Operational Design and Assessment of Exercises at United States Naval Forces Africa

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Members of a Moroccan navy boarding team take part in a Proliferation Security Initiative scenario aboard USNS Spearhead (JHSV 1) during Exercise Saharan Express 2015.

Forward

On 15 January 2015, Joint Doctrine Note (JDN) 1-15 Operation Assessment was signed. Its purpose was to standardize an Operational Assessment framework and define elements used in assessments at the operational level of war. The US Naval Forces Europe/Africa (NAVEUR/NAVAF) Operational Assessments Directorate has incorporated the best practices and methodologies contained in the JDN into their assessment of African Partner Nations through the EXPRESS series of exercises. Beginning with the 2015 exercise cycle, the focus of the EXPRESS Series exercise assessment has shifted from strictly assessing Partner Nation performance in tactical tasks to assessments of operational tasks and objectives within a Regional Information Sharing Construct, such as the Yaoundé Code of Conduct. Performing assessments at the operational level provides greater insight into the effect of Partner Nation improvements in capacity, capability, and collaboration. This article describes these assessment processes as we have applied them at NAVEUR/NAVAF. We offer our experience as an example of how other Service and Agency Assessment Directorates can implement these processes when building their
Introduction

The Naval Forces Europe/Africa (NAVEUR/NAVAF) Operational Assessments Directorate has had success in developing and applying an analytically rigorous, data-driven methodology to assess operational exercises in the United States Africa Command (USAFRICOM) Area of Responsibility (AOR). Success in this assessment process is attributed to a clearly defined data analysis and collection plan linked to USAFRICOM Theater Campaign Plan (TCP) and NAVAF Maritime Support Plan (MSP) Tasks, Effects, and Objectives. Incorporating Operational Design and Assessment concepts and principles into this methodology has enabled USAFRICOM, NAVEUR/NAVAF, Africa Partnership Station (APS) participants, and African Partner Nations to monitor, analyze, and improve African Partner Nation tactical and operational interoperability, coordination, and performance across multiple Naval Warfare Areas. This process has been selected by USAFRICOM as the standard for other Service Components to follow when developing their own exercises assessment methodologies. It is our intent to describe and disseminate this process to other Maritime Operations Centers and Fleet Staffs so others can realize similar successes during operations and exercises.

**Operational Design and Assessment**

The NAVEUR/NAVAF Operational Assessments directorate developed an exercise assessment scheme based on the principles and elements of Operational Design. Operational Design and Assessment principles ensure that Effects, Objectives, Measures, and Tasks are aligned with desired end states. *The end state is the set of required conditions that defines achievement of the commander’s objectives.*

Decomposing the Mission Analysis and Concept of Operations (CONOPS) into Effects, Objectives, and Tasks is the first step in developing an effective operational design and assessment plan. Within this plan, Tasks should support completion of Objectives and Effects. *A task is defined as an action or activity (derived from an analysis of the mission and concept of operations) assigned to an individual or organization to provide a capability.* Objectives should contain several tasks that are critical to ensuring the Objective is met. Objectives are the clearly

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1. JP 3-0, Joint Operations
2. NWP5-01, Navy Planning
defined, decisive, and attainable goals towards which every operation is directed.\(^3\) Objectives should be Specific, Measureable, Achievable, Realistic, and Timely (SMART). Tasks and Objectives should be written to align with Effects. An effect is defined as the physical and/or behavioral state of a system that results from an action, a set of actions or another effect.\(^4\) Objectives should indicate progress in achieving Effects.

It is critical to ensure that assessment personnel are present during the Mission Analysis and CONOPS development phase of Mission Planning to ensure that all elements of the Operational Design (Measures, Tasks, Effects, Objectives, Lines of Effort, etc.) are vertically integrated, practical, relevant and capable of being measured.

Connecting Measures of Performance (MOPs), Measures of Effectiveness (MOEs), and Indicators to Tasks is essential to accurately reflect progress towards the end state. MOPs show us if we as a staff are “doing things right.” MOEs show us if we are “doing the right things.” Indicators feed raw data into the MOPs/MOEs. The raw data is interpreted according to a pre-determined methodology developed in coordination with Staff Operational Planners. Linking Indicators, MOPs, and MOEs to Tasks according to a pre-defined methodology guarantees that Fleet Leadership can make an analytically rigorous, data-driven assessment of progress or regression towards achieving effects.

