understanding of the importance of naval history and heritage. More so than the other platforms, students were integrated with the crew to the greatest extent possible, including liberty, steel beach picnics, sporting events, and watches, and was cited as a key factor in the success of the Shiprider program.

Key Challenges from the Shiprider Program

We put forward the following observations about the Shiprider program that we glean from the separate platform engagements during APS 2011.

Correct Number of Shipriders Depending on the platform type, the space available for non-work activities may be limited. Crewmembers of the SWG expressed the opinion that the number of Shipriders was unwieldy for the platform size. According to an APS staff member, the Shipriders had "no place to stay" and "they were not being utilized". It appears that these two issues seem linked. When Shipriders are well integrated with the crew, and have regular tasking (e.g. on the SBR), the lack of space on the equivalent ship was not a problem.

Expectations for the ship not adequately established With the exception of the SBR, the ship and her commanding officer had little to no advance understanding of APS Shipriders. Because they had no previous experience with the APS Shiprider program, they did not know what to expect (either in terms of the Shiprider background, training, or needs) and they did not have a plan to work with them. There was no set training program, nor any expectation of the qualifications the Shipriders were supposed to meet while they were aboard. This lesson was learned by the time the SBR deployed, however. CTF 63 leadership and members of N52 visited the SBR when she was in port in Naples, to familiarize ship leadership and crew. It was further helpful that the APS Liaison officer for the SBR was the same officer who had deployed with the RGB. This programmatic knowledge was invaluable in establishing expectations.

Ownership and program oversight When the wardroom took ownership of the Shiprider program and the APS mission, participants felt that the program became much more successful. Conversely, the attitude of the ship was that the oneness for training rested on the Shipriders themselves, rather than the ship, the program was less successful. One observer noted, "It was questionable at time the wardroom realized the APS riders were fellow officers or even if the riders were on the ship for a reason."

Inadequate preparation of Shiprider expectations This was the corollary to the ill-defined expectations of the ship; many Shipriders may not have been appropriately prepared to live and work aboard a U.S. Navy ship. This preparation may be broken down into the categories of physical, cultural, and professional. We recommend that adequate preparation be given to incoming Shipriders in conjunction with good cultural preparation for ship's officers and crew:

- **Physical preparation** Shipriders sometimes did not have necessary items in their sea bags (such as basic hygiene kits, towels, shirts,

etc.). Shipriders were also often unaware of what their accommodations or schedule would be like.

- **Cultural preparation** As it's currently designed, the Shiprider program is meant as an immersion familiarization experience for the U.S. Navy way of doing business, including understanding the protocol for the various shipboard spaces, the daily battle rhythm, and other unspoken expectations. To the uninitiated, this environment provides special challenges. Furthermore, expectations unique to American lifestyle and culture can be difficult to extract and must be outlined explicitly, or managed in a mature fashion when they arise.
- **Professional preparation** Because the Shiprider program is designed primarily as a "familiarization" experience, there is no expectation set about the level of professional training that a participant will have when they arrive. This is exacerbated when there is no clearly defined expectation of the duties that will be required. This problem was alleviated on the SBR, when the APS LNO developed a system of PQS for Shipriders.

Recommendations for the Shiprider Program

Based on the challenges with the program, we put forward the recommendations for improving the Shiprider program.

Train to the appropriate goal We recommend that APS staff reconceptualize the Shiprider program. The program is currently considered to be a familiarization experience. It is unlikely that a familiarization program will actively build the pillar of maritime professionals. We recommend that the Shiprider program be considered as a means to train officers and crew to augment our forces and to act as liaisons in joint operations. Such a program would require the following elements:

a. Participants are screened well in advance and selected to be part of an "elite" immersion training program with specific qualifications to be completed.
b. An appropriate number of Shipriders would be selected for the platform.
c. A detailed training program would be developed for the riders, with curriculum disseminated to both Shipriders and ship.
d. Expectations for both Shipriders and ship would be clearly defined.
e. Shipriders would participate in these same training and held to the same standard that we hold U.S. sailors. Evaluation and adjustment of the program would occur regularly.
f. The Shiprider would embark for a sufficient period of time to master the training.

Standardize training The PQS established on the USS SBR was highly successful in imparting expectations and had tremendous implications for the program's success. We recommend that this program be extended and built upon.

Provide adequate support and program oversight An APS officer with appropriate rank is needed as a constant presence on board the ship in order to maintenance and oversee the program, and to provide appropriate guidance to the ship and

Shipriders.

Challenges

There are a number of challenges that we have encountered in our efforts to implement successful contribution to the pillar of *Maritime Professionals*. In this section, we discuss some of the challenges that arose during APS 2011 training engagements. Many of these challenges have already been identified by analysis in this section. Nevertheless, we touch on them here.

Matching students with courses

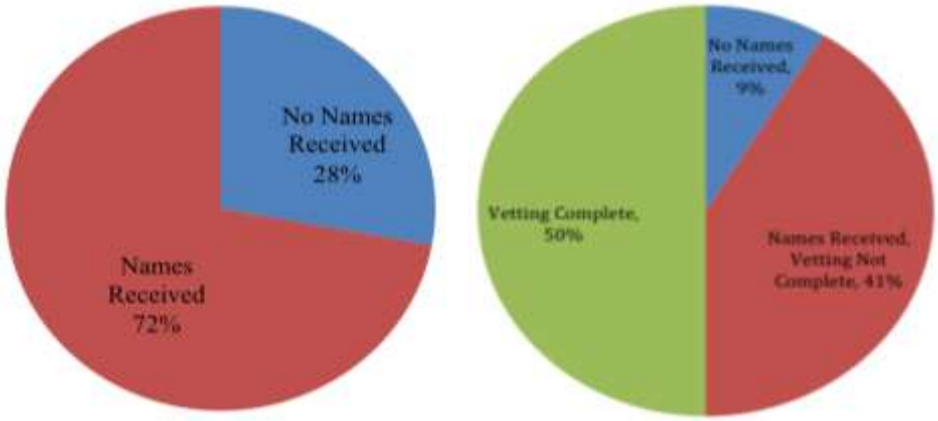
The challenge of obtaining student names and professional backgrounds is arguably one of the most prevalent issues in executing the APS program. Overwhelming data obtained from surveys, interviews, and observation demonstrates that students were frequently attending courses that will likely have little use for them in their daily duties, and in their existing career paths.

Additionally, instructors were consistently frustrated with the lack of information they received about their training audience prior to the course. This made it difficult for planning curricula. Instructor surveys revealed a sense of mismatch between course level and student preparedness. Unless and until it becomes possible to better match student names with course material, the effectiveness of APS training may be in question.

Vetting

Issues surrounding the vetting process provided a significant hurdle to APS training this year. U.S. legislation requires that all recipients of U.S. training be vetted for human rights violation. In practice, it is consistently challenging to acquire student names from Partner participants in an appropriate timeframe, and to receive the vetting for these names in a timely fashion. This has implications for Partner receptivity to efforts, and to the relationship between the U.S. Embassies and NAVAF, particularly because Military Interdepartmental Purchase Request (MIPR) moneys for Embassy support cannot be issued until the students for all courses are known. Anecdotally, this particular issue has generated considerable discomfort and adjustments to training during the past year. Here, in Chart 6A.4a and 6A.4b, we quantify the nature of this challenge.

This rough analysis allows us determine the how the vetting status progressed prior to each training event. We looked at two data points: whether or not student names were received 30 days prior to the event, and the status of vetting during the Friday prior to the event start. Although we have limited visibility on the individual cases and reasons underlying this data, a few interesting trends emerge. First, it is interesting to note that, in most (72%) of cases, student names for the APS courses are known within 30 days of the event. Interestingly, in half of all cases, student names have not been either received or vetted on the Friday prior to the event.



a. **b.**

Chart 6A.4: a. Percentage of countries providing names 30 days prior to an APS event, and b. the status of vetting in last Friday Flag Brief prior to event

These results have implications for the effectiveness of the APS program. Courses have been cancelled, and students have been dropped or removed from training while the training is ongoing. The dollar cost to the program may be high, and the cost to relationships with partner nation and U.S. Embassy personnel is also undoubtedly high. Until this issue is mitigated by greater accountability, greater visibility, and greater priority, we may expect that it will have lasting impact for the APS program.

Correct Course and Skill Identification

APS faces a persistent challenge in ensuring that its courses are in line with the training objectives of partner nations. Although partners send representatives to conferences, there remain communication disconnects between those representatives and in-country officers we have interviewed. This is an internal country communication problem, but it has implications for APS training, and methods should be developed to mitigate this. It would be beneficial to obtain training plans and readiness goals from partners so that APS efforts can be tailored to meet the needs of the individual countries. Efforts should be made at the desk-officer level to ensure that this occurs, and to follow-up with all participating host nation participants. An additional mitigating recommendation is the implementation of the Maritime Development Plan which we describe in greater detail in Section 7 of this report.

A related challenge is identification of particular curriculum requirements. Course names may often align to training goals, although specific course material may not be of particular use to participants. Course material should be designed towards the systems that participants are able to access and use in their own countries.

Training includes large multinational groups at different levels

An obvious advantage to current APS hub training structure is the value added in regional integration and partnership. However, the cost for this mixed student concept is variety in baseline knowledge. Student surveys have revealed this gap. Two students of the same course may characterize the material as “too hard” and “too easy” respectively. Overcoming this challenge will require careful planning and a Phased Training approach, a solution we posit in the *Recommendations* section.

Single level training focus

Course demographics have shown that the majority of students trained by APS are junior ranking and have only the most basic skills. While it is undoubtedly necessary to provide basic training, it would be beneficial to plan additional courses geared more towards senior officers and senior enlisted. A report from the HNLMS Johan De Witt after participating in APS 2009 discussed the need for higher-level training:

> *Most of the navies and coastguards met were not only struggling with the availability and readiness of means, in particular ships, they also seem to have very basic organizational standards. Development of doctrine, concepts and procedures is one, a Defense planning process with clear ways to go from identification of capability needs via staff requirements to parliamentarian approval for procurements is another. I believe such subjects could be dealt with in seminars and workshops on board and would broaden the APS-involvement from junior officers and enlisted also to more senior personnel.*

Focusing our training on junior personnel will not achieve effects that the APS program intends. A mechanic trained to repair a small boat will ultimately be hindered if the officer in charge of supply chain management is unable to order the appropriate parts.

Self Sufficiency Paradigm

Assessments interviews with host nation personnel have revealed a model for maritime engagement that discourages self-sufficiency. The French ship, *Jules Verne*, has historically played a role in spare parts replenishment and repair of West African Naval vessels that would otherwise founder. Similarly, agreements with China have resulted in external means of repair, negating the perceived need for developing in-house expertise. With this model for engagement, it is unsurprising that instructors of maintenance course encountered a paradigm that is particularly unhelpful for the goals of self-sustainment. The instructor of a Small Boat Engine Maintenance course discussed the issue: (paraphrased) “How can we compete with these other countries? What benefit is there for the students to learn when they know someone will come and fix it anyways? A lot of them just sat there while we worked on their engines, as if they were expecting us to fix them.”

Care must be taken to change this engagement model. When APS Staff and ship’s crew mend broken systems or trouble-shoot computer challenges, these activities should engage and instruct host nation personnel.

Platform Availability

The APS 2011 plans for engagement were significantly affected by the re-assignment of the USS WHIDBEY ISLAND to tasking in Libya. APS planners were forced to abandon months of work, and flex to recover what they could. Multiple large-scale hubs were cancelled and were replaced at the last minute by smaller no-ship training events. This is always a risk and can drastically affect the outcome of APS events. Interestingly, the resultant efforts by APS planners have been cited as a reason for negating the need for a ship.

It will be important, for future resource availability, to accurately characterize the role that a ship plays, and to understand what was lost from the training and overall mission, when the ship was lost. By implementing the “Phased Training” approach, as included in the *Recommendations* section, we propose a way to mitigate the effect the loss of a ship would have on some training efforts.

Training sustainment after APS events

Interviews with partner nation personnel have revealed that, outside military circles, there is generally low visibility amongst partner nation government and stakeholders regarding APS activities. These entities wield important influence over maritime operations, funding, and synchronization. Long-term effectiveness of APS effort will therefore require buy-in at all levels of government and maritime stakeholders, not just military personnel. Awareness of maritime challenges and response capability amongst these stakeholders is a crucial piece of APS engagement. Involvement of these personnel in conferences, exercises, and training, could be beneficial in facilitating partnerships that otherwise would not develop.

Recommendations

In this subsection, we make a series of recommendations that we believe will address many of the challenges we have identified in this section. These recommendations have been identified and developed by operators, planners, and assessors during APS 2011, and many of these have been tested and/or implemented in this fiscal year.

Create APS standard for courses

There is no standard that APS courses train to. Under the current model, the mission consistently trains for familiarization, rather than mastery. Future missions should consider developing a meaningful standard that would allow particular courses to serve as prerequisites for other courses.

In order to maximize effectiveness of these courses, the curriculum should be well understood by all participants and instructors, and should contain large practical component, with a real-world method to test the skills taught in the course. Where possible, future APS iterations should plan to include an at-sea-exercise where trainees can test and exercise their skills". The impromptu at-sea exercise that the RGB worked with the Togolese Navy seems to be a particularly inspired method for rehearsing the skills taught in the classroom, reinforcing the practices, and assessing the extent to which students have acquired the necessary expertise. The apparent benefit gained from this practical portion of the training seems to beg the recommendation that all courses retain such an element.

Re-structure APS training to a phased approach

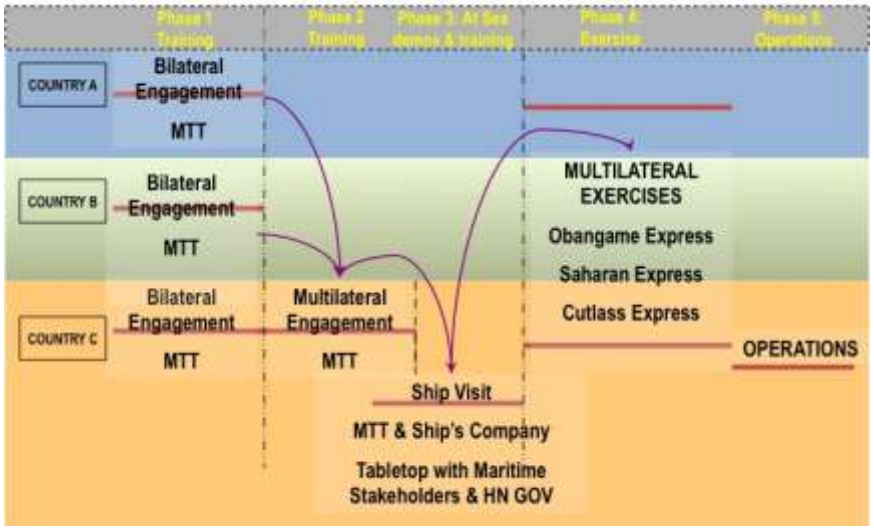
A phased approach to training would mitigate many of the problems faced by the current training structure. As we have previously identified, the multinational hub approach leads to regional integration and partnership but also results in variety in baseline knowledge. Conversely, bilateral training provides good training, but lacks the partnership-building aspect crucial for regional and international interoperability.

Phased Training incorporates a series of classroom and practical activities to build Partner Nation skills and ensure a common knowledge base among regional Partner Nations. Phased Training also supports Partner Nation development by clearly delineating expectations to advance from basic to advance skill sets and providing a projected curriculum to achieve that result.

Multilateral, advanced training is most effective when provided to a specified group of students that have completed bilateral training in basic skill sets and therefore have a similar training level and knowledge base from which to start. Mismatched levels of ability and expectations within a

course lead to frustration for students and trainers. The Phased Training concept allows Partner Nations to conduct bilateral training with a defined student group to bring them to a level of knowledge and expertise that will prepare them to participate in multilateral training.

The concept of Phased Training helps ensure an even playing field, and allows students to build their skills in a logical sequence. An added advantage of this concept is that the platforms which are available for APS operations will be used to their maximum value , and the mission will not suffer as greatly if the platform is removed. The concept of Phased Training, as briefed at the 2012 APS main planning conference is given in Graphic 6A.1. We describe the individual phases in greater detail here.



Graphic 6A.1: Phased Training Approach

Phased Training consists of five phases:

Phase 1: Small Mobile Training Teams (MTT) are sent to a small group of regional countries to conduct bilateral training. The goal is to have each group at the same baseline level before continuing to Phase 2. Courses are of varying lengths (2-6 weeks) to assure that students are competent can perform to a pre-determined standard. The standard may be basic or advanced, but its purpose is to level the playing field among proposed multilateral players so that multi-lateral training begins at the same level for all students. The training team will have a chance to assess the Partner Nation's capability, materials, and goals in the subject matter prior to multilateral engagement.

Phase 2: Multi-lateral training using the same students who participated in the bi-lateral Phase 1 training. Training teams are aware of the pre-determined training standard to which bilateral training was taught and can integrate students into effective multi-lateral training. It is recommended that Phase 2 training follow Phase 1 training as soon as possible to ensure that the skills are still fresh in the students' minds and the ability to retain the same students is maximized.

Phase 3: Application of skills to practical situations onboard a ship. When available, students who have completed Phase 2 training will visit U.S. vessel to further their understanding and application of skills learned. The ship arrives and acts as a

platform for practical exercise with the skills learned in Phase 2. It is possible that, in the event that a U.S. platform is recalled, partner nation platforms may be used in this phase.

Phase 4: Multilateral coordination and interoperability as students from multiple partner nations cooperate and coordinate during a multilateral Exercise (either table-top or practical; e.g. CUTLASS EXPRESS or SAHARAN EXPRESS). Phase 4 exercises will cement skills learned throughout the earlier phases and will promote regional cooperation and interoperability.

The collaboration and momentum generated by these four phases will result in significantly greater capacity building and knowledge retention. Students return to participate with their own countries in a multilateral exercise, such as those in the EXPRESS series. The US ship participates in this exercise as well.

Phase 5: Operations, such as the AMLEP operations, are the natural extension of the four phase training effort. Regional operations (such as CEEAC operations) are also a natural part of this phase.

In order to implement Phased Training, APS N52 planners coordinate with Partner Nations, Embassy Country Teams, and the APS Training Officer to develop a detailed training plan. Information included: courses to be conducted, what pre-determined standard Phase I training must achieve, which training teams will conduct the courses, and how many students will be available for all four training phases. The dates for training phases will be aligned so that all Phased Training milestones are met within the shortest timeframe and will coincide with ship visits and exercises.

There are several benefits to be had from the Phased Training approach.

- **Continuity**. Student continuity means that the same students receive more advanced training, versus familiarization only. With this advanced knowledge, they will be more likely and able to transfer knowledge to their peers. This method
- **Standardized proficiency levels**. Maintaining strict control of the training program allows for the knowledge that the students are receiving a certain level of training.
- **Practical training**. In line with data that shows the need for practical training to reinforce classroom training, this approach allows for students to use their training in an exercise environment.
- **Efficient scheduling**. The packaged structure allows for staggered parallel training. Proper scheduling could result in very efficient use of the MTTs and the ship.

In order to maximize these benefits, we make the following ancillary recommendations:

Utilize Maritime Development Plan for each country

In order to ensure APS training is in line with partner nation goals, a plan must be created that can be used and tracked by both the partner nation and NAVAF. Recommend having partners create measurable short and long term goals, including systems, skills, and relationships they believe necessary to reach these goals, and a plan of actions and milestones (POA&M). NAVAF can then use these individual nation goals to create regional goals and to find opportunities for APS to support these goals. A major benefit of this is that the limited resources available for APS can be used in an efficient manner, so as to not waste efforts where they are not desired or

needed. We articulate such a Maritime Development plan in Section 7 of this report.

Conduct Multi-Tier training

Training of junior ranks is vital but is insufficient on its own to improve MSS in the African EEZ. It is important to address the need for staff officer planning and logistics and supply-line training.

In addition to classroom training, an opportunity exists with the multinational exercises already taking place in Africa. The planning portions of these exercises can be leveraged to include African partners and give them experience in staff planning and logistics they would otherwise not receive.

Additionally, training efforts could be used to increase visibility of maritime issues to government officials and non-military maritime stakeholders. Planned table-top exercises with multiple invested organizations will work to raise awareness and provide a forum for collaboration that may not otherwise be present. They could also serve as a vehicle to improve efficiency in operations by clarifying roles and responsibilities, developing protocols and procedures, and identifying weakness and gaps.

Support the creation of Regional Maritime "Centers of Excellence"

Some countries have expressed the desire to act as regional training hubs for African partners, a desire that APS should not ignore. An example is the DC/FF school in Cameroon, whose staff members were the instructors for the DC/FF course held during that hub. Similarly, Nigerian participants have expressed the desire to train regional students in MDA.

APS can act as a catalyst to increase recognition and visibility of these schools, and can provide oversight and help create standards, and the ship's visit would reinforce the training through advanced training or exercising the skills. An example would be integration of their teams into Phase 1 and their center as the location for Phase 2 of the Phased Training Approach.

Promote the Train-the-Trainer Program

This new program was very successful in APS training efforts. Additional iterations of the Train-the-Trainer program will be useful in promoting long-term sustainability of partner nation capability.

The development of partner nation instructors could serve multiple useful purposes, including 1) implementation into Phased Training efforts. 2) Bilateral training under the APS banner, though independent of other APS events 3) integration into regional "Centers of Excellence".

Observation of partner-taught courses made it apparent that African paradigms and techniques made excellent

It was made apparent through observation of the courses taught by partners that they can serve as excellent instructors and their experiences as native Africans is a valuable aspect that US instructors will never be able to emulate.

Create a single training POC within NAVAF

A recurring complaint from instructors was that they did not know who to get information from about the courses they were supposed to teach. Ideally, this POC would maintain only the responsibility of coordinating and directing APS training. Some example responsibilities would include:

- Coordinate all logistics for trainers to ensure timelines are met.
- Maintain constant contact with MCAST/SFA POCs.
- Maintain Lessons Learned and Welcome Aboard products to improve trainer familiarization with APS and what to expect.
- Maintain a standardized course library with curricula.
- Act as the NAVAF POC for trainers during the hubs.

Another, related recommendation is to increase participation from training commands in APS planning efforts.

Summary and Conclusions

In this section, we have evaluated the role that APS 2011 has played in the pillar of Maritime Sector Development (MSD), *Maritime Professionals*. We have described how training was structured and implemented during APS 2011, quantitatively and qualitatively approximated the success of these training efforts, determined trends in both positive and negative influences on training efforts, and made recommendations that we believe could improve both the short-term and long-term effectiveness of future training programs.

The existing process for synchronizing training with partner nation requirements has demonstrated some success. Our partners have given a demand signal to understand APS training, and to synchronize with their own training efforts. African partners have been the greatest advocates for administering standardized tests of their sailors and to conduct post-course evaluation and assessment of student capability

During APS 2011, courses that had a practical component and which were interactive had positive feedback from students and instructors. Instructors selected for APS were knowledgeable and capable, and elicited confidence in the students. A greater effort should be made to match student skills and job descriptions with the APS training course, and to supply instructors early with curricula requirements. There is also a need for greater cultural awareness on the part of U.S. instructors, and a high demand for African trainers and translators. It seems clear that future use of the "Train-the-Trainer" graduates as instructors will help to maximize the value of APS courses.

We have identified the following issues and challenges for the APS training effort and successful contribution to the pillar of *Maritime Professionals*. These included matching students with courses, vetting student names on time, correct course and skill identification, training multinational groups at different levels, a single-level training focus, a self-sufficiency paradigm that is somewhat lacking, platform availability, and sustainment of the training program after APS events have ceased.

In order to address these challenges, we propose the following recommendations: 1) Create APS standard for courses, 2) Re-structure APS training to a phased approach 3) Utilize Maritime Development Plan for each country, 4) Conduct Multi-Tier training, 5) Support the creation of Regional Maritime "Centers of Excellence", 6) Promote the Train-the-Trainer Program, 7) Create a single training POC within NAVAF.

By actively seeking to improve the synchronization of the APS training program with our partners, and by evolving the training concept, APS appears poised to make increasing strides in improving the pillar of *Maritime Professionals*.

6B. Maritime Domain Awareness: Assessment of Efforts and Effects

Elizabeth Heider & Kirsty McLean

Section Summary

MDA efforts in 2011 were directed towards seven goals:

1. Understand AIS Status- MSSIS reporting, sustainability issues, training requirements.
2. Deploy enhanced capability & equipment.
3. Support strategies to sustain and maintain MDA capability.
4. Build interagency cooperation.
5. Support regional operations centers.
6. Share MDA information (e.g. via the APS Non-Classified Enclave)
7. Employ advanced capabilities such as Satellite AIS and Radar

APS 2011 contributed to the pillar of Maritime Domain Awareness on three different fronts: 1) Technology focused efforts, 2) Awareness and coordination efforts, and 3) MDA training courses.

MDA Technology focused efforts during 2011 included MDA System Assessments, Coastal Radar (ancillary to APS), AIS and MSSIS efforts, SeaVision, and CAMTES. Awareness and coordination efforts included a survey of maritime traffic in the GoG (Ghana hosted), MDA workshops Gabon and Ghana, and a feasibility study for an Indian Ocean Interagency Maritime Surveillance program in 2012. MDA training included ten courses on four topics in seven countries.

MDA coverage is incomplete in the African EEZ. However there seems to be an ongoing effort to improve the common operational picture (COP) largely through international donations and training. APS participating countries have at least one technology-based MDA system (such as coastal radar). U.S. 1206 MDA donations in Africa improved the MDA capabilities of receiving nations and sometimes represent the major MDA systems that our partners use. Importantly, U.S. 1206 donations are not the only MDA systems owned and operated by our partners and future MDA efforts would do well to recognize other actors to increase interoperability and avoid duplication of effort. Where partner nation MDA efforts do not appear to align with the system or metric we choose for MDA, a more comprehensive view of MDA information is required.

Technology-based MDA systems in partner countries tend to be stand-alone – not networked into a larger COP. Future APS efforts should emphasize networking existing systems, and ensuring that the physical infrastructure for such networking exists.

There are considerable challenges in MDA system upkeep. 1206 equipment donations do not allow for maintenance/upkeep funding. Partner professional maritime organizations frequently have minimal maintenance funding and spare parts of their own. There is often limited in-country expertise necessary to perform regular maintenance of MDA systems. During upcoming APS engagements, a thorough assessment of MDA systems should be conducted by a subject matter expert in conjunction with partner nation subject matter experts.

Future APS efforts should include forums for interaction between navies, commercial interests and local maritime professionals (such as local fishermen). It is recommended that APS should help create, or facilitate others in creating, memorandum of understandings, standard operating procedures (SOP), and information sharing. There are opportunities for such facilitation in stakeholder conferences, TTXs and real-world exercises.

Where APS has conducted MDA training it has been well-received. When personnel are trained to use MDA skills for systems that they are assigned to use, training value is maximized and partners are able to immediately implement the skills. When MDA systems are run and operated by non-military organizations, APS training efforts for MDA should include members of these organizations.

Basic watchstanding procedures training is an important aspect of APS training, but higher-level MDA operations training, including the development of operations center SOPs, should also be incorporated in to APS curriculum.

Based on our analyses, we make the following recommendations for implementing MDA solutions using APS 2012 and beyond:
1) Future APS efforts should have an emphasis on networking existing systems
2) APS efforts should include assessments and regular documentation of existing MDA systems,
3) APS should assist in implementing low-Tech MDA solutions
4) APS should help facilitate information sharing between maritime organizations,
5) APS should help develop and utilize Maritime Development Plans for each country
6) APS courses should train to existing MDA systems, and train groups that use the systems even if they are non-military
7) APS should conduct multitier training in MDA.

Background and Introduction

In this section we discuss the Maritime Sector Development pillar of *Maritime Domain Awareness*. The stated goal of this pillar in the MSP is: *Partner nation's Maritime Domain Awareness capability to support maritime security operations is enhanced*. The emphasis (effects and tasks) is that partner nations collect and fuse MDA information, develop a common operating picture, and develop tools to better manage missions, assets, equipment and resources.

We begin by examining the APS 2011 contribution of efforts. We then discuss partner nation MDA capabilities, as demonstrated by equipment usage, information from interviews and surveys, and observations of MDA usage during exercises and operations. By examining both our efforts and our partner capabilities, we assess where we currently stand in this work, and identify challenges that the U.S. and partner nations will face in building this pillar. Finally, we make recommendations for the way ahead.

The pillar of *Maritime Domain Awareness* is related to the other pillars of MSD. It requires both *Maritime Infrastructure* and *Trained Professionals* to support it; and the *Response Capability* of any maritime force requires some form of maritime domain situational awareness in order to be effective.

Efforts during APS 2011

MDA efforts in 2011 were directed towards seven goals:

1. Understand AIS Status- MSSIS reporting, sustainability issues, training requirements.
2. Deploy enhanced capability & equipment.
3. Support strategies to sustain and maintain MDA capability.
4. Build interagency cooperation.
5. Support regional operations centers.
6. Share MDA information (e.g. via the APS Non-Classified Enclave)
7. Employ advanced capabilities such as Satellite AIS and Radar

MDA capacity building efforts during APS 2011 included three distinct elements:

1. Technology focused efforts such as AIS and MSSIS system install, inspection, and upkeep,
2. Awareness and coordination efforts such as KLEs and stakeholder conferences, and
3. MDA training courses such as AIS/RMAC and Intelligence Fusion.

The first two efforts included their own funding stream within APS, with the majority of these funds allocated for CAMTES (Computer Assisted Maritime Threat Evaluation System), and for Satellite AIS improvements. The third MDA effort was funded as part of the regular APS training schedule.

Through assessments interviews and investigations, we learned that there are parallel efforts in assessing existing technology and installing MDA systems to include private contractors, other countries (including Denmark), and organizations, such as the International Maritime Organization (IMO). There is also significant commercial sector development of AIS technologies. We mention this as a matter of interest and to note that coordination with other entities will maximize the effectiveness of MDA efforts through APS.

1. ***Technology focused efforts*** constituted a significant push during APS 2011. In summary:
    - **MDA System Assessments** Initial efforts during APS 2011 were put towards understanding and identifying the status of the AIS systems that were part of 1206 donations in many African partner nations during the past five years. This was the task of the MDA working group, led by Edgar Bates as executive Agent for MDA (under N3). The status of MSSIS sites is monitored through a NAVAF contract with the Volpe System (part of the US Department of Transport), funded through APS OM&N. APS port visits also include 'grooms' of African partner AIS receivers. Members of the APS multinational staff assigned to the USS WHIDBEY ISLAND supported this effort in early 2011. LCDR Marcello Abbate (IT) and LCDR Mickael Delrue (FR) traveled to Senegal, Togo, and Cameroon to assess and, in some instances, attempt repair (see section on *Maritime Infrastructure* pillar). These two officers visited coastal radar sites in Senegal, and re-installed defunct AIS/MSSIS software in the Naval base in Lomé, Togo.

    - **Coastal Radar** There is no existing line of APS funding that will allow APS to contribute directly to coastal radar installation or upkeep. U.S. contributions to Coastal Radar for partner nations comes directly from the U.S. DoS 1206 FMF moneys. In early 2011, for instance, Coastal radar technologies were donated to Cameroon and installed by that country's rapid intervention force, the BIR, to give them visibility in their northern EEZ (note: training on this system was conducted by Israeli, not U.S. trainers).

    - **AIS and MSSIS** As with coastal radar systems, APS funds cannot go directly to the purchase and install of AIS transceivers. Over the past several years (and with FMF funds) the US Government/C6F has installed 26 AIS sets with TV32 in Africa at a cost of $40 Million dollars (roughly 1.5 Million per each). AIS is an IMO requirement for all ships of 300 gross tonnage and upwards engaged on international voyages, cargo ships of 500 gross tonnage and upwards not engaged on international voyages, and all passenger ships irrespective of size. Vessel information is collected by AIS receivers on land and other vessels and may be shared by the Maritime Safety and

Security Information System (MSSIS). MSSIS is a freely-shared, unclassified, near real-time data collection and distribution network. Its member countries share data from Automatic Identification Systems (AIS), coastal radar, and other maritime-related systems. MSSIS provides detailed information on ships including picture, IMO number, GPS coordinates, last port of call, destination, and cargo. During APS 2011, there were inspections on existing AIS systems (mentioned above), ancillary (not part of APS) AIS installations, and training on AIS usage, which we will discuss below. Importantly, MSSIS is not the only AIS data-sharing network available to partner nations, but its use is widespread.

- **SeaVision** SeaVision is hosted by Volpe and offers a web portal to access both MSSIS data and Satellite AIS data. With APS 2011 funds, Satellite AIS purchased on a trial basis, extended from the coast to 400 nautical miles from all around Africa (with the exceptions of South Africa, Namibia, Angola and Somalia). This technology consists of information from two satellites (note: under the proposed 2012 contract, Exact Earth will have a total of six satellites in orbit available for use) magnifying the number of contacts available to users. The contract was placed by SPAWAR via the Ghana maritime Traffic Survey project (see below). Maritime Outreach Program Manager Kirsty McLean used various conferences and visits to train and register African partner users on the system. To date, the following countries have accounts on SeaVision: Benin, Cameroon, Cape Verde, The Gambia, Ghana, Liberia, Mauritius, Nigeria, Senegal, Seychelles, and Sierra Leone. Regular users include: Senegal, Seychelles, Nigeria, Mauritius, Ghana and Cameroon.

- **CAMTES** Computer Assisted Maritime Threat Evaluation System (CAMTES) is a web subscription service based on IHS Fairplay shipping data which utilizes satellite AIS to track ships. This technology goes a step beyond vessel identification and information display. CAMTES identifies potential threats using a "rules" algorithm for risk assessment of merchant shipping, which provides knowledge for exchange with interagency, inter-governmental, and other coalition partners. CAMTES scores vessels on several criteria including country of ownership, port movements, crew member nationalities, ownership changes, sales, detentions. CAMTES was funded by the MDA cell and purchased as a subscription for use within CNE-CNA-C6F. During APS 2011, Ms McLean shared the system trial with the same countries who registered for SeaVision. Feedback about the system has been positive although it is not possible to track which countries are using the system, as they currently share a common APS login.

2. ***Awareness and coordination efforts*** The technology-based MDA efforts we have listed above constitute only one portion of the MDA effort during APS 2011. Another important effort involved the human element of awareness and coordination. This included key-leader engagements to bring attention to concerns in the maritime domain. Additionally, N50 Outreach coordinator Kirsty McLean organized three MDA working group meetings during APS 2011 in Ghana, Gabon, and the Seychelles.

    - **Survey of Maritime Traffic in the GoG.** Conducted by SPAWAR and the University of Ghana, this study involved the detection and tracking of a wide range of vessels, including large commercial vessels, industrial fishing vessels, semi-industrial trawlers,

and even small wooden fishing canoes using terrestrial and space based technologies. The goal of this project was to identify typical traffic patterns in the GOG, to inform NAVAF and partner mission planning to combat illegal activities in the maritime domain. This project brought together several Ghanaian agencies, including Fisheries, Navy, Ghana Maritime Authority, Ports and Harbors and NGOs. The project culminated in a maritime stakeholders meeting to discuss the future of the national maritime surveillance effort.

- **MDA Workshops Gabon and Ghana** The week long workshop in Gabon included 16 students from five separate organizations: the Gabonese Navy, National Parks, Department of Fisheries, the Marine Police, and the Port Authority. This was led by the MDA Battalion, a reserve group (National Control and Guidance of Shipping) that provides one-on-one training on systems and on-the-job training for interagency maritime surveillance specialists. As their capstone, the participants designed an interagency operations center to be based at the Port, which was briefed to senior leaders from all departments. A similar program was executed in Ghana, which featured visits to the Fisheries Department, University of Ghana and Port of Tema.

- **Feasibility study for an Indian Ocean Interagency Maritime Surveillance program in 2012** Meetings were held with the Seychelles Coast Guard, the Maritime Safety Authority, the University of Seychelles, the Police, the Ministry of Communication, the Ministry of Communications and Technology, and the Ministry of Foreign Affairs. The goal was to determine whether an advanced technology project, similar to the one completed in Ghana, could be held in Seychelles and Mauritius in 2012. This visit also included training in the Seychelles Navy operations center on SeaVision and CAMTES. Project managers from SPAWAR and the Office of Naval Research, conducted similar visits in Mauritius.

3. ***Maritime Domain Awareness Training Courses***. During APS 2011 planning conferences, NAVAF received a demand signal from several countries to receive MDA training. Training for FY 2011 was subsequently conducted in both the East and West APS efforts. We have listed these in Table 6B.1. Four topics were taught. These included general exposure to MDA, and training on specific systems such as AIS and RMAC. Other courses (taught by CNE-CNA-C6F's N2 trainers) included Maritime Intelligence Fusion and Maritime Intelligence Workshops. These latter courses are designed to teach students how to appropriately gather, store and analyze information.

   In all, there were ten MDA related training courses taught in seven countries as part of APS 2011. On a separate but associated note, certain U.S. Embassies have requested follow-on training in Maritime Intelligence from the NAVAF N2 shop. These trainers have since conducted this training in Liberia and in the Seychelles.

Table 6B.1. MDA related courses taught during APS 2011 training evolutions.

Event	Start Date	End Date	Host Country	MDA Training

SWG HUB #1	7-Feb-11	4-Mar-11	Tanzania	AIS/RMAC
SBR HUB #1	12-Aug-11	18-Aug-11	Seychelles	Maritime Intelligence Fusion
				Maritime Intelligence Workshop
				AIS/RMAC
RGB HUB #1	1-Feb-11	18-Feb-11	Togo	Maritime Intelligence Fusion
RGB HUB #2	7-Mar-11	17-Mar-11	Sierra Leone	MDA
RGB HUB #3	4-Apr-11	14-Apr-11	Nigeria	Maritime Intelligence Fusion
				Maritime Intelligence Workshop
NO-SHIP HUB #1	11-Apr-11	5-May-11	The Gambia	MDA
NO-SHIP HUB #2	6-Jun-11	17-Jun-11	Cameroon	MDA

Partner Nation MDA capabilities

In this subsection, we discuss some partner nation capabilities and current usage and paradigms of MDA. This is not intended to be a comprehensive look at overall MDA systems and usage in Africa – such a study is beyond the scope of this report. Rather, we draw from interviews, open source reporting, surveys, and observations of the Express Series Exercises (SAHARAN EXPRESS, OBANGAME EXPRESS, and CUTLASS EXPRESS) to examine specific country use of MDA. These individual studies give insight into how MDA is perceived and how MDA tools are used by our African partners. We may then use this information to inform us about the efficacy of our existing efforts and to direct our future actions in MDA development. We divide this look into two separate topics: 1) *Partner Use of MDA Technology*, and 2) *MDA Systems and Information Use in Individual Countries*

1. ***Partner use of MDA Technology***.
    - ***AIS and MSSIS*** As a first, overarching look at the MDA systems in Africa, we use the analysis conducted by CNA Field Analyst, Dr. Allen Hjelmfelt. Dr. Hjelmfelt analyzed the number of stations in Africa reporting in MSSIS since January 2010.
      Countries that had at least one AIS transceiver and which were able to transmit the signal via MSSIS were Benin, Cameroon, Cape Verde, Djibouti, Gabon, Ghana, Kenya, Liberia, Mauritania, Mauritius, Mozambique, Morocco, Nigeria, Sao Tome & Principe, Senegal, Seychelles, Sierra Leone, Togo. This analysis does not include stations which may have been working and reporting locally but not reporting to MSSIS.

      The number of receiver stations reporting in MSSIS each week were sorted by country, and then averaged into the chart given in Figure 6B.1 This metric is useful for gaining a broad-strokes look at which countries are operating their MSSIS systems, and the probability of achieving a good COP in the African AOR at any given time. According to this analysis, the highest number of stations reporting through MSSIS was 30 (April 2011). After this peak, these numbers fell and then stabilized at about 18. During FY11 (Between Sept 2010 until August 2011), the average number of MSSIS stations actively reporting rose from approximately 13 to 17, a roughly 30% increase in usage.

      Interestingly, although the metric of MSSIS feed provides an important initial gauge of partner capability, MSSIS reporting reflects only one dimension of Maritime Domain Awareness and not the whole picture. Consider that Benin has not

contributed to MSSIS at all in 2011. In spite of this, the Benin Navy has been successful this year in combating numerous bad acts at sea including the April 2011 tracking and interception of a vessel transporting 200 kg of cocaine[25], and the August 2011 saving of a Swedish Tanker that had been overset by pirates[26]. According to interviews with members of the Benin Navy, their Maritime Domain Awareness is directed by intelligence reporting and fusion, information from their neighbors (Togo and Nigeria), AIS, and coastal radar. Through this example we see that MSSIS reporting is not a stand-alone indication of AIS usage and MDA capability.

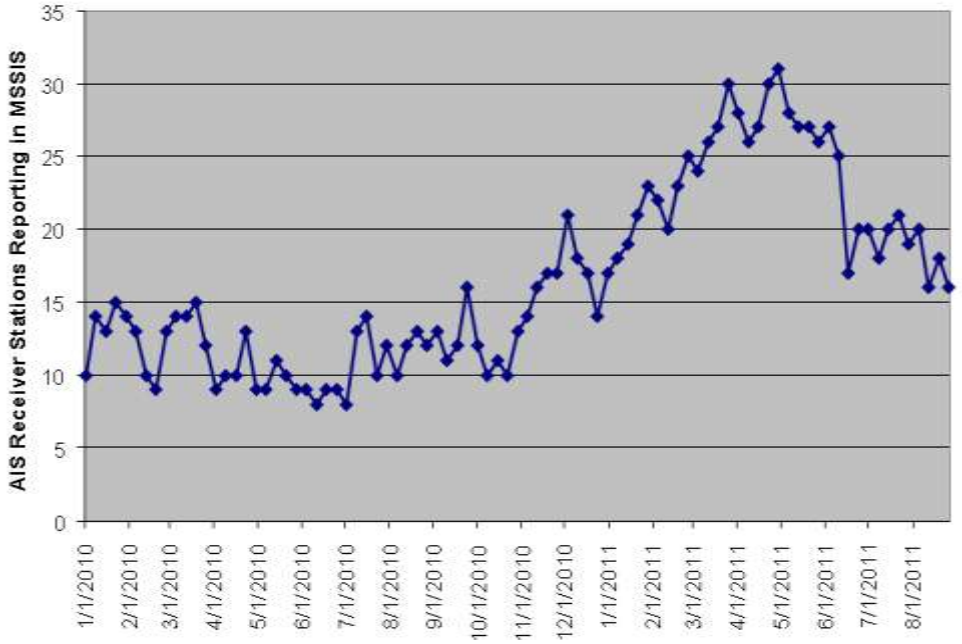


Figure 6B.1. Week-by-week look at AIS receiver stations reporting in MSSIS in Africa beginning in January 2010.

The case of the Benin Navy's non-transmission of MSSIS feed is not unusual. According to NAVAF desk officers, some countries may feel proprietary about the information they receive on their AIS and coastal radar feeds, and may be reluctant to contribute to the overall MDA picture. This gives us an important lesson in selecting the metrics for our MDA assessments: where partner-nation effectiveness does not appear to align with the metric we choose for maritime domain awareness, a more nuanced view of individual country MDA information is needed. In order to understand the variables required for such a perspective, we examine individual countries and their use of MDA.

2. ***MDA Systems and Information Use in Individual Countries*** In this subsection, we explore a more multifaceted view of MDA. We examine a few case studies of countries in order to understand how MDA is perceived and used by our African partners. We select countries for case studies based on the following criteria:

[25] AFP20110419950072 Cotonou Le Matinal Online in French 19 Apr 11
[26] http://worldmaritimenews.com/archives/tag/navy

- There exists sufficient data regarding MDA equipment and data handling for this country
- The country had active participation in APS 2011, with one or more emphases on MDA
- There existed an opportunity during 2011 for this country to demonstrate MDA capability in an operation or an exercise, and observers have provided information regarding use of MDA during the operation or exercise

Using this criteria, Cameroon, Senegal and Tanzania were selected for case studies. Extensive assessments observations and interviews have been conducted in all three countries, and all countries have participated in activities that tested their MDA capacity. Both Cameroon and Senegal participated in exercises in FY11 (OBANGAME EXPRESS and SAHARAN EXPRESS, respectively), Senegal participated in AMLEP operations in 2011, and Tanzania recently responded to a Ferry accident in its TTW.

In these case studies, we consider the questions: What equipment does this country have and what is its status? What is the picture created, what coverage is available, and who owns the picture? What happens to the information when it is gathered (e.g. is information shared)? What role did APS play in enhancing the MDA capabilities? How does MDA inform response operations?

Cameroon: MDA coverage in Cameroon is robust in the northern coastline of the country where their EEZ intersects with Nigerian waters and the waters of Equatorial Guinea (the Bakassi peninsula area), although the MDA picture in the south of Cameroon remains largely undeveloped. In the Bakassi region, the Cameroonian Rapid Intervention Battalion, the BIR, have both AIS and Coastal Radar stations. The two radar systems in this area were gifts from the U.S., however the BIR themselves built the operation centers to house the equipment, an indication of the high value they place on maintaining a good COP (training on this equipment was conducted by Israeli forces). These coastal radar stations became operational in February 2011. Oil company security personnel in the Bakassi regularly communicate with and update the BIR and, according to one interview, APS has facilitated the regular exchange of relevant maritime information between a BIR officer and his Nigerian counterpart. The BIR routinely use their MDA capability in an advanced fashion. For instance, in March 2011, the BIR were able to compare the pictures created by coastal radar and AIS in order to track bank robbers who had escaped on fast boats. [note: According to trainers who work with the BIR, MDA picture does not always translate into good operational capability. During training exercises, they noted that the BIR Delta continue to have difficulty “vectoring in” on a target.]

The COP obtained by the BIR is not shared with the Cameroonian Navy or other maritime institutions in Cameroon. This is symptomatic of a larger interagency communications and COP sharing challenge, a challenge that became apparent during the OBANGAME EXPRESS exercise in 2011.

OBANGAME EXPRESS 2011 was designed to exercise command, control, and coordination between the operations centers in Douala, , naval ships from multiple countries (Cameroon, Gabon, Nigeria, ROC (Brazzaville), Sao Tome & Principe, Belgium,

France, Spain, and the U.S.), boarding teams, and helicopter in each operational area. According to a CNA report, MDA challenges arose as a result of equipment failures, non-standard operations center procedures, and, most importantly, the lack of a formal mechanism for data sharing between maritime organizations. The CEEAC Zone D operations center used for the exercise, the Cameroon Navy MCC, experienced recurring failures in its High Frequency (HF) and Very High Frequency (VHF) radio systems during the exercise and for much of the exercise there was no MCC radio operator at all. The MCC was able to maintain a limited common operating picture through emails to IP-capable ships and the ships' AIS transmissions. The MCC also lacked sufficient bandwidth for AIS to provide real-time updates. When MCC staff received coordinates from ships in the exercise, they had to be prompted to plot AIS tracks on the computer and on a navigation chart in the MCC. Beyond operations center procedures and equipment challenges, however, the larger challenge was interagency.

During OBANGAME EXPRESS 2011, it was clear that the Navy and the BIR had no means to communicate with each other, in spite of the fact that their operations centers are located in adjacent buildings on the Douala Navy base. MCC staff and the BIR LNO had to quickly find work-arounds such as handheld VHF radios and satellite phones. By the end of the exercise, both the BIR LNO and the Navy MCC personnel saw the value of the BIR and the Navy working collaboratively and communicating with one another to address maritime threats. Unfortunately, any decision to increase Cameroonian BIR and Navy cooperation, or even to have a BIR LNO assigned to the MCC, is not currently supported by political leadership.

The APS 2011 no-ship hub in Cameroon held a course on MDA attended by Naval officers and members of the BIR. In an interview following the hub, C.V. DZOU Lucien, Douala Naval Base Commander, noted that members of the weekly patrol unit had participated in this training. He said, "We are more confident knowing that they have been trained by APS." Participants also noted that they were matching the training with operations. For instance, those who attended the APS MDA course are working in the operations center.

Analytical takeaways from the Cameroon Case study:

- MDA picture in Cameroon significantly improved in 2011 with the addition of Coastal Radar stations operated and controlled by the BIR (the Coastal radar systems were FMF donations from the U.S.). BIR use of these systems appears to be relatively advanced.
- The BIR obtain an additional level of operational MDA information through close working relationships with oil security personnel working in the Bakassi region.
- There exists robust MDA capability in Cameroon's northern EEZ, and underdeveloped MDA capability in the southern EEZ.
- MDA training during APS was well-received and has resulted in improved capability of Cameroonian Navy personnel, including members of the weekly patrol unit and personnel manning the operations center in the Douala Navy HQ.
- Primary challenges in MDA capability include underdeveloped operations center procedures, poor or damaged communication equipment, and no formal means for in-country maritime organizations to share information or work together.

- Information sharing between maritime organizations in Cameroon will likely continue to be problematic in the future; these organizations compete for funding and legitimacy and have separate mandates from political leadership.

