



# The Three Dimensions of Interoperability for Multinational Training at the JMRC

■ By Maj. Gen. Duane A. Gamble and Col. Michelle M.T. Letcher





*Soldiers conduct an operations briefing on June 22, 2016, during Swift Response 16 at the Joint Multinational Readiness Center in Hohenfels, Germany. The exercise included more than 5,000 Soldiers and Airmen from the United States, Belgium, France, Germany, Great Britain, Italy, the Netherlands, Poland, Portugal, and Spain. (Photo by Spc. Gage Hull)*



## FEATURES

By focusing on the technical, procedural, and human dimensions during training, units can ensure better interoperability.

Setting the theater requires sustainment formations that are prepared to receive, stage, onward move, and sustain divisions and corps of expeditionary forces and our allies. Sustainment formations must build and maintain reflexive competency to execute mission essential warfighting tasks in a high tempo, full-spectrum environment where interoperability is key.

As sustainment units operate in a dynamic and volatile theater, speed and strength matter. Core responsibilities, such as theater opening, establishing the theater distribution system, and sustaining operations across the European Command area of responsibility, matter as well.

In addition to the more than 50 battalion- and above-level exercises executed across the theater, NATO allies exercise their readiness through formal external evaluation at the Joint Multinational Readiness Center (JMRC) in Hohenfels, Germany. Multinational sustainment integration trends and observations at the JMRC, at the echelons-above-brigade support level, highlight the need for multinational interoperability.

Allied Joint Publication 01(D), Allied Joint Doctrine, describes the three dimensions of joint and allied interoperability. It is through the interoperability of the technical, procedural, and human dimensions that multinational units succeed in achieving allied security objectives. NATO list standardization, training and exercises, technical demonstrations, and tests as a few of the tools that nations can use to achieve and measure interoperability. This article shares the tools that units can use to train across the three dimensions of interoperability—technical, procedural, and human—at JMRC and in any other multinational training environment.

### The Technical Dimension

The technical dimension focuses on mission command and logistics management systems used at the tactical level. Interoperability is needed

in units' capabilities and technological output. Units demonstrate this dimension through communication, mission command systems, and the exchange or use of equipment between multinational partners. The technical dimension can be measured by assessing a units' ability to provide mission command and sustainment across allied formations in support of similar objectives or an allied commander's intent.

In order to do this, the senior sustainment commander on the ground must work through numerous command and support systems. Mission command systems are challenging when working with our NATO partners; there are 13 different battle-tracking systems across NATO. The U.S. Army sustainment formations communicate over the Command Post of the Future (CPOF) and Joint Capabilities Release—Logistics, which operate on the secure internet protocol router network. NATO allies use Battlefield Information Collection and Exploitation Systems (BICES) with Logistics Functional Area Services, which provide them with a logistics common operational picture.

Both Joint Capabilities Release—Logistics and Logistics Functional Area Services provide reporting tools and a common operational picture, but through two different networks that do not communicate with each other. This causes friction during JMRC rotations. Compounding the challenge, BICES and other systems used by our allies are not available to the tactical echelons of all nations. Many countries reserve BICES for static operational or strategic headquarters or for a forward-deployed mission command structure.

JMRC observer-controllers mitigate system and information shortfalls by suggesting the use of low-tech solutions such as simple graphic control systems to control movement, FM radio communication, liaison officers (the human dimension), and vehicle marking systems. All of these techniques increase technical interoperability for

mission command in a multinational environment.

A second observation from a technical perspective concerns the interoperability of our sustainment systems. In the absence of a standing NATO logistics brigade, allied units work together to exercise readiness and increase operational reach.

One example of a tool improving technological interoperability is the NATO fuel adapter that was used by the Modular Combined Petroleum Unit, a multinational bulk fuel company, during Trident Juncture 15. The unit executed multinational fuel distribution and storage missions and validated six fuel fittings with seven different nations during the exercise.

The 16th Sustainment Brigade identified the number of adapter kits needed based on each type of brigade's authorized bulk fuel assets. Rotational units must identify similar technical gaps and develop a common solution for mission command and sustainment interoperability with our allies for mission success.

### The Procedural Dimension

The procedural dimension of interoperability focuses on doctrine and procedures from the strategic, national level to tactical-level execution. It involves standardizing capabilities and operating in similar types of formations anywhere. Units demonstrate the procedural dimension through standardization agreements, standardized communication, and agreed upon terminology, tactics, techniques, and procedures that minimize doctrinal differences.

The effectiveness of a unit's procedural dimension can be measured by how well it synchronizes its sustainment resources to enable the alliance and increase operational reach and freedom of movement for multinational formations. The differences between nations are magnified in training environments with external evaluation platforms, like JMRC, and during U.S. Army Europe exercises that include border crossings

and multinational execution. Each nation's task organization, equipment, mission command platforms, and planning priorities becomes evident as the observer-controllers and trainers examine processes that are based upon each nation's standard operating procedures.

Standardization increases interoperability. Having standardization

agreements for processes, language or doctrinal difference, and procedures in place before an exercise reduces friction during training and execution. Standardization also increases the operational reach, combat power, and readiness of a formation.