Scalability is built into the Operational Design system so that the Operational Staff can develop a methodology that meets their specific needs. Not all elements need to be included. The NAVEUR/NAVAF Operational Assessments Directorate developed an exercise assessment scheme for the EXPRESS Series of exercises using some of the elements described above. Measures of Effectiveness Indicators were identified and linked to Tasks and Objectives at the tactical and operational levels of war. The overall Objectives of each exercise within the series are linked to the Intermediate Military Objectives and Joint/Navy Mission Essential Task Lists (JNMETL) delineated in the USAFRICOM TCP (See Figure 1). This ensures that training and exercise efforts support Higher Headquarters guidance and requirements, as well as maximizing Return on Investment (ROI) through an efficient application of often scarce training and operational assets.

\(^3\) JP 5-0, Joint Operational Planning
\(^4\) JP 3-0, Joint Operations
Figure 1 represents how each individual task associated with the Data Collection Plan is linked to overall Theater Campaign Plan Lines of Effort.

**NAVAF and the EXPRESS Series of Exercises**

Each year, NAVAF develops, participates, and assesses four different exercises under the EXPRESS Series: PHOENIX EXPRESS, CUTLASS EXPRESS, SAHARAN EXPRESS and OBANGAME EXPRESS. PHOENIX EXPRESS focuses on Mediterranean operations with partners including: Morocco, Algeria, Tunisia, and Egypt. CUTLASS EXPRESS focuses on East Africa countries with an emphasis on the Horn of Africa. SAHARAN and OBANGAME EXPRESS are concentrated on maritime operations in West Africa and the Gulf of Guinea region. The primary objective for the entire EXPRESS series is building the capacity of African Nations to counter piracy and illicit trafficking activities through information sharing and interoperability based on international maritime agreements, such as the Yaoundé Code of Conduct for West Africa and the Gulf of Guinea region.
Prior to the 2015 exercise cycle, the EXPRESS SERIES assessment was based on tactical observations and evaluations. Subject Matter Experts (SMEs) were employed to observe tactical level unit performance and provide a subjective assessment. This provided basic knowledge of Partner Nation performance and capability. As the exercises have shifted focus from tactical unit performance to integration and information sharing at the operational level, the assessment process has adapted. The 2015 exercise assessment process shifted to a more rigorous metrics-based assessment process with clearly defined Indicators linked to Tasks and Objectives. Figure 2 shows an example of this linkage for OBANGAME EXPRESS 2015.

It is important to note that NAVAF did not unilaterally develop the metrics, tasks and objectives. They were developed in conjunction with inputs from other NAVEUR/NAVAF staff directorates, including: N50 Policy, N52 Africa Engagements, N35 Future Operations, Public Affairs Office (PAO) and Strategic Communications. Soliciting and coordinating participation across all staff functions with an interest in the EXPRESS Series of exercises ensured that planning efforts were aligned with NAVEUR/NAVAF Theater Security Cooperation (TSC) priorities and Operational Objectives. Additionally, the metrics scheme and linkage to tasks and objectives was vetted and approved by African and European partner nations. It is absolutely essential to gain partner “buy-in” into the process to incorporate their priorities into the exercise.