Senegal: The MDA picture in Senegal is spread out through different maritime organizations, each with different equipment. As part of a U.S. FMF package, Senegal received three AIS transceivers – delivered to their maritime coordination body, HASSMAR. HASSMAR shared one transceiver with the Senegalese Navy, one with the department of fisheries (DPSP), and kept one transceiver for itself. Both the Naval AIS and the DPSP AIS transceivers were installed in Dakar, Senegal, a duplication that minimized the effectiveness of having two transceivers, and the information from each was not directly fed to the other institution's operations center. Both stations have reported rather frequently onto MSSIS since 2010. To date, the AIS transceiver owned by HASSMAR has not been installed nor turned on.
The Senegalese Navy owns ten response stations along the coast. Five of these have coastal radar, although it is likely that several are not functioning, and none of them are connected to the internet to share information or communicate with one another. As part of APS 2011, two APS staff officers, LCDR Abatte (IT) and LCDR Delrue (FR) visited the Coastal Radar station at Kayar, about 40 km away from Dakar. The radar in Kayar was not functional. It is unclear whether other radar stations have greater functionality.

APS training initially scheduled for Senegal in 2011 was cancelled when the USS WHIDBEY ISLAND was recalled to operations in Libya. Although the APS no-ship hub continued in The Gambia, it did not garner Senegalese participation, and Senegalese officers did not receive MDA training.

Senegal participated in the exercise SAHARAN EXPRESS 2011 (25-29 April), and in the AMLEP operations conducted by the USCG Cutter Forward (06-09 SEPT). During the SAHARAN EXPRESS 2011 Exercise, observers noted that the operations center had recently been updated with ten new computers, but that watchstanding procedures were not standardized. MDA procedures were also non-standardized, and the junior officers on the watch floor seemed to be unaware of how to obtain any usable common operating picture. There was no AIS feed into the operations center, and information regarding ship position was obtained via direct radio contact with the vessels by the European participants in the exercise. Watchstanders sometimes took notes about ship positions, but did not use any SOP to do so, and did not generate a common operating picture as they did this.

MDA challenges exposed by the SAHARAN EXPRESS exercise were repeated five months later during the AMLEP operations with Coast Guard Cutter Forward (FWD). During the AMLEP operations, operations center procedures continued to be a problem. Watchstanders did not seem to take ownership of or interest in the Operation; they did not participate in FWD's positions or actions, and behaved as though the operation was happening apart from them. An observer noted that the junior officers in the operation center didn't have the "operational mindset or drive to run an operation". The liaison officer from the FWD often tried to pass information through his Senegalese counterparts but these efforts did not produce the intended result.

APS engineering assessments of MDA equipment needs in Senegal during APS 2011 provided a good starting point for assisting the Senegalese Navy in its MDA efforts. Because APS did not contribute directly to the MDA training of the Senegalese Navy during 2011, the relative success or difficulty in watchstanding MDA procedures cannot be attributed to APS. But observations during SAHARAN EXPRESS and AMLEP allow for a snapshot of procedures and MDA usage.

Analytical takeaways from the Senegalese case study:

- MDA equipment in Senegal is owned and operated by different maritime institutions who do not generally share information, who use the equipment in duplicative ways, and who compete for funding. Future success in MDA capability in Senegal will rest in coordination and synergy between these organizations.
- The Senegalese Navy owns and operates an AIS transceiver and some coastal radar stations. The coastal radar stations may not be functioning and they are not networked into the operations center in Dakar to generate a naval COP of the Senegalese EEZ.
- Senegalese watchstanders did not use the COP generated from the AIS transceiver to inform operations during SAHARAN EXPRESS or AMLEP; there does not appear to be a standard operating procedure in the Senegalese operations center for recording MDA information or maintaining a COP.
- APS 2011 contributed to engineering assessments of MDA capabilities in Senegal, but did not train Senegalese in MDA or intelligence.
- Junior officer watchstanders in the Senegalese Navy may require training in basic MDA procedures and MDA usage. There may also be a requirement for staff officer training to generate MDA SOPs during operations.

Tanzania: The primary source of MDA in Tanzania is owned by the Surface and Marine Transport Regulatory Authority (SUMATRA), a civilian establishment with headquarters in Dar Es Salaam. The AIS transceiver is housed in the operations center, a tower built by the Chinese and completed in 2009. Russian software ("Oceanview", a windows based charting software) is used for the digital chart system. Although the organization is civilian run, a Tanzanian Navy Liaison on site coordinates for Navy response. The seventh level of the building houses the maritime rescue coordination center (MRCC). There are three landline phones. There is also INMRSAT, a satellite phone used for international distress signals. The eighth level of the building houses the vessel tracking service (VTS) and is run by the Ports authority. As of the date of this report, the Tanzanian Navy does not have AIS systems, nor (according to interviews) do they have an MSSIS feed from the SUMATRA AIS transceiver.

A 2010 U.S. study identified seven sites for AIS installation for the Tanzanian Navy, using 1206 funding. At roughly the same time, the IMO identified the same need; currently, the IMO is working to establish three AIS sites along the coast, and the U.S. will establish five.

According to newspaper reporting, the Tanzanian Navy has radar stations in Mtwara, Dar Es Salaam and Zanzibar. There are also a few unmanned stations up and down the

Tanzanian coast used to relay VHF distress signals. These include stations in Dar Es Salaam, Pemba, Mafia, and Lindi.

During the March 2011 APS hub, Tanzanian participants received AIS/RMAC training. According to instructors, many of the course participants lacked prerequisite knowledge and, as the Tanzanian Navy did not own AIS transceivers (nor did their operations center have an MSSIS feed), instructors felt that the training was ill-suited for the audience. In spite of these objections, participants felt that they benefitted from the training – and that there was value to be had in gaining familiarity in systems that they may be required to operate in the future. Given the fact that the operations center in Tanzania is civilian run, it is notable that no civilian personnel received MDA training during APS 2011.

The MDA capability of the SUMATRA operations center was tested on 10 SEPT 2011 when a transport ferry carrying about 800 people (200 people more than the boat was licensed for) capsized between Zanzibar's main islands of Unguja and Pemba.[27] The operations center received the distress call from the ferry when the vessel became unstable. Using AIS information, the operations center identified commercial vessels operating in the area and contacted the vessels, vectoring them in to assist in the rescue. The operations center also contacted the Tanzanian Navy but, as the Tanzanian naval patrol vessels were too far away to launch a timely response, the primary rescue effort was managed by commercial vessels and airplanes that were on the scene.

Because APS did not contribute directly to any MDA training that went into the operations center responsible for responding to the Ferry disaster, there is obviously no correlation between APS and this MDA capability. Yet the nature of the operations center indicate a relatively robust level of MDA capability, something that should be built upon in future APS events, and in related MDA capacity building opportunities.

Analytical takeaways from the Tanzanian case study:

- The primary MDA capability in Tanzania is owned and operated by SUMATRA, a civilian authority with coordination elements sharing information with the Tanzanian Navy.
- The SUMATRA operations center provided the crucial element of MDA response during the SEPT 2011 Ferry disaster. This operations center demonstrated a remarkably high level of coordination and MDA capability during this event.
- Coordination (e.g. information sharing) between SUMATRA and the Tanzanian Navy is relatively good, however civilian MDA operators are not currently trained as part of APS, and Tanzanian naval officers are not heavily used in the civilian operations center.
- The SUMATRA operations center does not currently share its AIS feed with the Tanzanian Navy directly nor through MSSIS.
- During the March 2011 APS hub, Tanzanian participants received AIS/RMAC training, but the value of this training is unclear, given that the Tanzanian Navy does not own AIS transceivers. Watchstanders in the civilian-run operations center in Dar Es Salaam (where the AIS transceiver is housed) received no MDA training during APS 2011.

[27] http://www.bbc.co.uk/news/world-africa-14869596

- The U.S. and the IMO are working to install a total of eight AIS stations up and down the Tanzanian coastline, under the control of the Tanzanian Navy. As these installations are created and manned, there may be a subsequent demand signal for trained operators at those sites. Future APS efforts should coordinate with the Tanzanian Navy to provide training for these operations centers, and follow-on exercises to test communications and procedures.
- As the Tanzanian Navy's AIS capability is stood up, MDA coordination with other maritime stakeholders (such as SUMATRA) will need to be emplaced so that everyone functions from the same common operating picture. Future APS missions may wish to help put this coordination in place, or to test formalized coordination procedures that the existing organizations put into place.

Challenges to MDA

In the previous subsection, we examined case studies of Senegal, Tanzania and Cameroon in order to gain an understanding of MDA systems in Africa and the way that these systems are employed. These studies have illuminated several key operational issues that will be important to address when improving MDA in the African AOR. In this section, we call out the specific challenges identified by these case studies, and identify additional challenges we have observed in improving MDA.

Incomplete MDA coverage in the African EEZ In spite of an ongoing effort to improve the Common Operating Picture, primarily through international donations of equipment and training, there remains incomplete MDA coverage.

Technology-based MDA systems are challenging to acquire, maintain, and properly exploit. APS participating countries have at least one technology-based MDA system (such as coastal radar). U.S. 1206 MDA donations in Africa have improved the MDA capabilities of receiving nations and sometimes represent the major (if not only) MDA systems that our partners use. Technology-based MDA systems in partner countries face a number of challenges, including the following:

- **Limited Networking** MDA systems tend to be stand-alone – not networked into a larger COP. Attempts to network the MDA picture, or to use network-based systems such as SeaVision are hampered by limited access to the internet, or to issues with network speed and maintenance.
- **Expensive to Obtain** Without outside support, MDA equipment is often too expensive for African partner nations to acquire.
- **Extensive Training** Technology based MDA often requires extensive training to properly use. Current training is often limited, and insufficient to provide long-term sustainability. When individual operators are trained in appropriate use of these systems, leadership may have insufficient training or understanding on the use of these systems to appropriately exploit their value. This lack of understanding and proper use has also resulted in MDA interfaces being turned off, or the information disregarded.
- **Equipment is susceptible to misuse, abuse or neglect** MDA interfaces, such as the laptop computers that were donated as part of the 1206 funded AIS system installs, may also be used for personal internet usage. This has resulted in imprudent system downloads to the systems that have introduced viruses which have slowed or stopped the use of these systems.
- **Limited accountability for system maintenance, information use, or response** Once a system has been donated and/or installed, there is often little accountability for the

systems to be properly maintained, or the information from those systems to be properly used, resulting in limited response.

- **Shared ownership; limited information sharing** MDA systems are often owned and operated by various maritime stakeholders who may compete for funding and legitimacy and have separate mandates from political leadership. Conflicting interests, incomplete knowledge, and distrust may be an obstacle to information sharing. There exists a clear need to facilitate communication between these organizations, infrastructure for sharing information, and standard procedures for ensuring that information gets passed between relevant organizations
- **Challenges in MDA system upkeep** Technology based MDA systems require continued funding and attention for full exploitation. If there is insufficient funding for system upkeep, these systems fall into disrepair or misuse.

Partner priorities are focused on equipment, rather than processes. This takeaway was the result of a survey administered to African APS participants during APS 2011 planning conferences beginning with the 2012 APS Main Planning Conference (MPC) in Virginia Beach, VA May 17-20 2011, and including the APS Final Planning Conferences in August (FPC West in Cape Verde) and September (FPC East in Tanzania). According to survey results, partners prioritized MDA technology and systems above procedures for sharing information and directing patrols. This was also prioritized above information sharing between other maritime organizations and from the public. In general, this survey revealed a persistent emphasis on the materials required for readiness, rather than the procedures needed to maintain them. This could indicate one of many paradigms that we should consider. Here are two:

- The severe lack of assets and infrastructure is creating a serious impediment to improving maritime safety and security – and it is felt that developing the procedures for managing equipment is unnecessary until the equipment is available
- Maintenance procedures and TTP development may not be generally considered to be a priority

Organizations within Partner nations duplicate MDA efforts. This takeaway is apparent from the Cameroon, Senegal, and Tanzania case studies. In all three countries, AIS data is compiled and used by often-competing sources and information sharing between organizations is either incomplete or not occurring. These examples also highlight some important aspects of MDA use by partner nations, namely:

- Commercial MDA capability may outstrip military capabilities. As in Tanzania, the SUMATRA center's response capability outstrips the Navy. Future APS efforts should recognize the multitude of actors in the maritime realm and develop tailored programs to increase interoperability and cross-organization training.
- MDA systems in African countries are often owned and operated by various maritime stakeholders who compete for funding and legitimacy, as is the case between the BIR and Cameroon Navy. It may be important to recognize the strengths and weaknesses of maritime organizations to maximize resources in the maritime domain.

Recommendations

Based on the case studies we have presented in this section - partner nation capability in MDA, previous APS efforts in developing MDA capability, and the challenges to MDA in Africa - we posit the following recommendations for APS efforts along this pillar of Maritime Sector Development:

Future APS efforts should have an emphasis on networking existing systems Such networking can occur through physical examination, assistance and repair of existing internet infrastructure.

Assessment and regular documentation of existing MDA systems A thorough assessment of MDA systems should be conducted by a subject matter expert in conjunction with partner nation subject matter experts. Recommended repairs and maintenance procedures for these systems should be passed to partner nations for their own use, and to U.S. Embassy personnel who may coordinate with country stakeholders to identify necessary equipment and make donation requests through the U.S. government and through other international partners (such as European partners who may wish to make donations) and other organizations (such as the IMO).

NAVAF should create a consistent framework for collecting these assessments, and generate and maintain a database to house MDA assessment information. This database should be periodically updated to include the most recent information regarding partner nation MDA systems.

Help implement low-Tech solutions. Efforts should be made to establish or augment CWOW Programs and Commercial Reporting Systems. MDA information obtained from technology-based systems can be augmented by reporting from commercial interests or other maritime professionals (such as local fishermen). In the instances where such augmentation is used, this appears to improve MDA capability. Consider as an example the U.S. Maritime Civil Affairs Team (MCAT) effort to combat bad-acts at sea in Kenya by putting Maritime Situational Awareness into the hands of the community. This CWOW program organized and mobilized Kenyan citizens to help improve the information environment for their government by encouraging community members to report "suspicious activities and emergencies." These teams found that the security relationships between fishing communities and Government of Kenya authorities in the twelve communities where interviews were conducted are not yet mutually reinforcing or characterized by trust and confidence.[28] Efforts should be made through Civil Military Affairs projects, and COMREL engagements to help support this trust. It is uncommon for partner nations to have some form of community alert system in place, and future APS efforts should be made to provide forums for interaction between navies, commercial interests and local maritime professionals (such as local fishermen). Variations on this program may include offshore server control of MDA reporting or "professionalization of the public" efforts such as the successful Danish "Stop the Oil" Campaign. [29]

Information sharing between maritime organizations. MDA systems in African countries may be owned and operated by various maritime stakeholders who may compete for funding and legitimacy and have separate mandates from political leadership. Conflicting interests, incomplete knowledge, and distrust may be an obstacle to information sharing. There exists a clear need to facilitate communication between these organizations, infrastructure for sharing information, and standard procedures for ensuring that information gets passed between relevant organizations. It is recommended that APS create opportunities to facilitate the construction of memorandum of understandings to be written, standard operating procedures to be created, and information sharing to be practiced. These opportunities include stakeholder conferences, TTXs and real-world exercises (this is not a complete list).

[28] Community Watch on the Water: Relationship Building on the Kenya Coast" by M.Farrell (CJTF-HOA SCRAT) and M.Wagner (AFRICOM SSRC), March 2011, AFRICOM/CJTF-HOA

[29] http://www.forsvaret.dk/SOK/eng/National/environment/Stop/Pages/default.aspx

Utilize Maritime Development Plan for each country
In order to ensure APS efforts match up with partner readiness goals, a plan must be created that can be used and tracked by both the partner nation and NAVAF. We recommend having partners create measurable short and long term goals in MDA, including systems, skills, and relationships they believe necessary to reach these goals, and a plan of actions and milestones (POA&M). NAVAF may then appropriately leverage these plans to support in-country efforts.

Train to existing MDA systems, and train groups that use the systems (even if they are non-military).
Where APS has conducted MDA training it has been well-received. When personnel are trained to use MDA skills for systems that they currently use, the value of this training is maximized, and partners are able to immediately implement the skills. When MDA systems are run and operated by non-military organizations, APS training efforts for MDA should include members of these organizations.

Multitier training in MDA. Training basic watchstanding procedures should be included as part of APS training, but higher-level MDA operations should also be trained to, including the development of operations center SOPs

Summary and Conclusions

Herein, we have evaluated the efforts during APS 2011 to contributing the Maritime Sector Development (MSD) pillar, *Maritime Domain Awareness*, and attempted to assess the role that this played in MDA in Africa. We described the three elements of this effort: Technology focused efforts such as AIS and MSSIS system install, inspection, and upkeep, Awareness and coordination efforts such as KLEs and stakeholder conferences, and MDA training courses such as AIS/RMAC and Intelligence Fusion.

Following this description, we analyzed some partner nation capabilities and current usage and paradigms of MDA, drawing from interviews, open source reporting, surveys, and observations of the Express Series Exercises (SAHARAN EXPRESS, OBANGAME EXPRESS, and CUTLASS EXPRESS) to examine specific country use of MDA. These individual studies gave insight into how MDA is perceived and how MDA tools are used by our African partners. Specifically, we examined overall MSSIS usage amongst our partners, and then examined three individual cases of MDA use, in Senegal, Cameroon, and Tanzania.

Using this information, as well as other assessments observations during the APS 2011 effort, we identified the following challenges to MDA in the African AOR: Incomplete MDA coverage; technology-based MDA systems are challenging to acquire, maintain, and properly exploit; and that partner priorities are focused on equipment, rather than processes.

Based on these analyses, we make the following recommendations for implementing MDA solutions using APS 2012 and beyond. 1) Future APS efforts should have an emphasis on networking existing systems, 2) APS efforts should include assessments and regular documentation of existing MDA systems, 3) APS should assist in implementing low-Tech MDA solutions, 4) APS should help facilitate information sharing between maritime organizations, 5) APS should help develop and utilize Maritime Development Plans for each country, 6) APS courses should train to existing MDA systems, and train groups that use the systems (even if they are non-military), and 7) APS should conduct multitier training in MDA.

By actively seeking to improve the synchronization of the APS training program with our partners and by evolving the training concept, APS appears poised to make increasing strides in improving the pillar of *Maritime Professionals*.

6C. Maritime Infrastructure: Assessment of Efforts and Effects

Elizabeth Heider

Section Summary
APS 2011 contributed to the MSD pillar of Maritime Infrastructure through three separate efforts: training for maintenance, response and repair of maritime infrastructure, engineering assessments of maritime infrastructure; and ad hoc repair projects of maritime infrastructure.

Primary U.S. efforts towards maritime infrastructure development in Africa are through 1206 MDA donations, CNT donations, and FMF projects. APS necessarily plays a small role in this pillar, due to funding constraints through existing APS funding lines. MCAST, SEABEE construction projects, and COMREL projects may be leveraged by APS but, due to limited funds cannot be expected to create significant improvements to maritime infrastructure.

The main emphasis during APS 2011 was on training. Courses to support maintenance and repair capability of organic infrastructure included both maintenance and damage control courses. These courses were conducted in Togo, Sao Tome & Principe, Nigeria, Cameroon, Tanzania and Mauritius. In all, there were seven course topics meant to support maritime infrastructure.

APS staff members conducted maritime engineering assessments in Senegal, Togo, and Cameroon with the plan to follow-on with engineering support during the scheduled engagements with the USS WHIDBEY ISLAND; these projects did not, therefore, occur.

Maritime infrastructure improvement projects were conducted during APS West 2011, although they were not planned in advance and were taken on by motivated ship's crew as events of opportunity. These included air conditioning repair in classrooms, boat maintenance, and boat winch repair. In general, these infrastructure improvements were not used as training opportunities – nor were the existing training opportunities used conjunction with repairs to or gifting of an actual system.

As the APS mission moves forward, we recommend maximizing the value of the existing program while remaining within the funding constraints that currently exist. We list some ways to accomplish this here:
1. Conduct Multi-Tier training on Maritime infrastructure repair and maintenance. Engineering and maintenance courses should include a practical portion and should use host-nation equipment and supplies.
2. Where feasible, focus COMREL activities and civil-affair construction projects towards maritime infrastructure and local fishing communities
3. Identify partner nation goals and plans for maritime infrastructure improvements. Use existing platforms to transport equipment and materials.
4. Create opportunities for engineering assessments. Design repair and maintenance projects to include partner nation participation.

Background and Introduction
The MSD pillar of Maritime infrastructure has the following goal associated with it: *Partner nations acquire and sustain maritime infrastructure needed for maritime security operations*. This pillar is

meant to complement other U.S. efforts of equipment and sustainment in Africa, including 1206 MDA donations, CNT donations, and FMF.

In this section, we explore the role that APS played in contributing to this pillar. This contribution is necessarily small because APS is constrained from making direct donations to country infrastructure unless requested to provide Civil Military Assistance to maritime infrastructure through MCAST, SEABEE construction or COMREL projects. These projects are all generally small and limited in funds and therefore cannot be expected to create significant changes in maritime infrastructure. Based on assessment observations, we make recommendations for future APS contribution to this pillar.

APS 2011 Efforts

There were three separate efforts during APS 2011 to feed this pillar of Maritime Sector Development: training, engineering assessments, and repair projects.

The main emphasis during APS 2011 was on training. Courses to support maintenance and repair capability of organic infrastructure included both maintenance and damage control courses. These courses were conducted in Togo, Sao Tome & Principe, Nigeria, Cameroon, Tanzania and Mauritius. In all, there were seven course topics meant to support maritime infrastructure.

1. DC/FF - Basic DC
2. DC/FF - Advanced Shipboard DC
3. DC/FF - Helicopter FF
4. Maintenance - Shipboard Electrical
5. Maintenance - Advanced Shipboard Electrical
6. Maintenance - Small Boat Engine
7. Maintenance - Small Boat Hull

In addition to training, APS staff members conducted maritime engineering assessments in Senegal, Togo, and Cameroon with the plan to follow-on with engineering support during the scheduled engagements with the USS WHIDBEY ISLAND; these projects did not, therefore, occur.

Maritime infrastructure improvement projects were conducted during APS West 2011, although they were not planned in advance and were taken on by motivated ship's crew as events of opportunity. These included air conditioning repair in classrooms, boat maintenance, and boat winch repair. In general, these infrastructure improvements were not used as training opportunities – nor were the existing training opportunities used conjunction with repairs to or gifting of an actual system.

Challenges

Maritime Infrastructure crucial for long-term maritime capability, but it is often underfunded. The maintenance programs of our partners are often unable to keep pace with infrastructure & asset requirements. Unfortunately, maritime infrastructure improvements are only incidental in current model for APS, and they are likely to stay this way.

Contribution to the MSD pillar of Maritime Infrastructure requires a significant logistical effort, motivation, and engineering expertise. This is not easily managed without the flexible resources of a ship and, during this year's APS engagement, all maritime infrastructure improvements were linked to a ship's presence. This point is important to note in future plans, especially as U.S. maritime assets for APS become scarce.

It is important to note that there are legal constraints associated with CNT and Air and Maritime Support Initiatives (AMSI) funding prohibiting "maintenance and repair" projects. Until and unless other funding sources are utilized to bring spare parts and make dedicated repairs as part of APS events, the primary APS contribution to this pillar of MSD is training.

Recommendations

As APS evolves, there are several unexplored opportunities in this pillar, maximizing the value of the existing program while remaining within the funding constraints that currently exist. We list some here:

Conduct Multi-Tier training on Maritime infrastructure repair and maintenance. Current efforts are focused on basic enlisted training in maintenance and DC/FF. These skills may improve partner nation mechanic capability but will not have significant effectiveness unless paired alongside junior and senior-level leadership on supply chain management and logistics. Similarly, seminars, KLE, training and table-top exercises should be planned to engage higher-level leadership to bring awareness of infrastructure needs and encourage the paring of government funding with maritime infrastructure and supply requirements.

Engineering and maintenance courses should include a practical portion and should use host-nation equipment and supplies. By training on existing system and using hands-on training, instructors will be able to better equip our partners to succeed in infrastructure and asset repair and maintenance when the APS event has ended.

Where feasible, focus COMREL activities and civil-affair construction projects towards maritime infrastructure and local fishing communities (such as boat ramps and community fish market infrastructure improvement). If host-nation personnel are available, request their participation in these efforts. This will have immediate impact on the maritime safety of fishing communities, and provide a mechanism for interaction and trust building between local fishermen and Navy personnel. This may have future benefits in information-sharing and maritime situational awareness.

Identify partner nation goals and plans for maritime infrastructure improvements. Country teams can synchronize with existing in-country maritime assets to identify country plans for maritime infrastructure development and improvement. APS may provide training support, or use COMREL opportunities to support.

Use existing platforms to transport equipment and materials. When a ship is used for an APS engagement, regularly schedule to use the lift capability of naval platforms to transport materials for maritime infrastructure improvement projects. This will require coordination with the country and country-teams to identify appropriate materials, and coordination with U.S. company donations and/or donor countries to provide materials.

Create opportunities for engineering assessments. When a ship is used for an APS engagement, schedule infrastructure assessments and infrastructure improvement projects in advance; include engineering assessment and support on the Operation Order (OPORD) for the ship's crew. Depending on the nature of the projects, legally viable funding sources will need to be identified and leveraged.

Design repair and maintenance projects to include partner nation participation. When infrastructure improvements are conducted by APS staff or ship's crew, partner nation participation should be requisite so that the appropriate skills for sustainment will be put into place.

Conclusions

There was minimal attempt during APS 2011 to contribute to this pillar of MSD. The only planned effort involved basic training of junior personnel on equipment maintenance and response. Maritime infrastructure improvement projects were conducted only when a ship was present and when personnel were personally motivated to conduct ad-hoc maintenance and repairs. We have not noted a significant improvement in this pillar this year as a result of APS efforts. If APS continues in the manner that it is currently executed, it will not result in a significant change in this pillar of maritime sector development.

6D. Response Capability: Assessment of Efforts and Effects

Elizabeth Heider

Section Summary

In this section, we examine the contribution that APS has made towards the MSD pillar of *Maritime Response Capability*. We conclude that, although a majority of our APS African partners are currently unable to adequately monitor, patrol, prevent, and respond to the maritime threats and concerns in their EEZs, APS and other international efforts are major contributors to our partner's response capability evolution, and that strides are being made in improving this pillar.

APS 2011 contributed to African partners' ability to respond to maritime threats primarily through training and through exercises at sea. According to interviews, Intelligence fusion and information exchange courses have played a crucial role in partner nation response capability in the past year. Gaps in intelligence and communications capability have been exposed during APS related EXPRESS exercises, and efforts during APS 2012 should be made to expand these capabilities – through additional courses, through TTXs, and through at-sea exercises and operations.

APS Passing Exercises in 2011 occurred primarily with the South African Navy and the Mauritius Coast Guard. These two partners are amongst the most proficient military maritime forces participating in APS. While these exercises may have built partnership and interoperability, it is likely that any increased maritime capability for these forces will be incremental, at best. We recommend that APS routinely plan Passing Exercises with other APS partners, and encourage South Africa and Mauritius to engage other partners in Passing Exercises.

Other U.S. efforts, such as FMF donations and exercises play a complementary and significant role in improving indigenous response capability. U.S. 1206 donated Defender-class and Archangel-class boats often represent a significant component of APS African partner's maritime response capability. In some cases, these craft are among the only functioning vessels in the maritime force. Similarly, U.S. 1206 donated MDA systems are often the only systems available to African APS partners.

International investments in training and asset donations also play a meaningful role in our partner's response capability. We recommend that APS training and engagement include these and other primary international supporters to synchronize activities and efforts.

Lack of maritime assets presents a significant factor in our partner's ability to respond to maritime threats. Future APS missions should focus on maintaining the longevity and functioning of existing assets through maintenance and repair training, and maximize the value of existing platforms by specialized operations and planning training.

The bilateral patrols in "Operation Prosperity" conducted between Nigeria and Benin are an encouraging step towards regional monitoring efforts. Similar joint patrols have been conducted between the members of CEEAC Zone D, and we recommend that APS request that partners identify the participants of these patrols and single them out for specialized training to improve these efforts and maximize the joint capability.

Background and Introduction

The goal affiliated with this MSD pillar of Response Capability has been defined as: *Partner Nations develop a maritime response capability to support maritime security operations*. This goal is extremely broad and clearly relies on the other MSD pillars for success. No Navy can respond to security operations without, at a minimum, maritime domain awareness, maritime professionals, and maritime infrastructure. Using this logic, we may say that contributions to those pillars will result in response capability. In many ways, this pillar is a desired end-state more than an intermediate step: all capacity building efforts are geared towards the goal of partner nations successfully responding to threats.

From the perspective of assessments, analysis of this pillar almost necessitates a thorough examination of all operations across the African AOR, and an evaluation of the relative improvement of these operations. This metric relies heavily on self-reporting from our partners and is therefore a challenging metric to obtain. In the absence of reliably obtaining this data, we must find proxy indicators that will allow us to evaluate this pillar with some fidelity.

As with analysis of the previous pillars of maritime sector development, we look at the APS 2011 contribution to response capability. Following this look, we examine the existing maritime challenges our partner nations face in their maritime environment (divided regionally) so that we may more clearly define the "maritime security operations" to which they must respond. Next, we examine open source reporting, interviews with Partner Nation personnel, and performance during EXPRESS series exercises and AMELP operations to develop a picture of overall response capability. From these cases, we gather common themes, and use these to make recommendations for APS engagement in the future.

APS 2011 Effort

All training and engagement during APS could be characterized under the rather broad pillar of "Response Capability", however we identify in this analysis those elements of APS that had specific emphasis on the operational capability of our partners. Using this definition, we may say that there were two main focus areas during APS 2011: Response Capability course training, and exercises at sea. The courses taught during APS 2011 that we have sorted into the category of Response Capability include the following:

- Defensive Tactics
- Hand & Arm Signals
- Marine Corps Martial Arts
- Medical - Basic EMT
- Medical - Combat Casualties
- Medical - Combat First Aid
- Medical - Combat Life Saver
- Oil Platform Defense
- Patrolling
- Physical/Port Security
- Search and Rescue Planning
- Small Boat Operations Level I
- Small Boat Operations Level II
- VBSS
- Weapons Combat Marksmanship

- Weapons Handling

U.S. platforms participating in APS this year also conducted at-sea exercises with partner nation counterparts. These included the following:

- The USS RGB conducted an MDA/VBSS exercise with the Togolese Navy. The RGB simulated an enemy ship while the Togolese Navy collected intelligence leading to identification, inquiry, and escort.
- The USS SWG conducted underway PASSEX with a SAN Heroine-class submarine SAS Charlotte Maxeke. This training included close quarter maneuvering, vessel avoidance, and contact management. Shipriders were exchanged during this event.
- The USS SWG conducted a PASSEX with the Mauritian Coast Guard as it departed port following the APS Hub training in Port Louis. A Mauritius Helicopter landed on the deck of the SWG, simulating a medical evacuation at sea.
- The USS SBR conducted underway PASSEX with a South African Navy submarine. Officers were exchanged, and the training included close quarter maneuvering.
- The USS SBR conducted a PASSEX with the Mauritian Coast Guard, using the Helicopter crew aboard the SBR. There was a joint exchange between the flight operations. The SBR crew and their Mauritian counterparts developed an operational plan and conducted an execution brief for the CO of the ship.

Maritime challenges in African Waters

When we inquire whether APS engagement activities affected the maritime response capabilities of our partners, we must identify the nature of the maritime challenges that our partners encounter. In this section, we give a brief overview of the maritime threats and concerns in the African AOR.

The nature and extent of maritime concerns and threats in Africa varies geographically. Maritime crime appears to be generally driven by consumer routes, logistic accessibility, market demand, maritime response, police and judicial response, and severity of consequences. A variety of international organizations track drug transit and seizure trends in Africa[30], illegal unreported and unregulated (IUU) fishing[3132], piracy[333435] and illegal migration and human trafficking[36]. It is not our intention to duplicate their efforts here and we refer the reader to these sources for in-depth topical research and information. Here, we combine information from these sources alongside primary source data from APS interviews and surveys to paint a picture of evolving maritime challenges. After assembling this image, we may then address individual partner nation response relative to the specific threats they confront.

Table 6D.1: Maritime threats and concerns, and response capability of maritime forces within APS participating countries in Africa. Countries are divided regionally (North to South) and maritime threats and concerns are ranked low to high, based subjectively on incidence rates, economic and social impact, and attention from political leadership. Ranking of response capability of maritime forces is based upon the criteria put forward by the Canadian Leadmark Study.[41]

[30] United Nations Office on Drugs and Crime, http://www.unodc.org/unodc/index.html
[31] National Oceanic and Atmospheric Administration (NOAA), http://www.noaa.gov/
[32] International Monitoring, Control, and Surveillance Network for Fisheries-Related Activities, http://imcsnet.org/imcs/index.shtml
[33] International Maritime Organization, http://www.imo.org/Pages/home.aspx
[34] International Commercial Crime Services, http://www.icc-ccs.org
[35] Kingsley, Maria, *An Analysis of Pirate Incidents in Africa*, Center For Naval Analyses, CRM D0023395.A2/Final June 2011
[36] http://www.frontex.europa.eu/

APS Participating Country	EEZ (square km)	Maritime Concerns/Threats: Piracy	At Sea Robbery	At-Sea Hostage Taking	Drugs & Arms Smuggling	Illegal Migration / Human Trafficking	Commercial Goods Smuggling	Oil Bunkering	Illegal Fishing	Distress at Sea	Response Capability of maritime force: 2010[41]	2011
West												
Senegal	157,550										8	8
The Gambia	22,630										9	9
Cape Verde	796,840										9	9
Sierra Leone	159,744										9	9
Liberia	246,152										10	9
Ghana	224,908										8	8
Togo	15,375										9	9
Benin	30,024										9	9
Nigeria	216,789										5	5
Cameroon	14,693										8	7
Sao Tome & Principe	165,364										9	9
Gabon	193,627										8	8
ROC (Brazzaville)	31,017										9	9
East and South												
Djibouti	7,459										9	9
Uganda	0										9	9
Kenya	116,942										6	6
Tanzania	241,888										8	8
Seychelles	1,336,559										9	8
Mauritius	1,284,997										8	8
Comoros	163,752										9	9
Mozambique	578,986										9	9
South Africa	1,535,538										4	4

High = This maritime threat has high reported incidence and/or is known to cause severe economic or social harm and/or is a major concern to partner nation leadership

Medium = Many and/or increasing incidents of this maritime threat and/or the economic and social impact is increasing, and/or is gaining attention of partner nation leadership

Low = Some incidents of this maritime threat and/or the economic and social impact is low or unknown, and/or is of some concern to partner nation leadership

None = Few incidents of this maritime threat; economic and/or social impact is negligible; there is no partner nation concern

In Table 6D.1 we provide a comparative ranking of maritime threats and concerns and response capability of maritime forces within APS participating countries in Africa. We divide countries by coast (West and East) listing the countries in a North to South pattern. Maritime threats and concerns are based on incidence rates, economic and social impact, and attention from political leadership. In order to provide a scale to these threats/concerns, we have listed the size (in square kilometer) of each country's EEZ. The reader will note that in this table we have also included a "Response Capability" ranking for the maritime forces. This ranking is based on criteria and rankings provided by a Canadian Naval study which we discuss later in this section.[41]

North and West Africa Maritime Threats/Concerns

The most universal maritime threats throughout West African countries are IUU fishing and drugs smuggling. Other maritime threats, including human trafficking and piracy are region specific and vary in severity.

As can be seen in Table 6D.1, there are considerable challenges in IUU fishing in all of the West African countries that participate in APS. On average, per capita consumption of fish in these countries is high, averaging 40 lbs per year (See Table 6D.2) and represents a significant source of protein for these populations. Both nutrition and country revenue from fishing is compromised in these countries due to IUU. The National Oceanic and Atmospheric Association (NOAA) estimates IUU catch in West Africa to be over one third the total catches in that region.[31]

Table 6D.2: Average Per capita consumption of fish and shellfish for human food by country for non-consecutive years spanning 1999 to 2007[31]

APS participating Country	Estimated Live Weight Equivalent (lbs)			
	1999-2001	2001-2003	2005-2007	Average
Senegal	64.4	58.4	55.3	*59.4*
Gambia	51.8	64.6	56.6	*57.7*
Cape Verde	48.3	41.9	27.0	*39.1*
Sierra Leone	32.2	37.7	59.7	*43.2*
Liberia	12.3	9.5	10.2	*10.7*
Ghana	65.5	56.2	63.0	*61.6*
Togo	24.5	19.0	7.5	*17.0*
Benin	19.4	20.9	19.2	*19.8*
Nigeria	16.8	21.6	19.9	*19.4*
Cameroon	30.0	31.7	31.0	*30.9*
Sao Tome & Principe	30.2	45.0	59.6	*44.9*
Gabon	97.2	82.0	80.5	*86.6*
ROC (Brazzaville)	40.3	41.7	12.2	*31.4*
Average	*41.0*	*40.8*	*38.6*	*40.1*

Arrests for drug trafficking in West Africa often involve fishermen, indicating a link between diminishing fish stock and fishermen's susceptibility for use in drug smuggling. This was noted in a 2009 interview of a Ghanaian fisheries authority who said: "As fishermen can't afford their gas and they come in with less and less fish, they have an incentive to carry drugs instead".

During the years spanning 2004 and 2007, two trans-shipment centers for cocaine emerged in West Africa. One hub centered on Guinea-Bissau and Guinea, and the other had its center in the Bight of Benin (from Ghana to Nigeria). Colombian traffickers transported cocaine by 'mother ship' to the West African coast before offloading to smaller vessels such as fishing vessels and artisanal wooden boats. These hubs appear to have been retained as reflected by local drug arrests in these countries.

The magnitude of drug smuggling through West African routes are tracked by UNODC[37] who estimate that, of the 158 metric tons of cocaine trafficked to West and Central Europe from

[37] World Drug Report 2011Copyright © 2011, United Nations Office on Drugs and Crime (UNODC). ISBN: 978-92-1-148262-1

South America, 13% were trafficked via West Africa. The amounts trafficked via Africa to Europe decreased in 2008 and 2009, and only partly resumed in 2010. Estimates for 2009 suggest that some 35 metric tons of cocaine may have left South America for Africa of which some 21 metric tons actually arrived in Europe. Most of the rest were noted by UNODC to have been consumed locally, an indicator of growing social issue in West Africa. UNODC noted that there were indications that West African countries are being used to stockpile cocaine which is later trafficked in small quantities to Europe.

In addition to drug trafficking, human trafficking via maritime routes has been an historical concern In the North Western African countries of Morocco, Mauritania, Senegal, and Cape Verde (of these, Senegal and Cape Verde are APS participants). The European agency Frontex has created bilateral agreements between Spain and the countries of Mauritania, Senegal, and Mali to develop patrolling and monitoring of illegal migration, contributing equipment and training to advance African monitoring and response capabilities. The average number of detected illegal border crossings at the Canary Islands averages around 50 per quarter, with increases shown in 2010 and early 2011.[38]

To add to the maritime issues in West Africa, piracy is also a growing concern in West Africa. There are no current reported acts of piracy in the North Western African countries, but piracy has become an increasing problem in the GoG. In Table 6D.1, we distinguish between "piracy" and "at-sea robbery". This distinction is largely artificial and we include it in order to help provide an *at-a-glance* understanding of the nature of the attacks. Piracy, as originally defined in the 1982 United Nations Convention on the Law of the Sea[39] required that the act take place "on the high seas". This definition required updating and was expanded by the IMB to encompass incidents of both piracy and armed robbery against ships, defining piracy as "An act of boarding or attempting to board any ship with the apparent intent to commit theft or any other crime and with the apparent intent or capability to use force in the furtherance of that act."[34] Taken together, these definitions are broad, including both actual and attempted attacks that may occur in a State's jurisdiction, its territorial waters, or on the high seas.

A 2011 Center for Naval Analysis (CNA) analysis of IMB reported piracy incidents noted a difference in the nature of piracy attacks on the East and West coasts of Africa.[35] In the piracy originating from Somalia, ships are hijacked for ransom while they are underway, whereas the attacks in West Africa tend to be incidents of armed robbery while the ship is at anchor. This certainly makes sense, given the nature of maritime traffic in East and West Africa. HOA waters serve only as transit for large vessels, whereas West African ports are hubs for commercial goods and oil. Regardless of reasons, the two types of piracy have elicited different responses from the international community. The increase of hijacking incidents off the coast of Somalia increased spurred an increased international military response, while increasing piracy incidents occurring in the GoG have received little international attention. Because GoG incidents generally occur within sovereign water space, they may be viewed as a local law enforcement problem, and the nature of maritime robberies is such that they are viewed more as minor criminal activity.

[38] http://www.frontex.europa.eu/
[39] http://www.un.org/depts/los/convention_agreements/convention_overview_convention.htm

Acts of piracy in West Africa began in the Niger Delta region and included attacks on fishing vessels, oil platforms, and commercial resupply vessels. Lagos and Bonny River piracy attacks have often been violent and included robbery and kidnapped crews along the coast, rivers, anchorages, ports, etc. Piracy is increasing in and about Nigeria, moving North into Cotonou (Benin waters) where the IMB reports an increasing number of armed pirate attacks. The IMB has reported 19 pirate attacks off Benin this year, compared with none in 2010. According to partner nation interviews, attacks may be focused on small tankers which carry cash to purchase oil in a transshipment-at-sea from larger tankers recently returned from Nigerian oil platforms. IMB reporting seems to confirm this, noting that, in Cotonou, "a number of ships particularly tankers were attacked and hijacked." [8]

Piracy has been a major concern in Cameroonian waters, particularly in the region between Nigeria and Cameroon, in an area known as the Bakassi Peninsula. There were 23 maritime incidents reported (by resident oil company security personnel in private communications to the BIR) in 2008, 44 in 2009, 31 in 2010 and, as of JULY 30, 23 in 2011. During the past two years, the relative level of violence in these attacks has worsened, with sharp increases in the numbers of dead, injured and captive; the number of hostages reported taken in the Bakassi Peninsula jumped from 5 in 2009 to 27 in 2010. The number of maritime incidents in Cameroonian waters appears to have diminished after the Cameroonian special response force, the BIR began to respond and increase patrols but the relative violence of the attacks seems to have worsened. The number of dead, injured, and captured is on the upswing.

South and East Africa Maritime Threats/Concerns

Piracy is the most prevalent issue of concern in East African waters. Pirate attacks in the waters off Somalia and the Horn of Africa, including those on U.S.-flagged vessels, have brought international attention to maritime piracy. Representing more than half of the worldwide pirate attacks, the International Maritime Bureau (IMB) reported 219 attacks in the Somalia/HOA region in 2010, with 49 successful hijackings. In 2011, the numbers of incidents has increased to 223 total incidents, but resulting in fewer (26 total) successful hijackings.[34] Somali pirates have attacked ships in the Gulf of Aden, along Somalia's eastern coastline, and outward into the Indian Ocean. Using increasingly sophisticated tactics, these pirates now operate as far east as the Maldives in good weather, and as far south as the Mozambique Channel. Hostage taking for ransom has been a hallmark of Somali piracy, and the IMB reports that more hostages, over 1,180, were taken at sea in 2010 than any year since records began; over 86% of those were taken by Somali pirates.

According to the Congressional Research Service, Somalia's "pirate economy" has grown substantially in the past two years, with ransoms now averaging more than $5 million.[40] In spite of international naval efforts to counter piracy, pirates in this region continue to improve their methods, increase the range of their attacks, and have amplified violence against hostages. Heightened military presence in an internationally recommended transit corridor in the Gulf of Aden has reduced attacks in that area, but pirates have adopted tactics that now allow them to attack more than 1,000 nautical miles off the Somali coast.

Interestingly, the piracy in these waters has diminished and/or diverted all maritime traffic, including illegal fishermen, with the result that piracy affected countries in East Africa rarely

[40] "Piracy off the Horn of Africa", L. Ploch, C.M. Blanchard, R.O'Rourke, R.C. Mason, and R.U.King, April 27, 2011, Congressional Research Service. http://www.fas.org/sgp/crs/row/R40528.pdf

complain of IUU fishing as a problem. Similarly, illegal smuggling of commercial goods, drugs and other illicit materials is also viewed to be a diminishing concern to our APS partners.

Our East African APS partners have cited distress at sea as an increasing problem. The Mauritian Coast Guard reports that they conduct frequent medical evacuations from commercial ships, and the September 2011 Ferry accident in Tanzanian waters called additional attention to the need for effective search and rescue (SAR) capability.[27]

Partner Response capability

The maritime threats and challenges that we outlined in this section call attention to the need for indigenous response capability. Unfortunately, there are significant challenges in developing baseline assessments for the response capability of our partner nations. The challenge lies in the contextual nature of the information. Discrete data that have may partially characterize response capability (e.g. Naval order of battle, and number and type of MDA sites) provide some pieces of the picture, but they do very little toward giving a complete understanding of partner nation response, towards assessing whether the response is adequate to the maritime threat, and the unique challenges our partners face when trying to improve their response capability. For this, a detailed case study approach is required. In a later of this report ,we give an example of such a case study for Cameroon. We recognize, however, that a comparative analysis of threat and response capability is warranted for an overview picture of the maritime domain in Africa. For a broad benchmark of response capability, therefore, we draw on a method developed by others.

The Canadian Navy developed a ranking system in 2002 in order to supply benchmarks for their own Navy, and to understand the role of Naval forces across the world. This ranking was published in the Canadian Navy's Leadmark Strategy for 2010[41,42], along with a ranking of the World's navies. We have included this 2010 a ranking of the individual maritime forces participating in APS in Table 6D.1, alongside the maritime concerns/threats of our partners. We have also included our estimate for 2011, using the same ranking system. We reproduce the Leadmark ranking system in Table 6D.3 so that we may frame the ranking of our African Partner navies and discuss the pillar of Response Capability in a consistent context. We note here that the term "navy" has also been used to discuss all maritime forces, such as the coast guard in Mauritius.

Table 6D.3: Naval Ranking system as developed by the Canadian Navy in 2002 and published in The Canadian Navy's Leadmark Strategy for 2020[41].

Naval rankings

Rank 1: Major Global Force Projection Navy (Complete) – This is a navy capable of carrying out all the military roles of naval forces on a global scale. It possesses the full range of carrier and amphibious capabilities, sea control forces, and nuclear attack and ballistic missile submarines, and all in sufficient numbers to undertake major operations independently. E.g., United States.

Rank 2: Major Global Force Projection Navy (Partial) – These are navies that possess most if not all of the force projection capabilities of a "complete" global navy, but only in sufficient numbers to undertake one major "out

[41] http://www.navy.dnd.ca/leadmark/pdf/ENG_LEADMARK_FULL_72DPI.PDF
[42] http://www.defenceweb.co.za/index.php?option=com_content&view=article&id=6229:fact-file-ranking-african navies&catid=79:fact-files&Itemid=159

of area" operation. E.g., Britain, France.

Rank 3: Medium Global Force Projection Navy – These are navies that may not possess the full range of capabilities, but have a credible capacity in certain of them and consistently demonstrate a determination to exercise them at some distance from home waters, in cooperation with other Force Projection Navies. E.g., Canada, Netherlands, Australia.

Rank 4: Medium Regional Force Projection Navy – These are navies possessing the ability to project force into the adjoining ocean basin. While they may have the capacity to exercise these further afield, for whatever reason, they do not do so on a regular basis.

Rank 5: Adjacent Force Projection Navies – These are navies that have some ability to project force well offshore, but are not capable of carrying out high-level naval operations over oceanic distances.

Rank 6: Offshore Territorial Defence Navies – These are navies that have relatively high levels of capability in defensive (and constabulary) operations up to about 200 miles from their shores, having the sustainability offered by frigate or large corvette vessels and (or) a capable submarine force.

Rank 7: Inshore Territorial Defence Navies – These are navies that have primarily inshore territorial defence capabilities, making them capable of coastal combat rather than constabulary duties alone. This implies a force comprising missile-armed fast-attack craft, short-range aviation and a limited submarine force.

Rank 8: Constabulary Navies – These are significant fleets that are not intended to fight, but to act purely in a constabulary role.

Rank 9: Token Navies – These are navies that have some minimal capability, but this often consists of little more than a formal organizational structure and a few coastal craft. These states, the world's smallest and weakest, cannot aspire to anything but the most limited constabulary functions.

Rank 10: No Navy

We list the APS participants as they were characterized in this 2010 system. The most proficient navies in Africa were given a ranking of 4, *Medium Regional force projection navy*, and included South Africa. Nigeria was rank 5, *Adjacent force protection navy*. Kenya was rank 6, *Littoral navy*. Six APS navies were given rank 8, *Constabulary navy*: Ghana, Senegal, Mauritius, Tanzania, Cameroon, and Gabon. Most African Navies were rank 9, *Token navy*: Benin, Cote d'Ivoire, Gambia, Sierra Leone, Togo, Angola, Comoros, Seychelles, Djibouti, Uganda, Cape Verde, and Republic of Congo. Listed as having no navy (rank 10) was Liberia.

