



**SUPPORTING, NON-STANDARD MISSION ROLE:
U.S. OPERATIONS IN LIBERIA, 2014-2015,
THAT ENABLED THE U.S. AND UN RESPONSE
TO THE EVD OUTBREAK**

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U.S. Army Peacekeeping and Stability Operations Institute

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Senior Editor**

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About the Author

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Introduction

Operation UNITED ASSISTANCE (OUA), which deployed to Liberia between September 2014 and June 2015, provides an example of how a Joint Force can support a lead federal agency (LFA), in this case the U.S. Agency for International Development (USAID) and other interagency and international partners to end a raging epidemic of Ebola Virus Disease (EVD). This EVD outbreak began in late 2013, when Emile Ouamouno, a two year old from Meliandou, a village in Guinea, close to the border with Liberia and Sierra Leone, died of a hemorrhagic fever.¹ Soon after, many of his relatives and their connections, who lived across the region, also became ill and died. In March 2014, a team from the Institut Pasteur in France confirmed that the hemorrhagic fever spreading through the region was EVD. By then, more than 2,400 people had died from the disease. By the time the epidemic ended, in Liberia alone, 15,227 cases of EVD had been confirmed through laboratory tests and 11,310 people had died.

But in the spring and summer of 2014, clinics and treatment centers were soon overcrowded, turning people away, and people were dying in the streets, unable to get even the most basic medical care. The worsening situation led the World Health Organization (WHO) to declare the EVD epidemic a "global health emergency" on August 8, 2014. When affected populations began to protest the lack of medical care for their afflicted loved ones, as occurred in Liberia on August 16, 2014, the most affected countries' political leaders (i.e., Guinea, Liberia, and Sierra Leone) realized they would need additional international assistance to stop the epidemic.

On August 29, 2014, the presidents of Guinea, Liberia, and Sierra Leone wrote a joint letter to the UN Security Council (UNSC) requesting a response and international assistance. On September 8, 2014, President Barack H. Obama announced that the United States would build a treatment center for medical workers, the Monrovia Medical Unit (MMU), outside of Liberia's capital. But Liberian President Ellen Johnson Sirleaf wrote to President Obama on the next day to request a more comprehensive U.S. response in her country. By then, data from the Centers for Disease Control (CDC) showed that without such assistance, thousands more people could

die. Because treatment centers were overwhelmed, relief experts recommended building additional Ebola Treatment Units (ETU).

On September 16, 2014, President Obama announced that the United States would deploy a 3,000-strong mission to Liberia to support international EVD response efforts. The Joint Force Command worked to build 10 ETUs and the Monrovia Medical Unit (MMU), deployed six mobile laboratories, established an intermediate staging base in Senegal, and established and ran a training center for healthcare workers who would then staff the ETUs. On February 11, 2015, with these tasks accomplished and the epidemic ebbing, President Obama announced the withdrawal of OUA, which terminated on June 30, 2015.

This study examines OUA to provide insights and lessons on the challenges of planning and executing an operation in an unfamiliar but permissive theater. The study is organized in five parts. The first section provides the background and strategic conditions for the operation. The second section describes the operational environment in Liberia. The third section discusses the lack of strategic guidance provided for OUA and describes how the Joint Force Command relied on a presidential speech at the Centers for Disease Control (CDC) to plan and execute the mission. The fourth section discusses the design and planning for OUA. The fifth and final section provides an assessment of OUA and insights for planning and conducting future similar operations.

Background and Strategic Conditions for the Operation

This section provides an overview of the country of Liberia: its geography, society, government structure, economy, and history.