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**UNCLASSIFIED**

**OE 15 Operational Assessment**

**Ex Obj 4: Exercise Theater MDA capability and information sharing**

**TASK 4.3: Enhance effectiveness of MOC operations**

<table>
<thead>
<tr>
<th>MOE 4.3.1 – PN MOC has baseline capabilities and procedures in place</th>
<th>Standard of Measure</th>
<th>OPR</th>
</tr>
</thead>
<tbody>
<tr>
<td>MOE 4.3.1.1 Does the PN MOC conduct 24/7 operations?</td>
<td>Yes</td>
<td>MDA Assessor</td>
</tr>
<tr>
<td>MOE 4.3.1.2 Does the MOC have standard operating procedures (SOPs) in place for various situations/crises?</td>
<td>Yes</td>
<td>MDA Assessor</td>
</tr>
<tr>
<td>MOE 4.3.1.3 Percentage of MOC personnel trained in the SOPs?</td>
<td>100%</td>
<td>MDA Assessor</td>
</tr>
<tr>
<td>MOE 4.3.1.4 Does the MOC have an organizational chart and roster?</td>
<td>Yes</td>
<td>MDA Assessor</td>
</tr>
<tr>
<td>MOE 4.3.1.5 Number of MDA drills completed in preceding 6 months</td>
<td>#</td>
<td>MDA Assessor</td>
</tr>
<tr>
<td>MOE 4.3.1.6 Can the MOC conduct Crisis Action Planning (SAR, Pollution)?</td>
<td>Yes</td>
<td>MDA Assessor</td>
</tr>
<tr>
<td>MOE 4.3.1.7 Did the PN MOC successfully complete all MDA drills during the exercise?</td>
<td>Yes</td>
<td>MDA Assessor</td>
</tr>
<tr>
<td>MOE 4.3.1.8 Were MOC procedures practiced during inport phase the same utilized during sea phase?</td>
<td>Yes</td>
<td>MDA Assessor</td>
</tr>
<tr>
<td>MOE 4.3.1.9 By the end of the exercise, was the MOC able to act on information gathered using MOC-MOC and interagency information sharing?</td>
<td>Yes</td>
<td>MDA Assessor</td>
</tr>
</tbody>
</table>

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Figure 2 shows an example of the linkage between Indicators, an MOE, Task, and Objective 1 for OE15
Measure and Indicator Data Collection and Management

The primary data collection method used by NAVAF for EXPRESS SERIES assessments were electronic surveys completed by assessors observing the exercise. All assessors were qualified Subject Matter Experts (SMEs) in their respective warfare areas and occupations, including: Vessel Boarding Search and Seizure (VBSS), Maritime Interdiction Operations (MIO), Maritime Operations Center (MOC) watch-standing, Maritime Domain Awareness (MDA), Medical, Fleet Operations, and Management. The primary difference between current iterations of the assessment process and previous ones is that the assessors' evaluation is focused on specific tasks, rather than subjective impressions of performance. The survey questions are written to align with the Indicators and MOEs defined in the Operational Design and Assessment plan development phase. For example, the EXPRESS Series daily MOC assessment survey questions that support the Indicator, “Conduct of scenarios between Operational Areas,” are, “Were MOCs able to pass suspect vessel information?,” “Was Tactical unit able to complete interdiction?,” and “Do MOCs utilize SOPs during handover procedures?” These questions focus the assessor’s attention on specific tasks executed during the exercise. Once the SMEs are trained in operating the data collection tool they can complete their surveys during the exercise using a PC, MAC, or any portable device i.e. IPads, tablets, smart phones, etc.

The particular tool that NAVAF uses is QuestionPro, provided by USAFRICOM. This tool is scalable, user-friendly and includes language support for all major languages used by members of NAVAF partner nations. During OBANGAME EXPRESS 2015, the Maritime Domain Awareness (MDA) objective was redefined. QuestionPro was used to easily develop an additional survey to assess this objective. The survey was made available to the MDA Assessors via a link embedded in the All Partners Access Network (APAN), and sent to them separately via email. The surveys were translated into French, Spanish, and Portuguese, so that African and European Partner Nation assessors, who did not speak English, could participate. Once the assessors completed their surveys, reports were generated displaying all information, including comments, in a .csv excel format.

While this tool is useful, it is, after all, only a tool. The actual process is more important. Spending time and effort at the beginning of the exercise cycle to develop relevant linkages between Indicators, Measures, Tasks, and Objectives supported by a robust, distributed, user-friendly data collection plan will enable Fleet and MOC planners and assessors to provide effective, data-driven operational exercise assessments.
LCDR Kervin Cabezas, a Reservist from Det. 205 Pittsburgh, discusses the Schedule of Events (SOE) with the Senegalese Navy for underway scenarios during the execution phase of SAHARAN EXPRESS 2015.