Although most of these rankings may be retained for 2011, we feel that an argument can be made to improve the overall ranking of at least 3 maritime forces: Liberia, Cameroon, and Seychelles. Both the Liberian Coast Guard and the Cameroonian BIR Delta forces were established in 2009. The BIR Delta became active and proficient in fighting maritime threats in the Northern Cameroonian EEZ in early 2010. Although lack of submarine assets prohibit them from being cited as a rank 7, their proficiency in special forces operations certainly qualify them to be given acknowledgement as a high rank 8 maritime force. The Liberian Coast Guard also became active this year, successfully interdicting and boarding illegal trawlers, and conducting search and rescue operations. This operational success propels them out of the Rank 10 category. The Seychelles Coast Guard have also been active in recent years, working with the international community to curb piracy in and around their territorial waters.[43] [44]According to host nation interviews and independent sources, during the high pirate

[43] http://www.usatoday.com/news/world/2009-04-28-pirates_N.htm
[44] http://www.eturbonews.com/15190/seychelles-coast-guard-intercepts-pirates-and-rescues-crew

season, half of the small Seychelles Coast Guard will be on patrol at any given time. This level of activity and response warrants a shift from Rank 9 to Rank 8.

North and West Africa Maritime Capabilities

In this section we give a brief overview of the maritime forces in African APS participating countries. These are not meant to be comprehensive or complete case studies. Rather, they are intended to lend granularity to the rankings that have been assigned to each. We examine open source reporting, interviews with Partner Nation personnel, participation in APS, and performance during EXPRESS series exercises and AMELP operations to develop a snapshot of their response capability. From these cases, we gather common themes, and use these to make recommendations for future APS engagements.

Senegal

Senegal's naval forces are one of the most established amongst their peers in West Africa. Senegal has had a long-term multilevel maritime engagement with the U.S., with a history of strong participation in APS. Additionally, the Senegalese Navy partners with France, has a working agreement with FRONTEX, and has a strong participation in ACOTA training and peacekeeping operations. Through the U.S., Senegal receives CNT training and cooperation, and works with an embedded representative from MARFORAF.

During 2011, Senegal received a 1206 donated Coastal Radar system which is scheduled to be installed in the Casamance, a priority area for Senegal. This year, CNT funding paid for the installation of a pier at Elinkin, in the southern border area of Senegal.

The APS hub planned for Senegal was changed to The Gambia when the USS WHIDBEY ISLAND was diverted. Senegalese therefore had limited participation in APS 2011. Twenty-five Senegalese students from the Navy and other maritime agencies participated in a NAVAF Maritime Intelligence Workshop, independent of the APS hub, and Senegalese students participated in the January 2011 "Train-the-Trainer" course, with graduates going on to teach VBSS to students in the Cameroon hub. There was additional play between the Senegalese Navy and U.S. forces, however, with the SAHARAN EXPRESS exercise and the subsequent AMLEP operations.

We feel that the 2010 Leadmark assessment of the Senegalese Navy as a rank 8 navy remains accurate through 2011.

The Gambia

The Gambia is a small country interposed in the center of Senegal, with long land borders and a small EEZ. The primary maritime challenges have been cited as illegal fishing, drug smuggling, and illegal migration to Europe. Drug smuggling was noted as particular challenge – a recent seizure of two tons of cocaine bringing the issue to public attention.

The Gambia's interaction with the U.S. was particularly high this year, with the APS hub shifted from Senegal to the Gambia when the USS WHIDBEY ISLAND was recalled. The Gambia also played in the SAHARAN EXPRESS exercise; the exercise stimulating them to

establishing a new room on their base for their MOC. The Gambia's involvement in these exercises brought national attention to the Gambian Navy, with the Vice President touring the Naval Base, and reviewing requests for upgrades.

The Gambia has an AIS system as part of a 1206 donation. The Gambia also has a MRCC that is manned around the clock. They bought their own GMDSS, an expensive system that is actively monitored in accordance with the IMO. Currently, the voice link is working but the data link is inoperable. SAHARAN EXPRESS 2011 revealed a gap in the Gambian Navy's ability to communicate with their patrol boats at sea as well as with the other MOCs in the region. In one example cited during a planning conference, a Gambian patrol vessel was in hot pursuit of 6 Russian Trawlers. Unfortunately, the vessel did not have the means to contact their own MOC or the Senegalese MOC for assistance.

The Gambian Navy has 11 vessels, including four Taiwanese Patrol Boats (three of which are operational), one US Peterson class patrol boat in extremely poor condition, a couple of Rigid Hull Inflatable Boats (RHIBs) and Boston Whalers, and three operational Zodiacs. Outboard engine maintenance and repair continues to be a challenge on these small boats (training on these subjects was requested). The Taiwanese government provides continued support for maintenance for the patrol boats gifted from Taiwan. Taiwan supplies spare parts and yearly maintenance training. Before the boats' arrival, engineers were brought to Taiwan to undergo training on the craft. During the APS 2011 hub in the Gambia, an assessments officer boarded one of the Taiwanese craft and noted that it was in good repair and maintenance.

Depending on the interview, the Gambian Navy either conducts two patrols per week with each patrol craft, or 2-3 patrols per month. It is difficult to ascertain the true number of patrols. However, according to interviews, the Gambian Navy has arrested ten fishing vessels in the past three years. The ministry of Fisheries conducts safety inspections of legal fishing vessels once per year, before granting license renewals, and observers are said to be stationed on every legal fishing vessel to ensure compliance and to collect biological data. The Gambian Navy is tasked with patrolling conservation zones.

A new pier built by Department of Fisheries and scheduled for completion at the end of 2011 will have 5-6 spots for the Gambian Navy. The Forward Operating base in Tanji depends on one boat to patrol the southern coastline. On-the-job training has been requested by Gambian training officers, particularly in SAR, ship handling, boatswain, and small boat maintenance.

We feel that the 2010 Leadmark assessment of the Gambian Navy as a rank 9 navy remains accurate through 2011.

Cape Verde

Cape Verde is a small island nation with a population of only 500,000 but with a large maritime footprint: an EEZ that is 180 times the actual land territory. A major contributor to its economy is its tourism, however its geographic location also makes it ideal for drug smuggling activities. Indeed, the country has faced increasing challenges from the South American cocaine trade.

Cape Verde's Coast Guard, the Guardia Costeira de Cabo Verde (GCCV) is a small force which receives training and support from European countries affected by the drug trade and the United States. Members of the GCCV have received training from the U.S. via APS and through NCIS courses. In April 2011, Cape Verde hosted the joint patrolling mission, AMLEP, with the USCG cutter FORWARD and the GCCV, Maritime Police, Judiciary Police, Department of Fishing and Maritime and Port Institute.

In October 2011, The Cape Verde Coast Guard responded to Intelligence reports from Dutch counterparts as part of a case that had been built in an international effort over the course of two months. The Cape Verde Judicial police and GCCV responded to the reports of a shipment of Cocaine, requesting air support from an Italian aircraft conducting FRONTEX operations in Senegal at the time. The Italian flight confirmed the ship's location and the GCCV led the response in an Archangel Patrol craft.

The maritime interdiction was the first stage of a drug bust that seized cocaine worth $100 Million U.S.D., weapons, luxury cars, and arrested four Cape Verde nationals.

The GCCV are searching to improve their response capability by acquiring additional vessels from the US. A new patrol vessel from the Netherlands, the Guardião is currently being built in the Damen BV shipyards in the Netherlands and scheduled to be moved to Cape Verde in December of this year.

Although their capability is improving, we feel that the 2010 ranking of the Cape Verde maritime force (9) remains accurate.

Sierra Leone

IUU Fishing costs Sierra Leone an estimated 28.7 Million U.S.D. per year.[45] In October of 2011, the Sierra Leonean Ministry of Fisheries and Marine Resources issued an ultimatum to all licensed industrial fishing companies operating in the Sierra Leonean EEZ, requiring them to install Vessels Monitoring System (VMS) Transponders in their fishing vessels.[46] Unfortunately, the Sierra Leonean Navy has difficulty properly patrolling their coastal waters.

According to interviews, the vessels owned by the Sierra Leonean Navy are maintenance intensive and frequently broken. They own three US Coast Guard cutters (Dreadnought class) and a single PB 105 Shanghai Class Frigate (this last vessel is broken and scheduled for repair by a team from China). The Navy also owns a Riverine boat which is unsuitable for ocean use. There is an individual patrol craft (IPC) open boat with an outboard engine. This is a 20 foot boat with a 10 to 12 mile capacity.

The Sierra Leonean Navy conducts search and rescue operations, particularly in the rainy season when fishermen are likely to capsize. The navy also tries to stop illegal fishing but their effectiveness in this effort is questionable. Smuggling is also a problem: illegal smuggling of rice and palm oil into Guinea where the prices are higher.

[45] Marine Resources Assessment Group Ltd, Review of Impacts of Illegal, Unreported and Unregulated Fishing on Developing Countries FINAL REPORT July 2005; http://webarchive.nationalarchives.gov.uk/+/http:/www.dfid.gov.uk/pubs/files/illegal-fishing-mrag-report.pdf

[46] http://www.stopillegalfishing.com/news_article.php?ID=468

APS 2011 training was felt to be helpful for the Sierra Leonean Navy, particularly the courses on MDA. The timing for these courses was apropos because they have only recently commissioned the maritime operations center and established their AIS transceiver. The APS training was believed to give the trainees a solid footing and the sailors are said to be able to conduct consistent watchstanding.

The 2010 Leadmark ranking of 9 remains accurate for the Sierra Leonean Navy.

Liberia

The Liberian Coast Guard was stood up in 2009, its 44 members identified from the burgeoning Armed Forces of Liberia (AFL). U.S. Coast Guard Commander Jennifer Ketchum became the Maritime Affairs Officer (MAO), and primary trainer of this force. According to CDR Ketchum, APS is one of three major tools available for training, along with ancillary mobile training teams and IMET funded training.

The initial capability of the coast guard was limited, with only Zodiac patrol craft as response vessels. 1206 donations of two 27 foot defender boats from the U.S. improved the response capability, and the Liberian Coast guard now conducts regular patrols out to three nautical miles from shore. They conduct six patrols per month for fisheries, and also respond to intelligence reports of illegal activities (from regional and international partners) and SAR requests from local fishermen.

In July 2011, the Liberian Coast guard demonstrated its response capability in responding to intelligence reports of the Korean fishing trawler, Seta 70, illegally fishing in Liberian and Sierra Leonean waters.[47] At the time the call came in, there was a skeleton crew of eight on the Coast Guard base, with most members attending Independence Day celebrations at a distant location. A crew of four embarked on the Defender boat, and looked for the illegal trawler but they were forced to return to base when darkness fell. Undeterred, they departed again the following morning, and intercepted the *Seta 70*. The trawler performed evasive maneuvers, behaving erratically. The Liberian Coast Guard fired warning shots and conducted a hostile boarding of the vessel. They safely subdued and arrested the Seta 70's 30 member crew, and transported the vessel into Monrovia. The fine for the *Seta 70* was $150K.

In the months that have passed since this seizure, the Coast Guard has conducted two additional fisheries arrests, and two search and rescue operations.

The Liberian Coast Guard response capability is hindered by a lack of funding for spare parts, essential infrastructure (both maritime infrastructure and repair of Coast Guard living facilities; members of the Liberian Coast guard routinely acquire water-bourn diseases such as cholera because they lack regular access to clean drinking water), and basic maintenance equipment such as oil filters and oil. The Liberian government has apparently rejected repeated requests for funding. When asked how oil filters for the Zodiacs and Defender boats were replaced, MAO CDR Ketchum said, "They need oil filters. They need oil. When they can't get it, I donate."

[47] http://cryptozoologynews.blogspot.com/2011/09/illegal-fishing-trawler-seized-off.html

In 2010, Canadian Navy's Leadmark Strategy gave Liberia a ranking of 10, no Navy. It is fair to assess that the Liberian Coast Guard has altered this through increased demonstration of capability, and may be given a rank 9.

Ghana

Ghana's navy is a small token navy with approximately 2,000 personnel. Its naval order of battle includes the following:[48]

- 2001 U.S. Navy donated vessels:
  - Two 1940 era Balsam class vessels previously operated by the U.S. Coast Guard
  - Two Lurssen built fast attack PB 45 Dzata class vessels
  - Two Lurssen built fast attack PB 57 Achimota class vessels
  - One PB Mk III inshore patrol boat.
- 2008 U.S. donated vessels
  - Three ex-Coast Guard Defender class boats
- 2010 U.S. donated vessels
  - Four Defender class boats
  - Six speedboats
- South Korea donated vessels
  - Refurbished Sea Dolphin-class fast-attack craft, GNS Stephen Out
- German donated vessels
  - Two decommissioned 58 meter Gepard class fast attack craft
- OCT 2011: Chinese built patrol craft purchased with funds from Ghana's Ministry of Food and Agriculture
  - Four 46 meter vessels: GNS Blika, GNS Garinga, GNS Chemle and GNS Ehwor (estimated total cost of $68 million U.S.D.). Prior to delivery, personnel from Ghana's navy went on a month-long training course in China.

In July of 2010, Jane's reported that Ghana's Navy plans to acquire ten new vessels over the next two years. Jane's believes Ghana has ordered two 62 meter patrol craft from South Korea for delivery by July 2013.[49]

Ghana's navy is divided into a Western Naval Command and an Eastern Naval Command. A self-reported listing of their roles and responsibilities included 1) Fisheries monitoring, 2) Maritime presence, 3) Surveillance of Ghanaian waters, 4) Evacuation Operations, 5) Checking criminal activities, 6) Disaster and humanitarian relief operations, and 7) Assisting civil authorities.

The primary focus of naval development in Ghana is training to protect the new Jubilee Oilfields. Interviews with Ghanaian Navy personnel noted that illegal fishing tends to occur near oil platforms because the fish are attracted to the lights. The Ghanaian Navy therefore patrols near the platforms at night to discourage fishermen and inform them of the limits.

[48] http://www.stopillegalfishing.com/news_article.php?ID=469
[49] http://www.janes.com/products/janes/defence-security-report.aspx?id=1065926850

Ghanaian naval forces have expressed the desire to create a special response force, and wishes to build on the dive familiarization training that they have received from APS.

In 2010, the Canadian Leadmark study determined that the Ghanaian Navy was a rank 8. We assess that this ranking still applies.

Togo

The Togolese Navy is a small supporting navy in a region that has seen increased shipping activity as cargo vessels have moved out of areas of increasing pirate activity in Nigerian waters. The capability of this navy is limited, with two 35-year-old wooden hull patrol craft (with severe engineering casualties) and two defender class boats gifted from the U.S. The country has a coastal radar system and AIS. In 2007, with help from the French, the Togolese Naval base in Lomé created a maritime operations center to respond to distress calls.

The Togolese Navy has seen and responded to at-sea robbery occurring primarily on vessels at anchor in the commercial port in Lomé during the past year. According to the Base commander, there is a ready patrol on standby 24 hours per day. Response patterns to actual include the following:

- 14 SEPT 2011: Lomé Anchorage, Togo. Naval patrol apprehended six suspected robbers who had attempted to climb onboard an anchored product tanker.
- 14 SEPT 2011: Around 7nm south of Lomé breakwater, Togo. Naval patrol responded to an aborted robbery attempt on an anchored chemical tanker by approximately 26 robbers in two boats.
- 16 SEPT 2011: Lomé Anchorage, Togo. Navy was contacted but did not immediately respond to an aborted robbery attempt on an anchored bulk carrier. Later, a naval boat came and patrolled the area
- 22 SEPT 2011: Lomé Anchorage, Togo. Togolese Navy responded to a potential robbery on an anchored chemical tanker by three fishing boats; Navy personnel detained two of the three boats.
- 24 SEPT 2011: Lomé Anchorage, Togo. Togolese Navy responded to a potential robbery on an anchored chemical tanker by four boats; Navy personnel detained all suspects.

According to members of the Togolese Navy, the primary challenges they face are: limited resources, regional cooperation and interoperability and Togolese stakeholder buy-in. There is a desire to create standardized practices for VBSS and to cooperate with other regional partners. According to interviews, interoperability is somewhat hindered by the language barrier: few naval officers speak English. According to one source, “Decision makers have little understanding of the issues in the Sea. The population is far from the coast and not aware of the problem. They don't understand that it is the sea that links them to each other”

In 2010, the Canadian Leadmark study determined that the Togolese Navy was a rank 9. It is likely that this ranking still applies.

Benin

Benin’s small coastline (120 km) belies the country’s reliance on its commercial port in Cotonou from which it receives approximately 40% of state revenues.[50] During the past two years, Benin has seen an upswing in pirate activities migrating up the coast from Nigeria: 19

[50] http://www.reuters.com/article/2011/09/21/piracy-westafrica-idUSL5E7KK39I20110921

attacks in 2011 according to the IMB[34] (compared to no attacks the previous year). The Benin Navy's chief of operations reported an even higher number of attacks in Benin waters, estimating that attacks had increased to roughly one attack per day, with particular increases noticed on the weekends (as noted in an earlier section of this report, attacks tend to focus on oil tankers, due to the cash that they carry on board for transshipment-at-sea).

The Benin Navy is a small entity, with two Defender class boats (gifted from the US as part of a 1206 donation), two Boston whalers, and several inflatable craft. According to the APS representative from Benin at the APS planning conferences, the country has recently acquired two 32 meter patrol craft from France, and two helicopters. The Benin Navy is constructing a coastal alert station at Grand Popo, and a "fully equipped" Naval Base at Cotonou port.

There are few reports of the Benin Navy's capability to respond to the piracy; however members of the navy described intercepting pirate attacks in progress. Two separate incidents were described in an interview. In the first incident, "The pirates were ready to operate but we came to them in the night. They went away, abandoning all of their equipment. They were close – less than ten nautical miles from the shore." In the second incident he described: "We were patrolling and we came near a tanker with its lights projected; we saw the pirates climbing on board. They saw us and jumped into a small boat very quickly and sped away. We exchanged gunfire. They were faster than we were and we couldn't reach them. Also, it was night and we couldn't orient our shooting."

Nigeria and Benin have begun to conduct joint patrols in the Seme and Cotonou territorial waters of Benin,[51] This collaboration, dubbed "Operation Prosperity", uses Benin's two Defender boats, two of the Nigerian Navy's (U.S. 1206 donated) Buoy Tenders, as well as several small patrol craft from the Nigerian Maritime Administration and Safety Agency (NMASA). The patrols and response are primarily designed to regulate and discourage transshipment. The operation is scheduled to last for six months; already several ships have been arrested for transshipment.

Benin has asked the United Nations to consider sending an international force to help police the GoG, similar to the NATO and European Union operations to protect shipping from Somali pirates off Africa's east coast.

Government awareness, limited resources, lack of training, and cooperation between military and civilian authorities are all cited as challenges to improving Benin's maritime response capability.

The 2010 Canadian Leadmark study determined that the Benin Navy was a rank 9. This ranking likely still applies.

Nigeria

[51] http://www.worldstagegroup.com/worldstage/index.php?&id=2988&active=news

Nigeria's Navy is the largest on the West coast of Africa. A force of approximately 10,000 strong, sailors are tasked with maintaining security in small boat Riverine patrols, providing security personnel for oil platforms and oil company craft, and providing maritime personnel for the Nigerian Maritime Administration and Safety Agency (NMASA), a maritime entity with coast guard functions.

During 2011, the Nigerian Navy began a concerted effort to crack down on piracy. Although there is limited evidence that they are responding to pirate attacks themselves, their efforts have focused on regulating and discouraging activities that attract at-sea robbery – particularly transshipment of goods and oil at sea.

The Nigerian Navy uses their new RMAC centers and "aggressive patrols" to identify suspicious activity. Identifying the companies involved in acts of transshipment, Navy officials contact the shipping agencies. When commercial companies deny the activities, data from the RMAC centers allow Nigerian Navy personnel to present evidence, and to levy fines. This increased naval response to transshipment-at-sea has purportedly diminished acts of at-sea robbery in Nigerian waters, shifting both the transshipments and attackers into the waters of Benin, Togo and Ghana.

Among the Nigerian Navy's primary challenges is in maintaining operational response vessels. Among the functioning fleet are four 180 foot Buoy Tenders (1206 donations from the U.S.) and two 37 meter patrol boats. The Navy is expected to significantly augment its response capability with a warship given by the United States Coast Guard to the Nigerian Navy in May 2011; the UCG Chase has been renamed NNS Thunder F90.[52] This craft will come with two 11 meter RHIBs with "over the horizon" deployment capability.

The 2010 Canadian Leadmark study determined that the Nigerian Navy was a rank 5. This ranking likely still applies.

Cameroon

Acts of piracy and sea robbery are a major concern in and around Cameroonian territorial waters – particularly in the Bakassi peninsula, where maritime incidents such as at-sea robbery and piracy are particularly concentrated. There were 23 maritime incidents reported (by the resident Oil Company Security Personnel in private communications to the BIR) in 2008, 44 in 2009, 31 in 2010 and, as of JULY 30, and 23 in 2011. During the past two years, the relative level of violence in these attacks has worsened, with sharp increases in the numbers of dead, injured and captive; the number of hostages reported taken in the Bakassi Peninsula jumped from 5 in 2009 to 27 in 2010. Additional maritime threats include illicit trafficking, such as the smuggling of goods and people, and illegal, unreported and unregulated fishing (IUU).

The Cameroonian Navy and the Rapid Intervention Battalion (BIR) are the major Military maritime entities in Cameroon. These organizations are discussed in detail in the case study on Cameroon later in this report, *Why APS Matters in Cameroon* and we refer the reader to this section. The Navy responds primarily to IUU fishing and local acts of at-sea robbery. The

[52] http://www.thisdaylive.com/articles/nigeria-renames-us-warship-nns-thunder-f90/91345/

BIR receive specialized SOF training, while the Navy's strength lies in its ability to work regionally.

Since they became operationally active in late 2009, the maritime branch of the BIR, the BIR Delta, has been successful at culling piracy attacks in and around the Bakassi oil platforms, and out of Cameroonian Territorial waters. Although the total numbers of attacks in this area are not notably diminished, the BIR Delta has significantly decreased the number of maritime incidents and acts of piracy occurring in Cameroonian waters.

As the new BIR coast guard is formed, there may be a need to import a new set of tactics and rules of engagement, different from those of the parent BIR organizations. By routinely engaging the population in a positive (public service) way, the BIR may be more effective in curbing the piracy element by eliciting cooperation and denying the pirates safe havens. BIR leadership charged with carrying out this new mandate may embrace the opportunity to collaborate with a respected, effective, established Coast Guard force.

The Cameroonian Navy's regional participation and response to illicit fishing in their waters and the BIR Delta's response proficiency in responding to the piracy threat in the Northern EEZ of Cameroon continue to retain their previous ranking. Although lack of submarine assets prohibit them from being cited as a rank 7, the BIR's proficiency in special forces operations certainly qualify them to be given acknowledgement as a high rank 8 maritime force

Gabon

The Gabonese Navy, The Gabonese Marine Nationale, was created in 1960 and acquired its first warship in 1961 (le BOUE WILLAUMEZ). In 1976, the Air Force, Army, and Navy were combined into one single force called the Forces Terrestres et Navales (FTN).

The current navy is approximately 800 persons strong and their principal missions are defined in the categories of defense missions, public service missions, diplomatic missions, and policing missions. Under these sets, their primary tasks are 1) Defense of Maritime Access, 2) Surveillance and control of EEZ, 3) Force support, 4) Surveillance and research assistance, 5) Fight against illegal immigration, 6) Fight against drug trafficking, 7) Fight against pollution and smuggling in the maritime environment, and 8) Support of other Ministries including Maritime Affairs and Fisheries.

According to interviews with host nation personnel, the primary maritime concerns involve illegal immigration (there is a belief that immigrants are entering the country via maritime routes), and drug smuggling. There is a limited indigenous fishing community in Gabon, and a majority of the fish market is owned by Chinese interests. IUU fishing has severe environmental impact because the Gabonese waters contain sensitive and diverse marine life.

The Gabonese Navy has a base in Port-Gentil, another in Mayumba, a Logistics Base in Libreville. There is also a Coastal Surveillance Base.

Platform acquisition has occurred in the past 27 years and includes the following:

- Light Transport Vessel BATRAL (acquired 1984)

- Patrol Craft P400 GENERAL BA-OUMAR (acquired 1985)
- Patrol Craft P400 DJOUE DABANY (acquired 1989)
- Fastboat RODMAN 38 (acquired 2006)
- Fastboat RODMAN 66 (acquired 2006)
- Four RPB Fastboats (acquired 2010)

South and East Africa Maritime Response Capability

Djibouti

Djibouti's location gives it strategic significance to the United States and at the forefront of Maritime concerns in horn of Africa. Djibouti's economy is highly dependent on port operations, and its navy is focused on securing its ports.

With 210 sailors and 25 officers, the Djiboutian Navy is a small. It has bases in Djibouti City and Obock, and watch stations in Ras Bir, Maskali, and Mououle. Its fleet is comprised of 20 patrol boats, two 17m vessels, eight 12m vessels, and seven speedboats. Communications capability includes Radios (MF, VHF, UHF, BLU), Mercury Chat, NCE, and VSAT. The RMAC capability of the Djiboutian Navy are courtesy of the United States and include Furuno, AIS, CCTV/LRT Cameras and SureTrack Software.

The Djiboutian Navy cites as its major challenges to achieving maritime security manpower limitations, insufficient training, lack of adequate infrastructure, and limited maritime assets.

Uganda

Uganda does not have a maritime force as they have no outlet to the sea. They do have waterways and limited Riverine capacity, and a very small capability to respond to incidents on Lake Victoria. Ugandan troops are focused on land operations, with an emphasis on peacekeeping operations.

Between February and August 2011, APS conducted training exercises that included Ugandan Marines as Shipriders on the USS SWG and the USS SBR as well as trainees in the Mombasa and Dar Es Salaam hubs. Participants attended courses in small boat operations and navigation, meteorology, fisheries, small boat maintenance, SAR planning, NCO leadership principles, Seamanship, basic instruction, intelligence fusion and MDA.

Kenya

Kenya Navy was established on December 12, 1964, exactly one year after Kenya gained independence. It was preceded by the colonial Royal East African Navy. Following the disbanding of the REAN in 1962, the East African Railways and Harbors Co-operations assumed control of naval operations in the former East African colonies until the independent states established their own navies. The British heritage from the colonial navy has been continued by the current military, and is reflected in their strategy and tactics as well as their military culture.

The Kenya Navy headquarters is on Mtongwe Base in Mombasa, and there are also bases in Shimoni, Msambweni, Malindi, Kilifi and since 1995 another base located in Manda (part of Lamu Archipelago in Northern Kenya). The Port in Mombasa is replete with a functioning operations center and 24 hour monitoring of RMAC for the Mombasa area. Watchstanders monitor VHF communications and have routine contact with the Kenyan Navy. Most training for the Kenyan Navy occurs at a school on the Navy Base, Manda. Technical and Communication Courses which are undertaken at Mtongwe Base.

The navy's primary mandate is to defend the country against External Sea-borne Aggression, Support Civil Power in Maintenance of Law and Order while remaining poised to Civil Assistance in times of Disaster and Crisis and any other duties as may be assigned from time to time by the Chief of the General Staff. The proximity of Somalia along Kenya's Northeastern border presents the primary threat to Kenya's social and economic stability, and piracy off the coast of Kenya and Somalia have had a significant impact on shipping, negatively affecting Kenya's economy.

Kenya has a number of maritime challenges as well as internal border security concerns in the areas near Somalia, Ethiopia, Sudan, and Uganda. Piracy is Kenya's number one maritime concern. According to an officer of the Kenyan Navy, they actively engage with Pirates – through kinetic operations and through dialogue with fishermen suspected of pirate activities. Said one interviewed officer, "We speak the same language. We talk to them, tell them to get out of our waters."

Although Kenya is the largest economy in east Africa and is a regional financial and transportation hub, funding for the navy is relatively poor. Military funding is one of the first sources considered for cuts during times of economic duress, and the present recession affecting most of the world has had a negative impact on the navy's budget. Ongoing operations in Somalia are further stressing the Kenyan economy and will likely cause a severe degradation to their naval capabilities unless foreign funding is provided. The navy currently lacks funds necessary to maintain a sufficient maintenance program and also execute operational patrols. Despite budgetary limitations constraining the Kenya Navy's ability to conduct patrols, there have been several instances of successful counter piracy operations.

In 2009, the U.S. donated one Archangel patrol craft and one Defender class boat using 1206 funds. The Kenyan Navy has at least two offshore patrol vessels (OPVs) recently received (August 2011) following a refit in Italy: the KNS NYAYO and KNS UMOJA.[53] To improve the operability of their other platforms, the Kenyan Navy has recently been working with the Danish Royal Navy to obtain spare parts for their Corvette Class vessels, cannibalized from analogous Danish craft.

The Kenyan Navy may still be considered a 7, an Inshore Territorial Defense Navy.

Seychelles

The Seychelles have recently become the focus of international attention because of their location within a region of increasing piracy activity. Although none of the east African countries have sufficient capability to conduct routine VBSS, prosecute suspected pirates, or

[53] http://www.mod.go.ke/?page_link=kenya_navy_ships

keep pirates in custody for long periods, the international community is focusing resources and attention to increase this capability. Donations and training support to maritime and legal capacity in Kenya, Tanzania, and the Seychelles comprise a large (though largely uncoordinated) international effort.

The Seychelles have an extremely large EEZ (comprising 1.3 million square kilometers) and an extremely small navy (roughly 100 persons) to control it, limited assets and a limited culture for planning, logistics, and maintenance. International donations may not be well supported, interoperable, nor fit any long-term readiness requirements.

The government and navy of the Seychelles are eager to participate and are increasingly capable partners; taking place in the NATO led *Operation Ocean Shield*, and responding to pirate attacks. For instance, in April 2009 the Seychellois Coast Guard air wing participated in preventing the hijacking of the MSC Melody, a cruise liner on route from Europe,[54] and the following year (March 2010), the Seychellois Coast Guard conducted a successful hot pursuit of a hijacked vessel, arresting the pirates and recovering the crew.[55]

According to host nation interviews and independent sources, during the high pirate season, half of the small Seychelles Coast Guard will be on patrol at any given time.

According to the State Department,[56] The Seychelles Coast Guard has four primary operational vessels: the Italian-built Andromache, the Indian-built Topaz, and two Spanish-built Rodman patrol crafts donated by U.A.E., each with crews of approximately 25. Most other vessels are non-operational.

The U.S. helped contribute to the response capability of the Seychelles Coast Guard in 2010 with a 1206 donated Archangel patrol craft. In June 2011, members of the Seychelles Coast Guard, Air Wing and Army received Maritime Intelligence training workshop from NAVAF instructors who noted that the students were highly participatory and ready for this level of training. Said the Seychellois participant at an APS planning conference: "This is an area that is new to us. We rely on other sources, other agencies. This was the first time it was in house." This training has stimulated a desire to create an intelligence cell within the Seychelles Coast Guard.

APS Training of the Seychelles military forces also included Crime Scene Investigation, DC/FF, and Fisheries Management (a course conducted by Danish military outreach instructors).

Given the regular patrolling and active response capability, we propose that Seychelles be given a rank of 8 under the Leadmark criteria.

Comoros

The inception of the Comoran Coast Guard was in 2009-2010 with personnel selected from the Army of National Development (AND). The number of Coast Guard personnel numbers approximately 40 with members possessing only elementary skills in seamanship, navigation and communication. The primary Coast Guard base is in Moroni, Grand Comore (with approx.

[54] http://www.usatoday.com/news/world/2009-04-28-pirates_N.htm
[55] http://www.eturbonews.com/15190/seychelles-coast-guard-intercepts-pirates-and-rescues-crew
[56] http://www.state.gov/r/pa/ei/bgn/6268.htm

25 to 30 personnel) with an auxiliary base on the island of Anjouan (with approx. 10 personnel).

The Comoran Coast Guard has limited response capability; it was unable to respond quickly to the sinking of a passenger ferry[57] on September 8, 2011 which resulted in the death of 50 people. Without a functioning vessel to respond, the Coast Guard commandeered a local fishing vessel and departed for the disaster site more than three hours after the ferry signaled distress.

Until late 2011, the Cost Guard had only one functioning vessel, a Zodiac patrol craft (from an original four donated by Turkey). In October, China donated a Landing Craft, escorting the vessel to Comoros and assisting in the training.

The Comoran Coast guard may still be considered a 9, token maritime force.

Mauritius

Mauritius is a former British colony with a large ethnic Indian population and strong continuing contact with both India and France. It serves as an important mid-way point for transit between Europe and Asia. Tourism, cruises and shipping traffic are major staples of the economy.

Some of the primary concerns in Mauritius include drug smuggling (both maritime and air routes; there is a large drug problem coming from Madagascar to Mauritius), arms smuggling, and the effect that piracy has on commercial shipping and cruise traffic. With 1.2 million people, Mauritius is the 3rd most densely populated area in the world.

Mauritius does not have a navy; instead, they have a proficient coast guard that is under the command of the extremely large (nearly 12,000 strong) police force. The Mauritian Coast Guard, led by an Indian National Commandant, is among the best trained and most prepared of any African maritime force engaged with APS East. They train regularly with India and France, although they have not traditionally held the paradigm of serving as a regional or global leader.

Geographically isolated, the country has, for several decades, been able to enjoy a protected mentality. Mauritian forces are eager to receive training and improve their own capability, but they have rarely expressed the need to share their expertise with their neighbors. Mauritian participants in APS have voiced a shifting vision of their role, however. Said one participant recently: “We used to think of ourselves as a thousand miles from anywhere…but we know we are not alone anymore.”

Mauritius first participated in APS in 2010 with the HSV SWIFT / USS NICHOLAS, hosting a port visit during FEB 22-25. During the 2010 iteration, 80 members of the Mauritian Coast Guard were trained, and 5 Coast Guard officers were ship riders. This year, the first Mauritius 2011 APS East hub was conducted by the frigate, USS SWG, with the ship arriving in Port Louis, Mauritius during the last week of March. The second Mauritius APS 2011 East Hub was conducted around the USS SBR visit in August and September. During both of these hubs in

[57] http://www.habermonitor.com/en/haber/detay/28524/comoros-islands-ferry-sinks-50-dead

2011, Mauritius provided facilities and transport, and students from the CG participated in courses. During the SBR visit, there was an exchange between U.S. Junior officers and junior officers of the Mauritian coast guard. Overwhelming feedback from both ships and from all course instructors indicated that the Mauritian participants were at an advanced level of understanding and competency, and that their professionalism was unmatched on the East. The Mauritian maritime forces were eager to plan and demonstrate practical skills of Damage control/Firefighting on board both U.S. Frigates and on board their own ship, *Guardian*. In both hubs, advanced helicopter exercises were planned and operated with the U.S. vessels. The March exercise simulated a medical evacuation, and the August exercise demonstrated advanced VBSS skills in an exercise with the SBR.

We assess that the 2010 Leadmark rank of 10 still applies to this maritime force.

South Africa

The South African Navy is one of the most advanced and best equipped military forces in the region and have relatively good ability to monitor maritime traffic (including patrol aircraft). Their maritime response capability includes surface (small and coastal patrol, and frigate class vessels), subsurface, and air assets that are capable of conducting operations in the EEZ.

The SAN has its headquarters in Pretoria, collocated with the South African National Defense Forces (SANDF) HQ. The SAN Fleet and Fleet HQ are based in Simonstown, the Navy's major base. There are smaller support bases in Salisbury Island, Durban and East London. The SAN's training bases are at Gordon's Bay for officer training and Saldanha Bay for enlisted training.

The SAN has a very competent naval force which includes four MEKO frigates, two WARRIOR class OPVs, Three T-Class OPVs, and numerous inshore patrol vessels, Riverine craft, and small boats. The Navy is proficient in all unclassified NATO ATP maneuvers. They are prepared to conduct EEZ patrols, and also routinely exercise at sea with European, South American, Indian, and Chinese partners in multi-unit deployments.

The SAN trains all South African Development Community (SADC) navies and coast guards. They confine this primarily to officer professional military education (PME), medical and technical. The quality of training is considered excellent and comparable to U.S. standards. SAN reservists are sent as MTTs to Angola and Mozambique to teach diving and EOD.

NATO TTPs are used by the SAN and their communications link is called ZA, a system that is employed by all members of the SANDF. SAN frigates can operate in all frequency ranges, and use Mercury Chat wile deployed on Counter Piracy patrols; other ships and submarines have HF and VHF.

APS involvement with SAN has been limited. South Africa sent representatives to the June 2010 APS Main Planning conference, and the September 2010 APS Final Planning conferences. This was the first year that South Africa has invited a TSC event with an APS platform. The USS SWG visited Simonstown in February 2011, participating in joint COMRELs with members of the SAN. As mentioned earlier in this section, South African Submarines participated in exercises at sea with both the USS SWG and the USS SBR. There is interest in

future APS interaction with the South African Maritime Reaction Squadron (MRS), a unit analogous to the USMC and USN EOD.

The 2010 Leadmark assessment gave the SAN a rank of 4, Medium Regional Force Projection Navy. We determine that this ranking has not changed in the past year.

Key Takeaways and Recommendations

In this section, we look at some of the consistent themes that emerge from the brief descriptions we have given on certain African APS partner nation response capabilities. Based on these response capabilities, and the maritime concerns/threats we have described in the previous section, we identify common themes and elements, draw conclusions, and make recommendations for moving forward in future APS activities.

- The Leadmark ranking system provides a useful first-glance at APS partner maritime forces, but this number alone does not provide significant value in understanding the character of our partner response. Descriptions of operations provide significantly greater value, and we recommend that in-depth case studies should be created in order to develop effective regional and country APS planning.
- The Leadmark ranking of APS Partner maritime force capabilities appears to remain largely unchanged from 2010 to 2011, with the exceptions of Liberia, Cameroon, and Seychelles, each of whom have notably increased their maritime responses within recent months. These changes appear to be due largely to interaction with international partners.
    - Liberia: The U.S. MAO and U.S. training programs and donations have improved the Liberian's Coast Guard response capability and are directly responsible for the shift from Rank 10 to Rank 9.
    - Cameroon: Israeli and U.S. training, donations and Exercise OBANGAME EXPRESS have improved the regional interoperability of the Cameroonian Navy, and the capability of the Cameroonian BIR Delta forces to respond to piracy in the Bakassi Peninsula.
    - Seychelles: International partners including the U.S., India, France, China and the U.A.E. have worked with the Seychelles Coast Guard in their counter-piracy effort. The Seychelles Coast Guard response capability improvements are at least partially due to this support.
- A majority of our APS African partners are currently unable to adequately monitor, patrol, prevent, and respond to the maritime threats and concerns in their EEZs.
- Lack of maritime assets presents a significant factor in our partner's ability to respond to maritime threats. APS is unable to affect this issue directly, however, because there is no line of accounting that will allow the program to gift assets. Future APS missions should focus on maintaining the longevity and functioning of existing assets through maintenance and repair training, and maximize the value of existing platforms by specialized operations and planning training.
- U.S. 1206 donated Defender-class and Archangel-class boats often represent a significant component of APS African partner's maritime response capability. In some cases, these craft are among the only functioning vessels in the maritime force.
- U.S. 1206 donated MDA systems are often the only systems available to African APS partners.
- Intelligence fusion and information exchange has played a crucial role in partner nation response capability in the past year. Gaps in this capability have been exposed during APS related EXPRESS exercises, and efforts during APS 2012 should be made to expand these

capabilities – through additional courses, through TTXs, and through at-sea exercises and operations.

- Exercises and operations with African Partners may play a significant role in improving partner nation response capability by providing a way for them to test themselves against an external metric. This was particularly obvious in The Gambia, where participation in the APS hub and the SAHARAN EXPRESS exercise stimulated them to establish a Maritime Operations Center. Challenges in communications between the operations centers in The Gambia and Senegal during SAHARAN EXPRESS, and MDA challenges in the Senegalese operations center during SAHARAN EXPRESS and AMLEP were valuable learning experiences for the Senegalese Navy, experiences that have encouraged the Training Officers to reevaluate their watchstanding procedures, SOPs and training.
- APS Passing Exercises in 2011 occurred primarily with SAN and the Mauritius Coast Guard. These two partners are amongst the most proficient military maritime forces participating in APS. While these exercises may have built partnership and interoperability, it is likely that any increased maritime capability for these forces will be incremental, at best. We recommend that APS routinely plan Passing Exercises with other APS partners, and encourage South Africa and Mauritius to engage other partners in Passing Exercises.
- International investment in individual APS partner countries play a significant role in their response capability. We call out some of relationships we have found here, in Table 6D.4. We recommend that APS training and engagement include these and other primary international supporters to synchronize activities and efforts.

Table 6D.4: APS African partners and countries which have demonstrated significant interest and/or support in their maritime response capability, to include maritime asset donations and training.

African Partner	Primary International Supporters
Cameroon	Israel
Comoros	China
The Gambia	Taiwan
Ghana	South Korea, China
Togo	France
Senegal	France, China, North Korea
Seychelles	the U.S., India, France, China and the U.A.E.
Mauritius	India and France

- The bilateral patrols in “Operation Prosperity” conducted between Nigeria and Benin are an encouraging step towards regional monitoring efforts. Similar joint patrols have been conducted between the members of CEEAC Zone D, and we recommend that APS request that partners identify the participants of these patrols and single them out for specialized training to improve these efforts and maximize the joint capability.

Conclusions

In this section, we have evaluated the contribution that APS has made towards the MSD pillar of *Maritime Response Capability*. We began by calling out the training and exercises that may have played a role in our partner’s ability to respond to maritime threats. We then identify the particular maritime concerns and threats on a regional basis in East and West Africa. We used an independently determined metric, the Canadian Leadmark naval rankings, to describe the response capabilities of our partners. Using interview and survey data, as well as open source information, we constructed brief descriptions of our African APS partner’s response capabilities. These descriptions were used to

estimate any changes in the Leadmark rankings of our partners. We also used these descriptions to elicit common themes and messages from our partner's responses. We then made a series of recommendations for future APS engagements in order to enhance this pillar of maritime sector development.

We conclude that, although a majority of our APS African partners are currently unable to adequately monitor, patrol, prevent, and respond to the maritime threats and concerns in their EEZs, APS and other international efforts are major contributors to our partner's response capability evolution, and that strides are being made in improving this pillar.

6E. International & Regional Cooperation: Assessment of Efforts and Effects

Elizabeth Heider & David Babcock

Section Summary

The 2011 APS mission successfully supported NAVAF's Pillar *of International and Regional Cooperation*. In the past five years of APS, 10 European countries, 22 African countries, the U.S. and Brazil have combined efforts. This has encouraged Australia, Norway and Sweden to possibly join in 2012.

In 2011, the APS international and regional participants embraced the "Train-the-Trainer" program - exporting African trainers across the continent-, hub training for regional students, and the APS Shiprider program. The Belgian ship, the BNS GODETIA conducted APS engagements and a multinational staff served on the USS SWG during its APS East deployment. Infrastructure evaluations in APS West were conducted by a French and Italian Officer, and Danish/Italian Mobile Training Teams were employed in APS East.

APS provides a distinctive forum which encourages regional and international relationships. It enables and legitimizes military-to-military cooperation. It facilitates information access and exchange, and promotes regional solutions to MSS.

Regional coordination, information sharing, program creation, and operational exercises are strongly linked and often directly attributable to APS efforts. These successes include:
Train-the-Trainer program exported African trainers across the continent.
Togo / Benin information share prevented toxic dumping in Togolese waters.
Benin and Nigeria jointly patrol the Seme and Cotonou territorial waters of Benin to curb the activities of pirates and other sea criminals.
Cameroon and Nigeria regularly share intelligence regarding piracy in the Bakassi peninsula.
Sierra Leonean and Ghanaian engineering officers collaborate on maintenance and engineering programs.
High-level military leadership in Ghana and Nigeria discussed the need for joint military exercises.
The Danish Royal Navy and Kenyan Navy engineers assessed maintenance support to the Kenyan Navy.

International and regional cooperation, center around the following:
Sustainment: Mission cost and effectiveness require international and regional efforts.
Synchronization: Track and harmonize ongoing efforts in Africa to avoid duplication and to maximize the effectiveness of all programs.
Support Role: The U.S. traditionally takes the lead in planning and executing APS engagements. Shared ownership –where the U.S. plays a supporting role- gives APS the strength to persist.
Strategic Message to U.S. DoS If the U.S. DoS remains bilaterally focused and fails to buy-in to international partnering, operating in Africa and getting partner nation support will be more difficult.

We actively support the following recommendations:

1. Maintain a full time NAVAF APS international maritime outreach coordinator position within N52.
2. Identify opportunities for partner-lead engagements and partner participation by providing appropriate support. Partners may be able to contribute platforms, programs, people and/or

paradigms.
3. Create and maintain an APS coordination website
4. Include international partners in APS planning and execution staff
5. Evolve the APS program into a concept of Regional Leadership:
6. N52 planners should regularly participate in NATO working groups.
7. Regularly hold the "Enduring Partners Synchronization Conference".
8. Conduct Multi-Tiered engagement with partners.
9. Leverage APS in-country receptions as an opportunity to include participants of partner embassies.
10. Work with U.S. Embassies to create opportunities for understanding International and regional roles in capacity building and APS.
11. Arrange routine N50, N51 and N52 site visits to partner countries to coordinate and identify opportunities to fold them into the APS mission

APS is a multinational partnership focused on maritime issues in Africa with global impact, necessitating a global response. It has become clear that mission success is closely linked to formal and informal relationships between these players. We conclude that long term effectiveness and sustainability of APS will only be possible if international and regional players take the lead to develop, manage and sustain the program.

APS 2012 is evolving the role of International and Regional cooperation. This year, a new maritime outreach coordinator in N50 was introduced and now serves as a point of contact for all international partnerships. Additional international actions include enhanced Danish Royal Navy participation in APS with the possible inclusion of a Danish Frigate to be used as an APS platform, new potential partners in Australia and Norway, and novel engagements between Mauritius and Cameron.

Background and Introduction

The APS mission is distinct from other U.S. efforts in Africa. This is a multinational effort, a regional and continent-wide program that emphasizes multi-lateral engagement to achieve its objectives in building maritime capacity. Since its inception, APS has been a partnership with players from many African countries, European nations, the United States, and Brazil.

The initial reason for this global partnership was articulated in the APS white paper, basing its reasoning on the premise that the maritime issues in Africa have global impact, thereby necessitating a global response:

> *International efforts to promote good governance, economic development, environmental protection, stability, and security in Africa are impacted by the corrosive effects of illegal activity at sea. Precious resources are lost when nations cannot exert even minimal control of their Exclusive Economic Zones, territorial waters, and ports. A huge opportunity cost is being paid each day by Africans, in terms of both unrealized national revenue and untapped human potential. Such conditions foster easy avenues for transnational threats to travel within and outside Africa, opening new routes and bases of support for criminals and extremists of every type. While these problems are complex and have deep historical roots, they are not insurmountable. To African coastal states and their U.S. and European partners, this situation is intolerable and the time has come to take collective action.* [58]

[58] APS WHITE PAPER, 27 July 2011, Africa Partnership Station: An Initiative to Promote Maritime Safety and Security, Commander Naval Forces Africa

As our analyses will show, the necessity for international partnerships has evolved beyond this original reasoning. Recent evidence indicates that mission success is closely linked to relationships, formal and informal, between international and regional partners. Furthermore, long term effectiveness and sustainability of the APS program will only be possible if international and regional players begin to take the lead in program development and management. The emphasis on this pillar, therefore, takes on additional importance. We explore the nature of this interaction and the future of international and regional partnerships in this section.

Table 6E.1: Countries historically participating in APS, and a broad description of their participation.

Countries	***Participation***
Europe: Belgium, Denmark, France, Germany, Italy, Malta, Netherlands, Portugal, Spain, U.K.	APS staff, planners, mobile training teams, ships, engineers, maritime NGOs, site surveys
North America: U.S.	APS staff, planners, mobile training teams, ships, logistical support, medical engagement, marine corps, civil-affairs teams, maritime NGOs
South America: Brazil	APS Staff
Africa: Senegal, Cape Verde, The Gambia, Sierra Leone, Liberia, Ghana, Togo, Benin, Nigeria, Cameroon, Equatorial Guinea, Gabon, Sao Tome & Principe, Republic of Congo, South Africa, Mozambique, Tanzania, Kenya, Djibouti, Seychelles, Mauritius	APS Staff, mobile training teams, training facilities, maritime NGOs
Australia	New APS participant (APS 2012 Planning Conference)

We look first at the nature of this effort encapsulated in the MSD pillar of *International and Regional Cooperation.* The stated goal of this pillar in the MSP is: *Regional and International capacity building are integrated in improving Maritime Safety and Security*. The emphasis (effects and tasks) is that Partner nations can build capability, capacity and proficiency to conduct sustained maritime security operations unilaterally and as part of a regional effort.

We begin this section by examining the history of international and regional participation in APS, and follow this with an examination of APS 2011 contribution of effort as determined by AARs, interviews, observations, and CEFRs. We analyze the relative value and indicators of success of these efforts. We then use this analysis to make recommendations for the way ahead.

International and Regional Cooperation Efforts

In the past five years of APS, international participants have included 10 European countries, 22 African countries, the U.S. and Brazil (See Table 6E.1). These participants have offered a variety of essentials to APS, including APS Staff, planners, mobile training teams, logistical support, maritime NGOs, site survey teams, maritime platforms, and training facilities.

In 2011, there was a large international component planned, including a partner nation ship (the BNS GODETIA), a small multinational staff on board the USS SWG, and a large multinational staff aboard

the USS WHIDBEY ISLAND. The BNS GODETIA and USS SWG continued their missions as planned, but the scope of the overall international effort was scaled back when the USS WHIDBEY ISLAND was diverted to Libya and staff members returned to their home institutions.