Geography

Liberia is a small country in West Africa, totaling 11,369 square kilometers (km). It is bordered by the Atlantic Ocean to the Southwest, Côte d'Ivoire to the East, Guinea to the North, and Sierra Leone to the West. It lies between latitudes 4° and 9°N, and longitudes 7° and 12°W. It has land borders spanning 1,667 km and 579km of coastline.² The climate is equatorial with year-round hot temperatures. There are two seasons: a dry and hot season (November to March); and a rainy season (May-October) which brings heavy seasonal rains.³ On average, Monrovia, the capital, gets 4624 millimeters (182 inches) of rainfall per year.⁴

The country is mostly flat with rolling coastal plains that rise up to plateaus and low mountains to the north. The hills beyond the coasts are covered in triple canopy tropical rainforest, with grassy clearings where people have settled. The hills in this area rise 60 to 150 meters. To the northeast lies an area of plateaus (with elevations between 180 and 300 meters) and small mountains (up to 600 meters). The highest point, Mount Wuteve, rises 1,380 meters.⁵

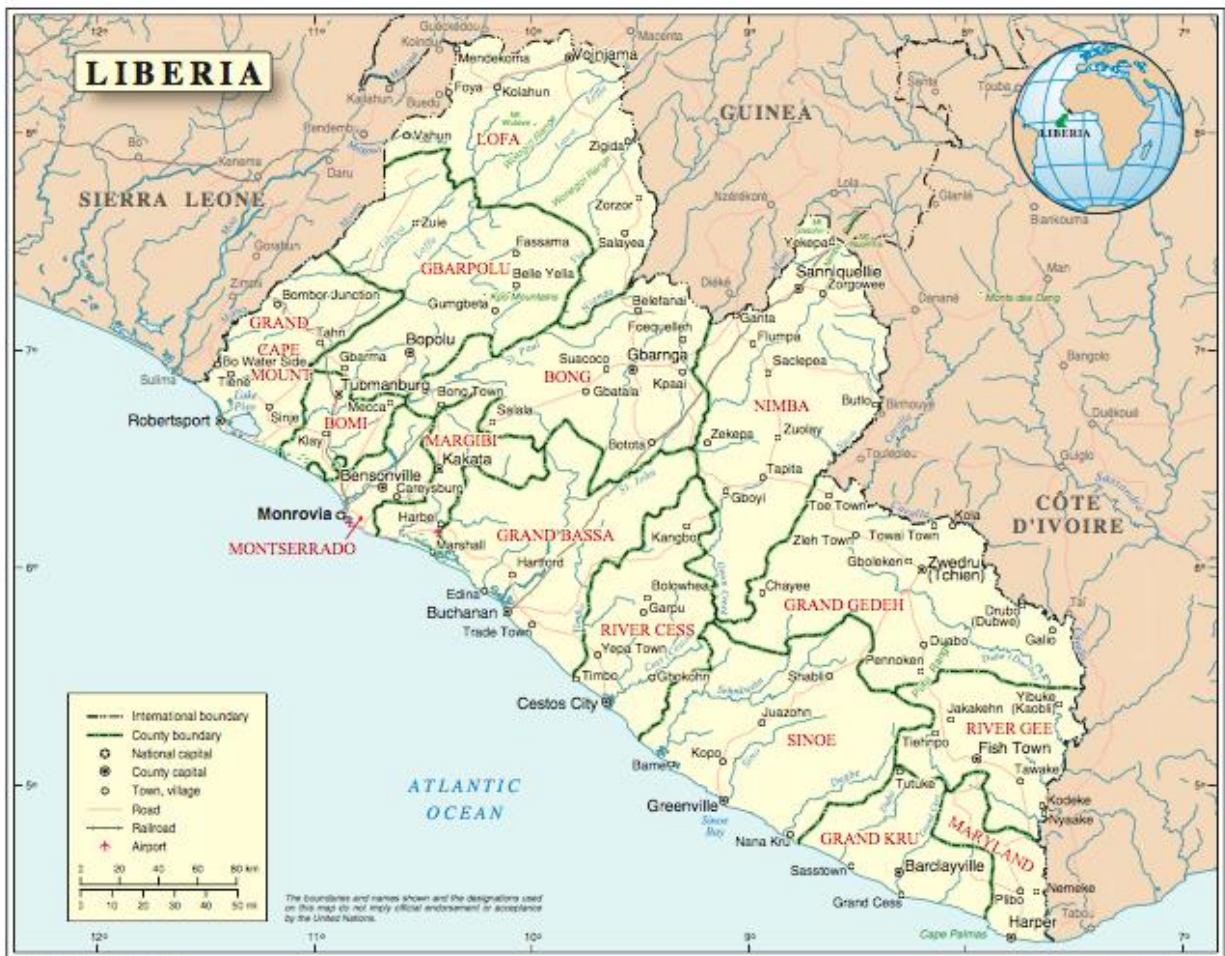


Figure 1: Map of Liberia⁶

Society

Liberia has 3.3 million people and over ten ethnic groups, including the Kpelle (20.3 percent), the Bassa (13.4 percent) and the Grebo (10 percent).⁷ English is the official language but only 20 percent of the population speak it. The rest of the population speak various local languages. Liberia has a high fertility rate of nearly 5 children per woman. Life expectancy averages 61 years, but more than 60 percent of its population is under the age of 25.⁸

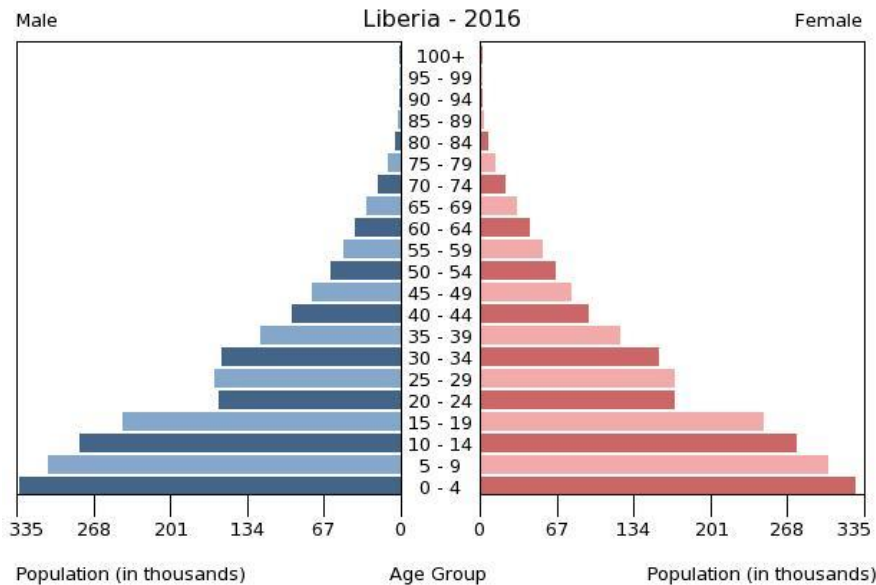


Figure 2: Liberia's Population Structure⁹