**Data Mining and Influencing Partner Progress**

The main benefit of an electronic data collection process is that the assessor and analysts can collect and analyze the data from multiple locations. For example, the scenario and assessment may take place in Cameroon, but NAVAFCAN access data from a remote location in Nigeria, eliminating the need for constant communication between assessors and analysts. This is especially important when the assessor is in a communications-limited environment such as a ship or remote training location.

At specified time intervals, usually daily, the NAVAFCAN Assessment team can pull the collected data. The team uses Excel as the primary data visualization and data mining tool. QuestionPro enables this as the survey data can be exported into a standard .csv format. Excel is readily available on all NAVAFCAN systems and most Partner Nation systems, so information can be easily shared. Excel, with a time interval-based data collection process allows for near real-time analysis on day-to-day operations.
Analysis can be presented with recommendations for improvement in Tactics, Techniques, and Procedures (TTPs) at both the tactical and operational levels. Providing a summary slide that includes task performance and recommendations based on objective evidence enables the commanders and decision makers to implement any necessary changes in operations prior to the next scenario (See Figure 3). These changes can then be assessed in subsequent scenarios and presented again. This iterative cycle can positively influence Partner Nation progress during the exercise.

Figure 3 shows how each individual country performed during the observed objective and the identified successes and challenges noted during the assessment.

An overall assessment is generated and presented to all participants after the exercise is completed. The end of exercise assessment, or “Hot Wash,” provides an opportunity for observations to be presented by all participants. The formal assessment shows how each objective was scored, which, when combined with identified successes and challenges, can be rolled up into an overall score for the exercise. The final product contains enough detail to show how the exercise was assessed in addition to feedback on Partner Nation performance for each task and
objective. Using multiple surveys collected over the course of the exercise from multiple perspectives with clearly defined scoring criteria ensures an objective assessment is based on quantitative data. (See Figure 4)

![Assessment Summary Diagram]

Figure 4 displays how each individual objective was evaluated and “Rolled up” to determine the overall assessment of the exercise.

**Assessment Drives Improvement**

During the Operational Design and Assessment phase, all major stakeholders collaborate to identify focus areas to increase the capacity and capability of African Partner Nations. Using the EXPRESS Series Assessments, NAVEUR/NAVAF Engagement Planners, in coordination with APS members, translate identified requirements into training objectives and engagement opportunities. A training plan is developed for each country and implemented during the year. The NAVEUR/NAVAF Operational Assessments Directorate adapts the assessment plan to accommodate any changes in the Tasks or Training Objectives, and then facilitates the
assessment. The ultimate goal of this iterative process is to enable African Partners’ ability to respond to illicit maritime activity within the construct of regional interoperability.

The Cape Verde Maritime Operations Center’s (MOC) watch team analyzes contact reports of an illegal fishing vessel to determine a Course of Action (COA) during Regional Information Sharing drills in SAHARAN EXPRESS 2015.

**Summary**

The data collection and analysis methodology described above provides a valuable tool for assessing exercises. Using Operational Design to frame the assessment process enables a focused, relevant, and analytically rigorous assessment product. For the NAVEUR/NAVAF Operational Assessments Directorate, success in using this process is evident in the African EXPRESS series. Remote data collection reduces the need for additional assessors to be present on-the-ground. It emphasizes the African Partner Nation’s ability to properly conduct self-assessments throughout the year—not just during the engagements. It reduces the amount of time necessary to develop courses of action to remedy identified capability gaps. The system is designed to be dynamic; adapting to the evolving needs of Partner Nations and enabling continued complexity in their exercises and operations. Additionally, this process will be adapted to assess other NAVEUR/NAVAF exercises including SEA BREEZE and BALTOPS for FY16.
Utilizing a synched system of indicators, tasks, objectives and effects supported with a robust, dynamic data collection capability will enable MOC Staffs to design and develop their own exercise assessment programs based on well-established operational assessment principles. This will create efficiencies in the use of scarce resources and provide valuable insight into partner nation progress.

**OBANGAME EXPRESS**

2015

There is no problem too great and no contribution too small for the Global Network of Navies

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