In spite of this setback, the originally planned regional exchange element of APS remained strong, particularly with the "Train-the-Trainer" evolution and Shiprider program. There remained an international flavor with the APS staff aboard the USS SWG, and with international mobile training teams. In the following bullets, we describe the distinct contributions to this pillar, in terms of international and regional efforts.

Regional Effort

Contributions to the regional component of the APS mission during 2011 included the Train-the-Trainer program, hub training for regional students, and the APS Shiprider program. These efforts are described here.

- *Train-the-Trainer*. This was the first year of the APS "Train-the-Trainer" program. Seven nations participated in the training segment: Gabon, ROC, Nigeria, Cameroon, Senegal, Tanzania and Kenya. Participants from Tanzania, Senegal and Cameroon went on to teach courses in a separate APS engagement. Senegalese and Cameroonian students were trained in NCO leadership. Nigerian students were given the "Train-the-Trainer" course in NCO Leadership and medical care (TCCC). In APS East, Tanzanian participants trained in NCO leadership. This program proved so popular that Kenya requested an additional "Train-the-Trainer" iteration, a course that APS trainers completed in July 2011. As a result of this novel effort, this year marked the first time African partners engaged as APS trainers. Senegalese participants of "Train-the-Trainer" went on to teach a course in Visit Board Search and Seizure (VBSS) in the Cameroon hub in June 2011. Cameroonian participants also taught a course on NCO leadership in this hub. Tanzanian instructors taught NCO leadership in the Mauritius hub in March 2011.
- *APS Shiprider Program*. The APS Shiprider program is designed to give sailors from African navies the opportunity to learn and train with U.S. sailors; moreover, to give them sea time and experience that they may not otherwise have access to. The goals for this program may therefore be said to fit directly into two separate categories of the MSD model: the pillar of *Trained Maritime Professionals*, and *Regional and International Cooperation*. We focus our analysis on the latter category.

  The APS Shiprider program encourages interaction between regional partners. This year, a total of 70 African Shipriders spent time aboard three U.S. ships and one Belgian ship. Shipriders from Togo, Ghana, Liberia, Sierra Leone, and Nigeria rode on board the USS RGB; Shipriders from the Republic of Congo and Gabon spent time together on the BNS GODETIA; Shipriders from Djibouti, Kenya, Tanzania, Uganda, and Mauritius were on board the USS SWG; Shipriders from Djibouti, Kenya, Tanzania, Uganda, and Mauritius were also on board the USS SBR. Interaction between these Shipriders reinforced the professional development of the others. One observer noted that leadership from within the group of Shipriders was found to have a significant impact on overall Shiprider accountability and morale.
- *Hub Training for Regional Students*. This is the second year of the "APS Hub" concept whereby students from multiple countries gather at the same location for shared training. This environment is intended to foster exchange and familiarity between the students, to provide a forum for shared ideas, to identify useful TTPs and to increase interoperability in regional navies. During APS East, there were four hub events with students from Seychelles, Mauritius, Kenya, Djibouti, Tanzania, and Uganda; during APS West, there were six hub

events with students from Togo, Benin, Ghana, Nigeria, Gabon, ROC (Brazzaville), Cameroon, The Gambia, Sierra Leone, Liberia, and Senegal.

- *APS Planning Conferences*. These conferences are designed primarily to identify readiness needs and to synchronize country efforts with APS input. Experience has shown, however, that there is greater value in these conferences than merely the planning that occurs. This forum provides the opportunity for military and civilian leadership from Europe, Africa, South America, North America and (this year) Australia, to interact with one another and create opportunities for future engagement. Some examples of how these conferences may be used for regional and international engagement follow:
  - *APS West 2012 FPC, Cape Verde*: representatives from Sierra Leone and Nigeria formed a nascent plan to send Nigerian training teams to Sierra Leone under the APS banner.
  - *APS East 2012 FPC, Tanzania*: representatives from Denmark met with representatives from Mozambique to initiate a plan for Denmark to help establish a "Community Watch on the Water" program in Mozambique.
  - *APS East 2012 FPC, Tanzania*: representatives from Mauritius discussed the possibility of creating an engagement between Mauritius and Cameroon.

International Effort

Contributions to the international component of the APS mission during 2011 included the contribution of BNS GODETIA, a multinational staff serving on the USS SWG (Tanzanian, Kenyan, Danish, and U.S. staff officers), infrastructure evaluations conducted by a French and Italian Officer, and Danish and Italian Mobile Training Teams in APS East.

- *Partner Platform*: During APS 2011, the Belgian ship, BNS GODETIA conducted APS engagements in Cameroon, Gabon, and ROC (Brazzaville).
- *Shipboard Multinational staff*: The Frigate, U.S.S. SWG (SWG) conducted APS engagements in East and South Africa in February through March 2011. APS staff on board the SWG consisted of naval officers from Kenya, Tanzania, Denmark, and the U.S. Ship's crew and mobile training teams conducted engagements that APS Staff planned and coordinated from aboard the ship.
- *Infrastructure Evaluations*: International partners from the original staff of the USS WHIDBEY ISLAND, LCDR Abbate (IT) and LCDR Delrue (FR) conducted evaluation, maintenance and repair of maritime infrastructure in Senegal, Togo, and Cameroon.
- *Mobile Training Teams* Danish instructors were used during APS East 2011 to teach courses in Fisheries in the Seychelles and Tanzania. Italian instructors were used for APS West 2011 to teach Fisheries and MDA courses.

These contributions to the MSD pillars of Regional and International Cooperation are certainly well-intentioned efforts. It is our observation, however, that the sum total of these contributions do not appear to reflect a particular effort or long-term plan towards creating regional and international cooperation. As far as we can ascertain, such a plan does not exist. Rather, this pillar is a catch-all for activities that may involve international partners (such as the international APS Staff), or discussions between host nation leadership and United States representatives (such as KLE). This observation is not meant to dissuade future planning but, rather, to emphasize the need for such a visionary plan.

Indicators of Success

In interviews and surveys, APS participants routinely cite their international and regional friendships as a major benefit of APS engagement. This has been a consistent response to surveys and interviews

during the past three years of APS[59], and forms the basis of one proposal of this report calling for new metrics (see section 8.c "Future Requirements for Assessing the APS Mission"). These relationships may be either formal or informal in nature, and the perceived benefits range from *access* to *interoperability*, to *asset sharing* to *communication* (see Table 6E.2 for a full list).

Table 6E.2: Results of interviews with African Partner participants in APS in 2009. **Error! Bookmark not efined.** Participants were asked the question: "What do you perceive to be the benefits of APS?" Interviews with APS participants in the subsequent years have shown that these same benefits continue to be cited.

African Pillar of Maritime Sector Development	Relationships between which players	Perceived benefits
Regional Relationships	Cross-region informal individual Relationships	Stabilization
		Cooperation
		Networking
		Access
		Mutual support
	Cross-region institutional relationships	Shared goals
		Communication
		Common cultural understanding
		Interoperability
		Assurances
		Trust
		Asset sharing
Internal Agency Relationships	Cross-agency relationships	Self-knowledge
		Shared goals
		Access
International Relationships	Relationships with U.S. and other international partners	Shared challenges / Shared goals
		Understanding
		Trust
		Reduced skepticism about motives

Information from hundreds of interviews has reinforced the legitimacy of these perspectives. It becomes clear that APS has provided a unique forum for legitimizing regional, international, and interagency interaction in a way and on a scale that has not previously existed. According to our partners, APS enables and legitimizes military-to-military cooperation and facilitates information exchange, access, and regional solutions to MSS. The nature of these exchanges can be seen in the examples below.

Here, we call out some of the successes in regional and International cooperation that may be linked to or may be directly attributable to the APS program. Although this is not a complete list, it gives some perspective on how international and regional relationships play an important role in building

[59] *Tailoring operations to country variables: An operational guide to APS engagement,* Elizabeth M. Heider, CNA Publication, CRM D0021995.A1/SR1 January 2010

maritime capacity, and how APS facilitates this interaction.

Train-the-Trainer Program

- This year marked the first time African partners engaged as APS trainers. Senegalese participants of "Train-the-Trainer" went on to teach a course in Visit Board Search and Seizure (VBSS) in the Cameroon hub in June 2011. Cameroonian participants also taught a course on Damage Control/Firefighting in this hub. Tanzanian instructors taught NCO leadership in the Mauritius hub in March 2011.

Togo / Benin Information Share

- On August 22, 2010, the Togolese Navy operations center received a tip from a contact in Benin (whom the Naval CNO had met through APS) that there was a ship carrying toxic waste into Togolese waters. The navy responded, escorting the ship into port and allowing it to dock, but insisted on inspecting the cargo. The ship refused, waited four hours and then left the port. CAPT Takougnadi, the Chief of the naval base in Lomé, emphasized the value of relationships and information sharing in order to facilitate this type of exchange. He said, "Right now, there is no official agreement of cooperation between the countries in the region. But, with APS, we've made informal contacts and call each other when we need to. My vision for APS is that all countries in the region would have operational centers that communicate with one another 24 hours a day, linked together. We want regional cooperation."

Benin/Nigeria Joint Patrols

- On 07 OCT 2011, the governments of Nigeria and Benin launched the joint patrol in the Seme and Cotonou territorial waters of Benin to curb the activities of pirates and other sea criminals. This bilateral cooperation was the first of its kind in the West African sub region and is in line with the Maritime Organization of West and Central Africa (MOWCA) Coastguard Function Network Initiative. After several meetings between the maritime agency and the authorities from Benin, the Agency two weeks ago unveiled two mother boats and five fast attack ballistic boats it acquired using a PPP arrangement with Global West Company. Together with the NNS Nwamba, they execute the directive of President Jonathan to fight piracy in Benin waters.[60]

Cameroon/Nigeria Information Share

- As a military operating unit, the Cameroonian Special Forces unit, the BIR, is not in a position to establish partnerships or relationships with other countries' military units without political authorization. APS and the OBANGAME exercises have provided the BIR with an informal mechanism for regional interaction, cooperation, and relationship building. According to one high-ranking source interviewed, APS has allowed the BIR to find solutions informally without the necessity of going through government channels. Now, the BIR Delta leadership relies on an informal relationship between a BIR intelligence officer who participated in APS with a Nigerian officer: "they are daily on the phone or e-mail; they exchange information about threats that will affect each other's country."

Sierra Leone/Ghana Engineering Solutions Exchange

- An engineering officer with the Sierra Leonean Navy, described his collaboration with his counterpart in the Ghanaian Navy, an officer whom he had met at an APS planning conference. The Sierra Leonean officer had recently been required to create the navy's fiberglass boat construction and maintenance capability. "I didn't know where to begin," he mentioned in an interview. "We don't have the products like fiber and resin. I didn't even

[60] http://www.worldstagegroup.com/worldstage/index.php?&id=2988&active=news

know the distribution sources." To resolve these concerns, he contacted his friend in the Ghanaian Navy and they collaborated. Said the Sierra Leonean officer: "We wrote up full procedures together. He gave me his distributors. Now we have a fiberglass boat capability in Sierra Leone."

Discussions to form Ghana /Nigeria Collaboration

- On 02 FEB 2011, the Ghanaian Minister for Defense, Lt Gen J.H. Smith, in speaking with outgoing Nigerian Defense Adviser, Col D. Yakubu and replacement, Col K.I. Mukhtar urged collaboration between Ghanaian and Nigerian Navies in order to rid the GoG of piracy.[61] He said there was the need for the Armed Forces of the two sister countries to conduct regular joint military exercises geared at ensuring peace and security in the West African sub-region.

Danish Navy/Kenya maintenance project

- The Danish Navy Maritime Capacity Building team is currently working with Kenya to provide training and equipment. Recent agreements with the Kenyan Navy CNO resulted in an agreement for the Danes to provide spare parts for MTU engines, technical support, education and operational training on systems such as GMDSS and SAR, as well as support on coastal radar. The Danish Royal Navy has been involved in APS since the beginning of the program, and is currently looking to expand their role in the program.

There are several interesting facets shared by each of these examples. First, these describe ongoing efforts with real-world operational impact and therefore emphasize the need for combining efforts and information between countries in order to maximize the value of the effort. Next, it is interesting to note that informal relationships appear to have as great a value in building capacity as formal ones. In some instances, informal relationships forge the way for greater interoperability and institutional changes. Another interesting factor shared by each of these examples is the lack of U.S. presence following the initial APS engagement. This is vital to future outcomes for the APS program. If the program is to succeed in building maritime capacity in Africa, then the mission needs to be "owned" or "driven" by multiple players. The maritime capacity building effort must, necessarily, outgrow the initial efforts we begin here. This falls along the lines of AFRICOM strategic guidance which calls for African Self Sufficiency.

Key Issues in Regional and International APS Engagement

In spite of the characterization of the APS mission as a multinational effort, operations during the past several years have revealed challenges in maximizing the value of these interactions. Here, we highlight some of the key issues. These are: sustainment, synchronization, support role assignment, and strategic messaging and collaboration with the U.S. DoS. We discuss these here.

- **Sustainment** Maritime capacity building in Africa requires a multifaceted, multinational approach in order to have long-term sustainment. The first reason for this is cost: no country can afford to unilaterally carry out the necessary operations and implement the necessary changes. The second, and in some cases the more germane reason, is mission efficacy. Complex relationships exist between different African countries, between European APS Participants, and between the U.S. and our African partners. Specific countries are more or less effective, based on specific relationships, and whether a particular country is perceived as having an ancillary objective that taints its objectivity (for instance, extensive mining interests, etc.). Maximum mission effectiveness and

[61] http://www.gaf.mil.gh/index.php?option=com_content&view=article&id=147:ghana-nigeria-navies-to-combat-sea-piracy-in-the-sub-regional-waters&catid=13:headlines&Itemid=34

sustainability relies on the multinational approach. A further, related reason for this issue lies in AFRICOM strategic guidance which calls for African Self Sufficiency. As such, it is unreasonable to emphasize the mission as a U.S.-centric effort. The multi-national approach is more conducive to this.

- **Synchronization** In order to avoid duplicating efforts, and to maximize the effectiveness of existing programs in Africa, synchronized efforts are required. There are hundreds of programs in operation on the African continent, both national and non-governmental. Many of these programs have parallel efforts or redundancies. There are few consistent ways to track and harmonize these efforts. The U.S. may have difficulty even tracking its own efforts among the different military branches. This problem is exacerbated when partner countries attempt to complement our efforts. Consider that little tracking or synchronization occurred with the 2009 deployment of the Dutch ship, HNLMS JOHAN DE WITT. The ship's captain, Ben W.J. Bekkering, wrote about this in his after-action report:

  > "During execution, more than once I suspected that JWIT was talked about, not with. My only formal input was given in a closing remark in the weekly OIC SITREP, which I do not consider proper command feedback. Briefings in Naples were fed by personal SITREPs of the PAO-chief…It certainly gave me the impression that involved commands did not establish a proper balance between "hands-off" and "retaining control". The fact that it sometimes left me in the dark is perhaps not so relevant. The fact that it did at times hurt the overall effort all the more."

  These sentiments were echoed in the SITREPs of the Belgian ship, the BNS GODETIA after its 2010 mission. In order to solve the lack of synchronization, the GODETIA's AAR proposed that, "A database of lessons learned from previous APS campaigns should be delivered to a supporting Navy". It is clear in 2011 that this lesson in synchronization and coordination has not yet been learned. This assessor has found it nearly impossible to get any feedback from the 2011 deployment of the BNS GODETIA.
- **Support role assignment** The U.S. has traditionally taken a lead role in planning and executing APS engagements, with our partners playing a supporting role. If multiple international players have an increased sense of ownership and investment in the program, this will serve as a force-multiplier, and allay some of the sustainment issues that the U.S. Navy faces. Shared ownership will give APS the strength to persist. This model for engagement currently does not exist, but should be explored in APS 2012 and beyond. We should keep in mind that, as our partners begin to take charge of certain programmatic elements of APS, that the U.S. should continue to be involved and invested, a lesson that we continue to cite, based on the experiences with our partner nation ships. Recommendations for such a model are given in this section.
- **Strategic messaging and collaboration with the U.S. State Department** Unlike bi-lateral training efforts in Africa, the strength of APS lies in its network of international programs and platforms, and the relationships forged between regional and international partners. International partners play an important role in APS execution, effectiveness, and strategic communications. In order to successfully execute this mission, a strong coordination and unity of vision between DoS and the DoD is required. This creates a particular challenge, given that the U.S. DoS focuses on bilateral engagements and relationships. We rely on the DoS to support APS efforts and to coordinate KLEs and the media. If they don't understand and buy-in to the international partner concept, operating in Africa and getting partner nation support will be more difficult. This particular issue was exposed during APS 2011 when the U.S. Commodore was unable to travel to the hub in Mauritius. His deputy, a Kenyan officer, was *de facto* scheduled to conduct KLEs. The U.S. Embassy, not completely

understanding the multinational nature of APS, was extremely reluctant to allow these engagements to occur, expressing the desire that the ship's Commanding Officer, the senior U.S. officer, conduct the engagements instead. (Note: the APS Deputy eventually did conduct the APS office calls in Mauritius, with extremely good feedback from the Mauritian counterparts). This perception of APS as a U.S.-only effort has been echoed by many U.S. Embassy staff members, and is sometimes reflected in the way that events are organized. In one APS graduation ceremony, the U.S. Embassy reserved the first two rows of seats for Embassy and ship personnel, seemingly unaware of the multinational APS staff.

Recommendations

It is clear that action of the APS program in the pillar of *International and Regional Cooperation* needs to address the key issues identified in this section. Recommendations have arisen from APS planners and participants, as well as assessments observations of international participation. We issue our recommendations in this section, and include both the key issues and matched recommendations in Table 6E.3.

1. **Maintain a full time NAVAF APS international maritime outreach coordinator position within N52**. This position is particularly crucial in maintaining a consistent point of contact for our international partners. This person can identify opportunities and provide cradle-to-grave oversight of partner collaborations and partner-lead projects. A maritime outreach coordinator position was established in N5 during FY11 and has been extremely helpful in providing appropriate support. We do note, however, that this position exists in N50 and is obligated to perform tasking and receive direction that is not solely APS related. We recommend that this position be shifted to the operational command of N52 to better serve APS.
2. **Identify opportunities for partner-lead engagements and participation, and provide appropriate support**. Of particular use for understanding this aspect of international partnerships was an assessment visit to Denmark in June 2011. During this visit, it became clear that the complete range of contribution from our partners was not being utilized. The APS mission can be strengthened by leveraging the skills, programs and capabilities of our partners. CNE-CNA-C6F coordination with partner navies should focus on the integration of the following into the current APS model: *Platforms*, *Programs*, *People*, and *Paradigms*. We discuss these in greater detail here. The examples we include here should be considered as starting points, rather than as limiting factors. Additional types of participation should be encouraged.
    a. **Platforms: E*xpand array of maritime platforms, training centers and direct training application venues.*** Partner countries may be in a position to provide maritime platforms (such as the Dutch ship, HNLMS JOHAN DE WITT or the Belgian ship, BNS GODETIA). There may also be unique opportunities for training venues, such as the Mauritian police academy or the new Damage Control Firefighting school used for training in Cameroon.
    b. **Programs: *Leverage diverse maritime forces, government ministries, agencies, NGOs and the private sector to enhance APS engagement tool set***. There may be a tendency to continue to use legacy methods and programs because the precedent for such programs already exists. But the successful evolution of the APS program requires creative identification and inclusion of new and diverse partner programs that might provide an excellent fit in a particular environment. Consider, for instance, the example of the Danish "Stop the Oil" campaign, which may be used as a possible

model for augmenting current maritime domain awareness efforts in APS participating countries.

Danish waters are the transit point for all crude oil tankers coming from the Baltic (there are 4,000 crude oil ships per year from Russia alone), and illegal practices have been a frequent problem. The idea of the "Stop the Oil" campaign was to involve yachtsmen, sports anglers, and others in the fight for clean Danish waters by becoming "watchers" for the Danish fleet. Within the first month 1,000 people had registered for the program and this soon ballooned to 5,000 in the first season. Today, there are 14,520 program registrants. This concept of "professionalizing the public" has been successful due to 1) The investment and ownership of the public in the program, 2) The Navy's immediate response to the reports, and 3) The feedback that they give to the "blabbers".

The nature of this program, and its leveraging of the public into a low-tech, community oriented solution seem ideally suited for application in Africa where the primary infrastructure that exists are cell-phone-towers, and where individual artisanal fishermen have an incentive to report. It may therefore be desirable to implement a similar program in certain African littoral countries.

As partner countries identify and begin to implement maritime solutions, the U.S. would need to continue to track and support these efforts and put them into the context of the overall APS mission.

c. **People: I*ncrease access to professionals from a wide spectrum of maritime forces***. International APS staff members have proven to be a successful aspect of APS during the past several years. Retaining an international APS staff is crucial for success of the program, and perhaps augmenting the role to include planning, assessments, and logistics support. (Note: we discuss this later as a separate recommendation). International partners have also successfully provided training teams to separate APS engagements. These successful aspects of personnel participation should continue, and new ideas for personnel participation should also be explored to include non-military international personnel, such as the Danish Naval Home Guard (a civilian volunteer organization), or professional maritime organizations (such as the International Maritime Organization, or the IMO). This latter recommendation may help to engage maritime stakeholders who might be reluctant to engage with a military force and who would be more willing to participate with a civilian organization.

d. **Paradigms: C*apitalize on unique partner perspectives and "new" paradigms to broaden APS***. The U.S. Navy has a very specific mission set based on a need for blue-water capability. Because there are few navies in Africa that are currently blue-water capable, have the potential to become so, or the need to develop this capability, there may be a significant difference between their paradigm of maritime safety and security, and the U.S. paradigm. Small European countries, South American countries, or Australia may have paradigms that would be more readily useful and applicable to our African partners. Their participation and ability to convey their effective paradigms might prove particularly useful.

3. **Create and maintain an APS coordination website** This tool would allow partners to track APS events and other maritime capacity building efforts in Africa. Countries and organizations that have ongoing efforts in a particular African nation would be able to enter data into the site and match up their efforts and means with other efforts. This would allow different stakeholders to identify opportunities to work together and help avoid duplication

of effort.

4. **Include international partners in APS planning and execution staff:** Successfully executed, exchange officers would work hand-in-hand with NAVAF staff planners. In order to maximize the partnership and eliminate potential confusion or under-utilization, these officers should be actual planners (more than liaison officers) and hold clear responsibilities.
5. **Evolve the APS program into a concept of Regional Leadership:** MSS is a regional concern, and the concept of a "Regional Lead" program would acknowledge this, making divisions on functional, not country lines. Each APS participating country would become a Regional Lead in a focus area supporting regional cooperation in maritime security efforts and developing regional maritime response capabilities, assessing current level of capability and interoperability, identifying gaps and shortfalls, and recommending a way ahead (to include a plan of action and milestones). Decisions for training and resource allocation would therefore be made to benefit the region as a whole rather than individual countries. This paradigm would build regional capability and self-sufficiency with interoperability and group capability as the primary focus. Programmatic ownership would be with member states, rather than the U.S., providing greater visibility on regional activity and allowing the accountability for success to rest with partner nations.
6. **N52 planners should regularly participate in NATO working groups**. This would allow us to tap into existing efforts in Africa, and find forums where the APS initiatives can be promulgated.
7. **Regularly hold the "Enduring Partners Synchronization Conference"**. This would provide an opportunity for European partners to discuss their ongoing efforts in Africa and agree upon mutual goals and projects. It is important that right people at the right levels attend, bring the message of APS, and retrieve important country information.
8. **Multitier engagement with partners**. Under the existing model, APS staff and planners tend to interface only with their counterparts in a separate country. In the future, it will be important to interface with country strategy planners, military planners, and the political planners.
9. **Leverage APS in-country receptions as an opportunity to include participants of partner embassies**. This forum is useful for creating mutual understandings, networks of interested parties, and future engagement opportunities.
10. **Work with U.S. Embassies to create opportunities for understanding International and regional role in capacity building and APS**. This may seem like a non-intuitive suggestion, given that the U.S. DoS plays such a crucial role in the APS mission. However, given that APS objectives and its multinational methods may sometimes seem at odds with the DoS bilateral effort, this suggestion is of prime importance. During future APS engagements, strategic communications must be made with our own U.S. DoS.
11. **Arrange routine N50, N51 and N52 site visits to partner countries to coordinate and identify opportunities to fold into APS mission**. In the past, solicitations for partner participation have been focused on the APS planning conferences. During APS 2011, however, it began to become clear that this may not be the only (nor sometimes the best) forum for understanding the complete range of potential partner participation and finding good matches between one partner's need and another's contribution. In upcoming APS missions, it would be wise to plan a visit in country with maritime outreach coordinators and desk officers. APS planning staff will have an understanding of programmatic capabilities and outstanding needs. This would allow them to identify potential matches with partner capabilities.

Table 6E.3: This table is a summary of many of the key issues that have arisen regarding partner nation participation of APS: sustainment, synchronization, support role assignment, and strategic messaging and collaboration with the U.S. DoS. We list these, summarize the background and reasons why these matter, and list recommendations.

Key Issue	*Background*	*Why does it matter?*	*Recommendations*
Sustainment	The U.S. has a very specific approach in Africa. This may not be only approach and may, in some instances, present certain roadblocks. Also, resources for mission are limited. If we "go it alone", we will not be maximally effective.	1) Cost: unilateral action is too expensive. 2) Effectiveness: U.S. programs may not be as applicable as another country program. Also, perception of country intentions may differ.	1. Maintain a NAVAF APS International Maritime outreach coordinator position 2. Identify opportunities for partner-lead engagements and participation, and provide appropriate support. Partners may be able to contribute platforms, programs, people and/or paradigms. 3. Create and maintain an APS coordination website 4.Include international partners in APS planning and execution staff: 5. Evolve the APS program into a concept of Regional Leadership 6. N52 planners should regularly participate in NATO working groups. 7. Regularly hold the "Enduring Partners Synchronization Conference". 8. Conduct multitier engagement with partners. 9. Leverage APS in-country receptions as an opportunity to include participants of partner embassies. 10. Work with U.S. Embassies to create opportunities for understanding International and regional role in capacity building and APS. 11. Arrange routine N50, N51 and N52 site visits to partner countries to coordinate and identify opportunities to fold into APS mission.
Synchronization	Each country has its unique goals and vision in Africa; there are national and non-governmental programs on the continent to support development and to build the capacity of the maritime sector. There are few consistent ways that we track and harmonize these efforts. Even when we do have a partner nation ship, we provide very little synchronization with that ship's efforts.	1) Avoid duplicating efforts; 2) Maximize effectiveness of all ongoing programs.	
Support Role	The U.S. has traditionally taken a lead role in planning and executing APS engagements, with our partners playing a supporting role.	If multiple international players have an increased sense of ownership and investment in the program, this will serve as a force-multiplier, and allay some of the sustainment issues that the U.S. Navy faces. Shared ownership will give APS the strength to persist.	
Strategic Messaging to U.S. DoS	The U.S. DoS focuses on bilateral engagements and relationships. APS has a regional focus with international partners playing an important role in execution, effectiveness, and strategic communications.	We rely on the DoS to support APS efforts and to coordinate KLE and the media. If they don't understand and buy-in to international partner concept, operating in Africa and getting partner nation support will be more difficult.	

APS 2012 and the Way Ahead

Many of the concepts that we have introduced in this section are currently being supported and addressed by the APS planning staff. Perhaps the most significant is the introduction of the maritime outreach coordinator in N50 who serves as a point of contact –not to limit, but to promote contact- for all international partnerships. Many of the subsequent international and regional actions have been a direct result of this position.

Additional international actions include the following:

- After a request from the Danish Royal Navy, an assessments visit was conducted to

determine potential link-ins to the APS program. This has resulted in several projects becoming implemented under the APS banner, including Danish Diver training in Djibouti, a "Community Watch on the Water" program to be implemented in Mozambique, and a follow-on NAVAF visit to Denmark (October 2011) to explore the possibility of a Danish Frigate to be used as an APS platform during APS 2012.

- Australian representatives at the APS 2012 East FPC were the first APS participants from that country. They expressed a desire to continue this partnership.
- Norwegian staff talks at NAVAF in October 2011 have stimulated interest in Norwegian participation in APS. Swedish staff talks at NAVAF the following month stimulated similar interest in Swedish participation.
- Initial discussions are underway to establish a collaboration between the Mauritian Coast Guard and the Cameroonian BIR. (Note: the proposal for this collaboration is included in the appendix of this document).

Conclusions

In this section, we have evaluated the role of international and regional collaborations during APS 2011. We began by examining the partnerships that have historically existed in the APS effort, and then articulated the specific engagements that occurred during 2011. We called out specific anecdotal indicators of success that have strong links to the APS program, and identified the key issues involved in international APS participation. These issues include sustainment, synchronization, support role of APS programs, and strategic communications to the U.S. DoS. By identifying both the mission successes and the key concerns, we have made a series of recommendations for future APS engagements in order to enhance the role of international and regional players in the APS mission.

We conclude that APS effectiveness and sustainability relies heavily on the multinational nature of the mission. Long term effectiveness and sustainability of the APS program will only be possible if international and regional players take the lead in program development, management and sustainment.

7. Future Requirements for Assessing the APS Mission

Elizabeth Heider, Eve McAnallen, and Anne Siders

Introduction

Longevity of the APS program is limited by its ability to sustain Navy, DoD, and U.S. Government support. With leadership support, APS will continue to receive the funding, dedicated assets, favorable guidance, and key senior leadership engagement that make APS an effective operation. Increasing fiscal constraints, changes in the political climate, and leadership turnover will require APS to place increased emphasis on engagement with U.S. senior leaders.

To gain and sustain leadership support, APS must continually demonstrate its success as a program. This involves both telling a story and providing metrics that demonstrate that APS is promoting U.S. national security interests, that APS is achieving its desired end-state, and that APS is providing a positive return-on-investment. APS assessments should provide the necessary quantitative framework and qualitative narrative that are essential for real-time program evaluation, alignment with leadership strategic goals, and long-term programmatic success.

An effective APS assessment must not only provide the strategic evaluation that will inform leadership engagement but also provide regular, real-time, tactical feedback to inform mission command decisions. These dual tasks cannot be achieved through use of existing assessment models alone.

This section therefore proposes a framework for conducting routine, robust, and accurate operational and strategic assessments of the APS program. This model is based on lessons learned during APS engagements in 2009, 2010, and 2011. Several elements of this model were tested during the APS 2011 engagement and found to be effective. Such examples are provided within the main text of this section and in the appendices. We begin by referring to the requirements of APS assessments as given by AFRICOM. We then proceed to outline a plan for both operational and strategic level assessments.

AFRICOM strategic Assessments guidance

The requirements for assessing a TSC operation were set forth by AFRICOM during the October 2011 Theater Security Cooperation Conference in Ramstein, Germany. According to the brief of CAPT Brian Whitten (AFRICOM Assessments Division) the mission of the component Assessments Directive is to provide the Combatant Commander with integrated theater analysis, assessments, and recommendations to allocate and prioritize resources, to focus planning efforts, to make decisions to continue or discontinue actions, and to inform capability gaps.

Assessments of Security Cooperation (SC) initiatives have additional requirements that must be met. These are:

- Ensure alignment of SC effort to Command and AFRICOM objectives
- Monitor SC return on investment
- Recommend programmatic changes

CAPT Whitten went on to explain that effective assessments must ultimately answer the following questions:

1. Is progress being made in the theater toward achieving our effects?
2. Are we doing the right things to achieve our effects?

It becomes clear that these two questions may be divided along the strategic and operational lines of assessments. In the following subsections, we describe the framework for both operational and strategic assessments, delineating our assessments along the lines provided by AFRICOM guidance. Table 7.1 summarizes AFRICOM's assessments guidance and outlines a comprehensive framework for assessing the APS mission. In the following two sections, we describe the elements of this framework, suggest the data collection methods that will be required and, where possible, give examples and worksheets that operators and assessors would be able to use in implementing a routine, robust, and accurate operational and strategic assessment of the APS mission.

Table 7.1: An outline for conducting routine Operational and Strategic Assessments of the APS mission and related AFRICOM TSC initiatives.

<table>
<tr><th colspan="3">Framework for Conducting routine Operational and Strategic Assessments of the APS program</th></tr>
<tr><th></th><th>Operational Assessment</th><th>Strategic Assessment</th></tr>
<tr><td>AFRICOM Assessments Guidance</td><td>"Are we doing the right things to achieve our effects?"</td><td>"Is progress being made in the theater towards achieving our effects?"</td></tr>
<tr><td rowspan="3">Requirement</td><td>Characterize Operational Environment
Case studies
Partner paradigm analysis (surveys and interviews)</td><td rowspan="2">Measurable indicators of capability shift
Achievement of self-established milestones in Maritime Development Plans (partner reported)
Occurrence of positive events correlated to APS actions through use of Hill's Criteria for Causation (US measured)
Partner nation capability (exercise performance,operational successes and maritime investment decisions)
Relationship strength and quality (polling, survey and interview data)</td></tr>
<tr><td>Analysis of Contribution and Value of APS Effort for each Event
Pillars of MSD
Mission contribution to systems (materials and processes), skills, and relationships</td></tr>
<tr><td colspan="2">Maritime Development Plans
Design and track long-term Country Maritime Development Plan
Design and track long term Regional Maritime Development Plan</td></tr>
</table>

Operational Assessment

There are several elements of a successful operational assessment. First and foremost, the assessment must answer the question posed by AFRICOM guidance: "Are we doing the right things to achieve our effects?" In order to do this, we must first identify the operational environment and then accurately capture and characterize each APS event in order to determine whether the effort adequately addressed the specific requirements of that environment. An operational assessment therefore includes both an environmental picture and a measure of contribution.

It is important to recognize that mission assessment provides more than an abstract measure of success or failure, but is also an opportunity to re-evaluate and re-direct mission efforts. Operational assessments should give continual feedback to APS planning and execution, facilitating persistent refinement to plans and execution.

Environment Assessment

An effective operational assessment will identify the unique operational environment of each partner nation, thereby allowing APS to tailor the mission to make it most effective. Accurately mapping and understanding the social, institutional, historical and political landscape of our partner nations is critical for tailoring the mission to determine which APS engagement activities will have the most impact on maritime security.

There are multiple ways to understand and capture the operational environment, but we have found two methods to be particularly effective. The first is to construct case studies, and the second is to use partner paradigm surveys. These methods are complementary and should be used together. During APS 2011, both methods proved effective in providing mission direction and context.

In addition to these two methods, an operational benefits from inclusion of the self-identified and self-reported goals of African Partner Nations. Understanding our partners' goals is a key element to understanding the operational environment in which APS must operate. One mechanism to identify partner nation goals is the country Maritime Development Plan (MDP), a framework described in the following section on strategic assessments.

Case studies. These may be built by subject matter experts, such as academics, social scientists, analysts, country desk officers, host nation participants, or members of a U.S. embassy country team. An effective case study must be both specific and relevant.

1. ***Specific***. The case study must be specific to maritime sector development and to a single nation. All political, social, and historical context included in the study should have a specific tie-in to the mission objectives and should relay relevant mission information. Broadly directed social research is not useful to tailoring an operation unless its relevance and context are explicitly noted.
2. ***Relevant***. The case study should reflect real-time operational data. In a dynamic operational environment, it is essential that the person who constructs and maintains the operational environmental pictures for each

country is linked in to the evolving landscape. The most effective analyst will be present in the country and have a substantial information network. Information may be gathered by following ongoing social and media research and by conducting routine interviews of partner nation participants and stakeholders.

Example
The operational environment case study *Why APS Matters in Cameroon* was based on interviews and data collected from partner nation participants and through interactions with the U.S. Embassy in Yaounde, Cameroon, over the course of three APS iterations. This environmental assessment provides historical and political background on the Cameroonian maritime forces, performance assessment of previous APS engagements, and recommendations for future areas of effort. It draws on specific examples, data, and interviews in drawing conclusions. This is included in Section 8 of this document.

Partner Paradigm Surveys. An analysis of partner interviews indicated that our African partners perceived maritime sector development in specific paradigms that differed from U.S. perspectives. During APS 2011, we began to recognize the value in capturing and understanding these varied paradigms. Paradigm surveys of key partner participants led us to recognize the importance of understanding how African decision-makers prioritized their efforts in maritime security capacity building. In future APS assessments, we recommend that decision makers and stakeholders be surveyed for their paradigms and priorities in maritime sector development.

Example
During the 2012 APS Main Planning Conference for APS (held in Virginia Beach, VA, May 17-20, 2011) we conducted a survey of African partner nation participants in order to begin to understand their paradigms and priorities. We include a copy of this survey and a record of the results reported in the appendix for reference purposes.
African survey respondents perceived APS as a means to acquire training and systems and to build relationships. APS was considered particularly useful in facilitating regional and international relationships. A high priority was placed on the relationships formed between governments, between a host nation (HN) military and its government, and between regional stakeholders.

Understanding what our African partner nations expected and desired from APS engagements provided valuable insight into their willingness to support APS activities and the potential for lasting change. These paradigm surveys enabled APS to target its efforts towards relationship building and specifically relationship building between high priority participants.

Value and Contribution of APS Activities

Having established an understanding of the operational environment in which APS must achieve its objectives, an effective operational assessment will also necessarily include routine analysis of the contribution and value of each APS event. Whereas the

environmental picture identifies the requirements and challenges likely to be encountered during mission execution, the measure of contribution assesses whether the mission successfully met those challenges and requirements. Both are necessary to an effective mission plan. We have developed and tested a model for the contribution analysis based on the pillars for maritime sector development and supplemented by a recording system that sorts APS activities according to the divisions that our partners have indicated as the most important contributions of APS:

1. **Systems** that must be established, operated and maintained in order to enable readiness (including both materials and processes),
2. **Skills** that must be gained, practiced and tested in order to enable readiness, and
3. **Relationships** that must be created and maintained in order to facilitate solutions to maritime challenges and enable long term sustainment of efforts

Examples of the collection worksheet and spreadsheet used in this model are provided as appendices to this report.

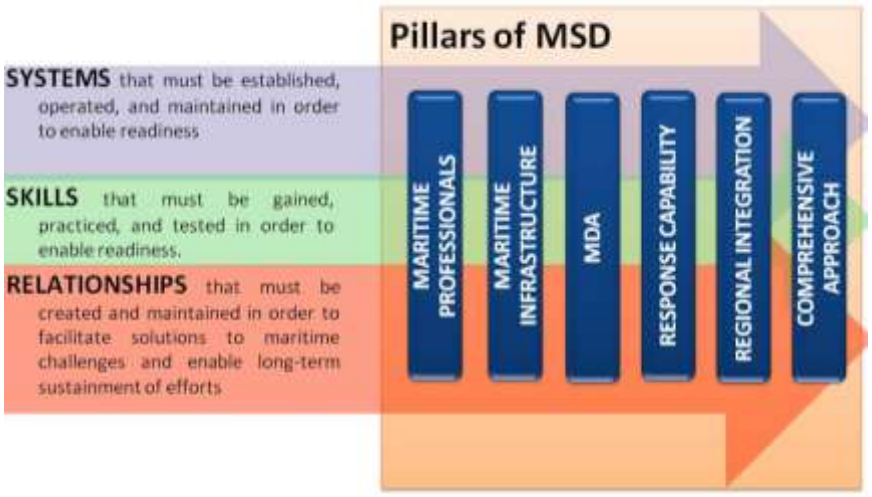


Figure 7.1*:* A graphical depiction of the way in which all pillars of maritime sector development rely upon a combination of systems (materials and processes), skills, and relationships.

The first step for evaluating an APS engagement is to identify the contribution of each activity to one or more of the pillars of maritime sector development. This allows APS to link its activities to operational guidance and, by extension, strategic guidance. This is an important first step, but it does not measure the extent to which the activity contributed to a pillar, nor whether the activity had any significant success in modifying the condition of that pillar. For this, we must find a different framework for considering the problem.

APS activities put systems in place that are necessary for MSS, establish skills necessary to use the systems, and facilitate the building of relationships that will be needed to implement and sustain both systems and skills. Figure 7.1 gives a graphical depiction of how these extend through all the pillars of maritime sector development. By consistently evaluating APS activities based on the systems that are emplaced, the skills that are taught, and the relationships that are facilitated and built, we are better able to evaluate the contribution of each activity to the MSD pillars. During APS 2011, we evaluated three separate APS engagements using this method (engagements in Togo, Cameroon, and Tanzania). For

reference, we include the Togo Hub assessment as an appendix to this report (see Appendix D).

SYSTEMS that must be established, operated, and maintained in order to enable readiness

Systems may include both materials (such as an AIS transceiver) and processes (such as a logistics supply chain). These are related, but separate elements.

A contribution assessment should therefore determine whether the processes and materials imparted during an engagement are correlated. For example, whether APS provides training on how to operate or maintain new equipment, or whether APS engagement improved supply chain management for maintenance of existing equipment.

If there is no drive to ensure that our partners are able to use the skills they learn on systems that they routinely use, it is unlikely that these engagements will result in long-term capacity building.

SKILLS that must be gained, practiced, and tested in order to enable readiness
This is a fairly straightforward analysis because APS has a large training component. Tracking the skills that APS trains is an important component of understanding the value of the APS engagement. During APS 2011, we learned that testing these skills and including a practical component to the training are also important. For a given APS engagement, tracking this information would fall along three separate queries:

1) APS events that imparted skills,
2) A list of the skills that these events were intended to impart, and
3) Indicators that these skills were or were not actually imparted.

This last column would normally include instructor feedback and student observations from the surveys (this would, for instance, tell us whether the skills were being taught to the appropriate trainee). After-action reports, exercise evaluations, and interviews of participants following the hub may also give valuable insight about skill retention and utilization.

RELATIONSHIPS that must be created and maintained in order to facilitate solutions to maritime challenges and enable long-term sustainment of effort

A primary value of APS lies in its ability to facilitate, legitimize, and construct important relationships. What happens (or does not happen) in Africa is driven by commitment of the people who implement and benefit from the system. To be effective in Africa, a project has to leverage African priorities. APS is comprised of a web of relationships: US Navy to foreign partner, to African partner, foreign partner to African partner, African partner to African partner. The APS mission provides the bridge for these relationships. Relationship building, therefore, becomes a necessary driver for the APS mission, not an ancillary effect. If we appropriately characterize the value of APS activities, we may tailor them in order to build the relationships that are needed to implement and maintain the systems and skills that would be most

effective in achieving our strategic end state. Additionally, if we acknowledge that relationship building is an objective of the APS mission, rather than a happy side-effect, we can enhance existing activities and increase their value and potential impact.

Table 7.2: Groups and organizations who have historically participated in APS.

APS PARTICIPANTS
1) U.S. Military (DoD)
2) U.S. Government (DoS)
3) HN Military
4) HN Government
5) HN Non-Military Maritime Stakeholders
6) HN Commercial Interests
7) Regional Military
8) Regional Governments
9) Regional Stakeholders/Publics
10) International Military
11) International Stakeholders/Publics
12) NGOs

Our metrics for tracking the relationship building value of each APS activity require the following information: *Who were the participants of a particular event, and what was the nature of their interaction?*

The first four elements of relationship building are "passive" in nature, and less likely to result in a strong relationship between participants. The final three are "active" in nature, and more likely to result in a robust relationship.

Table 7.3: Elements of relationship building and their definitions as they apply to individual APS activities.

Element of Relationship building / maintenance	Definition
Passive elements of relationship building	
1. Access	There is some identified need for the players participating in this activity to work with one another in the future AND this activity helps the players understand the jobs and responsibilities of the other players relative to their own position.
2. Exchange	This activity facilitates information sharing between the players
3. Openness	This activity encourages honesty during the exchange
4. Assurances	This activity allows players to demonstrate their commitment to the relationship
Active elements of relationship building	
5. Interdependence	During this activity, players will rely on one another
6. Sharing of Tasks	During this activity, players will work together to solve a problem or perform a task
7. Negotiating Differences	This activity will allow players to identify differences in policy and/or operations AND facilitate the development of a mutually beneficial compromise in future exchanges

The first part of this question is easily recorded. In Table 7.2, we list groups and organizations who have historically participated in APS. This provides a reference for us as we begin to sort through the type of relationship building that does occur, and the type that ought to occur.

Our next step is to characterize the type of interaction that a particular activity facilitates to determine the extent to which a relationship was built or maintained. To do so, we borrow from the social science of relationship theory to define the various elements that may be present in relationship-building activities.[62,63] This allows us to systematically categorize the activities of an APS engagement in terms of its relationship-building merit. These elements are *access*, *exchange*, *openness*, *assurances*, *interdependence*, *sharing of tasks*, and *negotiating differences*. We provide specific definitions for these elements in Table 7.3 to remove as much ambiguity as possible when determining the nature of an engagement.

Table 7.4: Overall relationship building profile measuring the interaction and elements of relationship building between the groups participating in the APS 2011 Togo hub.

	U.S. Mil	U.S. Gov	HN Mil	HN Gov	HN Pub	HN Comm	Reg. Mil	RegGov	RegPub	Intl Mil	Intl Pub	NGOs
U.S. Military (DoD)	6	6	38	3	10		10			10		
U.S. Government (DoS)			7	2						2		
HN Military				9	5		17					7
HN Government												7
HN Non-Military Maritime Stakeholders												
HN Commercial Interests												
Regional Military							7					7
Regional Governments												
Regional Stakeholders/Publics												
International Military												
International Stakeholders/Publics												
NGOs												

In order to obtain a "relationship-building profile" for each APS engagement, we construct a table that allows us to capture the participants of each event and the nature of their interaction. We give an example of a "profile" table in Table 7.4, which gives the relationship profile of the APS 2011 hub in Togo. For each event, we consider the participants that were involved and the elements of relationship building that were part of that exchange. For instance, a cooperative training between U.S. Sailors and Host Nation Sailors that involved four elements of relationship building would populate the intersection of these two groups with the

[62] "Guidelines for Measuring Relationships in Public Relations" by L.C. Hon and J.E. Grunig, 1999, Institute for Public Relations

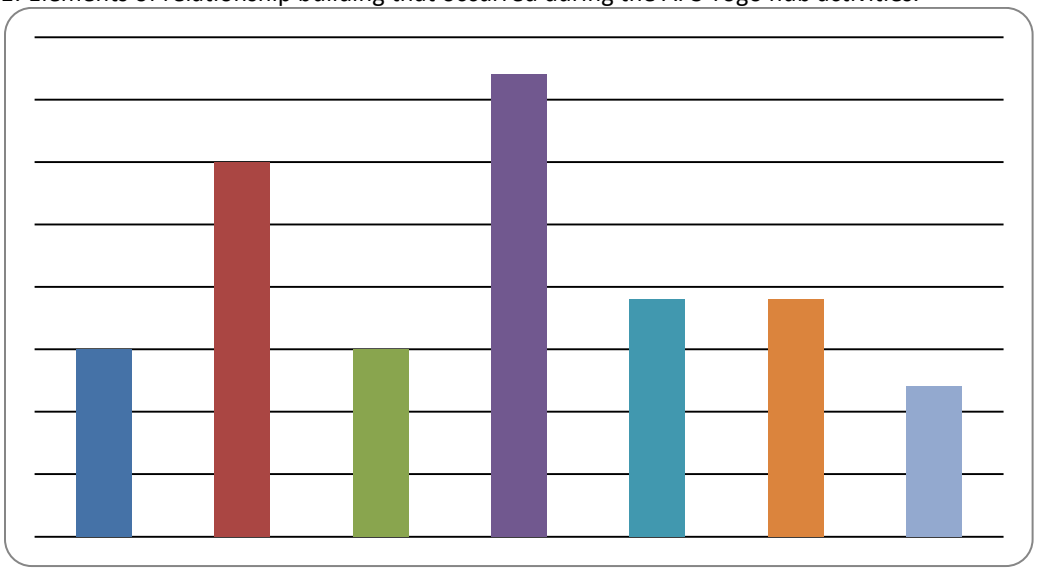
[63] "Segment Selection by Relationship Strength" by J.M.C. Schijns and G.J. Schroder, 1995, University of Limburg, Maastricht

number “4”. This means that any single interaction between two groups has a maximum value of 7. The next activity that provided interaction between these groups would add the relationship value to that given by the previous activity. These additive set of values allow us to populate the blocks of Table 7.4 with a meaningful number. We may then compare and contrast the relationship building that is assumed to have occurred between each group.

The overall level of participation between two groups may be seen by summing the number of elements of relationship building that occurred during the exchange. This would allow any single interaction to have a maximum value of 7. Further analysis would allow us to break down the nature of these engagements along each of the relationship building elements, dividing the activities into primarily “passive” relationship building, or “active” relationship building. We display this type of analysis in Chart 7.1.

By examining the groups that have interacted during an APS event in this way, it becomes possible to identify the groups that have the highest value relationship building activities, as well as groups that are underrepresented or absent from APS engagement. By contrasting this with the country political and institutional environments, it may be straightforward to inform decision makers about opportunities and successes in the APS engagement, particularly in its role as a relationship-builder. This type of analysis also aids in a strategic-level assessment in determining the impact of APS.

Chart 7.1: Elements of relationship building that occurred during the APS Togo hub activities.