Processes challenge units in all multinational exercises, but requirements for diplomatic clearances,



*Pfc. Dontravious Moon with the 240th Quartermaster Company, 18th Combat Sustainment Support Battalion, 16th Sustainment Brigade, out of Grafenwoehr, Germany, resupplies water for Soldiers during training on April 17, 2016. (Photo by Spc. Sarah K. Anwar)*





*Sgt. Daryl Perez, French Cpl. John Parau, and Spanish air force Pvt. Alejandro Sanudo with Trident Juncture 2015's Modular Combined Petroleum Unit coordinate logistics at Zaragoza Air Force Base, Spain, on Oct. 8, 2015. The unit fueled vehicles from almost all of the 35 countries participating in the exercise. (Photo by Sgt. 1st Class Michael O'Brien)*

requests for march credits, and moving equipment by rail can quickly overwhelm units with few rotations in Europe. Each European country has different requirements, and misunderstanding the paperwork and standards for moving in these countries can halt movement and affect the mission. Onward movement has specific requirements by nation and requires division transportation officers, mobility warrant officers, and unit movement specialist to plan according to the requirements of the nations that are being traversed.

A NATO standardization agreement provides a single standard to assist nations in increasing interoperability, but countries may implement this standard differently. The doctrinal terms, resource gaps, and tactics, techniques, and procedures of countries and units vary. It is important for units working within

multinational formations to establish a rotational plan that solidifies reporting formats, reporting time lines, synchronization meetings, and communication in order to standardize procedures.

### The Human Dimension

The human dimension of interoperability focuses on human behaviors and abilities at all levels of execution. It ranges from communication at the individual level to the standardized and executable capabilities that maximize national contributions. Human interoperability includes relationships, liaisons, education and training, and language skills. Cultural factors influence the human dimension. Of the three dimensions, the human dimension is most closely connected to interoperability effectiveness and is the most likely to determine system effectiveness.

Friction caused by blocked equipment movement at a single border crossing can become a national-level issue that requires an ambassador's assistance to resolve.

As organizations prepare for training, one of the greatest challenges in Europe is movement. Movements by air, rail, sea, or road require approval authorities across multiple commands, joint services, and host nations. Each command, service, or nation requires a different process, which may cause friction to a unit with new personnel, a regionally aligned or allocated force, or a rotational force.

It is through the human dimension that friction is reduced. Relationships built with carriers, liaison officers nested with other commands, and movement controllers working inside national movement coordination centers are all examples of



*1st Lt. Stevie Hasenfus discusses fuel operations with Spanish air force Maj. Sergio Armabilet and Antonio Arraez during Trident Juncture 2015 on Oct. 8, 2015. (Photo by Sgt. 1st Class Michael O'Brien)*

human behaviors that reduce potential movement friction and allow for smoother reception, staging, onward movement, and integration.

Education is another important aspect of the human dimension. It provides a foundation for all participants. The Joint Multinational Training Command offers multiple interoperability-enhancing training programs through the Joint Multinational Simulations Center and the 7th Army Mission Command Training Program. These programs provide training to prepare units for multinational missions.

Finally, repetition with our NATO allies in a training environment increases interoperability by building strong relationships. Sustainment training with recovery assets, fueling capabilities, movement control, and distribution capabilities are examples of systems that sus-

tainers may exercise to understand interoperability through the human dimension. Junior leaders learn to understand options and overcome obstacles through different equipment, processes, and language. All of these training opportunities strengthen the alliance.

Before a multinational rotation at the JMRC, units train at their home station to help build a foundation for success. Organizations exercise the human dimension through logistics synchronization and maintenance meetings, the use of mission orders, and combat power and strength management.

Leaders educate their formations on logistics estimation tools, logistics reporting, casualty evacuation procedures, and integrating echelons-above-brigade support to increase operational reach. Allied forces must understand the task organization of

multinational formations, familiarize themselves with national strengths, and use planning conferences and individual contacts to understand national aptitudes and capabilities in order to increase allied strength.

Finally, through the human dimension, leaders gain an understanding the capability gaps of partner nations as well as national caveats that may lead to shortfalls. Knowing this helps units to build a plan for a successful rotation.

Multinational training environments allow allies to exercise their interoperability and readiness and receive formal external evaluations. It is through the interoperability of the technical, procedural, and human dimensions that multinational units succeed in achieving allied security objectives. At the JMRC, or in any multinational training environment, sustainers exercise their ability to provide commanders with options to succeed.

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Maj. Gen. Duane A. Gamble is the commanding general of the 21st Theater Sustainment Command in Kaiserslautern, Germany. He holds a bachelor's degree in business economics from McDaniel College, a master's degree in logistics management from the Florida Institute of Technology, and a master's degree in national resource strategy from the Industrial College of the Armed Forces. He is a graduate of the Ordnance Officer Basic and Advanced Courses, the Army Command and General Staff College, and the Industrial College of the Armed Forces.

Col. Michelle M.T. Letcher commands the 16th Sustainment Brigade headquartered in Baumholder, Germany. She holds a bachelor's degree in social work from Illinois State University and master's degrees from the State University of New York at Oswego, the School of Advanced Military Studies, and Kansas State University. She also completed the Senior Service College Fellowship at the University of Texas at Austin.