An operational assessment that includes both an environmental assessment and a measure of contribution would be an effective tool towards answering AFRICOM’s directive question: *“Are we doing the right things to achieve our effects?”* Both elements of the operational assessment should be conducted as a routine element of a regular assessment schedule. The operational environmental assessment must be specific and relevant and should be based on specific examples derived from case studies and informed by African partner paradigms and

priorities. The measurement of contribution should not only identify contribution to the pillars of Maritime Sector Development but also measure the extent of their impact through an assessment of the systems, skills, and relationships imparted to the partner nation.

Table 7.5: A list of data that should be collected in order to measure the value and contribution of APS activities. An operational assessment necessarily includes routine recording and analysis of the contribution and value of the execution of each APS event

For Every APS Activity, track the following:

- How did the activity contribute to pillars of Maritime Sector Development?
  1. Trained Professionals
  2. Maritime Domain Awareness
  3. Maritime Infrastructure
  4. Response Capability
  5. Regional and International Cooperation
  6. Comprehensive Approach
- What were the **Systems** (materials and processes) that were put in place by this event?
- What were the **Skills** that were trained by this event?
- What were the **Relationships** built and maintained by the event?

Strategic Assessment

An operational assessment only achieves half of the AFRICOM guidance. A strategic assessment of APS is necessary to answer the second question posed by AFRICOM: "*Is progress being made in the theater towards achieving our effects?*" This is a challenging question to answer, and we present two complementary methods that together may provide an answer. The first method for gaining a measure of partner nation progress as a result of APS programmatic efforts has crossover value in conducting an operational assessment: it is the development, tracking and coordination of *Maritime Development Plans*. The second method applies a set of criteria borrowed from epidemiology in order to allow us to determine whether APS engagement was a causal factor in the complex system of partner nation maritime development.

Maritime Development Plans

One measure of partner nation progress is a straightforward assessment as to whether partner nations have achieved their self-identified maritime security development goals.

The Maritime Development Plan provides a mechanism through which partner nations identify and communicate their national maritime development goals to APS. With areas of focus derived from both the DoS Maritime Security Sector Reform doctrine and the pillars of Maritime Sector Development, our partners create measurable, short term (1, 3, or 5 year) goals, identify systems, skills and relationships necessary to facilitate these, design tasks, and create a plan of action & milestones. Through the MDP, APS not only has insight into the partner's national goals but also their implementation schedule, against which it is possible to measure progress. At the end of this document, we give examples of Maritime Development Plans that have been developed by our East African Partners.

Each partner nation goal may also be used by the APS / NAVAF desk officer leads to generate a regional goal for US engagement. Desk officers and APS planners may use MDPs to consistently identify opportunities for APS to support partner goals, and may measure partner milestones as a metric for capacity building success. MDPs provide a metric against which partner nation progress can be measured, but MDPs do not necessarily measure APS contribution towards that progress. In order to determine the extent of APS contribution towards that success, APS must apply criteria for causation.

Measurable indicators of capability shift – Hill's Criteria for Causation. In this more U.S.-centric method of evaluation, we must observe evidence of improved partner nation capability and then apply criteria for causation to determine whether APS engagement activities actually caused the improvement. If APS engagement did not cause the improvement, then the improvement cannot be considered evidence of success for the APS program.

Strategic indicators of partner capability may include the following:

- performance in maritime exercises,
- real-world response to maritime threats,
- investment decisions to improve maritime capacity, and
- results of surveys and polling data that indicate improved relationship amongst partners that APS has engaged.

These indicators may be observed by U.S. personnel or through self-reporting by African partner nations. Many instances of success may be self-reported by partners through surveys, interviews, and open-source reporting. Often, their reports will be in the form of a narrative, and these narratives become important metrics. We have referenced many of these anecdotal indicators in the operational assessment for APS 2011. As this type of information becomes more accessible and more frequent, however, it will be important to not only track the occurrence of individual incidents but also to find ways to understand what role APS has played. In other words, it becomes a question of causation versus correlation. We may ask questions of the type: *What role did APS play in enabling the Togolese Navy to conduct this particular intervention?* Or *Did APS play any part in the governmental decision to provide their navy with more funding for fuel?*

The question of causation versus correlation is not a new one. Epidemiologists have used a set of criteria, known as the Bradford Hill criteria or *Hill's criteria for causation,*[64] to determine causal factors in complex illnesses, have adapted that list of criteria to serve as analogous criteria for APS success:

1. **Strength of association**: *A strong association is more likely to have a causal component than is a modest association.* In the case of particular anecdotal evidence: does there exist a strong association between APS activities (such as training) and our partner nation's response?
2. **Consistency**: *A relationship is observed repeatedly.* The repeated observation of an association included "different persons, places, circumstances and time". If a particular type of engagement or training results in the same type of response for two countries, this criteria would be satisfied.

[64] Bradford-Hill, Austin, "The Environment and Disease: Association or Causation?" Proceedings of the Royal Society of Medicine 58: 295–300, 1965. PMC 1898525. PMID 14283879

3. **Specificity**: *A factor influences specifically a particular outcome or population*. If one observed an association that was specific for an outcome or group of individuals, this was a strong argument for a causal effect. For instance, if the recipients of APS training in MDA were able to successfully maintain a COP during an exercise, while those who had not received the training were not, this would fulfill the criteria of specificity.
4. **Temporal relationship:** *The factor must precede the outcome it is assumed to affect*. We cannot claim success for partner capabilities or responses which pre-dated APS engagement.
5. **Gradient** (dose-response relationship): *The outcome increases with increasing exposure*. For APS, does long-term, repeat, or significant exposure to the program lead to increased indicators of capability?
6. **Plausibility:** *The observed association can be plausibly explained by substantive matter explanations.* Is it plausible that the APS engagement lead to a particular capability improvement in our partner? Is there a rational relationship between the APS engagement and the observed outcome?
7. **Analogy** (consideration of alternate explanations): *A cause has already been demonstrated in analogous exposures and outcomes.* It will be important to consider the role that other factors play in a particular partner nation capability. If, for instance, the Indian Navy has consistent VBSS training and exercises with the Mauritius Coast Guard, care should be taken to avoid claiming that a Mauritian response using VBSS may be attributable solely to APS VBSS training.[65]

In order to track long-term success of the APS program, and to make the argument of programmatic success to leadership, we recommend that APS conduct a routine strategic assessment based on an evaluation of partner nation capability development. This strategic assessment should reference self-identified national goals set forth in the national Maritime Development Plans as well as APS regional engagement plans. The strategic assessment should also observe operational indicators of partner capability and apply Hall's criteria of causation to determine the extent to which APS contributed to the observed event. Through such analysis, APS can demonstrate not only that partner nation capabilities are, in fact, improving but also that APS engagement activities are responsible for that improvement.

Conclusions and Recommendations

In this document, we have laid out a framework for conducting routine, robust, and accurate operational and strategic assessments of the APS program. Such assessments are required by AFRICOM assessments. In order to meet the mission defined by AFRICOM assessments, APS operational and strategic assessments should inform leadership decisions in allocating and prioritizing resources, focus planning efforts, assist in deciding whether to continue or discontinue actions, and inform capability gaps. Essentially, AFRICOM poses two questions that must be answered:

3. **Operational Assessment**: Are we doing the right things to achieve our effects?
4. **Strategic Assessment**: Is progress being made in the theater toward achieving our effects?

[65] The original Bradford Hill Criteria included two additional criteria, coherence and experiment, that are not applicable to the APS mission and are therefore not included in the text. Coherence is essentially the negative re-phrasing of plausibility (if it is not plausible that an event caused another, then it is not coherent), while experimentation notes that randomized experiments are more substantive proof of causation.

We have argued that an effective operational assessment will both provide an operational environmental assessment before APS engagement and evaluate the value and contribution of APS activities to the maritime sector development model. This two-pronged approach will ensure that mission plans adequately address environmental requirements and challenges, and it will provide real-time operational feedback to permit alterations in execution. In order to achieve this result, the operational assessment must be based on specific examples, real-life experience, and extensive communication with our partner nations.

To complement the operational assessment, we recommend two separate but complementary methods for conducting the strategic assessment. The first method is the development, tracking and coordination of *Maritime Development Plans.* Achievement of milestones identified in the MDP demonstrates improved partner nation capabilities. The second method applies a set of criteria to observed instances of operational success in order to determine APS contribution to partner nation development. We recommend that Strategic indicators of partner capability are routinely captured. These include the following:

- performance in maritime exercises,
- real-world response to maritime threats,
- investment decisions to improve maritime capacity, and
- results of surveys and polling data that indicate improved relationship amongst partners that APS has engaged.

These indicators would then be subjected to an adaptation of the "Bradford Hill Criteria", allowing us to determine causal factors in complex systems. For both methods, we recommend that strategic indicators of partner capability be routinely captured in a database.

Conducting the routine analytical assessment outlined in this document for the APS mission will provide the operational and strategic feedback necessary for APS planners to make valuable course corrections in an on-going mission and to demonstrate the long-term success of the APS program.

8. Why APS Matters in Cameroon: A Case Study of APS Impact in the Gulf of Guinea

Elizabeth Heider

Section Summary

- APS has played a significant role in maritime development and maritime response in Cameroon, and has contributed to the improvement of maritime security in Cameroonian territorial waters. Significantly, APS also gives "cover" to all Cameroonian maritime services to work together without competing for resources against one another. It also provides a forum for regional cooperation and interoperability.

- APS engagement with the Cameroonian Navy has trained sailors who use those skills in MDA, boat operations, and METOC in their daily patrols and watch standing. APS has also brought attention to maritime challenges and, significantly, helped craft the Navy's new identity during a period of flux driven by the introduction of Cameroon's new maritime force, the BIR Delta. The Cameroonian Navy now emphasizes its role as a regional player through CEEAC Zone D operations, through APS, and through the APS related exercise OBANGAME EXPRESS. The future role of the Cameroonian Navy may be as a greater regional leader through the formation of a regional specialty training center under the APS banner and supplemented by regular APS engagements. This would place greater emphasis on the APS "Train-the-Trainer" program, and related specialty support. There is also an opportunity to leverage existing maritime incident reporting programs to begin a community watch on the water program similar to the one recently implemented by the Kenyan Navy and MCAT.

- APS has also played a major role in the maturity of the operationally superior BIR Delta through training, infrastructure development, civil-military engagements, and as part of a larger U.S. maritime development plan (through 1206 U.S. donations of boats and other equipment and special forces training). Most importantly, APS and the exercise OBANGAME EXPRESS has provided the BIR Delta with its primary legitimate operational forum for regional interaction and coordination with other in-country maritime institutions. Analyses of maritime incidents demonstrate that regional and in-country interoperability will be crucial for successfully combating maritime threats in and about Cameroonian territorial waters.

- The primary threats to maritime safety and security in Cameroonian waters are piracy, at-sea robbery, and land-based criminal acts with sea-based transportation. Additional maritime threats include illicit trafficking, such as the smuggling of goods and people, and illegal, unreported and unregulated fishing (IUU).

- The number of maritime incidents in Cameroonian waters near the Bakassi region has diminished since 2009 when the BIR Delta began to operate in that area, but analysis reveals that increased BIR presence has displaced, rather than eliminated, these attacks to regions just outside Cameroonian jurisdiction, calling for a change in BIR tactics to include regional coordination and cooperation. Furthermore, the relative level of violence in these attacks has worsened, with sharp increases in the numbers of dead, injured and captive.

- It stands to reason that with this increased level of violence maritime criminals may be gaining confidence, capacity, and capability. It is possible and likely that these criminals will, as more powerful and confident adversaries, return to the target-rich Cameroonian oil platforms, further south into Cameroonian waters, and conduct more criminal acts ashore and using the sea as an escape route (such has already been observed in Cameroon in recent years). Because of this, it is imperative that the BIR and Cameroonian Navy have the tools needed to successfully fight such threats.

- Regional maritime safety and security cannot be achieved with a single military fighting force, regardless of its proficiency. It will be argued that the development of regional partnerships, relationships between maritime institutions in Cameroon, and relationships between the military and public needs to be proactively targeted, and that APS has proven a valuable forum to do so.

Introduction

The following is a case study of APS engagement in Cameroon, a country that has been a primary partner with APS since the beginning of the program in 2007. Cameroon's military structure and recent changes to military maritime institutions, as well as the emergent maritime threat from piracy provide a unique opportunity for exploring the impact of the APS engagement.

In this section, we discuss the maritime organizations in Cameroon, their capabilities, the maritime threats they face and the history of APS in that country (with particular emphasis on the 2011 engagement). After framing this context, we present evidence that the APS effort is having the intended effect of improving Maritime Safety and Security in the region. Finally, we recommend goals for APS engagements in Cameroon to build on previous engagement and to maximize the use of resources and the environment. We then offer tactical and operational observations that future APS engagements will be able to leverage to achieve strategic goals in the region.

Cameroon's military force is divided into five groups: The Joint Chiefs (consisting of the Army, Navy, Marines, and Air Force), the CNSP (emergency response and firefighters), the Gendarmerie (the state police), the Presidential Guard, and the BIR. The history, mandate, composition, capabilities, and chain-of-command of these institutions differ from one another – a situation that adds a considerable layer of complexity to APS planning, execution and assessments.

Strategically, it is difficult to predict how the competing interests of each group will play out in creating long term maritime security in Cameroon and in the region. Consider for instance that the well equipped, specially trained, and operationally superior BIR Delta (the BIR maritime unit) have decreased reported maritime incidents and acts of piracy in Cameroonian waters from 40 incidents (5 persons killed, 8 injured, 4 hostages) in 2009 before the BIR became maritime operational to 16 (6 persons killed, 5 injured, and 15 hostages) in 2010 to 8 (14 persons killed, 5 injured, and 11 hostages) in 2011 (JAN-AUG). They have accomplished this through exceptionally aggressive tactics.

The BIR Delta have styled themselves as a Cameroonian coast guard, however, a recent presidential mandate has expanded the BIR maritime organization to include a complete Cameroonian Coast Guard: a separate entity from the BIR Delta. In this presidential decree, the BIR Delta would continue

their mission in the area around the Bakassi Peninsula, while the BIR Coast Guard would have jurisdiction of the remainder of the Cameroonian TTW out to 12 nautical miles. Traditional BIR training and philosophy have prepared them these forces for non-compliant boarding and Special Forces missions. However, these TTPs are not intuitively converted into the public service mandate of a coast guard. As the new BIR coast guard is formed, there may be a need to import a new set of tactics and rules of engagement, different from those of the parent BIR organizations. By routinely engaging the population in a positive (public service) way, the BIR may be more effective in curbing the piracy element by eliciting cooperation and denying the pirates safe havens.

Interviews with BIR Delta leadership over the past two years have revealed that, although the BIR are interested in APS as a mechanism for absorbing training, they do not desire the sort of regional cooperation that other naval organizations (including the Cameroonian Navy) have cited as a benefit of APS. This may become a roadblock in improving overall maritime safety and security in the Gulf of Guinea, particularly when one considers that the acts of piracy which are diminishing in Cameroonian waters appear to have been merely displaced. Piracy is increasing in Nigerian territorial waters, and acts of piracy have recently occurred as far northwest as Ghana and Benin. If the BIR, along with other emerging military players in the GoG do not develop a paradigm of communication, cooperation, and sharing, the mutually copacetic interests of maritime safety and security in this region will not be met. Of course, the capable military force we have just described is the exception to the rule amongst the GoG countries, and among the other military organizations in Cameroon.

The mandate for the BIR maritime capability is in its infancy. Before 2009, the directive for maritime safety and security lay with the Cameroonian Navy and Naval Infantry, organizations that struggled with this task while suffocating under a purportedly corrupt leadership. It is not surprising that these organizations are now under pressure to redefine themselves, and to develop mission sets and capabilities that will allow them to remain relevant. It is in this environment that we see an increased sense of urgency and desire for participation in APS. This desire arises from a need to fill the gap in training and equipping forces whose own supply and training programs are given short shrift when compared to their BIR counterparts[66], and whose interaction with the U.S. military is felt to give them a greater legitimacy in the eyes of both the public and government. The Navy has found increased identity in a role of regional player, participating in the regional operations of CEEAC Zone D (whose headquarters are in the Cameroonian Naval facility in Douala), and participating in the U.S.-led regional exercise, OBANGAME EXPRESS. Their self-reported operations and their participation in OBANGAME allow us to track progress in maritime capability from year to year. More important to an operational assessment, however, are the indicators within the maritime leadership of investment in long-term solutions to maritime challenges, and that they are driving to play a leadership role in these solutions.

Data

The sources in this section are, for the most part, original primary sources. Early source material was derived from direct operational observation and interviews during the APS 2009 mission of the USS NASHVILLE. More recent sources are from interviews following the APS 2010 engagement, and then again in September 2011. Cameroonian representatives to the APS 2011 Final planning conference (Libreville, Gabon, September 2010), the APS 2012 Initial Planning Conference (Stuttgart, Germany February 2011), the APS 2012 Main Planning Conference (Virginia, U.S.A., May 2011), and the APS

[66] Some observers have noted that this may be partially due to superior resource management and less corruption in the BIR leadership relative to their Navy counterparts.

West 2012 Final Planning Conference (Cape Verde August 2011) were also interviewed. Due to the sensitive nature of some of the material, the identities of all primary source interviews are protected. Additional source material includes after-action reports from APS hub participants, analysis of the June 2011 APS Cameroon Hub conducted by N9 Analyst LT Richard Amerine, and the assessments of the exercise, OBANGAME EXPRESS conducted by N9 Analyst LT David Lindeblad and CNA Analysts Lesley Warner and Lonn Waters. Where possible, data has been checked against secondary sources (given the obscure nature of the material, this is frequently not possible), and with APS participants and resident APS subject-matter-experts. All secondary sources are referenced within the document.

Cameroon and its Maritime Threats

Cameroon and its territories are former French and British colonies with 250 separate ethnic groups and a population of 19 million. Its primary GDP (reported by the DoS as $21.88 Billion in 2010) derived from oil revenues and timber extraction. A 1070 km oil pipeline (a controversial project financed by the World Bank and led by Exxon-Mobile) spans the country from Chad to the dock in Kribi; there are oil wells offshore in the Bakassi region and around Limbe. Cameroon territories owned by France were given independence in 1960, and territories owned by Britain were given independence one year later. The country is a republic, governed by a strong presidency. Paul Biya, who was appointed to the presidency in 1982 and recently (2008) amended the constitution to remove presidential term limits (an action that stimulated public protests), will be running for re-election in October 2011.

a. 

b. 

Figure 8.1. a. Nigerian Trawler LILY 1, the victim of at-sea robbery (date of attack is unknown but we estimate it to be 2008 or 2009). b. The calling card left by attackers on board the LILY 1 claims political affiliation with the "Bakassi Freedom Movement", BFM. (source: 2010 CEEAC Zone D brief)

The primary threats to maritime safety and security in Cameroonian waters include piracy and at-sea robbery, as well as land-based criminal acts using the sea as an escape venue. Additional maritime threats include illicit trafficking, such as the smuggling of goods and people, and illegal, unreported and unregulated fishing (IUU).

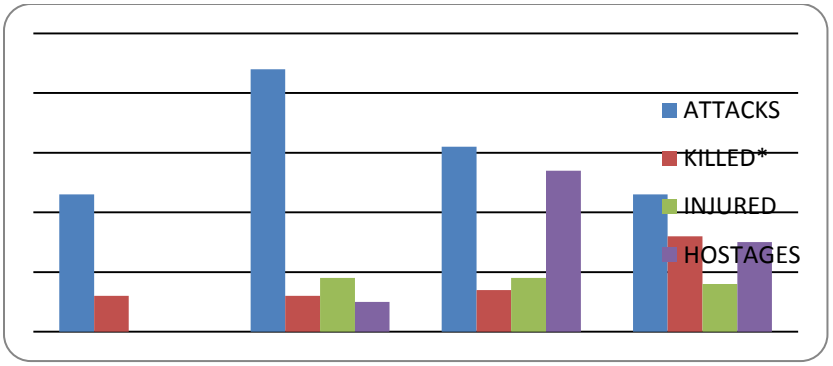


Figure 8.2. Recorded maritime incidents in the regional waters of Cameroon, Nigeria and Equatorial Guinea since 2008 (source: data from a host nation interview. For complete data, see Appendix F). The blue column represents the total number of maritime incidents, the red column is the number of persons killed; number of injured are in the green column, and number of hostages in the purple column. It is clear that, although the number of overall attacks appears to be decreasing, the methods of the enemy are becoming more aggressive, with greater numbers of killed, injured, and hostages taken (note that pirates/assailants casualties are not taken into account here).

Many maritime attacks and maritime threats are perceived by the Cameroonian public and leadership to originate in Nigeria. Although we could not determine the truth of this assertion, a large percentage of incidents are certainly concentrated in the regional waters shared by Nigeria, Equatorial Guinea, and Cameroon. It is clear that certain criminal acts at sea attempt to gain legitimacy by claiming affiliation with political ideology. For instance, the robbers of one fishing trawler claimed affiliation with the Bakassi Freedom Movement (see Figure 8.1).

According to many sources, maritime related criminal acts in the Gulf of Guinea are becoming increasingly violent. This seems to be upheld by data that was shared with me by a well-connected interviewee. We include this information in Appendix F (at the end of this report) and draw from this information and other interviews to characterize the nature of the maritime threat.

In 2008, many maritime attacks recorded in and about the Bakassi region held much of the same character as the attacks on fishing trawlers in more northern Nigerian waters (as reported to me in a 2009 interview with the leadership of the Nigerian Fishing Trawlers Organization. This information was also published independently in an ACSS article[67]). These attacks were characterized by boarding and theft of equipment and personal property. On August 28 2008, three banks in Limbe were attacked, with the pirates escaping through maritime routes. During this attack, one person was killed, 6 persons were wounded, and a safe was stolen. Other similar land attacks have included an attack on the presidential palace in Equatorial Guinea (2/17/2009) and violent bank robberies in Douala (3/18/2011). The number of maritime incidents in this region appears to have diminished (notably after the BIR began to respond and increase patrols in the region) but the relative violence of the attacks seems to have worsened. The number of dead, injured, and captured is on the upswing.

[67] A Vogel, Navies versus Coast Guards: Defining the Roles of African Maritime Security Forces Africa Security Brief, Africa Center for Strategic Studies, NO. 2 / DECEMBER 2009

a.  b. 

c. 

Figure 8.3. a. Fast-boat smuggling "Éro" from Limbe (Cameroon) to Calabar (Nigeria) and b. The catch of a trawler fishing illegally and using illegal methods in Cameroonian waters, c. Human trafficking from Gabon collected by a CEEAC Zone D Maritime Center (CMC) ship (source: 2010 CEEAC Zone D brief)

Maritime incidents involving illegal trafficking have also been purportedly prevalent in Cameroonian waters. Our information on these incidents is less complete than the piracy incidents. However, both CEEAC and the Cameroonian Navy have reported that smuggling is a significant problem, and that the Navy must respond to illegal fishing in the EEZ (Figure 8.3b).

Those interviewed in the Navy and BIR did not believe drug smuggling to be a major concern, but that smuggling of expensive commodities such as the desirable regional vegetable, Éro, is moved on fast boats from Cameroon to Nigeria (Figure 8.3a). Human trafficking is also posing a problem, and considerable pressure is on the regional navies to exercise restraint and to act humanely when dealing with trafficked individuals (Figure 8.3c).

Cameroonian Military Maritime Institutions

The following section, which comprises the foundation of this report, discusses the various maritime institutions in Cameroon, their capabilities, mission sets, and social factors that may play a role in their ability to respond to maritime threats. Throughout this introduction, we discuss the interplay of each institution with APS and construct recommendations based upon current trends, needs, and capabilities.

We begin this discussion of the Cameroonian Military Maritime institutions with their most recent member, the BIR. The presence of the BIR during the past decade has served to significantly alter the nature of other military institutions; it is therefore useful to begin here. Following our discussion of

the BIR and their maritime component (the BIR Delta), we touch upon the Navy, the coordination body, the *Délégation générale à la Mer* and the regional maritime coordination body, CEEAC Zone D. There exists a maritime component of the Gendarmerie but we do not discuss them in this report.

Figure 8.4. BIR Insignia (source: BIR after action report)

BIR

The Rapid Intervention Battalion (*Battalion d'Intervention Rapide*, or BIR) was formed in 2001 by President Paul Biya, placing Israeli born COL (ret) Abraham Avi Sivan in charge of training. COL Sivan, a personal friend and advisor of President Biya, had successfully implemented training measures for the Presidential Guard to improve their capabilities and professionalism. His success in this role purportedly inspired President Biya to request that he create a special fighting force to combat a growing problem of highway banditry, the 'coupeurs de routes' in the northern regions of Cameroon (particularly along the oil pipeline from Chad). According to Cameroonian press reports, between the years of 2006 and 2008, more than 600 people were killed in Cameroon highway banditry attacks and US $8.9 million taken in ransom in 2007 alone.

In order to avoid becoming enmeshed in the corruption that inundated the other armed services (according to several interviews, this corruption extended to the Joint Chiefs of Staff), COL Sivan established a rule that his recruits for the BIR would come from the Cameroonian public, not reeducated from any other armed service (in fact, previous military service meant automatic exclusion). Furthermore, the BIR followed a different chain of command than the rest of the military. The BIR have a relationship with the Ministry of Defense (MoD) but, rather than answering solely to MoD, the BIR have a line to the Prime Minister who reports to the President (note: this arrangement has had operational and tactical implications for APS training because request for student names is submitted to the Ministry of Defense, an organization that is not affiliated with the BIR).

Training

Initiation into the BIR is harsh. According to one observer, "they bring civilians in and take them through big big butt pain. The whole point is to take the civilian out of them and get them used to the military…make these guys hard to make them stand and follow orders". A new recruit will spend his first four months sleeping on bamboo slats set atop lava rock, a makeshift two-man teepee all that protects him from the onslaught of the rainy season (see Figure 8.5a). He will not eat in the galley. Sometimes, he will not eat at all. He will be denied sleep. He will be forced on long marches and subjected to extreme physical stress. He will jump from the height of a 2 story building onto lava rock; he will slog through the mud. According to one interview, a recruit was made to carry a large log around the base while other soldiers beat him with sticks. When he dropped the log, his tormenters, "beat the shit out of him." At the end of the four months, recruits are taken on a 400 km (248 miles) 7 day march, 35.4 miles per day (this will earn the recruit a red braid on his uniform, a point of

extreme pride). This final march is considered crucial to "toughening up" the BIR recruits. One interviewee recounted an incident in 2010 when a BIR troop was shot in the leg during the course of a firefight with pirates. In spite of his injury, the soldier continued to engage the enemy for two additional hours. His fortitude and bravery were praised by COL Sivan who then asked him, "how did you continue to fight with the pain of that injury?" The soldier replied: "This pain was easier to bear than the pain of the 400 km march at the end of basic training."

It is not uncommon for recruits to suffer excessive injuries or die during these first four months. Of this latter occurrence, those we interviewed expressed this as an inevitable side-effect: "when recruits die, they die." Of the 1600 recruits who began training in March 2011, 200 have since left the program voluntarily, been forced out, become too injured to continue, or have died.

a.  b.

Figure 8.5. a. Two man teepees used by new BIR recruits (source: In-country interview), b. Soldiers on the Man-O-War base in Limbe, Cameroon September 2011 (source: Heider personal photograph)

Although the training methods are extreme, the rewards for being a BIR soldier are high, and considering the difficulty of basic survival in Cameroon, the increased mortality risk of BIR basic training is not considered terribly shocking. BIR troops are paid well, and their equity in the community is soaring. The BIR brand and uniform are viewed by the public as a distinct social class replete with special privileges. "When the BIR come down the street, everyone gets out of the way," people frequently say. Every item of the BIR uniform has a BIR marker on it – down to the multi-tool sheaths. The BIR bakery imprints the BIR emblem on its bread. There are BIR water bottles, ball-caps and tee-shirts. It should be noted that these items are

not available to anyone outside of the BIR organization, increasing the exclusivity of these forces.

Those who last through the first four months of training are taught a variety of topics including weapons handling, hand-to-hand combat (based on Krav Maga, the Israeli martial art), defensive tactics, physical security and combat marksmanship, maintenance/engineering, and medical trauma and casualty care. Those in the new maritime unit (BIR Delta) are also taught swimmer and water competency, small boat skills and tactics, coxswain and engineering/outboard motor, vessel boarding maritime interdiction operation, and Riverine live fire (note: this does not constitute a complete list of BIR training courses). Trainers include Cameroonian, Israeli and U.S. forces. The BIR have participated in APS courses since the USS FORT MCHENRY first came to Cameroon in 2008.

Figure 8.6. Acts of robbery and Piracy in the Cameroon/Nigeria border area NOV 2007 – AUG 2011 (source: data from a host nation interview)

BIR Maritime Capability

The size of the BIR has doubled in the past two years. In 2009, the BIR consisted of 3 Battalions of 650 men per battalion. There are now six battalions of 500 to 650 men per each (between 3000 and 4000 men). The majority of these battalions are ground forces, but in 2009 the mission set of the BIR was expanded to include maritime protection of the Bakassi Peninsula (see Figure 8.6).

The ownership of the Bakassi, a peninsular oil-rich region on the Cameroonian border with Nigeria, had been under dispute for decades. In 1994, Cameroon asked the International Court of Justice to settle the contention and to specify the boundary between the two regions. In 2002, the Court delivered its judgment, assigning ownership of the Bakassi to Cameroon[68].

[68] http://www.un.org/events/tenstories/06/story.asp?storyID=900

As discussed in a previous section, acts of piracy and sea robbery are a major concern in Cameroonian territorial waters. In Figure 8.6 it is clear that the acts of piracy and related incidents reported to the BIR are particularly concentrated in this region[69]. There were 23 maritime incidents reported in 2008, 44 in 2009, 31 in 2010 and (as of JULY 30) 23 in 2011. By 2009 when the BIR Delta were formed, there was a clear need for an exceptional response capability.

Figure 8.7. Site of APS SEABEE pier construction on Man-o-war bay base in 2009 (source: 2009 BIR After Action Report).

APS participated in training and assisting the BIR Delta forces during the April 2009 mission. U.S. Marines lived and worked with the BIR at their Man-o-War bay base for approximately one month, and a SEABEE project to build a pier at that facility was begun (Figure 8.7). This project represented the largest SEABEE construction project that the Navy had undertaken in 5 years and was therefore a significant vote of U.S. support for the BIR forces.[70] APS trainers also taught the BIR medical and port security courses. U.S. funded 1206 donations of two defender class boats originally scheduled to be handed off to the Cameroonian Navy were diverted to the nascent BIR Delta forces – to the dismay of Cameroonian Navy personnel who argued that the BIR were a ground force, and not able to maneuver in the water.

During the first several months of training, the Cameroonian Navy's argument against the BIR was overwhelmingly valid. In its early days, the maritime capability of the BIR Delta was abysmal. This maritime force was uncomfortable with the water (note: one trainer told me that the BIR soldiers could not swim but, according to their training, would jump in the water when ordered). Until the Defender class boats and U.S. trainers arrived in the summer of 2009, the BIR used civilian fishermen to teach them basic boat operations and to operate boats in and around the naval base in Douala. They trained on commercially purchased 5 meter Zodiac rigid hull inflatable boats (RHIBs) with 90 horsepower outboard engines. 3 meter aluminum "John boats" were used for transfer of gear and passengers. Vessel refueling was done by civilian hire with 5 gallon jugs hand carried to the boats. Many of the boats suffered from water intrusion.

[69] Dates and descriptions of these attacks are given in Appendix F at the end of this document. It is important to note that this is likely an incomplete list of attacks because attacks without sufficient proof are unreported

[70] In an unfortunate side-note, due to water currents and unexamined ground conditions in the waterway, the pier ultimately collapsed.

Figure 8.8 Boat dock at Man-o-war bay base. In view are two defender class boats and several 9 meter RHIBS. The BIR Delta routinely conduct patrols. During a September 2011 assessments visit, they were observed practicing live fire to shore on the 7 meter RHIBs. (source: Heider personal photograph).

Israeli forces led by General Benjamin Zuckerman, as well as U.S. forces, were brought in to train this new maritime unit. By August 2011, the BIR Delta appear to have an impressive fleet, particularly when compared to their early days only two years ago. According to our observations and interviews, there are numerous patrol craft including 9 and 7 meter RHIBs, Aluminum hull craft, and the defender boats from U.S. 1206 donations. There are also larger ships that the BIR may use for longer time at sea (see Figure 8.12), including the 70 meter *Rio Del Ray*, an accommodation barge with a helicopter pad. This ship may serve as a sea base for BIR operations.

The BIR Delta are extremely receptive to the specialized training they receive, although long-term operational preparation and maintenance procedures continue to be a problem. Unlike their regional counterparts, the BIR purportedly invest in maintenance programs but they struggle with maintenance procedures that will allow long-term sustainability of vessels and weapons (one source told me that vehicle oil is used to clean and lubricate weapons, and that they may often use bullets with rusted casings). As with the maintenance procedures, maintaining good operational procedures is difficult. In one instance, two BIR boats were tethered together when one began to sink. The BIR who were supposed to be on watch had gone to sleep and, by the time the threat was realized, both boats were in imminent danger. None of the BIR troops had brought their issued knife to cut the line between the boats and so attempted the task with a bullet. When they were finished, the endangered boat had 12 new holes in its hull.

In another instance of procedural challenges, in June 2010, six BIR troops on an aluminum hull craft became lost in the waters of Equatorial Guinea. The EG response forces (who had responded violently to the maritime based presidential palace attack in 2009) sent a helicopter to intercept and were prepared to open-fire on the vessel that did not appear to have any markers identifying it as a BIR craft(Figure 8.9). It was a fortunate circumstance that the regional maritime partnership of CEEAC between EG and Cameroon facilitated a phone call to the Cameroonian Commander of CEEAC and lead to identification of the craft and stand-down of the EG forces (See Figure 8.9).

Figure 8.9. View of the mis-navigated BIR vessel in Equatorial Guinean territorial waters
As seen from the response helicopter of the Equatorial Guinean forces. (source: from a host nation interview)

This last example highlights not only the challenges that the BIR Delta face in transitioning from a ground force to a maritime force, but also the need for regional cooperation in maritime security operations in this area. This theme seems to emerge repeatedly as we look at next-steps for maritime safety and security in the Bakassi region, although there is resistance to regional cooperation from the BIR Delta leadership. We were told in one interview that regional cooperation was "the job of the navy". In this instance, regional coordination and regional relationships saved the lives of the BIR Delta forces, a significant point to bear in mind.

In spite of the challenging learning curve, the BIR has shown remarkable maritime response capability in a short period. The first report we have of a BIR response-at-sea is listed as 10 OCT 2009, only months after the BIR Delta Maritime Training began. Pirates on a fast boat opened fire on the fishing trawler, ROSE 3, where BIR military were aboard. The BIR countered and the fast boat retreated. The following day, the pirate boat was found on the Bakassi shore with 3 injured and 4 dead. The next incident is recorded as 2 JAN 2010. A "Fly boat" (referred to in this document with the U.S. vernacular, "fast boat") attempted to pass through a BIR security checkpoint. The BIR flashed lights and fired warning shots and one person on the fast boat was injured.

Between JULY 2010 and MARCH 2011, we count 10 maritime incidents involving the BIR. All of these incidents were pirate attacks and, in all of these, the BIR were able to respond in real time, sometimes from on board the pirated vessel itself. Six of these incidents resulted in a live firefight between the BIR and the pirates and deaths on both sides.

Coastal radar sites installed in and around the Bakassi in early 2011 have given the BIR greater maritime domain awareness[71]. This capability, combined with the response capability

[71] The coastal radar system was a donation from the United States under a 1206 donation. This donation included radar hardware, software, AIS systems, and power generators. The Cameroonian government "facilitated the installation", and the BIR built the buildings, wired the facility for internet, and housed the radar; BIR troops provided all labor for this project. The BIR have also made an outright $25,000 purchase of a

and effective tactics of the BIR, make them an increasingly capable maritime force. Oil company security personnel in the Bakassi regularly communicate with and update the BIR. Commercial interests and the Cameroonian government are requesting amplified BIR presence.

Perhaps the most notable display of BIR Delta maritime capability occurred on 19 MARCH 2011 the morning after a violent bank robbery. Late at night on MARCH 18, approximately 30 gunmen attacked a bank in Douala. Robbers carried explosives, hand grenades, and 50 caliber weapons. They shot two night guards and opened fire on nearby civilians. In the final count, approximately 10 people were wounded and six were dead. The robbers had hidden fast boats in a nearby creek and escaped to the sea with 200 Million FCFA (approximately $0.5M U.S.D.), leaving two stragglers behind to be arrested.

Figure 8.10. BIR Delta forces exercising Visit Board Search and Seizure Procedures (source: 2009 BIR After Action Report)

Hours later, in an impressive exhibit of MDA capability, the signal of the BIR's newly installed coastal radar system was compared against that of their Automatic Identification system (AIS) and the BIR found the fast boats by focusing on those craft that had a radar signature but no AIS signal. At 0840, the BIR intercepted two fast boats containing the remaining pirates. The pirates opened fire and then split up, one boat entering Nigerian waters, and the other turning East. The BIR responded, destroying one boat and killing 11 pirates on board (the 12th pirate was badly injured and died of his wounds). Five BIR troops were wounded and one died of injuries to his abdomen and spine the next day.

Since the BIR Delta have begun patrolling the Bakassi region, securing the passage of commercial vessels by working aboard security vessels and traveling with fishing trawlers, the number of attacks in Cameroonian waters has dropped. In 2010, there were no attacks on the oil platforms there (Figure 8.11).

maintenance contract with Forward Slope Incorporate (FSI). The practical training on signal analysis was provided by the Israeli trainers who are regular fixtures at the BIR training sites. The installation of this system had been completed only the previous week

Figure 8.11. Profile of maritime incidents reported by commercial companies in the Bakassi region in 2009, 2010, and the first half of 2011. Incidents within the region of the oil platforms (yellow polygon) are diminished due to BIR presence. Overall incidents in Cameroonian waters decreased in 2010, but incidents within the region remain high.

But the attacks have not stopped. Table 8.1 lists the number of incidents reported in and around the territorial waters of Cameroon. Although the number of attacks in the Cameroon AOR has diminished, the total number has not significantly dipped. The pirate attacks are displacing. Sea criminality has changed location, moving into Nigerian waters (and, recently, into the waters around Ghana and Benin). Furthermore, the piracy attacks are becoming more violent and their tactics evolved. Of those maritime incidents recorded, the first hostages were taken in March 2009 and number of hostages has increased in the months since. The number of injured and killed in maritime incidents in this region has also increased.

Table 8.1: Piracy attacks and other criminal acts at sea in Cameroonian and neighboring waters in and around the Bakassi region. According to our source, data was recorded by oil company security personnel and is briefed regularly with BIR leadership.[72] It is important to note that, although the overall number of incidents in Cameroonian territorial waters has diminished, there are still high numbers of maritime incidents in the region at large; this highlights the need for regional and international cooperation in eliminating the threats.

CAMEROON ONLY					CAMEROON + BOUNDARIES				
	ATTACKS	KILLED*	INJURED	HOSTAGES		ATTACKS	KILLED*	INJURED	HOSTAGES
2008	16	6	0	0	**2008**	23	6	0	0
2009	40	5	8	4	**2009**	44	6	9	5
2010	16	6	5	15	**2010**	31	7	9	27
2011 (through AUG)	8	14	5	11	**2011 (through AUG)**	23	16	8	15
TOTAL	80	31	18	30	TOTAL	114	35	26	47

* pirates/assailants casualties are not taken into account

Given the displacement of criminal acts at sea and the increasingly violent methods of bad actors, It is clear that regional maritime safety and security cannot be achieved through the introduction of a solo fighting force, no matter their proficiency. It is only through regional partnerships, relationships between maritime institutions in Cameroon (the fifth and sixth pillars of Maritime Sector Development) and relationships between the military and public (as argued in the following sections) that Cameroon will be able to successfully address the challenges in this region. APS has provided a forum (perhaps the only forum) for facilitating and legitimizing regional relationships and inter-agency partnerships.

[72] The description of each incident as given in the table at the end of this document do not appear to match the number of killed, injured and captive that were counted by the BIR. Lacking further clarification, we use the count that the BIR themselves created.

It may be further argued that the mechanism of APS provides the U.S. DoS with a valuable tool for helping to shape the paradigm of the BIR, exposing them to new TTPs, and thereby diminishing their potential for negative use. As we will discuss later in this document, there is also significant value to be gained by publicizing the positive actions of the BIR Delta.

BIR Coast Guard

Given the successful formation, training, and operations of the BIR Delta in the Bakassi region, it was a natural next step to extend the maritime responsibility of the BIR. In 2011 President Biya issued a presidential decree to form a new branch of the BIR, the BIR Coast Guard (note: the name of this organization may change, but we refer to it under this title for the purpose of this section). The BIR coast guard would be formed from recruits who begin their training in the Spring of 2012. Although this organization will be separate from the BIR Delta, training will be expected to follow a similar format since many of the skills will have crossover value. In this model, the BIR Delta would continue their mission in the area around the Bakassi Peninsula, while the BIR Coast Guard would have jurisdiction of the remainder of the Cameroonian TTW out to 12 nautical miles (note: this would push the area of responsibility of the Cameroonian Navy beyond this range, an area of responsibility that will be difficult for the Cameroonian Navy to patrol, given the nature and condition of their patrol craft).

It is not currently expected that the BIR coast guard will have constabulary authority, and the mission focus and mission sets have not yet been outlined. Given this ambiguity, it is difficult to say whether the BIR Coast Guard will serve in the traditional BIR special-forces role, or if their mandate will reflect a public service philosophy. Traditional BIR training and philosophy have prepared them these forces for non-compliant boarding and Special Forces missions. However, these TTPs are not intuitively converted into the public service mandate of a coast guard. As the new BIR coast guard is formed, there may be a need to import a new set of tactics and rules of engagement, different from those of the parent BIR organizations. By routinely engaging the population in a positive (public service) way, the BIR may be more effective in curbing the piracy element by eliciting cooperation and denying the pirates safe havens.

BIR Dual Use Potential

There is a considerable amount of myth and secrecy surrounding the BIR, their activities and purposes. Members of the public express fear of and pride in the BIR – often in the same breath. Before his death in a BIR helicopter crash in November 2010, a similar sentiment was expressed about COL (ret) Avi Sivan who, depending on the interview, was described by Cameroonians as either an “advisor” or a “mercenary”. Whatever he was, he created a military fighting force that has no equal in West Africa (or, likely, in all of Africa).

It is difficult and possibly dangerous to characterize the BIR organization as either completely good or completely bad. The situation is far more nuanced than this. The BIR seem to fall into the same category as “dual use chemicals”, compounds that may be used for either beneficial industrial and medicinal processes or dangerous weapons or illicit drug manufacturing purposes. Depending on how they are trained, how their paradigm is developed, and how they are used, the BIR will either prove itself to follow the predictions of its supporters who describe it as a “non-corrupt capable fighting force” responsible for

eliminating external threats to Cameroon – or they will be used as an oppressive weapon against internal domestic policy threats.

There is certainly a dual nature in the genesis of the BIR. In 1999, around the time that the BIR was conceived or formed (there are conflicting media reports citing the BIR origin as 1999 or 2001) the U.S. State Department country report for Cameroon[73] noted that the Government's human rights record "continued to be generally poor." It went on to mention that "government officials continued to commit numerous serious abuses. Citizens' ability to change their government remained limited. Security forces committed numerous extrajudicial killings; reportedly were responsible for disappearances, some of which may have been politically motivated; and tortured and often beat and otherwise abused detainees and prisoners, generally with impunity." The economic situation was also extremely poor. According to the same report, "The country's population of about 15 million had a recorded mean per capita Gross National Product (GNP) of about $590." According to one interviewee, only 250,000 Cameroonians had access to potable drinking water, and preventable diseases like cholera are a major problem; UNICEF puts the number of those in rural Cameroon with access to safe drinking water at 44%[74]

With public discontent rising, and with corruption in the military branches, it would not be surprising that President Paul Biya, who was appointed to the presidency in 1982, may have been fearful of a revolution or a military Coup d'état. Indeed, his first use of COL Sivan was to serve as a trainer of his own presidential guard. Although there was legitimate need to combat the growing acts of banditry and ensure safety along Cameroon's roadways and oil pipeline, the formation of the BIR also provided President Biya with military forces who reported directly to him and who did not interact with the existing military infrastructure. The question was whether he would use them in a way to protect himself and his increasingly persistent role as president. Seven years after their creation, the BIR were used for just this purpose.

In late February 2008, the BIR were mobilized to suppress a series of public protests and violent demonstrations in Cameroon's biggest cities. The protests were spurred on by a strike by transport workers who opposed high fuel prices and working conditions. The situation was further aggravated by President Biya's announcement that he wanted to amend the constitution and remove the term limits that would have required him to leave office in 2011. According to the UN Humanitarian News and Analysis, the BIR were used to combat the protesters, resulting in the death of up to 100 unarmed civilians[75]. According to one interview, the protests disbanded after the BIR leadership were heard on the radio to tell the protesters, "You are stupid for doing this. We will crush you." (note: we have not been able to confirm this account, but it serves to underline the fear with which average people view the BIR). Further concern about how the BIR will be used in the future has been expressed, given certain alarming indicators that political dissent is stifled. For instance in MARCH 2011 the social network tool, Twitter, was blocked for 10 days by mobile phone operator MTN at the behest of the government due to fears that it would be used to mobilize opposition

[73] *Country Reports on Human Rights Practices, Bureau of Democracy, Human Rights and Labor* 1999, February 23, 2000, http://www.state.gov/g/drl/rls/hrrpt/1999/231.htm
[74] http://www.unicef.org/wash/cameroon_39992.html
[75] http://www.irinnews.org/report.aspx?reportid=80065

forces.[76] These incidents only heighten the concern of the appropriate use of the BIR, and with the approach of the October 2011 elections (President Biya's constitutional amendment passed in 2008 and he will be running for another term[77]) such concerns may be particularly prescient.

In spite of their potential for misuse, the capability, the enthusiasm, dedication and professionalism of the BIR and their role in serving U.S. energy security goals, have made them attractive recipients of U.S. training attention. In interviews, we have heard them referred to as the "A students", and "the right unit in the right location." They have certainly proven themselves to be a proficient fighting force.

The question as we continue to engage with them is not whether or not the BIR will be tactically capable of executing the missions they are given, but whether the paradigm of the BIR can be shaped in a way to prevent them from becoming predatory or being easily misused. When the BIR are engaged in activities that cause them to form connections with the community, they redefine themselves as public servants and defenders. This role, one that is emphasized and facilitated in APS, may prove crucial in promoting stability in Cameroon and the region.

APS and the BIR

Throughout the previous sections, we have described APS engagements that have involved the BIR within the context of ongoing roles and operations. In this section, we discuss specific aspects of APS that are of particular significance to BIR operations and regional maritime safety and security.

APS as a Tool for Facilitating Regional Cooperation

As a military operating unit, the BIR are not in a position to establish any partnership or relationship with another military unit (within their own country or outside its borders) without political support for such an action. Formal operations with Cameroon's neighbors cannot occur unless the mandate comes from the Presidency. APS and the OBANGAME exercises have provided the BIR with an informal mechanism for regional interaction, cooperation, and relationship building. In the future, these relationships between the BIR and their regional counterparts will be important in combating maritime threats, particularly piracy. Consider the following:

- **Regional cooperation will limit risk to the BIR who operate heavily near other sovereign waters**. The June 2010 incident of the BIR vessel in Equatorial Guinean waters when regional coordination and regional relationships saved their lives emphasizes the need for formal and informal regional coordination.
- **Regional coordination will make maritime operations more effective**. The case of the March 2011 bank robbers escaping into Nigerian waters is one example of how regional cooperation could improve the BIR's mission effectiveness. Had the BIR been able to coordinate with their Nigerian counterparts, they may have been able

[76] http://allafrica.com/stories/201103230012.html
[77] Le Sdf appelle à une journée de deuil national. Donat SUFFO, 16 April 2008. Le Messager, Yaounde.

to receive Nigerian reinforcements in the pursuit and received permission to continue into Nigerian waters. Additionally, shared information between BIR troops and the Nigerian Navy could improve the common operating picture used by the BIR.

- **Regional cooperation will reduce the overall piracy threat in the region, rather than only shifting the location of the threat**. As discussed, the piracy threat is moving into neighboring waters and methods are becoming more violent. If BIR do not collaborate with neighbors, they may succeed in temporarily moving the piracy threat out of Cameroonian AOR, but the threat will reemerge and, when it does, it will be more dangerous and difficult to manage.

During the APS 2011 engagement in Cameroon, BIR troops trained alongside students from the Republic of Congo (Brazzaville), and Gabon - and Senegalese instructors taught a VBSS course to both BIR and Cameroonian Navy personnel. The APS-related exercise, OBANGAME EXPRESS, also reinforced regional cooperation. During OBANGAME, players from Cameroon, Gabon, Nigeria, Republic of Congo, Sao Tome & Principe, Belgium, France, Spain and the U.S. conducted joint exercises; participants demonstrated an ability to establish communications and coordinate actions, conducted boarding operations safely and achieved VBSS objectives. This model for regional training and regional cooperation is not available to BIR forces in any other forum outside APS and its exercises.

Although it is difficult to directly measure the impact of the regional relationships enabled by APS, anecdotal information for this exists. For instance, we learned in one recent interview that the BIR Delta leadership relies on an informal relationship between a BIR intelligence officer and his counterpart in the Nigerian Navy (a relationship initiated through APS). According to our source, “they are daily on the phone or e-mail; they exchange information about threats that will affect each other’s country.” According to this interview, APS has allowed the BIR to find solutions informally – resolutions to regional communications problems without the necessity of going through government channels.

Future APS engagements and activities should build upon this model, and provide opportunities for greater relationship-building between regional maritime response forces. We recommend that this effort be specifically targeted to enable as many opportunities of relationship building between the BIR and neighboring countries. It is possible to track the nature of our effort, and we recommend that a formal mechanism be employed to do this, so that we may appropriately link outcome to effort.

	US Mil	US Gov	HN Mil	HN Gov	HN Civ Mar	HN Public	Reg Mil	Reg Gov	Reg Civ Mar	Int'l Mil	Int'l Civ Mar	Non-Mar NGOs
US Mil		17	116	14	15	19	31			23		
US Gov			17	7	7	4	4			2		
HN Mil				7	7	8	30			14		
HN Gov					7							
HN Civ Mar												
HN Public												
Reg Mil										11		
Reg Gov												
Reg Civ Mar												
Int'l Mil												
Int'l Civ Mar												
Non-Mar NGOs												

Figure 8.11: Profile of relationship building elements between groups participating in the APS 2011 Cameroon hub. This chart shows a representation of relationship building for the hub, including the number of relationship-building elements for each possible group combination. The purpose of this comparison is to show the general emphasis of the APS effort in building relationships. (Source: Internal NAVAF document, "Analysis of APS 2011 Engagement in Douala, Cameroon" by LT Richard Amerine)

Beginning this year, NAVAF assessments of APS has attempted to quantify how relationships are being built during our APS engagements. Using relationship building metrics used by social scientists we tally seven basic relationship elements between the various groups participating in any given activity. These elements are *access*, *exchange*, *openness*, *assurances*, *interdependence*, *sharing of tasks*, and *negotiating differences*. The first four are "passive" relationship building elements and would be most prevalent in activities such as classroom training and KLE. The last three elements are "active" and would be incorporated in table-top exercises, operations planning, and exercise execution. Using these metrics, it becomes possible to track the relationship-building opportunities of each activity during an APS engagement. During the June 2011 APS hub in Cameroon, the assessments officer (LT Richard Amerine) tracked every engagement activity (including training, key-leader-engagement, COMRELs, etc) and the nature of the interaction between groups. This tally, shown in Figure 8.11 allows us a quick insight into the groups who participated in APS and the nature of their involvement with one another. Consider that the interaction between the groups, "regional military" and "Host Nation Military" had comparatively high value when contrasted with the engagements between other groups.

In future engagements, "high relationship value" or "active relationship building" elements in APS activities should be included for building regional relationships (e.g. activities that promote active relationship building elements such as *sharing of tasks* and *negotiating differences*). These can be constructed into the APS plan and/or included spontaneously. Such activities might include exercise planning and execution, table-top contingency planning, and operational coordination. These activities should engage all levels, including enlisted, line officers and the leadership (a Multi-Tier approach). Because regional relationships are so crucial for Maritime Safety and Security in Cameroon, we make this same recommendation when discussing the other maritime organizations in that country. Bear in mind, however, that the mandate for regional cooperation between the Cameroonian Navy and its neighbors

exists (particularly in the CEEAC Zone D alliance) whereas no such mandate is in place for the BIR.

Although it is beyond the scope of this analyst's directive, based on the evidence for the need of regional cooperation, it is recommended that the existing construct for regional cooperation between the BIR and its partners be reexamined. The U.S. DoS may wish to discuss with Cameroonian leadership the possibility of providing a formal mechanism for regular cooperation between the BIR Delta and their military maritime counterparts in neighboring countries.

APS as a Tool for Facilitating Internal Military Cooperation

During its creation, the BIR was deliberately firewalled from the other military branches in Cameroon. This decision has had lasting implications in resourcing, operations, and in informal relationships. For all intents and purposes, there are no sanctioned interactions between these organizations. Although there may have been good initial reasons to establish the BIR in this fashion, it is becoming clear that this firewall is preventing effective response to maritime threats (note: this relates to the sixth pillar of Maritime Sector Development, the Comprehensive Approach). During the APS hub in Douala, and during OBANGAME EXPRESS, the BIR interacted and played with the Cameroonian Navy. This was an uncharacteristic and beneficial partnership, as noted in a CNA report on OBANGAME EXPRESS:

> "At the outset of the exercise, it was evident that the navy and the BIR had no means to communicate with each other and MCC staff and the BIR LNO had to quickly find work-arounds such as handheld VHF radios and satellite phones. However, by the end of the exercise, both the BIR LNO and the navy MCC personnel saw the value of the BIR and the navy working collaboratively and communicating with one another to address maritime threats. Regardless, these participants stated that a decision to increase Cameroonian BIR and navy cooperation, or even to have a BIR LNO assigned to the MCC, was a political decision that was out of their hands." [78]

Although the BIR respond primarily to criminal acts in the northern Bakassi region of Cameroon, the Navy is working to curb piracy, illegal fishing, and smuggling in the southern territorial waters. As discussed in the next section of this report, the Navy is far less equipped to conduct these operations than their BIR counterparts. Nevertheless, there are indications that there is a dedicated effort and a will to respond. Without cooperation between all maritime organizations in Cameroon, a complete and effective response to criminal maritime elements may not be possible.

In line with the previous recommendations to create play between BIR and their regional counterparts, we offer a similar recommendation that APS create "high relationship value" activities between the BIR and the Cameroonian Navy (and Naval Infantry). In order to maximize the capability and value of all MSS efforts, it would be beneficial to establish regular information exchange and shared TTPs between the BIR and the Navy. As noted in the CNA report, this is not possible without high-level political blessing, so we step outside bounds once again to recommend that the U.S. DoS consider pursuing this issue with Cameroonian leadership.

[78] L. Warner & L. Waters in *Obangame Express 2011 Exercise*, CAB D0024910.A2/Final May 2011

APS as a Tool for Facilitating Relationships between the BIR and the Public

In July 2011, APS held a medical engagement in the Bakassi Peninsula. This engagement was specifically requested by the U.S. Embassy in Cameroon. According to DoS personnel, the engagement was a tremendous success because it caused the BIR to become involved in a service role in the communities where they typically operated. [79] According to several different sources, the BIR took a lead role in this engagement, providing maritime transportation for U.S. Military Medical personnel, and building a clinic. The BIR spent a considerable amount of their own funds during this engagement, a tangible investment metric demonstrating commitment to Maritime engagement and to U.S. requests. One BIR officer involved in the project was excited to be interviewed about this. He took a camera from his pocket and showed more than 100 pictures he had taken during this activity.

This project exemplifies the type of APS engagement that may have long-term impact in improving maritime safety and security, and the type of engagement that should be pursued with the BIR and our other partners.

There are at least two primary reasons why using the BIR to conduct Civil-Military engagements and Community Relations projects (particularly in the Bakassi region). They are listed here:

1. **To win the hearts and minds of the populations, to obtain actionable intelligence from the residents, and to deny the pirates a safe-haven**. The BIR have operated in the Bakassi peninsula for two years. This is a politically contentious region with criminal elements drawing organic support from those who feel that Nigeria should have jurisdiction over the area, such as the Bakassi Freedom Movement (see Figure 8.1b). The methods of the BIR are clearly forceful and there is a possibility that the public in this area may view the BIR with fear and suspicion, or be directly impacted by their methods (such as collateral damage to property, friends or family). By routinely engaging the population in a positive way, the BIR may be more effective in curbing the piracy element by eliciting cooperation and denying the pirates safe havens.
2. **To help shape the BIR as a non-predatory force**. The U.S. Military has a statutory obligation to not train troops who have committed human rights abuses. This requires that all APS trainees be part of a Leahy vetting process.[80] But there is no provision for training troops who have the potential for committing human rights abuses, nor indeed would there be any reasonable method for checking this. But the 2008 suppression of public demonstrations by the BIR ground forces indicate that the BIR may be used in the future for such a purpose. If their role as a fighting force includes an element of public service, the paradigm and potential for aggression against the public may be altered. Perhaps there is a level of wishful thinking in this proposition, but the effort to shape the BIR as public servants cannot cause harm

[79] Some observers noted that long-term sustainability of this clinic as a public service is unlikely, as there are insufficient personnel to provide staff full time. More likely, the single military surgeon on site will serve to assist BIR troops who are injured in the course of operations.

[80] The Leahy Law in the 2001 Foreign Operations Appropriations Act (Section 563 of Pub.L. 106-429) states: "of the funds made available by this Act may be provided to any unit of the security forces of a foreign country if the Secretary of State has credible evidence that such unit has committed gross violations of human rights, unless the Secretary determines and reports to the Committees on Appropriations that the government of such country is taking effective measures to bring the responsible members of the security forces unit to justice."

and may actually result in an altered paradigm for BIR identity. This would serve both U.S. Military goals, and DoS objectives to increase stability.

In future APS engagements, it is recommended that the BIR (and other military organizations) participate in COMREL events, medical engagements, and Civil-affairs projects.

APS as a tool for influencing the TTPs and operational philosophy of the new BIR Coast Guard

It may be said that the goal of a coast guard is to facilitate commerce; a balancing act between safety and freedom of movement. Coast Guard TTPs are therefore constructed around the concepts of regulation, inspection, and response. Coast guard emphasis is best placed on the first two concepts, and practices generally follow from this. Comparatively, the existing BIR maritime forces with the special challenges they face, are forced to emphasize the last concept: response, the most challenging and risk-filled aspect of this paradigm. There are therefore significant philosophical differences between the existent BIR organization with their specialized mission sets and the public service mandate of any coast guard. The original charter of the BIR required extremely aggressive training and tactics to make their land troops effective against highway banditry and their maritime component effective against piracy. During recent exercises, it has become clear that existing BIR methods are calibrated to non-compliant boarding and hostile take-downs. Indeed, the methods used by the BIR Delta during the OBANGAME EXPRESS exercise revealed that these troops were unfamiliar with non-compliant boarding. Rather, the crew of the USS RGB were startled to find that, during the VBSS portion of the exercise, the BIR conducted an aggressive non-compliant boarding procedure. Their methods may have been particularly forceful, given that the BIR who participated in the OBANGAME EXPRESS exercise had, the day before, conducted the hot pursuit and interdiction of the Douala bank robbers. If the plan for the BIR Delta is carried out and they become the Cameroonian Coast Guard, additional peacetime training will be needed; a need that APS can certainly fill.

These tactics techniques and procedures currently used by the BIR may not be readily converted to serve the more community-oriented charge of fisheries protection, customs control and regional cooperation. As the new Cameroonian coast guard is formed, there may be a need to expand its tactics and rules of engagement, drawing away from the traditional roles of the parent BIR organizations. This paradigm redirection will be most practical if initiated at the establishment of this new force.

We recommend that APS be used as a tool to facilitate Coast Guard training for the new BIR Coast Guard. This may be accomplished by leveraging U.S. Coast Guard trainers, or moving a step beyond this to include an exchange program between the BIR and a proficient African Coast guard such as the Mauritius Coast Guard. Because APS already provides a forum for exchange between African countries, it is reasonable to suppose that such an arrangement could be easily facilitated. Furthermore, given the nature of each of these forces, and the similar maritime threats they face, such collaboration may be extremely fruitful. Both the BIR and the Mauritian Coast guard face similar problems of smuggling and piracy. The piracy problem, in particular, is a growing concern in the EEZs of both countries. The proficiency of both groups is exceptionally high. Shared tactics and lessons learned between these forces would likely improve the effectiveness of both. Additionally, there is perhaps a benefit to be had that may not be possible with the inclusion of U.S. trainers alone: although skilled and

capable, U.S. trainers may not be able to fully appreciate the impact of piracy within their country's waters, an experience that Cameroon and Mauritius share.

APS as a Tool for building the sustainability of BIR effort through maintenance training

The acceleration of the BIR maritime capability has been startling. In a very short period of time, the BIR Delta are operating a large fleet of boats and ships, and conducting heavy operations. If maintenance support and practices for this fleet are not integrated into operations at this stage of the BIR, this level of performance cannot be expected to last. Evidence suggests that, although the BIR practices include better maintenance procedures for weapons and equipment than many other African maritime forces, the operational tempo for the BIR necessitates an equally ambitious maintenance tempo. In an interview with a leader of the BIR Delta, "Maintenance is the center of everything because we can't afford to have a vessel paralyzed." Future APS training may therefore wish to focus on maintenance courses.

Cameroonian Navy

In this section, the evolving role of the Cameroonian Navy and the Naval Infantry are discussed. Beginning with a brief discussion of the mission evolution and baseline capabilities, this is followed by a description of the Navy's role in specialty training, interagency coordination, and regional participation in CEEAC. Throughout this discussion, where appropriate, we put forward the role that APS has played in each facet and indicators of the impact of this APS engagement. We follow this up with recommendations for future APS engagements.

a.  b. 

Figure 8.12: Ships in the Naval Base in Douala. a. Cameroonian Navy vessel (left) next to a new BIR vessel. b. Inoperable Cameroonian Navy vessel on blocks. (Source: Heider personal photograph September 2010).

Over the past two years, the Cameroonian Navy and Naval Infantry have been forced to redefine themselves. With the introduction of the BIR Delta forces as a maritime unit in 2009, it became clear that there was significant overlap between the BIR Delta and Cameroonian Navy mission sets while at the same time, significant differences in the chain of command and overall funding. From an outside perspective, the reasons for this were apparent; according to several sources, members of the Navy leadership were corrupt, funneling funds away from maintenance and repair programs, asset acquisition, and training. Nevertheless, those who were unconnected with any high-level corruption and who were attempting to respond to the maritime threat could see the overwhelming obstacles they faced.

During the APS 2009 USS NASHVILLE engagement with the Cameroon Navy, there was considerable concern regarding the new BIR maritime capability, including anger expressed that the 1206 donations of defender class boats were being gifted to the BIR instead of the navy. During the year following, the BIR acquired many additional naval platforms while it was clear to even the untrained eye that many of the naval assets on the dock in the Douala Naval base were non-serviceable or in extremely poor repair (see Figure 8.12). Similarly, the MDA equipment and information owned and operated by the BIR (including Coastal Radar systems in and about the Bakassi peninsula and AIS systems) do not pass to the Cameroonian Navy. As mentioned in the previous section, the BIR operations center and the navy operations center in Douala (located in adjacent buildings on the navy base) have no means to communicate with one another.

Figure 8.13: Within the Douala Naval Operations center (Source: Heider personal photograph September 2010)

After two years of identity crisis and struggle to maintain relevance, the Cameroonian Navy (and, to a lesser extent, the Naval Infantry) is emerging with a stronger definition of their function. Their new role places an emphasis on their position as regional players, their contribution in CEEAC Zone D, and their heavy participation in APS. With the recent turnover of Navy leadership and the introduction of the new Cameroonian Chief of Naval Staff, RADM Jean Mendoua (who was in the leadership of the Presidential Guard while COL Sivan was training them and who temporarily stepped in to fill COL Sivan's shoes following Sivan's death in a helicopter crash in NOV 2010) and former Douala Navy Base Chief and APS supporter, Deputy CNS, CAPT Koskreo Djwore , there are planned changes to move the Navy forward. These changes include an *in-the-works* 25 year plan to support the 2035 "Emergent Country" roadmap for Cameroon. Additionally (or perhaps as part of this) the Cameroon Navy has burgeoning plans to play a greater leadership role in APS regional training. If these plans are successful, they may work to move the Cameroonian Navy away from the stagnation it has experienced. But recreating the Navy will be an uphill climb, and the Navy has none of the internal or external support that allowed the BIR Delta to transition from maritime-ignorant to maritime-operational within four months in 2009.

Like the BIR, the Cameroonian Navy considers piracy to be the largest maritime threat (followed by smuggling and illegal fishing). This analyst does not have the particular data on maritime incidents south of Douala (the type of information available for the Bakassi region) and the

response of the Cameroon Navy, making it difficult to gain a clear picture of the threat magnitude or the capability for responding. It was mentioned that the Navy has daily patrols to combat or deter piracy, and that they increase patrols on the weekends because acts of piracy spike during that timeframe.

The MDA picture for the Cameroonian Navy is less advanced than the systems of the BIR. This is in spite of the fact that, in Douala, the operations center of the BIR and the Navy operations center are located in adjacent buildings on the same base. The naval operations center is housed in Douala navy base and contains VHF and HF radios for communications (Figure 8.13) although, according to the CNA report on OBANGAME[78], both the Navy Operations Center and the Operations center for CEEAC (the CMC) experienced recurring failures in its HF and VHF radio systems, and consequently had difficulty with communications. The navy does not own Coastal Radar stations (compared to the 2 coastal radar stations owned and operated by the BIR, covering the Bakassi region and terminating in Douala). It is unclear to this analyst whether the Cameroonian Navy owns an AIS transceiver. Observers during the OBANGAME exercise did note that there was an MSSIS feed for MDA in the maritime operations centers, allowing regional AIS signals to be displayed (although the feed was limited by both bandwidth and intermittent electrical outages). During an interview with Navy leadership, it was disclosed that the Cameroonian Navy has established a line to the operations center for reports from local fishermen, and that the Navy logs and responds to these calls. The volume of information from the public is slim, although leadership seemed receptive to establishing a campaign to professionalize the public to report on bad acts at sea similar to the Kenyan/MCAT CWOW campaign.[81] If such an effort is put in place, it would augment any existing common operating picture used by the Navy.

CIES

In 2009, by presidential decree and as part of a Franco-Cameroonian cooperation program, the Cameroonian Navy built an independent specialty school for security training. CIES (the Security Education and Training Center), is a firefighting damage control school that provides security training on Hazardous Materials (HAZMAT) management, basic firefighting, and water damage control. There is a particular emphasis placed on incident prevention, workplace hygiene, and safety training.

This specialty school was leveraged during APS 2011 to excellent effect, and plans are in the works to continue to use this facility and expertise in APS 2012. In APS June 2011 Commandant of the CIES, along with several Cameroonian instructors from the schoolhouse[82], conducted basic level training on fire prevention and firefighting, and interior and exterior shoring. Navy leadership and the school's director were enthusiastic about the use of this school and expressed a desire to expand its use, building on regional participation (students during APS 2011 were from Gabon, Republic of Congo, and Cameroon). They suggested that APS facilitate advanced level training such as *Training Lead*, *Fire Investigation*, and *Basic Fire Team*. Additional augmentation would include medical care courses such as safety and first aid, enabling

[81] Community Watch on the Water: Relationship Building on the Kenya Coast" by M.Farrell (CJTF-HOA SCRAT) and M.Wagner (AFRICOM SSRC), March 2011, AFRICOM/CJTF-HOA

[82] Two of these instructors were students in the APS 2011 February "Train-the-Trainer" event in Douala and Commandant Sima noted that the skills and abilities of these two instructors were markedly improved by this training.

emergency responders to provide triage medical response in the course of their contingency response operations. There was a further discussion about enhancing the ability of the school with the APS "Train-the-Trainer" program, and potentially allowing students from the region to regularly attend, expanding on the current APS concept of regional integration.

This latter vision might easily fall in line with the recommendations from Deputy CNS, CAPT Djwore, who has on multiple occasions expressed a desire to see the APS mission facilitating regional standards and curricula, as well as providing oversight for APS "Centers of Excellence". CAPT Djwore's concept would include regional partners hosting specialty training schools for one another, with APS providing means, legitimacy for the regional interaction, and quality control. If the Cameroonian Navy works with the CIES school to create an APS regional center of excellence, it would represent the first partner-driven effort of this kind.

Navy Cooperation with Internal Stakeholders

As is the case in most African countries, the role of operating fisheries patrols and enforcing fisheries protection in Cameroon falls under the mandate of the Navy. This role will likely continue even if the BIR expand their reach to become a Coast Guard force in the southern waters off the coast of Cameroon. In their current operations, the Navy also coordinates with other law enforcement institutions. In smuggling cases, the Navy coordinates with Customs and the Police; in cases of illegal fishing, they coordinate with the ministry of fisheries.

Formal arrangements between in-country maritime stakeholders have also recently been put into place. For instance, in 2008, a presidential directive established *the Délégation générale à la Mer*, a collaborative body with membership from the Navy, the Gendarmerie, the BIR, the Merchant Marines, Customs, and the Port Authority. The primary tasking of this organization is to implement the International Ship and Port Facility Security (ISPS) Code, a set of measures designed to enhance the security of ships and port facilities (note: ISPS compliant ports are more likely to enjoy greater economic benefit than countries with non-compliant ports). Deputy CNS, CAPT Djwore expressed a more expansive vision for this organization than its original tasking, hoping that it would serve as a collaborative mechanism between various ministries in order to promote maritime safety and security. He is currently pressuring members of the *Délégation générale à la Mer* to send liaison officers to work in the maritime operations center at the Douala Navy base (recall that no such arrangement currently exists, particularly not with the BIR).

These in-country efforts for stakeholder collaboration were reinforced by APS 2011. As part of the June 2011 engagement, the U.S. Ambassador, Office of Security Cooperation Liaison, and Defense Attaché hosted a maritime stakeholder's conference which was sponsored by NAVAF and facilitated by the ACSS. Cameroonian participation included senior Cameroonian military and civilian stakeholders from the National Ports Authority, Interior Ministry, Gendarmerie and Police. This single-day conference provided a forum for discussing Maritime Security, and was the first of its kind for APS in Cameroon.

Navy Regional Cooperation

CEEAC Zone D, comprising participants from Cameroon, Equatorial Guinea, Sao Tome & Principe, and Gabon is the formal mechanism through which the Cameroonian Navy

cooperates regionally. The Regional Security Center of Central Africa (CRESMAC) divided the maritime space of Central Africa into three zones: A, B, and D. CEEAC Zone D was formally created in an agreement signed in October 2009 in Kinshasa by different chiefs of state within the region, and is based in Pointe Noire in the Congo.
The Secretary of the ECCAS, the COPAX (Council Security and Peace in Central Africa) authorized the ministries of defense in separate countries belonging to Zone D to find a common, joint strategy to respond to maritime threats. Its mandate was operational: to coordinate operators within an operations center, and to supply different ships and personnel in order to control regional waters, protect vital interests of each country, with the aim to facilitate free circulation of persons and goods. The Zone D CMC consists of the following multi-national representatives:

- Chief of the CMC (Cameroonian)
- Officer in charge of operations and logistics (Gabonese)
- Intelligence officer (Equatorial Guinea)
- Officer in charge of transmission (Sao Tome and Principe)

Figure 8.14: Area of Responsibility for CEEAC Zone D (source: CEEAC presentation 2010)

The regional exercise, OBANGAME EXPRESS, leveraged the operational relationships existing in CEEAC Zone D and, according to the stated objective, promoted "the interoperability and proficiency of the regional maritime stake holders in the Gulf of Guinea in concert with U.S. and European Partners to counter piracy and illicit activities in the Gulf of Guinea."[78]

The exercise operated from the CEEAC Zone D CMC control center on the Navy base in Douala. operations center. In the MCC's role as the regional coordination center for ECCAS Zone D, it has Operational Control (OPCON) of some ships flagged to nations in the region in order to patrol its area of responsibility (Figure 8.14). During the exercise, it had OPCON of the Cameroon Naval Ship (CNS) *Akwayafe* and the Gabonese Naval Ship (GNS) *Betseng* (ships that already participate in CEEAC Zone D patrols). Also in play during OBANGAME were European partners and Nigeria; Cameroonian Navy officers noted that the presence of the Nigerian ship in the port of Douala was unprecedented.

According to after action reports and assessments, OBANGAME EXPRESS 11 tested and demonstrated communications ability and interoperability among the participants. The

exercise also allowed participants to successfully conduct MIO/VBSS scenarios, including a vessel in distress scenario, a counter-piracy scenario, and a counter-trafficking scenario.[78]

The sort of regional play promoted by the NAVAF EXPRESS series exercise is unique amongst the African littoral countries, and a formal maritime collaboration like that of CEEAC Zone D is also unique. Such collaborations are a natural fit for APS and may serve as a starting point for the idea of APS bannered regional centers of excellence discussed in this section.

APS and the Navy

The Navy and Naval Infantry are receptive and active participants in APS and they see their role growing in future years. According to recent interviews, APS is increasingly perceived by Navy leadership as a means of supplementing necessary training and also as a way to garner high-level attention, credibility and support. The APS hub in 2011 trained Cameroonian officers in an MDA course and Naval leadership were quick to note that those who trained in APS are currently being used in the operations center, indicating that the training hit the mark. Furthermore, those who attended the APS course in METOC now include METOC information in the daily command brief. According to the Douala Navy base Commander, CAPT Lucien Dzou, members of the weekly patrol unit had participated in APS training and he noted that, "We are more confident knowing that they have been trained by APS."

In the preceding section, we have described APS engagements that have involved the Cameroon Navy, particularly as this involvement has fed into existing capabilities and efforts. In doing so, we have touched on several key points which are explored explicitly now. In this section, we discuss specific aspects of APS that may hold particular value to the future of the Cameroonian Navy in their current and future efforts, and which may serve a key role in improving maritime safety and security in the region.

APS as a Tool for Facilitating Regional Cooperation

This recommendation may be familiar – as it was also the first recommendation for the BIR engagement model in APS. In the context of regional play with the BIR, the significance and means for this regional interaction was far different than for the Cameroonian Navy. Whereas APS and OBANGAME represented the only formal mechanisms for regional interaction for the BIR, the Navy currently has government sanctioned mandates for regional play. Their current level of regional participation in CEEAC Zone D, and the regional leanings of Navy leadership indicate that this is a strength and direction for the Cameroonian Navy, and it will be useful for APS to support this effort. The following suggestions might serve to facilitate this end:

1. Support the maritime operations of CEEAC Zone directing APS Maritime Domain Awareness Training to the regional participants of the CMC for CEEAC Zone D, and VBSS training to the sailors aboard the ships under CEEAC Zone D OPCON. This training should be conducted within the CEEAC units that are currently used in operations, and should culminate in the at-sea operations that CEEAC Zone D currently conducts. Since these groups are members of regional navies, coordination with those bodies will be necessary to identify and retain the appropriate sailors for all phases of such training.

2. Provide Staff officer planning training for CEEAC Zone D leadership, to facilitate regional cooperation and provide procedural guidance that may be needed for this burgeoning organization.
3. Continue to engage CEEAC Zone D and other regional partners in APS and OBANGAME EXPRESS
4. Work with Navy leadership to shape and support the Cameroonian Maritime Center of Excellence. Integrate the concept into regular APS operations and engagements; conduct Train-the-Trainer as necessary and share curriculum and standards with the school.
5. The Naval Infantry continue to struggle to find an identity that will renew their relevance. They have requested engagements with the USMC through APS, and evaluation as candidates for regional cooperation through the Peacekeeper program. In future APS training of the Naval Infantry, APS should focus their efforts on training that would complement the ACOTA peacekeeper training program.

APS as a Tool for Facilitating Internal Country Stakeholder Cooperation

This recommendation, insofar as cooperation between the Cameroonian Navy and the BIR is concerned, is the same as the recommendation given in the section regarding the BIR. The reasoning remains consistent and will not be repeated here. Regular interplay and exchange of information through APS should be continued, with an emphasis on using the CIES (the Security Education and Training Center), the firefighting damage control school and its trainers to train Navy, Naval Infantry, and BIR (efforts should be made to include the trainers from this school in the APS Train-the-Trainer program).

Since the current APS training interaction occurs on the action officer level, it may be advisable to provide a forum for higher-level interaction, including contingency response planning and TTXs. Similarly, stakeholder conferences should be regularly conducted to facilitate interaction between the regional players who have a role in enforcing maritime safety and security measures. In both the TTXs and stakeholder conferences, it would be advisable to leverage the existing response organization, the *Délégation générale à la Mer*, providing opportunities for its members to interact and codify their practices.

APS as a Tool for Facilitating Relationships between the Navy and the Public

The Cameroonian Navy currently has mechanisms for public reporting of maritime threats. In order to gain greater maritime situational awareness, APS should build on this program and support in-country efforts to improve public reporting and to create a campaign to professionalize the public to report on bad acts at sea similar to the Kenyan/MCAT CWOW campaign.[81]

Conclusions and Recommendations

This case study was meant to provide planners, operators, and assessors with a complete and nuanced look at Cameroon and the role that APS plays in that country. This type of analysis may prove to be useful and necessary for the APS mission, in order to understand and appropriately target the mission in the future. Furthermore, it may be desirable to expand this type of analysis and

generate such analysis of other countries, particularly because each country APS engages possesses its own unique operational environment, political landscape, influencers, and maritime organizations. A detailed understanding of our partners may help planners and operators tailor the APS approach for each country, and more readily understand the impact of APS.

Using primary source data and secondary source materials, we've created a picture of the two major maritime organizations in Cameroon: the BIR Delta and the Cameroonian Navy, describing their history, their tasking, their capabilities, and giving some indication of their future uses. After framing this context, we've presented evidence that the APS effort is having the intended effect of improving Maritime Safety and Security in the region. Finally, we recommend goals for APS engagements in Cameroon to build on previous engagement and to maximize the use of resources and the environment. We then offer tactical and operational observations that future APS engagements will be able to leverage to achieve strategic goals in the region. We summarize some of the recommendations here.

1. *Use APS as a tool for facilitating and promoting Regional Cooperation.* Build upon the model of regional engagement, and provide opportunities for greater relationship-building between the BIR and its regional counterparts, particularly Equatorial Guinea and Nigeria. Additionally, support the maritime operations of CEEAC Zone directing APS Maritime Domain Awareness Training to the regional participants of the CMC for CEEAC Zone D, and VBSS training to the sailors aboard the ships under CEEAC Zone D OPCON.
2. *Use APS as a tool for facilitating Internal Country Stakeholder Cooperation*. Create opportunities for interactive events between the BIR and the Cameroonian Navy (and Naval Infantry). Work to establish regular information exchange and shared TTPs between the BIR and the Navy (pursuing high-level political blessing to do so). Regular interplay and exchange of information through APS should be continued, with an emphasis on using the CIES (the Security Education and Training Center), the firefighting damage control school and its trainers to train Navy, Naval Infantry, and BIR (efforts should be made to include the trainers from this school in the APS Train-the-Trainer program).
3. *Use APS to provide a forum for relationship building between high-level maritime stakeholders.* Interaction can include contingency response planning and TTXs. Stakeholder conferences should be regularly conducted to facilitate interaction between the regional players who have a role in enforcing maritime safety and security measures.
4. *Use APS as a Tool for Facilitating Relationships between the Cameroonian Maritime Organizations and the Public* In future APS engagements, it is recommended that the BIR (and other military organizations) participate in COMREL events, medical engagements, and Civil-affairs projects. If both the BIR and Navy build relationships with the public, this will allow them to win the hearts and minds of the populations, to obtain actionable intelligence from the residents, and to deny the pirates a safe-haven. Engagement in civil-military affairs projects will also help to shape the BIR as a non-predatory force, serving U.S. Military goals and DoS objectives. The Cameroonian Navy currently has mechanisms for public reporting of maritime threats. In order to gain greater maritime situational awareness, APS should build on this program and support in-country efforts to improve public reporting and to create a campaign to professionalize the public to report on bad acts at sea.
5. *Use APS as a tool for influencing the TTPs and operational philosophy of the new BIR Coast Guard.* The TTPs currently used by the BIR may not be readily converted to serve the more community-oriented charge of fisheries protection, customs control and regional cooperation. As the new Cameroonian coast guard is formed, there may be a need to expand

its tactics and rules of engagement, drawing away from the traditional roles of the parent BIR organizations. This paradigm redirection will be most practical if initiated at the establishment of this new force. We recommend that APS be used as a tool to facilitate Coast Guard training for the new BIR Coast Guard. This may be accomplished by leveraging U.S. Coast Guard trainers, or moving a step beyond this to include an exchange program between the BIR and a proficient African Coast guard such as the Mauritius Coast Guard.

6. *APS as a Tool for building the sustainability of BIR effort through maintenance training*. We recommend that future APS training in Cameroon include maintenance and repair courses to support ongoing maintenance efforts in that country.

All stages of engagement (planning, operations, and assessment) may wish to draw from and contribute to the observations made in this document. As Cameroon's political environment evolves, as the maritime threat changes, as the maritime institutions are modified, and as APS continues its engagement, it will become important to reexamine these issues.

9. Conclusions

This report has reviewed the APS program, with an in-depth look at 2011 efforts. We conducted discrete analyses along the four pillars of maritime sector development to determine the efforts, effects, and challenges along each line of effort. These analyses have identified areas of distinct programmatic impact and have revealed areas needing adjustment in order to maximize the value of existing APS efforts. Following these analyses, we made recommendations for future analyses of this mission and other TSC engagements – at the operational level and the strategic level. One important recommendation for this assessment is that a nuanced "Environmental Assessment" be conducted for each partner country in order to inform future APS operations and to tailor engagements. We then provided a sample assessment of this type, identifying the individual institutions and operational impact of APS in Cameroon.

Our recommendations for future APS missions fall along the lines of proposed programmatic changes, improvements to the APS training program, and enabling better internal NAVAF execution of APS. We assess that the APS program goals for 2012 and 2013 should focus on leveraging existing institutions, information, assets and infrastructure by setting programmatic goals that support partner processes, that network systems and people, and assist partners in developing long-term partner maritime development plans. We recommend that changes be made to APS training to enhance support partner-nation self sufficiency, including a "Phased Training" and "Multi-Tier training" approach, expansion of the "Train-the-Trainer" program, and support for development of African partner "regional centers of excellence". We also recommend that emphasis be placed on practical and real-world operations, and that meaningful standards be established for course curriculum. Internal NAVAF execution of the APS mission may be enhanced by augmenting existing knowledge management systems, by establishing an APS coordination website, including international partners in APS planning and execution staff, and establishing specific POCs within N52 to coordinate international efforts, to ensure student vetting, and to coordinate and direct on-the-ground training.

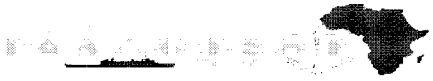
In the process of assessing efforts and effects along each pillar of maritime sector development, we have identified recurring themes in partner comments and behavioral examples indicating that APS is having a positive impact in the following areas:

1. Increased regional and international cooperation.
2. Utilization of APS program graduates in duties related to their training.
3. Use of APS training in real-world operations.
4. Increased leadership attention to maritime challenges & legitimization of maritime forces in an otherwise land-centric environment.
5. Self-assessment and self-initiated maritime response improvements.
6. Interoperability between maritime stakeholders.
7. Increased response to maritime threats.

There is compelling evidence that APS is having its intended effect, primarily as a result of the persistent presence of this mission which has formed genuine partnership and trust amongst participants. Relationships, trust, and interoperability between multinational players are key to the success of this capacity building effort. We assess that, with continued conscientious planning and execution, and with persistent presence and partnership, we will continue to find enhanced capability in our African partners, and new ways to address the maritime challenges in Africa.

Appendices

Appendix A: Main Planning Conference Partner Paradigm Survey



APS 2012 Main Planning Conference Participant Survey

Your feedback isimportant for ensuring the success of APS

Home Country: _____ **Job Title:** _____

Service: Navy Coast Guard Marines Army Other: _____

Years of Service: _____ **Rank:** _____

What is your area of expertise? _____

Have you ever participated in an APS engagement? yes no **years:** 2010 2009 2008 2007

Have you ever attended an APS planning event? yes no **years:** 2010 2009 2008 2007

***In your opinion*, what is the greatest benefit of APS?** _____

_____

_____

***In your opinion*, what is the greatest challenge of APS?** _____

_____

_____

List the three things that you hope to accomplish during this conference.

1) _____

2) _____

3) _____

In the following section, we ask that you give your opinion on the different elements required for the pillars of maritime sector development. ***Please do not use the same ranking for two different items in the same pillar.***

MSD Pillar: Maritime Domain awareness

Rank the following according to priority (1=highest priority, 5=lowest priority)

- [ ] Local fishermen routinely report bad acts to the navy or coast guard
- [ ] AIS and/or coastal radar systems are installed
- [ ] The government believes that the navy/coast guard is capable and will respond to threats at sea
- [ ] Other maritime organizations coordinate with the navy/coast guard to inform them about maritime threats
- [ ] A command center regularly communicates with and directs patrols

MSD Pillar: Trained Professionals

Rank the following according to priority (1=highest priority, 5=lowest priority)

- [ ] Training facilities are well equipped and sailors are paid a living wage
- [ ] Government offficials have regular meetings with navy/coast guard leadership
- [ ] Most people consider the navy to be an honorable and important profession
- [ ] Junior officers and enlisted feel that they can bring important information to the attention of their superiors
- [ ] Personnel are reguarly tested to assess their progress towards readiness goals

MSD Pillar: Maritime Infrastructure

Rank the following according to priority (1=highest priority, 5=lowest priority)

- [ ] Logistics and supply officers receive special training to manage the logistics plan for the fleet
- [ ] Ports and piers are regularly inspected and repaired and evaluated against readiness needs
- [ ] The navy/coast guard regularly coordinates with other maritime institutions to share maritime infrastructure
- [ ] The government understands the maritime infrastructure needs all in-country maritime institutions
- [ ] The supply chain is well managed and meets the readiness goals of the fleet

MSD Pillar: Response Capability

Rank the following according to priority (1=highest priority, 5=lowest priority)

- [ ] The navy/coast guard exercises regularly to train to respond to distress calls or maritime illicit activities
- [ ] The navy/coast guard has sufficient boats and/or aircraft to maintain maritime safety and security
- [ ] The navy/coast guard is regularly informed about maritime illicit activity from other maritime organizations
- [ ] The government is aware of the threats in their country's area of responsibility
- [ ] Local fishermen and populations feel that they can ask the navy/coast guard for help with maritime problems

MSD Pillar: Regional integration

Rank the following according to priority (1=highest priority, 5=lowest priority)

- [ ] Regional maritime training centers are established and all countries in the region participate
- [ ] Training, tactics and proceedures of neighboring countries are standardized with one another
- [ ] Maritime organizations in different countries share assets and coordinate patrols
- [ ] A maritime memorandum of understanding is established between the governments of neighboring countries
- [ ] Regional maritime organizations share information about maritime threats with their neighbors

List the most important thing you feel could be improved in future APS missions

_____

_____

_____

_____

_____

_____

Appendix B: Key Takeaways from the APS MPC 2012 survey

APS MPC African survey respondents were from senior leadership positions; most had not previously participated in APS. APS was perceived by our partners to bring training, systems, and to facilitate relationships. The mission was considered particularly useful in facilitating regional and international relationships. Challenges to APS were centered around the difficulties with the required systems (lack of assets and infrastructure), challenges with administering training (differing skill levels and requirements, etc) and problems with creating the right perspectives and relationships (international and regional cooperation, etc)

Respondents placed a high priority on regular testing and exercising, indicating a demand signal for the type of Phased Training that the APS 2012 CONOP prepares for, and also indicating that there could be receptivity for administered tests at the end of a course.
Respondents placed a high value on material systems and, strangely, a low priority on the procedures that would be necessary to operate or maintain the systems. This allowed us to note that APS planners should be aware of this result when planning to implement particular TTPs, and to recommend that this apparent incongruity should be examined in future surveys (and across different organizational tiers) to determine if this result holds.

A high priority was placed on the relationships formed between governments, between a host nation (HN) military and its government, and between regional stakeholders. Interestingly, the respondents prioritized the relationship between maritime professionals and the public as the least important aspect of maritime sector development. This may indicate a hierarchical way-of-doing-business and should be taken into account in future APS missions. For instance, an emphasis should be placed on engaging decision makers and forming regional memorandum of understanding (MOUs). Furthermore, planners should be aware that community-focused maritime programs may be met with reluctance or resistance from the professional maritime communities. Alternative (non-traditional) methods should be developed to engage these communities.

This survey seems effective in eliciting our partner's paradigms for maritime sector development and could be effective in directing our efforts in supporting the MSD pillars. It is recommended that this (or similar) be administered to APS participants and that the results be broken down by country to accurately identify operational paradigms and tailor the mission to each country.

Appendix C: APS Activity Plan and Execution Worksheet

APS Activity Plan and Execution Worksheet

Making APS activities high-value by including skills, systems, and relationships

Overview

Date: **Planner/Operator(s):**

Date the activity planned for/ executed on:

Activity name:

Activity Goal:

Maritime Sector Development

Which pillar(s) of Maritime Sector Development does this feed into? (circle one)

Trained Professionals	MDA	Infrastructure
Response Capability	Regional Integration	International Cooperation

Briefly describe:

Skill Building

What skills does this activity help to put in place?

Indicators that the skills are/are not being imparted?

Comments and/or specific feedback from the Instructors or Activity Organizers:

Systems Building

What materials were put in place during this activity (donated/installed/repaired)? Briefly describe

What processes were put in place during this activity? Briefly describe

Relationship building

In addition to providing skills, systems, and materials for increased maritime capacity and capability, APS recognizes that relationships are at the heart of our efforts. APS facilitates/builds/maintains formal and informal relationships between different participants and groups. These relationships may fall into the categories of 1) Internal organization relationships, 2) regional relationships, and 3) international relationships. We list the key APS players in Table 1.

For this activity, identify the players that will be involved, and the type of relationship building/maintenance activity that will feed the relationship.

Table 1: **Key players in APS**

Key Players in APS	**Which players were involved in the activity? Briefly describe their involvement**
1. HN Government 2. HN Military participants 3. HN Non-military maritime stakeholders 4. HN Commercial Interests 5. Regional Governments 6. Regional Military participants 7. Regional Stakeholders/publics 8. International Community military 9. International Community Stakeholders/publics 10. U.S. Military (DoD) 11. U.S. Gov (DoS) 12. U.S. Commercial interests 13. NGOs	

Table 2: **Elements of relationship building and maintenance and their definitions**

Element of Relationship building/maintenance	**Definition**
Access	There is some identified need for the players participating in this activity to work with one another in the future AND this activity helps the players understand the jobs and responsibilities of the other players relative to

	their own position.
Exchange	This activity facilitates information sharing between the players
Openness	This activity encourages honesty during the exchange
Assurances	This activity allows players to demonstrate their commitment to the relationship
Interdependence	During this activity, players will rely on one another
Sharing of Tasks	During this activity, players will work together to solve a problem or perform a task
Negotiating Differences	This activity will allow players to identify to identify differences in policy and/or operations AND facilitate the development of a mutually beneficial compromise in future exchanges

Relationship Development Chart: Each box represents a particular relationship. For instance, the intersection point between "U.S. Mil and H.N. Stakeholders" represents an exchange between the two parties. Characterize each exchange by the number of relationship building elements

	HN Gov	HN Mil	HN pub.	HN StkHld	Reg. Gov	Reg. Mil	Reg. StkHld.	Int. Mil	Int. StkHld	U.S. Gov	U.S. Mil	NGOs
HN Government												
HN Military												
HN Public												
HN Stakeholders												
Regional Government												
Regional Military												
Regional Stakeholders/ publics												
International Military												
International Stakeholders												
U.S. Government												
U.S. Military												
Non-Gov Organizations												

Appendix D: Analysis of the APS 2011 Togo hub Using the APS Activity Plan and Execution Framework

The following report is an operational analysis of the APS 2011 Togo hub engagement which occurred February 1-18, 2011. Data sources for this analysis include direct observation and on-site assessments, interviews with participants, situation reports of the MPP team, after-action reports from trainers, and notes from the USS Robert G. Bradley (RGB) Togo hub hotwash, and the Commander's event feedback report (CEFR).

Summary List of Activities

The APS hub in Lome Togo was conducted by the USS RGB on 1-18 FEB 2011. There were 25 discrete activities during the APS Togo hub. These may be grouped in the categories of Key leader engagements, Press Events, Community Relations (COMREL) projects, Maintenance and Repair, Training, At-Sea Exercise, Flag-Officer visit, Shipboard Reception, and Visits and Interactions with the French Ship Tonnerre (a vessel that was berthed near the RGB in the Togo hub).

Most of the engagement activities, such as training and key leader engagement, were planned in advance. Other activities such as the at-sea exercise, maintenance and repair activities, spontaneous training by RGB Boatswain's mates, and interactions with the French ship, *Tonnere*, were unplanned but extremely beneficial aspects of the engagement. Other planned aspects of the training, such as the VBSS training, would not have been possible (due to mis-scheduling of the mobile training teams) were it not for the impromptu flexing of the RGB.

- **Key Leader Engagements (KLE)**. The goal of these Key Leader Engagements is to build relationship with and start/continue dialogue with local stakeholders. The Commodore and ship's captain's office calls may be said to contribute to the final pillar of MSD: *International involvement and Comprehensive approach*. Key Leader engagements during this hub were as follows:
    1. CDRE Shaffer, Ship's Captain & Chief of Togolese Navy, CAPT Yawo Ametsipe
    2. CDRE Shaffer, Ship's Captain & Director of the Port and Mayor of Lome RADM Fogan Adegnon
    3. CDRE Shaffer, Ship's Captain & Commander of Lome Naval Base, CAPT Neyo Takougnadi
    4. CDRE Shaffer & Director of the Ministries of Defense
    5. CDRE Shaffer & Chief of Defense staff
- **Press Events**. The goal of press events is to shape the message of Africa Partnership station, to attract attention to the mission, and to build a relationship with the host nation public, the military, and the government. Press events do not contribute directly to building any of the MSD pillars, but they can support these pillars through secondary means (e.g. soliciting partner nation buy-in, or providing a forum for participants to build relationships with one another). Press events during this engagement were:
    1. Opening Ceremony. U.S. Gov & H.N. Mil greeted USS RGB when ship pulled into port
    2. Media event held at Chu Tokoin Hospital during COMREL event
- **Community Relations Projects (COMRELs).** The goal of COMREL projects is to demonstrate goodwill and a desire to build a relationship with our host nation partners. The intention of these events may be conveyed by the Commodore during Key Leader engagement, or conveyed by the press. When a COMREL event is run exclusively by the ship (without HN Mil participation), such an event can build relationships and access with the Togolese public, but will not directly contribute to any one pillar of MSD. When the HN military participates in the COMREL alongside the U.S. sailors, as in the case of the second COMREL at the orphanage, then the COMREL contributes directly to the *Trained Professionals* pillar of MSD. The COMRELs during this engagement were:

1. RGB Crew conducted 4 days of work at Chu Tokin, a local hospital. Cleaning, priming and painting.
2. RGB Crew and soldiers from Togolese Army worked at the Terre des Hommes orphanage, repairing doors, windows and furniture

- **Maintenance and repair**. The goal of Maintenance and Repair projects is to directly improve the infrastructure and response capability of our partners. Depending on the items under repair, the goal may be slightly different, as may be the pillar of maritime sector development that the activity feeds (see the descriptions below). In this hub, the maintenance and repairs were conducted exclusively by the RGB crew and the International APS staff members, LCDR Mickael Delrue (FR) and LCDR Marcello Abbate (ITA). With extremely few exceptions, the repairs were done on-site based upon assessed need, and did not include Togolese participation. Given the ad-hoc nature of the repairs (the ship was not informed that repairs were requested or needed until two days before it came into port), and the lack of spare parts or specialized equipment, the work that the RGB and the international officers conducted was significant. The costs for the repairs were (with no exceptions we found) funded by APS, individuals, and the RGB. The maintenance and repair projects were as follows:
    1. **AC Repair**. RGB and LCDR Delrue (FR) worked with the Togolese Navy to investigate the possibility of repairing the AC units in classrooms. RGB and LCDR Delrue then conducted repairs. The goal of these repairs was to make the classrooms comfortable for training. This may therefore be said to feed the MSD pillar of *Trained Professionals*. Because the Togolese played a limited role (if any) in the repair, this could not be considered a direct training experience.
    2. **Boat Winch Repair**. RGB and LCDR Delrue (FR), and LCDR Abbate (ITA) conducted repairs of the boat winch for pulling Defender boats out of the water. The motor of the winch was recoiled, a brake pad was replaced, and a new cable was installed. By making the winch functional, APS participants directly fed the MSD pillar of *Maritime Infrastructure*. Because the Togolese played a limited role (if any) in the repair, this could not be considered a direct training experience (e.g. the MSD pillar of *Trained Professionals*). It should be noted that replacement of this winch was a direct request from the Togolese navy
    3. **HF Radio Repair**. RGB and LCDR Delrue, and LCDR Abbate disassembled three inoperable HF radios to make one good working one. The goal of this activity was to repair communications equipment, which are important systems for *Response Capability* and therefore may be said to feed that pillar of MSD.
    4. **Defender Boat Maintenance**. RGB enginemen changed oil and adjusted the hydraulic steering system for a Togolese defender boat. The goal was to improve the functioning and longevity of the craft and may therefore be said to feed the *Response Capability* MSD pillar.
    5. **Defender Boat AIS System Fix**. RGB crew helped repair nonfunctional AIS on Togolese Defender boats. The goal of this repair was to improve the *MDA* and *Response Capability* of the Togolese navy.
    6. **MSSIS and AIS Software Install**. LCDR Abbate examined the AIS system in the naval base in Lome. He also reinstalled a version of the MSSIS software that would allow the AIS to feed the picture. The MSSIS software and the AIS software directly contribute to the MDA picture and MDA capability of the Togolese navy (the MSD pillar of *MDA*). This should necessarily contribute to the response capability, as well, but this connection is slightly less solid since there seems to be evidence that the Togolese do not use the AIS system to direct their operations. Furthermore, the Togolese did not assist in the repairs and, at one point, N9 assessments noted that certain ops center participants were unable to log into or use the AIS system.
- **Training**. In the minds of many, this activity is the main purpose of APS. The emphasis, of course, is on the MSD pillar of *Trained Professionals*. Depending on the course material and how it is taught (classroom instruction vice practical application), the course may also feed other pillars of MSD. The following training occurred during this hub:

1. **Coxswain training**: RGB Boatswain's mates trained Togolese sailors on line maintenance to include eye and short splicing and frapping. The practical nature of the event and the apparent friendliness provided the opportunity for relationship building, and imparting skills. This contributed to the MSD pillar of *Trained Professionals*.
2. **Fisheries enforcement training**. The International Monitoring Control, and Surveillance Network (IMCS) taught this course. Regional APS Hub in Togo selected as the first training program for fisheries. The training consisted of 3 days of classroom theoretical lectures, followed by two days of operational, at sea boarding and inspection training. This practical course fed the pillars of *Trained Professionals* and *Response Capability*. Not only did students plan and execute an operation using the skills they had acquired in the classroom, students from different countries worked together to solve problems, making this a good opportunity for *Regional Integration.*
3. **Visit Board Search and Seizure (VBSS).** This course was taught and translated by RBG crew after a request for forces (RFF) for a mobile training team went amiss. The trainers who were scheduled to train the course did not plan to come to Lome until February 14, four days before the hub was completed. There were 22-24 students in this course. Most were francophone (2-3 were not). The training consisted of basic tactical movements and room entry and was taught with lectures and with practical classroom training. In port training also included a practical session, using Togolese small boats to embark VBSS teams. They came along the RGB in port and boarded via Pilot's ladder, and the teams then secured portions of the ship. Since this included a practical session, and because the skills were necessary to respond to threats at sea, we may say that this course helped facilitate *Response Capability*.
4. **Small Boat Maintenance.** This course was taught by two members of the Security Force Assistance (SFA) detachment of Maritime Civil Affairs and Security Training (MCAST). This was a combined engine maintenance/hull maintenance course. As requested by the Host Nation, this was supposed to be two courses taught simultaneously (hull maintenance and engine maintenance). Without consulting planners, the SFA decided on their own to merge the two classes into one (without consulting with APS planners). Instructors noted that, had they known the types of repairs needed for the Togolese large patrol craft (one craft had some non-negligible damage to the hull), they would have brought different materials.
5. **Maritime Intelligence**: The goal of this course was to teach intelligence gathering and information fusion. This course was primarily a classroom work and did not contain a practical component. This training may be said to contribute to the MSD pillar of *Maritime Professionals*.

- **At-sea Exercise.** On February 4, members of the Togolese Navy and the RGB met to discuss the possibility and requirements for an at-sea exercise. This was a spontaneous activity, and not planned in advance of the ship's visit. The ship would develop a scenario where the Navy was looking for a ship violating their territorial waters. The U.S. would simulate the enemy ship. Intelligence would come through the ops center, and the Togolese navy would come to locate, inquire, and escort back. It was initially thought that there would be no VBSS component but the Togolese participants wanted the VBSS rehearsal. The students from the VBSS would play the boarding team, conducting dry land VBSS practice tactics first. The Togolese requested that the RGB provide gas for their boats. The exercise was conducted, and all participants agreed that the communications and location section of the exercise went well. Unfortunately, the VBSS portion of the exercise to commence because the ship's captain feared that the hulls would collide and cause damage.
- **Flag officer Visit** During the last week of the Togo Hub, General Ward (AFRICOM) came into the country. We have little data regarding the nature of his visit.
- **Shipboard Reception**. On February 3, the crew of the RGB hosted a reception on board the ship. Host nation military representatives attended, as did host nation governmental personnel and local maritime stakeholders. Representatives from the U.S. Embassy also attended and trainers from the peacekeeper training program.

- **Visits and interactions with the French** The Tonnerre was berthed near the RGB. Sailors from the RGB took tours of the French ship and interacted with French navy personnel.

The Pillars of Maritime Sector Development

As can be seen in the above discussion, the events during the APS engagement contributed, in varying degrees, to the different pillars of Maritime Sector Development. For instance, in the above descriptions of each event, we have included some of the most likely linkages these pillars.

We may use these linkages to conduct a straightforward count of how many times the activities touch on a particular pillar of maritime sector development. We therefore note that the 25 events, there are 31 instances where it can be said that the activities feed a particular pillar. This is not a measurement of the extent to which an activity contributed to a pillar, nor whether the activity had any significant result in modifying the condition of that pillar, but it does give us a good understanding of the direction of our efforts. This type of analysis will allow us to make some immediate course corrections. For instance, we may see if one particular pillar dominates our efforts, or if we have neglected to put efforts to another pillar, particularly if such a demand is called for in a particular country (and noted in the country action plan).

For the Togo hub, we display the results of our count graphically in figure 1. Of the 31 contributions to the pillars of maritime sector development, the pillar of *International and Comprehensive Approach* (30%) was the most actively engaged in the Togo hub, followed closely by *Trained Professionals* (26%) and *Response Capability* (26%). The pillars of *MDA*, *Regional Integration*, and *Infrastructure* combine to comprise the remaining 20%.

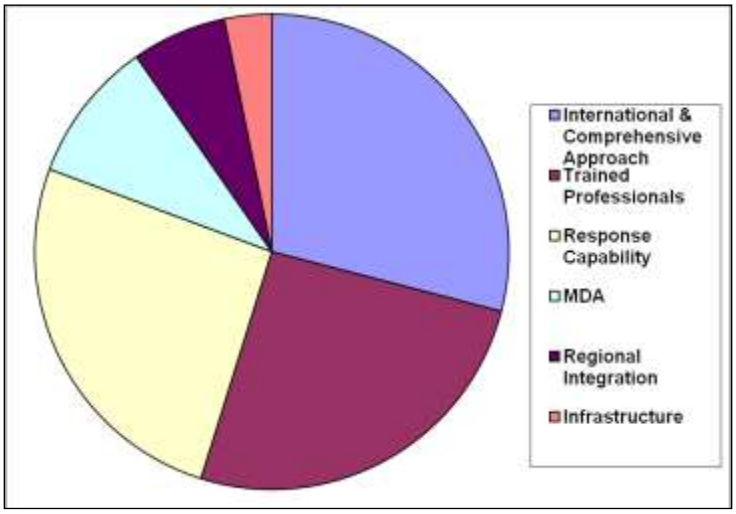


Figure 1: Pie chart reflecting the number of contributions to each pillar of maritime sector development during the APS 2011 Togo hub. Of the 25 events, there are 31 instances where it can be said that the activity contributed to a particular pillar.

The heavy bias towards the *International and Comprehensive Approach* does not, unfortunately, reflect a particular effort or long-term plan towards creating an international and comprehensive approach in Togo. As far as we can ascertain, such a plan does not exist. Rather, this pillar is a catch-all for activities that may involve international partners (such as the international APS staff), or discussions between host nation leadership and the United States representatives (such as Key Leader Engagement). In the first instance, the international partner participation was incidental; the APS officers from France and Italy were scheduled to be on the upcoming *USS Whidbey Island* APS mission (since cancelled) and were in Togo to assess engineering needs before deploying with their own mission. The Key Leader Engagement may be

said to help contribute to a *Comprehensive Approach*, but the engagements themselves were structured primarily as social engagements, and there was no particular end state desired or planned for any one. Fortunately, the same thing cannot be said of the emphasis placed on the *Trained Professionals* and *Response Capability* pillars. This hub was designed to have a concerted effort to training maritime professionals, and the capacity building activities of APS are intended to improve our partner's capability to respond to threats at sea. The emphasis of activities in these areas can be taken as a positive sign.
The contribution to *Regional Integration* arises from the hub design itself: partners from multiple countries training and learning together. Contributions to the *MDA* and *Maritime Infrastructure* pillars were a direct result of (mostly unplanned) repairs and maintenance conducted by the French and Italian APS officers and the crew of the Robert G. Bradley. This observation comes with several implications. One implication is that the presence of a ship and its expertise provides an opportunity for spontaneous capacity building of infrastructure and MDA that would be otherwise unavailable.

Key takeaways from this section:

- **The APS hub in Togo succeeded in feeding all pillars of the Maritime Sector Development Model. Pillars receiving the largest contribution were International and Comprehensive approach, Trained Professionals and Response Capability.**
- **While the contributions to the Trained Professionals and Response Capability are a direct result of planned efforts, contributions to the remaining pillars appear to be situational and highly dependent on individual initiative, the ship's presence and crew expertise.**
- **The contributions to the MSD pillars of International and Comprehensive Approach does not, unfortunately, reflect a particular effort or long-term plan towards creating an international and comprehensive approach in Togo. As far as we can ascertain, such a plan does not exist. Rather, this pillar is a catch-all for activities that may involve international partners (such as the international APS staff), or discussions between host nation leadership and the United States representatives (such as Key Leader Engagement).**
- **Although we can assess that the APS hub activities contributed to the pillars of maritime sector development, this does not automatically yield a measurement of the extent to which the activity contributed to a pillar, nor whether the activity had any significant success in modifying the condition of that pillar. For this, we must find a different framework for considering the problem.**

Measuring the Value and Contribution of APS Activities

The heart of an operational assessment lies in answering the question, "Are we doing the right things?" Because we use as our guide the Maritime Sector Development (MSD) model, this question should be rephrased to read, "Are we doing the things that are necessary to build or reinforce the pillars of maritime sector development and achieve our desired end state (Maritime Safety and Security)?"
In the previous section, our survey of APS activities and their contribution to the MSD pillars can give us some insights in answering this question. For instance, we may be able to see that the contribution to a particular MSD pillar was underrepresented and, based on the needs of the country, we may therefore wish to increase the number of activities that contribute to that pillar. This may give us some insight about the direction our future efforts should take.

We have also noted that an increase of activities aimed towards building a particular pillar may only adjust the relative contribution of effort, and not necessarily improve the quality of the contribution. We need a consistent framework to judge the merits of each activity so that we may know the extent to which the activity contributed to an MSD pillar. Consider that 1) debugging slow AIS software and 2) installing a coastal radar station both contribute to the MSD pillar of *Maritime Domain Awareness*, but nobody would ever claim that these activities had equivalent value in improving maritime safety and security!

In the following section, we introduce a simple model that will allow us to consistently characterize the elements of each APS activity, and their contribution to the pillars of Maritime Sector Development. This model is derived from assessing the responses of more than 100 interviewed African partners participating in APS.

Framework for assessing the contribution and value of APS activities

APS activities put systems in place that are necessary for MSS, establish the skills necessary to use the systems, and facilitate the relationships that will be needed to implement and sustain both systems and skills. By consistently evaluating APS activities based on the systems that are emplaced, the skills that are taught, and the relationships that are facilitated and built, we are better able to evaluate the contribution to each MSD pillar. Figure 2 is a representation of the fact that each pillar of MSD contains an interrelated and unique combination of systems, skills and relationships.

Rather than discussing this in great detail, we demonstrate the framework by using it to analyze the APS 2011 Togo hub.

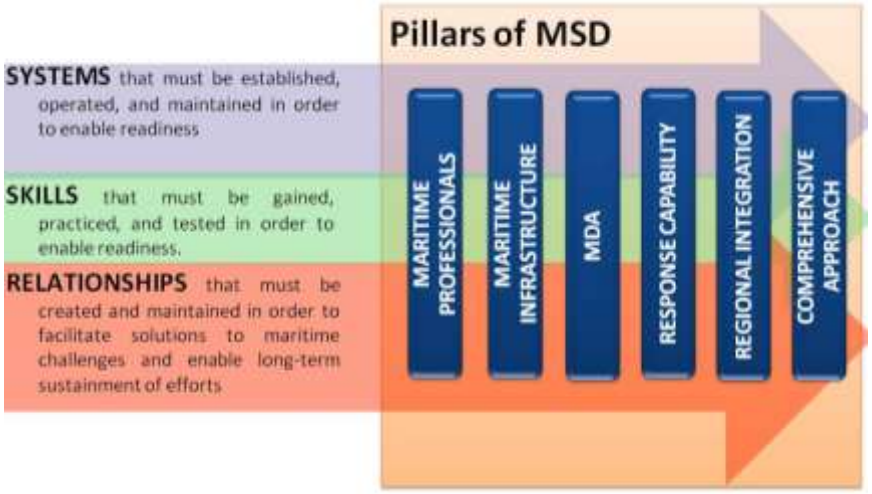


Figure 2: A graphical depiction of the way in which all pillars of maritime sector development rely upon a combination of systems (materials and processes), skills, and relationships.

SYSTEMS that must be established, operated, and maintained in order to enable readiness

The systems that are needed to maintain readiness will be different for each MSD pillar. For instance, *Maritime Domain Awareness* readiness requirements in one country may require an AIS transceiver, while the *Response Capability* may require a functioning logistics supply chain to keep fuel in the patrol boats.

This leads to an interesting observation: that systems may include both materials (such as the AIS transceiver) and processes (such as the logistics supply chain). These are related, but separate elements. We therefore evaluate the system contributions under these subheadings: materials and processes.

During the APS 2011 Togo hub, 14 of the 25 activities put systems in place that contributed to maritime sector development. Details of these activities are given in Table 1.

Table 1: A listing of the activities that put systems into place during the APS 2011 Togo hub. These systems may be physical materials or processes that will contribute to overall readiness.

Activity	SYSTEMS (Materials)	SYSTEMS (processes)
	What materials were put in place during this activity?	What processes were put into place during this activity?
Community Relations project at hospital	HAZMAT kit left behind from the ship	None
Repair of AC in classrooms	Air conditioning in the classrooms	None
Repair of boat winch	Boat winch for Defender boats	None
Repair of HF radio	HF radio	None
Maintenance of Defender boat	maintained defender boat	None
Maintenance and repair of AIS on Togolese Defender boats	AIS hardware on boats	None
Maintenance and repair of AIS and MSSIS software	AIS software, MSSIS software	None
Coxswain Training	None	Boatswain practices: line maintenance
Fisheries Enforcement Training	None	Planning and executing a fisheries patrol
VBSS training	None	VBSS procedures
Small boat Maintenance training	None	Maintenance procedures
Maritime Intelligence training	None	Intelligence gathering and fusion procedures
Small boat operations training	None	Practices for small boat operations
At-sea Exercise	None	Procedures for responding to a threat at sea.

There are several interesting facts that result from this analysis. Let us look first at the materials column. These materials contributed to *Maritime Domain Awareness* (Software install and AIS system on patrol boats), *Response Capability* (HF radio, boat winch, and HAZMAT kit), and *Trained Professionals* (AC in classrooms). Note that all of the APS activities that emplaced materials were a direct result of the ship's presence, the crew expertise and initiative, and the APS international staff who happened to be on site. We may infer (correctly) that no materials would have been emplaced if the ship had not been present to support the ad-hoc repairs. It also becomes apparent that there was no plan to impart materials during this APS hub. It is unknown whether this was by design or oversight.

Look now at the second column: the processes that were put into place during this hub. Not surprisingly, most are associated with the training that was planned as part of this engagement. These include Boatswain practices, planning and executing a fisheries patrol, maintenance procedures, intelligence gathering and fusion procedures, and practices for small boat operations. The last process that was rehearsed was a result of the (unplanned before the hub) at-sea exercise, an activity that was not planned before the ship arrived, but which was developed between Togolese and RGB operators shortly after the hub began.
It is interesting to note that the processes and materials imparted during this hub are uncorrelated. In other words, the activities that emplaced materials, through repair or maintenance or donation, did not also possess an element of training. There does not appear to have been any drive to ensure that the host nation participants would play an equal or even

apprentice role in reviving broken systems. (It should be noted that a large number of Togolese personnel were engaged in the classroom training when many of the repairs were taking place.) There appears to be a mentality of "get the job done" without realizing that the corollary skills must also be taught.

Assessments observed a few instances of "maintenance and repairs" activities, and it was clear that the APS visitors were taking the lead on projects, and that the host nation participants, when they were involved, played an ancillary or observer role. Take for instance, the repair of the MSSIS system. The following is a description given by LCDR Marcello Abbate (ITA) who led the effort to repair the broken system:

> "When we arrived in Lome the MSSIS didn't work at all, no tracks on screen no AIS data sent to the others stations. We provided with a new installation of the program with a new start up, showing and writing the correct procedure to the Togolese officers in charge. After that we were able to see on screen all the Automatic Identification System (AIS) data transmitted from the others stations but ours AIS data.
> Thanks to the ET personnel from RGB we added an adapter and changed the port to receive data from our AIS receivers. Than we have changed the configuration file and actually we send our AIS data to all other station, we had also received a confirmation from Volpe guys on the East Coast."

For one extended period, assessments observed that Europeans and Americans sat close to the computer system, making phone calls, and troubleshooting computer concerns, while the Togolese representative in the operations center sat in a corner far removed from the action. Whether this exile was self-imposed or mandated, or if the man was simply waiting to be invited, there was clearly no perspective that repair itself should be viewed as a training opportunity. Of course, the Togolese operators were trained on the repaired system, but they were not part of the process for repairing a system that, in all likelihood, will break again. This observation is not meant to diminish the excellent effort that LCDR Abbate and others made to repair this damaged system. Rather, it gives some insight into a recurring complaint from U.S. and international partner participants that the international donations to our African partners may not be maintained or repaired. That maintenance and repairs were conducted in Togo undoubtedly led to short term increased capability. We observe, however, that such short term gains may not translate into long-term results unless training and mentorship becomes closely connected with real-world repairs.

There is a similar lack of correlation between the processes that were put in place and the materials that would be used in those processes. This reflects another recurring theme in partner nation interview and survey feedback: "You train us on systems that we do not have access to." Although APS funding lacks the flexibility to include asset donation (this is probably a good thing, as it helps prevent excessive asymmetry in the relationships with our partners as we will discuss later), it may be beneficial to more closely link the processes that APS teaches with the systems that are currently in place, or time the training to happen in conjunction with previously planned donations.

Key takeaways from this section

- **More than half of the activities in this APS hub put systems (materials and procedures) in place to improve maritime safety and security.**
- **The materials that were put in place during this hub were repairs to existing systems. Repair or maintenance of these materials contributed to *Maritime Domain Awareness* (Software install and AIS system on patrol boats), *Response Capability* (HF radio, boat winch, and HAZMAT kit), and *Trained Professionals* (AC in classrooms).**

- **The ship played a crucial role in all of the repairs to physical materials, and a lead role in 10 of the 14 systems (both materials and processes) that were put in place during this hub.**
- **All of the repairs to physical systems were done on an as-needed basis and were heavily dependent on individual initiative and shipboard expertise and equipment. Without the ship's presence, these systems would not have been repaired.**
- **In general, the repairs to existing systems were not used as training opportunities – nor were the existing training opportunities used conjunction with repairs to or gifting of an actual system.**

SKILLS that must be gained, practiced, and tested in order to enable readiness

In this section, we discuss the skills that were taught during the Togo 2011 hub. In Table 2, we have included a column of APS events that imparted skills, and, in the second column, a list of the skills that these events were intended to impart. You will note that some of the activities that emplaced "processes" from the previous section are reflected here. In the third column, we give indicators that these skills were or were not actually imparted. Please note that this third column should normally include student observations from the surveys (this would, for instance, tell us whether the skills were being taught to the appropriate trainee), but at the writing of this report, these surveys have not yet been fully analyzed. We rely, instead, upon after-action reports, and interviews of participants following the hub. With incomplete data, we are able to give only a partial picture, and base our recommendations on this picture, acknowledging that additional information may change our perspective.

We begin our assessments of the skills acquired with an observation that was made by Commodore Shaffer during this hub. He noted that there was a distinct difference between the familiarization courses taught during APS during a short hub visit and the rigorous, standard training provided by Peacekeeper trainers. He noted that this was a different type of training that focused on train-the-trainer, training to a UN standard, and making forces self-sufficient. In his words, "They're training guys to run small arms ranges and make staff level decisions." He was also impressed that, in Peacekeeper training, the trained partner nation (PN) forces were required to provide 50% of the training. He questioned why APS wasn't tracking the previous participants who would be qualified to administer future courses. One of the issues, he noted, was that we do not embed U.S. maritime trainers with a unit to train to specific goals (he noted that the AKOTA trainer had embedded with PN forces for 1.5 years). He said, "We don't have guys who are embedded from a maritime point of view. We don't consider that to be a career development move."

This is an interesting observation, and provides an opening for recommending that APS develop a standard for training, allowing us to build upon the skills that we know our partners to possess, based upon their history of previous APS training.

It is notable that so many of the skills that were taught in this hub were subsequently tested or otherwise used. The structure of the Fisheries enforcement course seems to be particularly indicative of a successful skill transfer. The after-action report created by the IMCS Network training coordinator for the course Marcel Kroese (while likely not bias-free – this is the risk of self-evaluation!) has several interesting points that indicate participants were able to execute the skills they had acquired:

> "…the facilitator played no role in the planning and that the resultant patrol plans were detailed and comprehensive and included targeting various offences, zonal and gear infractions. In a real-world scenario the plans were very well conceived and developed and show a high degree of incorporation of the planning methodology presented.
> Since only one vessel was available for boarding, the Director of Fishing and Aquaculture, Dr Ali arranged for the vessel to be in port and to be inspected. The vessels launched from the Navy base and practiced a boarding at sea on the fishing vessel in port.

We were fortunate that on the second day of operational training, a large refrigerated carrier vessel moored in the port, thus enabling the class to practice a port inspection according the PSMA to check on the ICCAT pertaining to tuna in the Atlantic Ocean
While only one vessel, the "MFV AMOU 1", was available for boarding, a small stern trawler, the groups prepared various boarding strategies, such as opposed boarding or a routine inspection. A reefer the "MV ELBRUS" which came in to discharge fish was also inspected in port. This inspection was conducted in terms of the Port State Measures Agreement and conformed to its provisions."

In similar vein, the impromptu at-sea exercise that the RGB worked with the Togolese Navy seems to be a particularly inspired method for rehearsing the skills taught in the classroom, reinforcing the practices, and assessing the extent to which students have acquired the necessary expertise. The apparent benefit gained from this practical portion of the training seems to beg the recommendation that all courses retain such an element (in fact, this was one of the reasons that the N9 shop recommended the "Phased Training" concept of operations for APS 2012).

The value of practical exercises was particularly apparent in this hub. In an interview with a Togolese navy officer three months after the Togo hub, we learned that a Togolese patrol vessel had successfully completed a VBSS on a vessel, which proved to be acting illegally, and that the vessel was escorted ashore. Participants of this boarding directly credited the successful operation to APS training they had received.

Table 2: Skills that the APS 2011 Togo hub worked to put into place

Activity	**What skills did this activity attempt to put into place?**	**Indicators that the skills were/were not being imparted**
AIS/MSSIS software repair	Appropriate use of the new MSSIS install	During the at-sea exercise, operators were able to correlate the radar and AIS picture accurately
Fisheries enforcement training	Recognizing the types of fishing that occur in the region; understanding fishing areas for the different target species adjacent to the regions coastline; anticipating the types of vessels likely to be encountered; operational limitations of the patrol vessels; safety considerations; Planning and executing a fisheries enforcement patrol	Course participants developed comprehensive plans using the methodology from the course , preparing various strategies such as opposed boarding and routine inspection. They then performed a simulated boarding on a fishing vessel in port, and an actual port inspection on a refrigerated carrier vessel
VBSS Course	Basic tactical movements and room entry and was taught with lectures and with practical classroom training. This was followed by in-port practical training.	In port training used Togolese small boats to embark VBSS teams. They came along the RGB in port and boarded via Pilots ladder. The student teams then secured portions of the ship. In an interview with a Togolese navy officer three months after the Togo hub, we learned that the Togolese navy had successfully completed a VBSS on a vessel, which proved to be acting illegally, and that the vessel was escorted ashore. Participants of this boarding directly credited the successful operation to APS training they had received.
Small Boat Maintenance	Engine and hull maintenance of small boats	None currently available
Maritime Intelligence	Familiarization with Intelligence fusion techniques	None currently available

Coxswain course	familiarization with small boat operations	None currently available

Key takeaways from this section:

- **There is no standard that APS courses train to. As it currently stands, the mission consistently trains for familiarization, rather than mastery. Future missions should consider developing a meaningful standard that would allow particular courses to serve as prerequisites for other courses.**
- **Courses that were taught during this APS hub that contained a practical "hands on" element of training appear to be highly successful. The fisheries enforcement course, and the VBSS course were shown in real-world operations to have imparted skills they intended to teach.**

RELATIONSHIPS that must be created and maintained in order to facilitate solutions to maritime challenges and enable long-term sustainment of effort

It is very easy to conceptualize the APS mission exclusively as a training mission. Certainly, training constitutes a significant portion of APS coordination, funds and efforts. Furthermore, the concept of training is conducive to the U.S. Navy way of planning and operating. But capacity building is necessarily more than training. The most skilled navy in the world would be unable to perform its duties if the appropriate materials and processes were not in place: if they did not have ships or fuel, or navigation and communication equipment, or if there was no consensus on the procedures needed to respond during an at-sea threat. We may very easily therefore make the argument that systems (materials and processes) are required for maritime safety and security. Indeed, when we ask our partners how we can help them build their maritime capacity, an overwhelming number of them request systems and training. It is an interesting result, therefore, that these same partners in the same interview cite *relationships* as the greatest benefit of the APS mission. Why *relationships*? Why would their request differ so markedly from what they named as the greatest benefit they received from this mission?

Table 3: Groups or organizations that have historically participated in APS

APS PARTICIPANTS
13) U.S. Military (DoD)
14) U.S. Government (DoS)
15) HN Military
16) HN Government
17) HN Non-Military Maritime Stakeholders
18) HN Commercial Interests
19) Regional Military
20) Regional Governments
21) Regional Stakeholders/Publics
22) International Military
23) International Stakeholders/Publics
24) NGOs

The connection between capacity building and relationships is often a secondary connection and is therefore more difficult to see and understand, although anyone who has worked in an APS hub will agree that there is something important about the relationship aspect of the mission. Unfortunately, we have tended to sort it under a personal metric of "nice but unnecessary side effect of the APS engagement". In fact, as we claim here, the systems and skills that we wish to have in place in order to increase maritime capability and capacity are crucially reliant on appropriate relationships in order to implement and sustain them. We will try to explain this here.

Consider a scenario where different agencies within a country have various types of equipment for obtaining maritime domain awareness. Say that the department of fisheries has a vessel monitoring system (VMS), and that the navy has coastal radar, and that the port authority has AIS. Consider that none of these participants possessing these various valuable pieces of information ever work together to combine it into actionable information. We may reasonably go a step further and discover that the agencies with the MDA equipment are mandated by current law to exchange information with one another. Yet, we find that information continues to be stove piped, and that the processes that are supposed to be in place to merge this information is never actually used. In this scenario, the most effective means to improve the pillar of *Maritime Domain Awareness* is not to install yet another system. The best investment of time and effort may be to put the appropriate people into a room and create an environment where they may learn about one another, speak openly about their common problems, and work together to find common solutions.

Table 4: Elements of relationship building and maintenance and their definitions

Element of Relationship building/maintenance	**Definition**
1. Access	There is some identified need for the players participating in this activity to work with one another in the future AND this activity helps the players understand the jobs and responsibilities of the other players relative to their own position.
2. Exchange	This activity facilitates information sharing between the players
3. Openness	This activity encourages honesty during the exchange
4. Assurances	This activity allows players to demonstrate their commitment to the relationship
5. Interdependence	During this activity, players will rely on one another
6. Sharing of Tasks	During this activity, players will work together to solve a problem or perform a task
7. Negotiating Differences	This activity will allow players to identify differences in policy and/or operations AND facilitate the development of a mutually beneficial compromise in future exchanges

This is obviously an optimistic and overly-simplistic case – but it does reflect some on-the-ground truth for some of our partners. And hopefully it helps prove the point.
Consider another scenario where a particular navy has a large desire to respond to threats at sea, but limited capability to do so. It understands its tasking but is hindered from operating because its budget for training and for fueling its vessels is small, and its government does not provide any funding for maintaining its infrastructure and ships. What would it mean if APS key leader engagements were used to encourage the relationship between the navy and the minister of finance (or some other similar ministry), or if APS facilitated the relationships between navy

leadership and his counterparts in neighboring countries, encouraging them to work together and maximize the value of the assets that they do have? This is not a far cry from the type of relationship building that APS already engages in.

In fact, APS has relationship building activities, but we have not labeled them as such. Furthermore, we may downplay the value of such activities because they do not appear to have a direct link to one or more pillars of maritime sector development. We have mentioned one (key leader engagement). Consider that COMREL projects, civil affairs projects, Project HANDCLASP donations, and medical engagements are all effective in building relationships with local community leaders, and with the host nation public. If we appropriately characterize the value of these activities, we may tailor them in order to build the relationships that are needed to implement and maintain the systems and skills that would be most effective in achieving our desired end state (maritime safety and security). Additionally, if we acknowledge that relationship building is an objective of the APS mission, rather than a happy side-effect, we can enhance existing activities and increase their value and potential impact.

Table 5: Overall relationship building profile measuring the interaction and elements of relationship building between the groups participating in the APS 2011 Togo hub.

	U.S. Mil	U.S. Gov	HN Mil	HN Gov	HN Pub	HN Comm	Reg. Mil	RegGov	RegPub	Intl Mil	Intl Pub	NGOs
U.S. Military (DoD)	6	6	38	3	10		10			10		
U.S. Government (DoS)			7	2						2		
HN Military				9	5		17					7
HN Government												7
HN Non-Military Maritime Stakeholders												
HN Commercial Interests												
Regional Military							7					7
Regional Governments												
Regional Stakeholders/Publics												
International Military												
International Stakeholders/Publics												
NGOs												

After this rather long introduction to the concept of using relationships as a metric for measuring the APS engagement, let us proceed to see how this can be done by analyzing the relationship building aspects of the Togo hub.

We begin by listing the participants that have historically taken part in APS engagements (Table 3). This merely provides a reference for us as we begin to sort through the type of relationship building that does occur, and the type that ought to occur.

Our next step is to provide a metric for characterizing the type of interaction that a particular activity facilitates. In Table 4, we give a list of the elements of relationship building/maintenance. We draw these elements from social science studies on relationship building, and the metrics for measuring the strength and quality of relationships.[83,84] This allows us to systematically categorize the activities of an APS engagement in terms of its relationship-building merit. These metrics are access, exchange, openness, assurances, interdependence, sharing of tasks, and

[83] "Guidelines for Measuring Relationships in Public Relations" by L.C. Hon and J.E. Grunig, 1999, Institute for Public Relations

[84] "Segment Selection by Relationship Strength" by J.M.C. Schijns and G.J. Schroder, 1995, University of Limburg, Maastricht

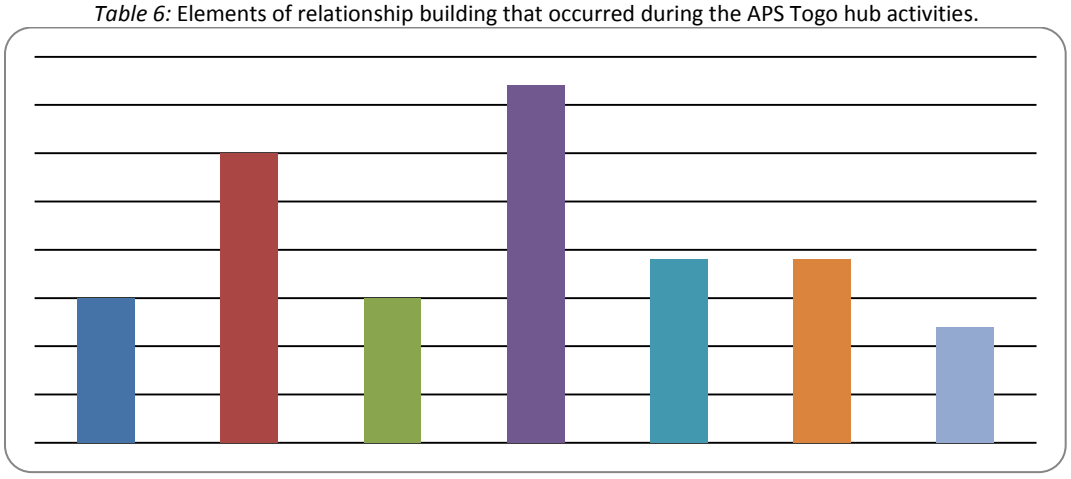
negotiating differences. We provide specific definitions for these elements in Table 4 to remove as much ambiguity as possible.

For each event, we consider the participants that were involved, and the elements of relationship building that were part of that exchange. This allows us to populate the blocks of Table 5 with a meaningful number. We may then compare and contrast the relationship building between each group.

Relationships between Groups

Unsurprisingly, the primary relationships that were built during this engagement were the relationships between the U.S. Military participants and the Host Nation Military. The number of interactions and the inherent elements of relationship building was more than double those of the next interactions, that which occurred between Host Nation military participants and their regional partners. This is undoubtedly due to the regional nature of the hub. It is clear to see that, without the current design of the hub, there would be significantly fewer opportunities to facilitate these types of relationships.

Table 6: Elements of relationship building that occurred during the APS Togo hub activities.



It should also be clear by looking at the low population or empty blocks in Table 5 that there are many relationships that are not being created. Because we have no basis for comparison with other hubs, nor with partner nation priority relationships, it is difficult to infer at this stage what this gap means for the efficacy of APS. In future analysis, we will be able to contrast the relationship profile with other hubs and engagements, and against the paradigms of our partners. At this time, we may simply say that there appear to be missed opportunities to build relationships in the Togo hub. Participants that were not engaged (or minimally engaged) include host nation commercial interests, regional governments, regional publics, international military, host nation governments, international publics, and non-governmental organizations. This lack represents possible missed opportunities, and it may be advantageous to design future APS engagements with these groups in mind.

Elements of Relationship Building

In Table 6, The most heavily used elements of relationship building in the Togo hub activities were Exchange (*Definition: This activity facilitates information sharing between the players*) and Assurances (*Definition: This activity allows players to demonstrate their commitment to the relationship*). The remaining elements of relationship building were fairly low. This indicates that the types of activities that occurred during the APS Togo hub were passive relationship building, rather than active. Activities that require participants to actively engage in meaningful ways will

include the relationship building elements of *Sharing of Tasks*, *Negotiating Differences*, *Openness*, and *Access*. Activities that include these elements are more likely to build robust and longer-lasting relationships than passive activities than their passive counterparts.

High Relationship Value Activities

It is a straightforward evaluation to examine the groups of participants in each activity and the nature of their interaction to determine which activities have the greatest relationship value. Using this metric, the following activities had a variety of participant types and/or a large contribution of relationship building elements in the activity:

1. **Fisheries enforcement training:** The International Monitoring Control, and Surveillance Network (IMCS) taught this course. Amongst the 20 participants were officers and Non-Commissioned Officers from the Ghana, Benin and Togo Navies, as well as the Director and staff of the Ministry of Agriculture the promotion of Fishing. The diversity of the types of participants (NGOs, Host-nation military, regional military, and host nation government) is an indicator that the activity had the potential for high-relationship value. This value was further enhanced because the nature of the coursework was active, rather than passive learning; the training consisted of 3 days of classroom theoretical lectures, followed by two days of operational, at sea boarding and inspection training. This type of engagement fed elements of *Sharing of Tasks*, *Negotiating Differences*, *Openness*, and *Access*.
2. **Coxswain training**: RGB Boatswain's mates trained Togolese sailors on practical matters of line maintenance. Although the participating groups were limited to two (U.S. Military and H.N. Military), the nature of the interaction was active. This made the activity high-value.
3. **Visit Board Search and Seizure (VBSS):** This course was taught and translated by RBG crew. The interaction was largely Mil-to-mil, including members of host nation military, regional military and U.S. military. The problem-solving practical sessions of this course made it high-value in terms of relationship building.
4. **At-sea Exercise.** The primary relationship-building nature of this activity is drawn from the active nature of the exercise.
5. **Shipboard Reception**. The receptions associated with APS engagements provide a forum for social interaction between various groups. In general, the value from the receptions come from the number and types of groups who participate in the receptions, rather than the number of relationship-building elements.

Key Takeaways from this Section

- **The systems and skills that we wish to have in place in order to increase maritime capability and capacity are crucially reliant on appropriate relationships in order to implement and sustain them. By including this metric, we may enhance existing activities and increase their value and potential impact.**
- **We systematically categorize the activities of an APS engagement in terms of its relationship-building merit. For each event, we consider the participants that were involved, and the elements of relationship building that were part of that exchange. These elements are access, exchange, openness, assurances, interdependence, sharing of tasks, and negotiating differences. We may then compare and contrast the relationship building between each group.**
- **The primary relationships that were built during this engagement were the relationships between the U.S. Military participants and the Host Nation Military participants. The current design of the hub facilitates relationship-building with regional military participants as well.**
- **There are many opportunities for relationship-building that may not have been fully exploited during the Togo hub. Participants that were not engaged (or minimally engaged) include host nation commercial interests, regional governments, regional publics, international military, host nation governments, international publics, and non-governmental organizations. This lack**

represents possible missed opportunities, and it may be advantageous to design future APS engagements with these groups in mind.

- **The types of activities that occurred during the APS Togo hub were primarily passive relationship building (based on the elements of relationship building). It may be advisable to design future APS engagements with active elements of relationship building (*Sharing of Tasks*, *Negotiating Differences*, *Openness*, and *Access*) in order to build robust and long-lasting relationships.**
- **The activities during the APS Togo hub that had the highest relationship building value (based on the participants and their interactions with one another) were: 1) Fisheries enforcement training, 2) Coxswain training, 3)Visit Board Search and Seizure (VBSS), 4) At-sea Exercise, and 5) Shipboard Reception.**

Summary and Conclusions

In this report, we have presented an operational analysis of the 2011 Togo APS Hub. We began by examining the individual activities that took place during the hub, and linking each activity to its most likely input to the pillars of maritime sector development. After this brief summation, we explored how these activities may have actually contributed to maritime capacity building by examining the systems that were put in place, the skills that were trained to, and the relationships that were built. This hub succeeded in feeding all pillars of the Maritime Sector Development Model, with major contributions to the pillars of *Trained Professionals* and *Response Capability*.

Our analyses reveal that the ship played a significant role in imparting skills, building systems (particularly repairing physical systems), and building relationships. Ship instructors taught two of the five hub courses; The ship played a lead role in emplacing 10 of the 14 systems (both materials and processes) that were imparted during this hub, including all repairs of physical systems. The ship also played a key role in relationship building, being instrumental in four of the five high-relationship value activities of this hub (Coxswain training, VBSS, At-sea Exercise, and Shipboard Reception).

There is no current standard that APS courses train to. As it currently stands, the mission consistently trains for familiarization, rather than mastery. Future missions should consider developing a meaningful standard that would allow particular courses to serve as prerequisites for other courses. The skills that were imparted during this hub were considered to be of greatest value when the courses contained a practical or exercise component.

There are many opportunities for relationship-building that may not have been fully exploited during the Togo hub. In future APS engagements, it may be advantageous to engage as many groups as possible using active elements of relationship building (*Sharing of Tasks*, *Negotiating Differences*, *Openness*, and *Access*) in order to build robust and long-lasting relationships.

Appendix E: Maritime Development Plan Worksheet

Maritime Development Plan

2012-2014

Goals, Milestones, and Plan of Action

STEP 1:
A. Identify a challenge currently faced by the Navy or Coast Guard.
B. Identify a roadblock that is preventing the Navy or Coast Guard from meeting that challenge.
C. Identify a metric that would demonstrate improvement towards meeting that challenge.

CHALLENGE:

ROADBLOCK:

METRIC:

STEP 2: Select a focus MSSR function and primary MSD pillar. Identify a national goal that is specific, narrow, quantifiable, and that would significantly improve national maritime security.

Example Goals: Conduct VBSS operations 10-15 times per week in EEZ; Trained watchstanders conducting 12 hour watches 6 days a week

		Maritime Security Sector Reform (MSSR) Functions					
		Maritime Governance	Maritime Civil and Criminal Authority	Maritime Defense	Maritime Security	Maritime Response and Recovery	Maritime Economy
Maritime Sector Development (MSD) Model Pillars	Trained Professionals						
	Maritime Infrastructure						
	Response Capability						
	Maritime Domain Awareness						

GOAL:

STEP 3: Identify the systems, skills, and relationships that are needed to achieve the GOAL.

Systems that must be established, operated and maintained		*Skills that must be gained, practiced and tested*	*Relationships that must be created and maintained*
Materials	*Processes*		
e.g. AIS	*e.g. Regular Patrol pattern*		

Maritime Development Plan

2012-2014

Goals, Milestones, and Plan of Action

STEP 4: Develop a plan of action. Create a list of concrete steps that must be taken to develop the systems, skills and relationships identified above. Star (*) items requiring APS support.

	Task	Deadline	Responsible Office / Dept / Agency
	e.g. Apply for funding for patrol boat fuel	*Budget Submission*	*Navy Operations Staff*
1	Assess current capabilities, skills & systems	January 2012	Assessments
2			
3			
4			
5			
6			
7			
8			
9			
10	Assess mid-term capabilities, skills & systems	August 2013	Assessments
11			
12			
13			
14			
15			
16			
17			
18			
19			
20	Assess end-state capabilities, skills & systems	August 2014	Assessments

Maritime Development Plan

2012-2014

Goals, Milestones, and Plan of Action

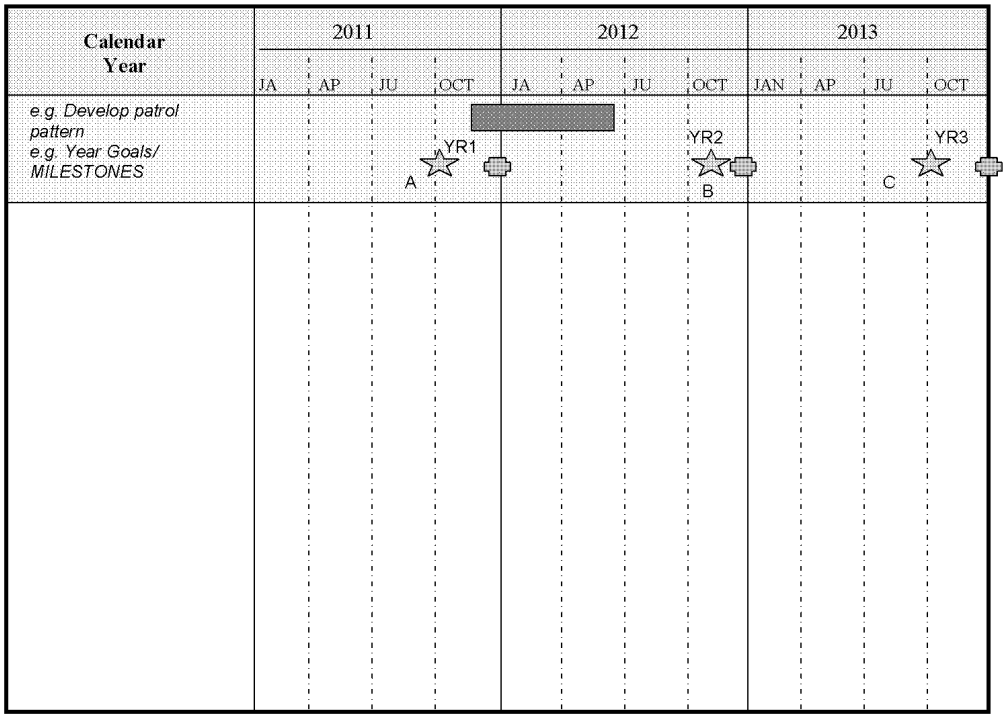
STEP 5: Identify major milestones that demonstrate progress towards intermediate and end GOALS

MILESTONE A: _____

MILESTONE B: _____

MILESTONE C: _____

STEP 6: Schedule major tasks, milestones and intermediate goals. Block out approximate times when tasks will be performed, milestones met, assessments conducted, and intermediate goals achieved.



Appendix F: Sample Professional Qualification Standard for APS Shipriders

FINAL QUALIFICATION AS ENGINEERING
USS ---- (FFG --) EMBARKED PARTNER SPECIALIST
NAME_____SPONSOR _____

This page is to be used as a record of satisfactory completion of the USS ------ Embarked Partner Surface Qualification Requirement. Only qualified crew members or sponsors may sign applicable sections upon completion of the assigned tasks. PQS is a means of qualifying sailors and providing them with the information they need to perform different jobs or tasks onboard the ship. Every event that you will observe underway has required the Sailor to qualify in some sort of PQS. This PQS has been put together to help you learn more about our fine ship and for your training to help you gain knowledge as a Surface Warfare Officer.

QUALIFICATION RECORD

Trainee has been indoctrinated in this PQS watchstation and given a target completion date of ----------__.

SIGNATURE: _____ DATE:_____

Trainee has completed all PQS requirements for this watchstation. Recommend designation as a qualified USS --------- Embarked Partner Engineering Specialist.

RECOMMENDED_____DATE_____
Sponsor

RECOMMENDED_____DATE_____
APS Liaison Officer

RECOMMENDED_____DATE_____
Executive Officer

QUALIFIED _____DATE_____
Commanding Officer

SECTION 300 TASKS

Complete all of the following tasks to obtain this qualification. Consult your sponsor or any crew member if you have any questions about how to complete these tasks.

300.1 Meet the following:

a. Commanding Officer Initial____
b. Executive Officer Initial____
c. Command Master Chief Initial____

Signature: _____ Date: _____

300.2 Tour the engineering spaces with a qualified Watchstander.

Signature: _____ Date: _____

300.3 Take a tour of CIC and learn about each of the watchstations.

Signature: _____ Date: _____

300.4 Fire the 25mm gun.

Signature: _____ Date: _____

300.5 Observe Sea &Anchor Detail

Signature: _____ Date: _____

300.6 Observe Engineering Casualty Control Drills from:

a. CCS
b. On Scene/S&S

Signature: _____ _____ Date: _____

300.7 Observe a Flying Squad/Condition II DC drill from:

a. DC Central
b. Repair Locker
c. On Scene

Signature: _____ _____ Date: _____

300.8 Don an SCBA.

Signature: _____ _____ Date: _____

300.9 Don an EEBD.

Signature: _____ _____ Date: _____

300.10 Become familiar with JOOD responsibilities regarding:

a. CO's standing orders/night orders JOOD Initial____
b. SORM (especially ship's bills) JOOD Initial____
c. Deck Log (underway) JOOD Initial____
d. List of Effective Notices and Instructions JOOD Initial____
e. Normal steaming operations JOOD Initial____
f. Sea and Anchor Detail JOOD Initial____
g. Underway replenishment JOOD Initial____
h. Vertical replenishment JOOD Initial____
i. Helicopter operations JOOD Initial____

Signature: _____ Date: _____

300.11 Conn the ship during a Man Overboard Drill.

Signature: _____ Date: _____

300.12 Steer the ship as the helmsman.

Signature: _____ Date: _____

300.13 Throw a heaving line.

Signature: _____ Date: _____

300.14 Discuss hailing and query procedures.

Signature: _____ _____ Date: _____

300.15 Look through the “Big Eyes” on the bridge wings.

Sponsor signature: _____ Date: _____

300.16 Attend and understand the importance of a “steel beach picnic.”

Sponsor signature: _____ Date: _____

300.17 Find a member of the Visit, Board, Search & Seizure Team and ask what the teams mission is and why he is the most important member.

Sponsor signature: _____ Date: _____

300.18 Talk to a sailor from E-1 to E-9 and find out what they do onboard the ship.

E-1_____E-2_____

E-3_____E-4_____

E-5_____E-6_____

E-7_____E-8_____

E-9_____

300.19 Take a tour of the boat deck and discuss RHIB Operations

Signature: _____ _____ Date: _____

300.20 Take a tour of the foc’sle and discuss an anchoring evolution.

Signature: _____ Date: _____

300.21 Take a tour and discuss all stations manned during an UNREP

Signature: _____ _____ Date: _____

300.22 Participate in Officer’s Call and Morning Quarters.

Signature: _____ _____ Date: _____

300.23 Become familiar with the cycle, quarterly and weekly schedules, the master PMS deck, and how they are maintained/annotated.

Signature: _____ _____ Date: _____

300.24 Conduct a PMS spot check.

Signature: _____ _____ Date: _____

300.25 Observe oil transfer procedures.

Signature: _____ _____ Date: _____

300.26 Observe internal fuel transfer procedures.

Signature: _____ _____ Date: _____

300.27 Accompany the Executive Officer during a daily messing and berthing inspection.

Signature: _____ _____ Date: _____

300.28 Observe Flight Quarters from the following locations:

a. Bridge Wing _____
b. HCO Tower _____
c. LSO Shack _____

Signature: _____ _____ Date: _____

SECTION 301: WATCHSTANDING

301.01 Sounding and Security – 1 HR.

Signature: _____ Date: _____

Signature: _____ Date: _____

301.01 Auxiliaries Monitor – 1 HR.

Signature: _____ Date: _____

Signature: _____ Date: _____

301.01 Main Engineroom Monitor – 1 HR.

Signature: _____ Date: _____

Signature: _____ Date: _____

301.01 Electrical Plant Control Panel – 1 HR.

Signature: _____ Date: _____

Signature: _____ Date: _____

301.01 Engineering Officer of the Watch -2HR.

Signature: _____ Date: _____

Signature: _____ Date: _____

Signature: _____ Date: _____

Signature: _____ Date: _____

Signature: _____ Date: _____

Signature: _____ Date: _____

SECTION 302: SHIP OPTIONAL

300.27 Earn your USS ----- ballcap.

Signature: _____ Date: _____

Appendix G: Maritime incidents in the territorial waters in and around Cameroon.

According to our source, data was recorded by oil company security personnel and given to BIR leadership. It appears that the sailors completed the descriptions of the responses. These descriptions have not been modified or corrected from their original content.

Assets	Zone	Date	Description
Cameroon Army position	Former custom office (Bakassi)	11/12/2007	21 Cameroonian soldiers killed
Argonaut (s/contract Addax)	Zone BOMANA	1/8/2008	Attack on a dredging vessel on 08 Jan 2008 at 00h01A (ADDAX) Lap top, mobile phone and personal belonging stolen
Unsucessful attack on a dug-out - unsuccessfull attack	Zone Bavo	1/18/2008	Attack (unsuccessful) on a dug-out (TOTAL) on 18 Jan 2008 nothing to report
Cement carrier Elbia; armed roberry	Equatorial Guinea - 03° 12N 008° 36E ; 10 nm SW Isla Bioko	1/31/2008	Isla Bioko. Elbia robbed at anchorage
Orca (s/contract Addax)	Zone BOMANA	2/7/2008	Attack on supply Orca on 07 Feb 2008 personal belonging stolen
Kelly Daniel (Trawler)	NGOSSO	6/8/2008	personal belonging stolen
Fly boat marine nationale	AKWA	6/9/2008	6 killed (1 S/prefet et 5 Cameroonian soldiers)
MV Mako supply boat	North 6Nm Antan terminal	6/10/2008	Nigeria
Seabulk Snipe (Seacor), Gulf Fleet 103 (Tide Water), Kelly Daniel (trawler)	Wouri delta Off Douala	7/2/2008	Attacks on 2 supplyships (TOTAL) & 1 trawler on 02 July 2008 at 02h30A personal belonging stolen
Cameroon Navy position	MUNYA	7/12/2008	Shots exchange no wounded reported
Ronier (Boluda) + 2Chinese Trawlers	KLF2	7/15/2008	Attacks on 1 tug (TOTAL) & 2 trawlers on 15 July 2008 at 05h10A personal belonging stolen
Cameroon Navy position	KOMBO A JANEA	7/24/2008	12 killed (10 aggress.+ 2 cam) + 8 agressors prisonners.
2 Unknown trawlers	Off Cape Cameroon	9/13/2008	personal belonging stolen
Oceanix Orion and Oceanix Omega	Antan field / Adanga and Ebughu platform	9/23/2008	Nigeria
3 banks in Limbe	LIMBE	9/28/2008	Limbe Banks attaked at 00h00A to 03h00A : 1 killed, 6 wounded + 1 safe stolen
Unknown trawler	JABANE	10/18/2008	Attack on a Cameroonian ship by two rebel's boats on 18 Oct 2008 (morning). Armed forces reacted immediately: one rebel's boat reported sank destroyed, the other one escaped to Nigerian side.
SS Sagitta + 1 platform vandalised	KLF2	10/31/2008	Attack during Crude Oil transfer (Bourbon/TOTAL) on 31 Oct 2008 at around 02h00A. 10 person's hold as hostage or kidnapped (7 French, 2 Cameroonian, 1 Tunisian).by BFF
MV Sword	Antan field	11/10/2008	Nigeria
Non armed dug-outs	KBO3 well	11/13/2008	Nigeria:10 fishermen arrested in a restricted area by Navy
5 Atlantic Shrimper Ltd trawlers	Off Cape Debundsha (15Nm)	14 & 15/11/2008	Lotus1, Star shrimper7, Star shrimper11, Star shrimper16, Lady Dina & 2 Benarly trawlers: Olokon4, HRV4 Echo sounder, VHF, HF, Compass, radar stolen, one injuried at Buea hospital
Oceanix Orion Hotel barge	Antan field	12/4/2008	Nigeria: Hotel barge attacked on 04 Dec at 02h30A. 2 persons kidnapped, 1 wounded at foot by bullet. (Addax Petroleum Nigeria.) Hostages freed on Dec 16th.
A ferry heading to Calabar	South Calabar close to border	12/17/2008	personal belonging stolen

Falcon Crest & Falcon Wing	Isobo	12/18/2008	Nigeria 22h00A
MV Setter supply boat	Kombo well area	12/20/2008	Nigeria 01h00A
Unsuccessful attack on Swire tug working for Addax Petroleum	4 20 58.2 N - 8 39 14.7 E Est TEPC field	1/12/2009	03h30A No injuries no theft, just some bullets impacts in the bridge windows, as BIR was on board and reacted immediately.
Trawler	Est TEPC field	1/12/2009	Pirates opened fire to the boat before boarding. Valuable stolen while crew hid, No wounded people.
trawler attacked	OFF KRIBI	1/23/2009	Morning attacked by 30 people wearing combat camouflage dress. 1 killed, 1 wounded, some suspected to have been kidnapped
trawler attacked	OFF KRIBI	1/23/2009	
One fMV Gulf Fleet No.33	Perenco Moudi terminal area	1/25/2009	01h00A only valuable stolen using same modus operandi: to fire to the boat then to board to steal while crew is hidding himself. No Wounded people. Gun shots were fired at the MV Gulf Fleet No.33 before the pirates boarded from a small pink speed boat. Damage was sustained to the wheelhouse aboard MV Gulf Fleet No.33; radio and other ship's equipment was stolen and removed from the vessel; and, crew personal effects were pilfered, but we are relieved to report there were no injuries to the vessel's crew reported and no environmental impact as a result of this event.
Trawler KulakIII - unsuccessfull attack	3 Nm South Ekoundou	1/27/2009	12h00A trawler chased by 3 pirates boats , Captain had time to inform Security Forces. When Security Forces arrived the 3 pirates boats ran away.
Oron	OML 123	2/5/2009	Nigeria 03h00A Security vessel attacked by two boats, other assets on lock down mode, Captain (retired Major) was reported killed and other crew member injuried.
Malabo City	Equatorial Guinea, Isla Bioko	2/17/2009	Malabo 03h00A Pirates launched an attack on Equatorial Guinea's presidential palace. The EG military reacted violently. The Nigerian pirates were possibly after the presidential safe.
SIL TIDE Vessel (Pecten)	04°15N 008°25,25E	3/14/2009	03h30A Two fast boats with around 15 persons each on board attacked the Seal Tide. They kidnapped 4 expats (Philipinos and Ukrainians). Apparently they came from Nigerian side. The hostages have been freed 4 months later (29 july 2009)
Trawler ROSE 3	Esoma area	4/20/2009	00h50A. 8 pirates in a flyboat have attacked a trawler ROSE 3 (Chinese boat with Cameroonian crew). Money, HF radio and fish were stolen. This took place East of TOTAL site, 9 nm south off Bakasi coast.
Terraseis Workers going back home	Shell Creek	5/5/2009	10h00A Terraseis labours who were released today and received their final payment were attacked by some people in Shell Creek. After the BIR had found the robbers these handed back the money to our employees. Apparently the robbers took a fall when they climbed out of their boats and were then helped by the BIR to give the money back...
4 vessels	Wouri delta off Douala	6/10/2009	4 vessels attacked at the base buoy: cargo Sevastopol Bukhta, container ship Delmas Bonny, tanker Anuket Ivory, trawler Kelly Daniel. Valuables, radios have been stolen. Pirates armed with AK47 have stolen valuables, radios, etc. They climbed onboard the vessels with a hook with rope.
Security boat Chantester	KITA Rio del Rey	7/12/2009	0045 The TEPC security boat at anchor in the north of the field was attacked by pirates, they opened fire and the soldiers onboard returned fire, the pirates have fled toward Nigeria. Result: several bullet impacts on the hull and 2 pirates possibly killed
Security boat Chantester	KITA Rio del Rey	7/13/2009	0045 The same TEPC security boat anchored north of the field was attacked by 4 boats (2 from north and 2 from south). Pirates fled away after deterrence shots from the BIR
3 fishing Trawlers	04°19N / 008°30E (Rio del Rey)	7/16/2009	2300 Three Nigerian fishing trawlers were attacked by pirates and looted. The pirates have stolen valuables, mobiles and fish.
Trawler OLOKUN 6 - unsuccessfull attack	2 nm south Bakasi	8/1/2009	2200 7 pirates in a flyboat unsuccessfully tried to board the trawler in the nothern part of TEPC field

Trawler STARSHRIMPER 2	Off bakasi (no accuracy)	8/4/2009	2200 the trawler was attacked and looted by pirates who opened fire. The Starshrimper 2 sailed back to Calabar to nurse one injured sailorman wounded by a shot
Trawler - unsuccessfull attack	Off bakasi (no accuracy)	8/5/2009	Early morning, unknown fishing trawler reported that pirates with several boats attempted boarding. The vessel sailed south afterwards to get shelter in the PECTEN/PERENCO FIELD.
Trawler STARSHRIMPER 6	Off Bakasi (6 Nm south from Rio Del Rey River, E TEPC field)	8/31/2009	23:30 trawler attacked and looted by pirates who opened fire before boarding. Radios broken or stolen and all the navigation equipments destroyed. valuables, mobiles and fish stolen.
Trawler STARSHRIMPER 11	In the Rio Del Rey River	9/1/2009	21:30 STAR SHRIMPER XI same modus operandi than Serial 47
3 trawlers	Off the coast, between Limbe and Debunsha	9/4/2009	01:30 (first attackt) Trawlers LIAO DALIAMYU 15117, LIAO DALIAMYU 15118 (FINI), MADAM TINUBU (A. SHRIMPER), were attacked with the same modus operandi than Serial 47
trawler HERACLIS	Wouri delta, off Douala	9/4/2009	19:57 trawler HERACLIS attacked in the vicinity off the base buoy (scenario idem serial 47). Observation: information regarding the unsuccessfull attack of Supply SMYRNA is false (the crew mistook the navy RIB for a pirates boat)
4 Trawlers	Wouri delta, off Douala	9/4/2009	ERYCLAS, STEMAR, ELIZABETH, ROSE 1. Sea pirates attacked them after shooting sporadically and gained entrance into the vessel. They beat all the crew and damaged the electronic equipment they did not took away. Most of the catch products on board and valuables were taken away.
2 trawlers	Cap Debunsha	9/10/2009	01h00-02h30: STAR SHRIMPER I & LEVI were attacked by pirates. Same modus operandi than serial 51.
trawler	Cap Debunsha	9/11/2009	STAR SHRIMPER III 23h00 Sea pirates shot in the air several times and then went onboard. Same modus operandi than serial 52
Supply boat	ANTAN Field	9/15/2009	Supply on ANTAN field, operated by ADDAX. Pirates (12) onboard two speed boats attacked the COVENANT ECHO at about 12h30. This ship called for help the security vessel (Wanitou). There was an exchange of gunfire between the Wanitou and gunmen. Speed boats left to West
Trawler	Cap Debunsha	9/20/2009	01h00: MADAM TINUBU trawler was attacked and looted by pirates who opened fire.
Trawler	Cap Debunsha	9/20/2009	21h30: LEVI trawler was attacked and looted by pirates
Trawler	Cap Cameroun	10/7/2009	03h00: KELLY DANIEL attacked and looted by pirates. One sailor drowned after jumping in the water and another one is missing in action
Trawler	Off bakasi, East side of TEPC oil field, in the vicinity of BVF1	10/8/2009	04h00: LOTUS 4 was attacked by pirates. Same modus operandi than serial 51. Moreover, the crew personal belongings were taken away by the pirates (clothes, toothpaste/brush, etc.). The pirates were about to attack another trawler (Rose 3) when a security vessel from TEPC site prevented it.
Trawler. 4 pirates dead	Off bakasi, in the north vicinity of TEPC site	10/10/2009	00h30: ROSE 3 was assaulted by 9 pirates who directly opened fire. BIR Military onboard the trawler countered to the attack by shooting the pirates. The following day, the fly boat was found on Bakasi shore, with 3 injured pirates and 4 bodies onboard. Pirates belong to the Bakasi Freedom Mouvement, a branch of BFF.
Trawler	Calabar junction, Mbo area	10/19/2009	14h00: CALABAR Junction Trawler FIRST STALLION attacked by Cder Osazi, leader of BFF2 militant camp at Utana Iyatah. Militants collected cash and valuables. Captain Peters was taken as a hostage. No casualties reported.
Gendarmes boat attacked by unknown assailants; 2 dead	Bakassi, Rio river	12/19/2009	04h00: one gendarme and his pilot were shot dead. They might have surprised smugglers who didn't want to be bothered.
non compliant fast flyboat	Bakassi, Rio river	1/2/2010	mid-night: one flyboat tried to pass through a BIR check point. The pilot didn't stop when the military used flashlights, then warning shots. One people in the flyboat injured.

Trawler; 4 abducted	Cap Debunsha	23/02/2010 24/02/2010	3 fishing trawlers were seized during night by pirates, 4 crewmen were abducted. All hostages were released (2 March) after payment of a 15 millions CFA ransom.
Orion Barge	NIGERIA OML 68 EXXON MOBIL	3/4/2010	At about 0715, one speed boat (8m, white hull, speed about 30 Knots) with about 10 gunmen onboard sailed straight to Orion barge (MFEM, OML 67). The speed boat has been chased by the security vessel (UTAI 3), she ran away to IDOHO platform, course 310deg (OML 68)
Trawler; 7 abducted	NIGERIA: Exact location unknown (probably south Rio Calabar mouth)	11/03/2010 12/03/2010	During night 7 chinese fishermen were abducted by Nigerian Pirates, the pirates have left one phone number in order to negociate a 25 millions dollars ransom. 2 people injured Hostages were relaeased march 17th after payment of a ransom (possibly 25 million FCFA)
PACIFIC SUPPLIER	NIGERIA, Rio Calabar	3/20/2010	15:20 hrs - 3 gunmen onboard a speed boat attacked the supply vessel on the Calabar River (close to the Parrot Island). They climbed up the bridge, shot one window to enter the bridge, but didn't succeed. They stayed about one hour onboard before leaving the vessel. No casualty.
MV Seagull; 2 abducted	NIGERIA, Rio Calabar	3/27/2010	was sailing from Tiko Port (Cameroon) to Calabar. At 0545 the vessel was hailed by 3 'flying boat' , each boat had 8 passengers, wearing anything from shorts to partial camouflage uniforms. Warning shots were fired and the vessel instructed to slow down. The vessel was the boarded. Money was demanded and then they went for computers, telephones, bridge equipment, handheld VHFs and binoculars. They were ruff with the crew (mainly Ghanaians and two Sierra Leoneans), but nobody was really harmed or injured. As the sun was rising the pirates went away taking the captain and chief engineers, Ghanaian citizens (Denis Zim and Isaac Yaboa). The vessel waited a couple of hours in hope that they would be returned and as an AB knew the Calabar river very well he took command and sailed the vessel to the Calabar Inland Waterways berth.
Gendarmerie post attacked	Bamusso, on Cameroonian shore (12 nm East Bakassi)	3/29/2010	Pirates arrived with boats. They attacked a gendarmerie station and seized weapons, ammunition and one outboard engine.
Ferry THANASIS	NIGERIA, Rio Calabar	4/1/2010	Pirates attacked the ferry and stole all valuables from the passengers (laptops, cellphones, money, etc.). Tha Captain had been advised to pay a monthly tax to sail freely
KULAK V; 2 pirates dead	Cap Debunsha	4/22/2010	10 pirates onboard 1 flying boat attempt to attack fishing trawler kulak 5 off cap Debunsha. The BIR detachment onboard (3 men) returned fire. The 3 BIR men where wounded, the pirates have fled toward Nigeria, 2 pirates presumed killed in action..
Malaisian palm plantation workers onshore; 2 abducted	BAMUSSO	4/28/2010	Two malaisians abducted near Bamusso, the two men were working for oil palm industry near LIMBE. Probably detained in Nigeria, they were picked up by flying boat. No more information. Released the 9 of May.
2 cargo vessels: ARGO + NORTH SPIRIT; 3 abducted	Fairway Buoy (Buoy nbr 1), 10 nm off Wouri river mouth	5/16/2010	During night, 2 cargos were attacked while at anchor ARGO attacked at 23:45. The captain (Lithuanian) was abducted. Around 20 pirates armed with AK47 were onboard 2 flyboats. NORTH SPIRIT: attacked at 00:40 (17/05/2010). The captain and chief engineer were kidnapped (Russians). Onboard both vessells, all cabins were ransacked and property stolen (money, cameras, laptops etc).Hostages released the 3rd of July.
SUPPLY EYNNA II	NIGERIA, UBIT 11 nm West of Cameroonian waters	6/2/2010	At 0255hrs, EYNNA II (supply boat) within UBIT field, 15 nm off the coast, was attacked by seven pirates with guns and machetes, they came on board and they assaulted the crew, stolen radio, Tetra, telephones, money laptop.... etc. The captain was wounded on the head and received care on GO platform.

ROE RIVER	NIGERIA Antan field At about 04 deg 14'N – 008 deg 17'E	6/9/2010	The ROE RIVER, supply vessel was attacked 22h55 by 2 speed boats full of men in the Addax field vicinity of Rig Onome. The pirates stole the vessel's Electronics and shattered the wheelhouse glasses. Vessel carried out lockdown, crew mustered at the safe location and remained until all clear was given by security vessel. No crew injured
MT IGBURA (Spell must be confirmed) Chartered by : EXXON MOBIL	NIGERIA MPN fields,	6/22/2010	location not exactly determined (round UBIT/ IDOHO field) At about 02:00 there was an attack on the MT Igbura, a marine tanker supplying fuel and lubricants to the MPN field. The perpetrators arrived in two speed boats. The pirates assaulted and robbed the crew before making off with cash and valuables.
UNKNOWN SUPPLY VESSEL	NIGERIA Parrot Island About 04deg 47'- 008deg 18,5' E	6/25/2010	One MV supply vessel sailing close to Parrot Island in the CALABAR river was attacked around 14h00 by one fly boat with armed men onboard. The Navy responded; alleged aggressor left the area when the Navy showed up.
MONICA EXPRESS	NIGERIA Parrot Island About 04 deg 47'N- 008 deg 18E	6/30/2010	The MV MONICA EXPRESS was en route from Cameroon to CALABAR when she was attacked by pirates (Number undetermined) around 0500 hrs close to PARROT ISLAND. A lady and a man, passenger onboard the vessel were shot by the pirates. The lady died instantly. Local Police informed and body of the lady transferred to Calabar General Hospital mortuary.
KULACK 3	Off Debunsha cape unsuccessfull attack	7/6/2010	22:30: 3 flyboats tried to attack a trawler onboard wich BIR military were hidden. The BIR opened fire before the boarding and the assailants fired back from the closest flyboat. Then the 3 pirates boats went away. 2 dead among the assailants
ROE RIVER	NIGERIA Rio Calabar South Parrot Island	7/23/2010	Supply vessel was attacked at 16:20 hrs in the Calabar river, South of Parrot Island. Boarded by 6-7 persons on a speed boat. Company received SSAS and stayed in contact with crew via mobile phones while crew was locked down in engine room. Addax had helicopter near by from doing crew change and contacted it to do a fly over Roe Rivers location and scarred the pirates off. Navy Gun boat once contacted arrived at their location 1 hour later. No crew injured
OLOKUN 4, KULACK 7	Off Debunsha cape	7/25/2010	2 flyboats attacked the trawlers at around 00:00 hrs. The assailants fired directly before boarding. 1 sailor has been shot dead and 3 people are badly wounded (now at Limbe hospital)
ST JOHN	Off Debunsha cape unsuccessfull attack	7/25/2010	04:15 hrs. 2 flyboats attacked the ST JOHN, a security vessel chartered for GLENCORE seismic operations. She was securing the GEOMARINER (seismic vessel) with 2 other security vessels. BIR military were onboard. Pirates opened fire when approaching. BIR replied and the pirates went away with possibly several pirates dead. 19 bullet impacts on the bridge. No casualty
SALMA AMERIGO VESPUCCI	Base buoy (mouth of the Wouri river)	9/12/2010	2 vessels attacked in the vicinity of the base buoy and 6 people abducted: - SALMA (cargo vessel): 2 flyboats with around 12 pirates onboard each boat attacked the SALMA at 21:25 hrs. Pirates climbed onboard with a hook and rope, broke a porthole to come into the accomodation and took 4 hostages (captain, chief enginer, cooker, and one sailor, all Ukranians). - AMERIGO VESPUCCI (dredging vessel): she was sailing in the vivinity of the base buoy. When the alarm was raised on the VHF, she turned back towards Douala, but too late. Pirates climbed onboard at 21:45 hrs. They fled away when they saw the flashlights of the BIR's fastboats, taking away 2 hostages; 1 Philipinian and 1 Croatian. It is to note that pirates jammed the VHF CH 16 and that the SALMA has been staying at the base buoy for 13 days. Another vessel, the MARILYN MC CALL, witnessed the attacks without harm. The hostages were released the 30 of September yesterday after a ransom payment by ship owners.

MANIPOLO vessel	NIGERIA: South of Calabar river, AGBANI	10/17/2010	Unknown Gunmen hijacked a MANIPOLO vessel at approximately 17:45 hrs on Sunday 17 October around AGBANI. The gunmen have hijacked 4 Nigerian workers and diverted them to unknown destination while they were going to the company's oil well head - Abana West Akwa Ibom waters.The gunmen ordered the vessel to divert to an unknown location.No reports of anyone sustaining injuries at this time.
PACIFIC SUPPLIER	NIGERIA: South of Calabar river	11/5/2010	13:22 hrs: two speed boats with heavily armed men attacked the PACIFIC SUPPLIER at 10 nautical miles south of Parrot Island Calabar. The Crew bolted down and no casualty was reported. the wheelhouse was damaged. Note that PACIFIC SUPLIER was attacked at 15:20 hrs in the same area last March (serial Nb 66).
B.AXELLE	NIGERIA: South of Calabar river	11/11/2010	13h45: B.Axelle, chartered by Addax - 04deg 38'N – 008deg 23'05E Attack attempt: exchange of gun fire between the Navy security vessel and 2 speedboats (repulsed). No casualties.
AGBANI Barge	NIGERIA: South of Calabar river	11/12/2010	around 13h45: Agbani barge (Addax) - 04, 35.52 N 008, 25.45 E. same modus operandi and result as Serial 85 (2 speedboats repulsed)
SECURITY VESSEL MOUNGO 7 (PERENCO)	22 nm South Bakassi peninsula	11/16/2010	Security vessel MOUNGO 7 attacked at 22:00hrs by 2 speedboats. Deaths of 5 Cameroonian personnel - 3 military from the BIR and 2 civilian security contractors. The security vessel was attacked while checking two suspected boats sailing in the vicinity of MOUDI FSO (PERENCO). No information about the assaillants (the whole crew has been killed)
ALI RIZA BEY (fresh water supply vessel)	NIGERIA: South Rio Calabar (9 nm south Parrot Island)	11/18/2010	The ALI RIZA BEY works in the MPN field, Akwa Ibom. She was attacked at approximately 1800 hrs on its way to Calabar. The attacker's boarded, robbed the crew and abducted the Captain. The attackers then left but ordered the crew not to move the vessel until they released the Captain. Captain's not released yet. Assailants: 4 speed boats with 20 heavily armed men, boarded after warning shots
BEACON PETERS	NIGERIA: Mouth of the Rio Calabar	11/23/2010	PECOS PETER was attacked at 11:10 hrs south of Rio Calabar (04.35.2 N 008. 22.8 E). Vessel was inbound Calabar Port from Addax Anthan field.Thanks to lockdown and to the nearby security vessel, attackers left. No casualties. Damage to bridge and electronics.
BRENDA CORLETT	NIGERIA: Calabar River-Parrot Island	12/3/2010	0650 The ferry Brenda Corlett (passenger boat between Calabar and Limbe in Cameroon) was attacked by pirates in the vicinity of Parrot Island, Calabar River- Nigerian Water, and the captain abducted .
SMYRNA	22 nm south Bakassi	1/14/2011	Attempt: 4 flyboats tried to board the Smyrna, a supply vessel working for Perenco, 6 nm East from Moudi FSO (04° 06,65' N - 008° 33,70' E), at 20:25 hrs, They were surrounding the Smyrna but gave up thanks to the BIR's fast Ribs in approach (they heard the engines or got information on the VHF) and also (supposed) because the search light of FSO Moudi was flashing them, <u>Observation:</u> afternoon the previous day, those 4 flyboats with armed people onboard were detected in Nigerian waters: Rio Calabar first then offshore sailing south towards Bioko Island. It means that the 4 rafts and crew hid somewhere out of their place before reappearing the following day.
Military post attacked	Ekondo Titi (Bakassi area)	2/1/2011	03:00hrs - Military station (21st BAFUMAR) attacked by a group of bandits coming by boat. They murdered one military and wounded another, before being fought back. 2 bandits caught (in custody now). Assailants probably tried to steal weapons / ammunition
2 fishing trawlers	NIGERIA:23 nm West of the Cameroonian border	2/2/2011	2 fishing trawlers (Barnaly 1 & 2) were attacked at 15:30 hrs 5 nm south of ExxonMobil Qua Iboe terminal. One fatality recorded and several wounded

MV BONNY SERVICES	NIGERIA:24 nm West of the Cameroonian border	2/5/2011	5th February 2011 01:00 hrs. The MV BONNY SERVICES attacked by one speed boat with 9 armed men onboard 2 Nautical Miles from the shore/ QIT. Shot fired , boarding realized, a naval rating onboard was beaten up and his rifle was taken away as well as other valuables It seems that the pirates escape with the arrival of a security vessel
Military post attacked (2 dead)	Bakassi, Akwa	2/7/2011	around 03:00 hrs: one gendarmerie post attacked at Bonjo. 2 police gendarmes have been killed.
Officials kidnapped (11 abducted)	Bakassi, Akwa	2/7/2011	Later the very night: 11 people abducted in a nearby town of Akwa. Among them: sub-prefect, the brigade commander of the local gendarmerie and the (civilian) police commissioner. They were ambushed while returning to Akwa by boat, 2 gendarmes were killed during the action. AMC (African Marine Commando) claims the attacks Hostages were released the 16th of February.
Skirmish (military)	Bakassi, Issangele	2/11/2011	after midnight: Skirmish between military and "pirates". 4 pirates and 1 BIR military killed. BIR seized weapons
Passenger flying boat	Ekondo Titi (Bakassi area)	2/16/2011	Civilian people coming from Nigeria were attacked by pirates, BIR intervened and the attackers were repulsed. One female has been killed in the incident.
Hijacked fishing trawler	Cap Cameroon	2/27/2011	On the night of 27 pirates presence is attested in the area of the fishing village of Nkange, gunshots were heard by the people but no casualties observed. Probably intimidation shooting . At 2:25 the trawler Shrimper 2 is hijacked by a group of 25 pirates dressed in black clothes and military pants and wearing balaclavas. They say the captain that their goal was to attack targets in Gabon (pretext?) But they have failed in their operation. Arrived in the area Nkange, coming from Nigeria, short of gasoline, they could not refuel and decided to capture a trawler to return to Nigeria. The Schrimper 2, opposite the fishing village, is chosen as a target. Once boarded the pirates took command, switch off the lights and means of communication. They chose a route toward Nigeria as discretely as possible by the south of Malabo avoiding the military forces in place north of the island. Both skiffs were fasten on each sides. Many weapons were aboard, one man remained in each boat during transit. The vessel was released on 28 in the morning 05.00 AM at the mouth of the Sambreiro river opposite Bonny, well known haunt of pirates. No casualties or act of violence, the crew belongings were not stolen.
MV SEARCHER firefight	NIGERIA: Delta of the Cross River on the way to Calabar Lat 04. 34.00 N Long 008. 23.00 E	3/4/2011	MV Searcher left for port after taking bunkers in the morning, at 10:18 MV Searcher reported it had been in a Firefight with sea pirates close to the Agbani Barge 1 x Yamaha twin engine speedboat blue in colour, 11 x Persons / Pirates onboard Armed The Speedboat approached the Searcher from the starboard side and was passing the Searchers stern. The Speedboat then suddenly changed its direction and headed towards the starboard stern of the MV Searcher were an exchanged of gunfire (firefight) happened. Sea pirates sped off towards a local town called AKAIRO No casualties reported from MV Searcher with minimal damage to MV Searcher starboard window (Radio Rm) and searchlight. Full security report / Incident report and witness statements from Searchers Capt and OIC to come from Calabar security Once the attack was over MV Searcher carried on to shoreline base arriving at 14:20"
Fishing trawler, MV Banarly 3, hostage	UBIT	3/7/2011	On 7th March 2011, at about 08.45 hrs, Pirates suspected to be led by one Commander Azazi attacked a fishing trawler, MV Banarly 3 around Ubit platform area in Ibeno LGA and took the captain of the vessel hostage. No demand for ransom has been made yet.

ECOBANK in Douala Pirates attack (robbery)	Douala (Bonaberi disctrict)	3/18/2011	Around 30 Gunmen attacked a bank in Douala at 23 :45 hrs (March 18th). Pirates came to the bank onboard a minibus. They were very violent, firing deliberately at the population. They shot the two night guards and 4 others civilians around (6 dead). Many wounded. Gunmen went away after more than 1 hour on place and escaped with two speedboats hiden in a creek nearby. 2 pirates unable to reach the boats were caught onshore. In the following morning (March 19th), a BIR patrol intercepted at 08:40 hrs the 2 flying boats with 28 pirates or so. They were going back to Nigeria after their coup in Douala. The pirates opened fire directly, then divided: one boat saling to the Nigeria, the other coming back to the Est direction. The BIR managed to destroy one boat, killing the 11 pirates onboard and the other boat escaped crossing the border, with many dead or wounded. 1 badly wounded pirate was brought back to Jabane but died just after. Among the 28 pirates who attacked the bank, only a few are alive. On the BIR side, 5 military were wounded, among whom one officer (sous lieutenant Youssouf), who died the following day. The pirates robbed between 150 and 200 millions FCFA and so far no news about the money.
MV ATLANTIC CREST	NIGERIA: Calabar channel	4/11/2011	Location: along the Calabar channel at 2 or 3 Nm south East from Jamestown. Supply vessel Atlantic Crest, working for Addax, was attacked around 11:00 hours by approximately 12 armed men in a speed boat. 4 armed men board the vessel. The captain of the vessel, Charles Enyi (a nigerian) was reportedly taken hostage by the criminals. All valuables were stolen.
MV OAK RIVER	NIGERIA:Calabar channel	5/6/2011	The MV OAK RIVER was on her way from CALABAR to OML 123. One Fast Boat Sighted off the port side of MV OAK RIVER, the Fast boat tried to board MV OAK River from its Port Stern. MV OAK RIVER Captain sounded the Alarm and instructed his crew to go to the engine room. Capt reported incident on channel 16. Capt remained in the wheel house and carried out anti boarding techniques (increased his speed and zigzag maneuvers) denying access to attackers. Attackers fired a single shot at the wheel house damaging port/stern window Police returned fire from patrol boat No casualties reported.
BEE BASS 1	NIGERIA: Calabar channel	5/10/2011	Security vessel Bee bass 1 working for Addax OML 123 (Anthan field) on route from Calabar to Addax OML 123 was attacked by gunmen at about 1635hrs at 5 miles North of Barge DLB 332 in Calabar River. Two speedboats with armed men approached at speed Circled the vessel and then approached whilst firing at the Bee bass 1. The Marine Police on board Bee bass 1 returned fire and the two speed boats aborted attack and fled. No casualties were recorded on Bee bass 1.
MT TREASURE	NIGERIA: Calabar channel	5/11/2011	Marine tanker MT Treasure carrying 5000mts of DPK was attacked near Parrot Island by armed men suspected to be sea robbers. The time and position of the vessel during the incident is currently unknown. Twenty pirates in two speedboats had approached the tanker. Ten gunmen boarded the vessel while the other pirates in the speedboat circled the MT Treasure. It is also not known if any of the crew sustained injuries but the Master and Chief Engineer were reportedly taken hostage. Nonetheless, it was further reported that the tanker and the remaining crew were escorted by the navy to its base in Calabar after the incident No more details at this time.
MV ATLANTIC CREST	NIGERIA: Calabar channel	5/16/2011	When the MV ATLANTIC CREST was on her way to CALABAR port getting to Parrot Island and James Town at about 0950hrs, four flying boats with about six armed men onboard each were spotted at about 500 meters by the personnel on the bridge. When the armed men saw the security men on board the vessel, the speed boats flee away. All the four boats were painted with white colors and a white flag in front and a black one behind. The pirates were all dressed on black with a red badge on their left hand side. There was no shooting or injury to any crew.

Fast crew boat	NIGERIA: Calabar channel (Parrot Island)	6/1/2011	MV SIENNA, on her way in CALABAR river, close to PARROT Island, has been attacked by unknown pirates at 14h40. Escort boat has repealed the attack. Two passing navy boats joined he escort boat and chased the pirates away. No injuries, no damage onboard MV SIENNA.
Passenger boat	NIGERIA: Calabar channel	6/1/2011	Suspected pirates attacked and killed the owner of a commercial wooden boat shuttling service between Nigeria and Cameroon. The victim, identified as Koko Edet, riginated rom Adadia, Ibiaku Ishet in Uruan Local Government of Akwa Ibom State. Edet was a sailor and had been with his assistant, Thompson Etim, as well as other passengers in a boat loaded with timber when they were attacked by eight pirates. The exact location of the incident remains unclear but the attack was reported to have occurred at 0200 hrs local time “on the high sea at Abana, according to Etim.
Supply	NIGERIA: Calabar channel	7/12/2011	An attack was reported on the Caribbean Crest, a supply vessel in Calabar waters, while on transit to Calabar at about 10:50 hrs on 12th July 2011 the vessel was attacked in the area of Jamestown towards Parrot Island Calabar River. No injuries on crew and no damages on vessel were reported. The Navy escort either on board the Caribbean Crest vessel or on an escort boat (TBC) repelled the attackers and they all fled.
Supply	NIGERIA: Calabar channel	7/22/2011	An attack was reported on the MV SIENNA and MV TRUCKEE RIVER, supply vessels sailing outbound in Calabar waters, while on transit to Calabar at about 1545 hrs on 22nd July 2011. The vessels were attacked in the area of Parrot island. After short fire fight between pirates and security men onboard vessels, the pirates left the area. No injuries on crew and no damages on vessel were reported.
SECURITY VESSEL	NIGERIA: Calabar channel	7/29/2011	An attack was reported on the MV SUSAN T, vessel sailing outbound in Calabar waters, while on transit from Calabar on 29th July 2011. The vessels were attacked in the area of Parrot island. After short fire fight between pirates and security men onboard vessels, the pirates left the area. No injury.
SECURITY VESSEL	NIGERIA: Calabar channel	7/30/2011	The security vessel MV SUSAN T was attacked at 18h30, while returning back to the field (OML 123), by one speed boat (white) with about 12 men, in Ibaka area. One GSF Marine Police was wounded on the left side upper rib during the exchange of fire and evacuated to hospital. One gun boat was send in order to assist them. This is the second attack against MV SUSAN T in the last 24 hrs in the same area.

Appendix G: Proposal for APS Facilitated Collaboration between the Cameroonian BIR and the Mauritius Coast Guard

BLUF: This is a proposal for exchange between maritime forces of Mauritius and the maritime forces in Cameroon. Initially, the Mauritius Coast guard would, in conjunction with U.S. Coast Guard representatives, send a training team (or multiple training teams) to Cameroon to work with the BIR leadership in training their new maritime branch, the BIR Coast Guard. As the engagement evolves, training teams from the BIR may also be sent to Mauritius to conduct practical special-forces training. The BIR, with its special-forces training and methods would benefit from the training, perspective, and methods of a well-trained coast guard. Reciprocally, the exchange may enhance Mauritius Coast Guard with their special-forces capabilities. It would also expand the leadership role of both countries onto a global stage, an enhanced role that will assist in combating regional maritime threats by providing exposure to new tactics and lessons learned from alternate systems of maritime crime. Implementation of this proposal will address three pillars of maritime sector development: "Trained Professionals", and "International Cooperation". Additionally, the exchange of information regarding "East Coast Piracy" and "West Coast Piracy" will likely improve the MSD pillar of "Response Capability" of each maritime force in addressing the piracy problem. If this proposal is executed, this would represent the first time that a African training teams are exported across the continent (non-regionally) as part of APS.
The details of such an effort are not fully fleshed out. This paper is therefore meant to serve as an introduction to the various players and as a starting point for discussion.

Introduction:
It may be said that the goal of a coast guard (such as the Mauritius Coast Guard) is to facilitate commerce; a balancing act between safety and freedom of movement. Coast Guard TTPs are therefore constructed around the concepts of regulation, inspection, and response. Coast guard emphasis is best placed on the first two concepts, and practices generally follow from this. Comparatively, the existing BIR maritime forces with the special challenges they face, are forced to emphasize the last concept: response, the most dangerous aspect of this paradigm. There are therefore significant philosophical differences between the existent BIR organization with their specialized mission sets and the public service mandate of any coast guard[85]. The original charter of the BIR required extremely aggressive training and tactics to make their land troops effective against highway banditry and their maritime component effective against piracy. A new (2011) presidential mandate has tasked the BIR with creating a coast guard unit (due to stand up in 2012) responsible for patrolling the Cameroonian EEZ out to 12 nautical miles (although, under the current concept, would lack constabulary authority). During recent exercises, it has become clear that existing BIR methods are calibrated to non-compliant boarding and hostile take-downs. These TTPs currently used by the BIR may not be readily converted to serve the more community-oriented charge of fisheries protection, customs control and regional cooperation. As the new Cameroonian coast guard is formed, there may be a need to expand its tactics and rules of engagement, drawing away from the traditional roles of the parent BIR organizations. This paradigm redirection will be most practical if initiated at the establishment of this new force.
This paper recommends that Mauritian Coast Guard members, supplemented by U.S. Coast Guard counterparts, visit the BIR training facilities, examine curriculum and training methods, and revisit as often as deemed necessary and agreed upon by both countries. It might be further advisable for

[85] A Vogel, Navies versus Coast Guards: Defining the Roles of African Maritime Security Forces Africa Security Brief, Africa Center for Strategic Studies, NO. 2 / DECEMBER 2009

members of the BIR to visit Mauritius and study the system and methods of their coast guard. These studies would then be followed by curriculum development and instruction by Mauritian trainers and mentors. Depending on the agreement between both countries, a more reciprocal relationship may be formed: with BIR experts training their Mauritian counterparts.

The Mauritius Coast Guard methods and their directive stands in contrast to those of the BIR. An extremely capable constabulary force modeled on the British system, the Mauritius Coast Guard are well trained and so dedicated to public welfare that they have begun to call themselves a "Police Service" versus their previous title of "Police Force". Exposure to and training from the Mauritius coast guard trainers, their procedures, and their philosophy will ensure that the direction of the BIR coast guard development aligns as a "service" organization from its inception – the short window of time during which such an intervention would be maximally effective. This philosophical mentorship and tactical training is strongly recommended for the BIR, as their traditional methods, which have been so usefully deployed in the fight against pirates in the Bakassi peninsula region of Cameroon, have the potential to cause harm if used in the course of normal Coast guard service duties. They may also prove to be detrimental in curbing maritime crime, as harsh methods would alienate the public and make them reluctant to report, comply with requests, and participate in investigations.

Both the BIR and the Mauritian Coast guard face similar problems of smuggling and piracy. The piracy problem, in particular, is a growing concern in the EEZs of both countries. The proficiency of both groups is exceptionally high. Shared tactics and lessons learned between these forces will likely improve the effectiveness of both. Additionally, there is perhaps a benefit to be had that may not be possible with the inclusion of U.S. trainers alone: although skilled and capable, U.S. trainers may not be able to fully appreciate the impact of piracy within their country's waters, an experience that Cameroon and Mauritius share.

It is of particular note that both countries are French-speaking. This will likely facilitate the exchange between participants of this program.

Background:

Mauritius

Mauritius is a former British colony with a large ethnic Indian population and strong continuing contact with both India and France. It serves as an important mid-way point for transit between Europe and Asia. Tourism, cruises and shipping traffic are major staples of the economy.

Some of the primary concerns in Mauritius include drug smuggling (both maritime and Air routes; there is a large drug problem coming from Madagascar to Mauritius), arms smuggling, and the effect that piracy has on commercial shipping and cruise traffic. With 1.2 million people, Mauritius is the 3rd most densely populated area in the world.

Mauritius does not have a navy; instead, they have an extremely proficient coast guard that is under the command of the large police force (nearly 12,000 strong). The Mauritian Coast Guard is the best trained and most prepared of any African force engaged with APS East. They train regularly with India and France, although they have not traditionally held the paradigm of serving as a regional or global leader.

Geographically isolated, the country has, for several decades, been able to enjoy a protected mentality. Mauritian forces are eager to receive training and improve their own capability, but they have rarely expressed the need to share their expertise with their neighbors. Mauritian participants in APS have voiced a shifting vision of their role, however. Said one participant recently: "We used to think of ourselves as a thousand miles from anywhere…but we know we are not alone anymore."

Mauritius first participated in APS in 2010 with the HSV SWIFT / USS NICHOLAS, hosting a port visit during FEB 22-25. During the 2010 iteration, 80 members of the Mauritian Coast Guard were trained,

and 5 Coast Guard officers were ship riders. This year, the first Mauritius 2011 APS East hub was conducted by the frigate, USS SWG, with the ship arriving in Port Louis, Mauritius during the last week of March. The second Mauritius APS 2011 East Hub was conducted around the USS SBR visit in August and September. During both of these hubs in 2011, Mauritius provided facilities and transport, and students from the CG participated in courses. During the SBR visit, there was an exchange between U.S. Junior officers and junior officers of the Mauritian coast guard. Overwhelming feedback from both ships and from all course instructors indicated that the Mauritian participants were at an advanced level of understanding and competency, and that their professionalism was unmatched on the East. The Mauritian maritime forces were eager to plan and demonstrate practical skills of Damage control/Firefighting on board both U.S. Frigates and on board their own ship, the Guardian. In both hubs, advanced helicopter exercises were planned and operated with the U.S. vessels. The March exercise simulated a medical evacuation, and the August exercise demonstrated advanced VBSS skills.

Interestingly, their engagement with APS during the past two years has appeared to have an effect on the perspectives of the Mauritian participants with respect to the role of Mauritius as a regional player and a global leader. During the APS EAST Final planning conference for 2012, the Mauritian APS representative gave a rousing call for action from African Partners, noting that the piracy problem and the opportunities that APS provided gave them the mandate for regional engagement. "This is our time," he said.

Cameroon

Cameroon and its territories are former French and British colonies with 250 separate ethnic groups and a population of 19 million. Its primary GDP (reported by the DoS as $21.88 Billion in 2010[86]) derived from oil revenues and timber extraction. A 1070 km oil pipeline (a controversial project financed by the World Bank and led by Exxon-Mobile) spans the country from Chad to the dock in Kribi; there are oil wells offshore in the Bakassi region and around Limbe. Cameroon territories owned by France were given independence in 1960, and territories owned by Britain were given independence one year later. The country is a republic, governed by a strong presidency. Paul Biya, who was appointed to the presidency in 1982 and recently (2008) amended the constitution to remove presidential term limits (an action that stimulated public protests), will be running for re-election in October 2011.

Acts of piracy and sea robbery are a major concern in Cameroonian territorial waters – particularly in the Bakassi peninsula, where maritime incidents reported to the BIR are particularly concentrated (see Figure 1). There were 23 maritime incidents reported in 2008, 44 in 2009, 31 in 2010 and (as of JULY 30) 23 in 2011. By 2009 when the BIR Delta was formed, there was a clear need for an exceptional response capability. During the past two years, the relative level of violence in these attacks has worsened, with sharp increases in the numbers of dead, injured and captive. (Consider, for instance, that the number of hostages reported taken in the Bakassi Peninsula jumped from 5 in 2009 to 27 in 2010). Additional maritime threats include illicit trafficking, such as the smuggling of goods and people, and illegal, unreported and unregulated fishing (IUU).

The BIR was formed in 2001 by President Paul Biya, placing Israeli born COL (ret) Abraham Avi Sivan in charge of training. By 2009, the BIR consisted of 3 Battalions of 650 men per battalion. There are now six battalions of 500 to 650 men per each (between 3000 and 4000 men). The majority of these battalions are ground forces, but in 2009 the mission set of the BIR was expanded to include maritime protection of the Bakassi Peninsula[87] and the BIR developed a maritime unit, the BIR Delta.

[86] *http://www.state.gov/r/pa/ei/bgn/26431.htm*

[87]The ownership of the Bakassi, a peninsular oil-rich region on the Cameroonian border with Nigeria, had been under dispute for decades. In 1994, Cameroon asked the International Court of Justice to settle the contention

Figure 1. Acts of robbery and Piracy in the Cameroon/Nigeria border area NOV 2007 – AUG 2011 (source: data from a host nation interview)

Since they became operationally active in late 2009, the BIR Delta has been successful at culling piracy attacks in and around the Bakassi oil platforms, and out of Cameroonian Territorial waters. Although the total number of attacks in the "Bakassi area" (which we cited earlier) have not notably diminished, the BIR Delta have decreased reported maritime incidents and acts of piracy in occurring in Cameroonian waters alone from 40 incidents (5 persons killed, 8 injured, 4 hostages) in 2009 to 16 (6 persons killed, 5 injured, and 15 hostages) in 2010 to 8 (14 persons killed, 5 injured, and 11 hostages) in 2011 (JAN-AUG). They have accomplished this through exceptionally aggressive tactics. APS participated in training and assisting the BIR Delta forces during the April 2009 mission. U.S. Marines lived and worked with the BIR at their Man-o-War bay base for approximately one month, and a SEABEE project to build a pier at that facility was begun. APS trainers also taught the BIR medical and port security courses. U.S. funded 1206 donations of two defender class boats. Those in the BIR Delta maritime unit are taught swimmer and water competency, small boat skills and tactics, coxswain and engineering/outboard motor, vessel boarding maritime interdiction operation, and Riverine live fire (note: this does not constitute a complete list of BIR training courses). Trainers include Cameroonian, Israeli and U.S. forces. The BIR have participated in APS courses since the USS FORT MCHENRY first came to Cameroon in 2008.

The BIR Delta had styled themselves as a Cameroonian coast guard, however, a recent presidential mandate has expanded the BIR maritime organization to include a complete Cameroonian Coast Guard: a separate entity from the BIR Delta. In this presidential decree, the BIR Delta would continue their mission in the area around the Bakassi Peninsula, while the BIR Coast Guard would have jurisdiction of the remainder of the Cameroonian TTW out to 12 nautical miles. Traditional BIR training and philosophy have prepared them these forces for non-compliant boarding and Special Forces missions. However, these TTPs are not intuitively converted into a public service mandate of coast guard.

As the new BIR coast guard is formed, there may be a need to import a new set of tactics and rules of engagement, different from those of the parent BIR organizations. By routinely engaging the population in a positive (public service) way, the BIR may be more effective in curbing the piracy

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and to specify the boundary between the two regions. In 2002, the Court delivered its judgment, assigning ownership of the Bakassi to Cameroon [See http://www.un.org/events/tenstories/06/story.asp?storyID=900]

element by eliciting cooperation and denying the pirates safe havens. BIR leadership charged with carrying out this new mandate may embrace the opportunity to collaborate with a respected, effective, established Coast Guard force.

Recommendation

Under the banner and direction of APS, the Mauritius Coast Guard would, in conjunction with U.S. Coast Guard representatives, send a training team to Cameroon to assist the BIR leadership in forming the training plans and philosophy of the new Coast Guard force. Mauritian and U.S. Coast Guard trainers would simultaneously be deployed to train in Cameroon.

As the partnership between Mauritius and Cameroon progresses, the model for the engagement may evolve as well; the relationship may begin asymmetrically, with Mauritius trainers in Cameroon to support the burgeoning Coast Guard forces there. However, both the BIR and Mauritius Coast Guard (MCG) are both capable forces that are moving into areas outside their core competencies—areas which are the core competencies of the other. This may therefore evolve into a training "exchange" program between the two groups.

Both the BIR and the Mauritian Coast guard face similar problems of smuggling and piracy, with a particular emphasis on the growing challenge of piracy. Both the BIR and Mauritian Coast Guard are extremely proficient, but their tactics and training and mission dictates are different. Shared tactics and lessons learned between these forces will likely improve the effectiveness of both groups.

This action would likely need buy-in from the highest levels of both the Cameroonian and Mauritian governments. There may also need to be a legal framework drafted, although the need for this type of arrangement may be mitigated if the engagement is conducted as an APS program – rather than as a unique, unprecedented collaboration.