Despite a near absence of health care workers and medical infrastructure, infant and child mortality has dropped nearly 70 percent since 1990.¹⁰ However, Liberians continue to suffer from the eighth highest maternal mortality rate in the world.¹¹ A mostly rural country, just under half of the population lives in urban areas, with 1.3 million people alone living in the capital, Monrovia.¹² Because of endemic poverty, lack of access to clean water and sanitation, the absence of trained health workers and health facilities, Liberians are at a very high risk for contracting a variety of infectious diseases, including diarrhea, hepatitis A, typhoid fever, malaria, dengue fever, Lassa fever, and yellow fever.¹³ This presented a challenge for international EVD response efforts because many of these diseases present with the same symptoms as Ebola.

Another key part of Liberia's social structure is that the country's large extended families often travel both within the country and outside of it, to visit each other.¹⁴ They rely on old, overcrowded cars, minibuses, trucks, and motorcycles to travel on a dilapidated road network. Controlling such population movements, particularly across borders is extremely difficult.¹⁵ Indeed, the terrain makes it more convenient for people to use unofficial and unmanned border crossings.¹⁶ Shutting down a border or even declaring an area quarantined is extremely difficult to fully enforce.¹⁷

Government

Liberia is a presidential republic modeled on the American system.¹⁸ The President is also the head of government and commander in chief.¹⁹ Widely regarded as a corrupt country, Liberia ranked 90th out of 176 countries in corruption perception according to Transparency International, where a rank of one is perceived to be the least corrupt.²⁰

Economy²¹

Liberia is one of the poorest countries in the world: it is ranked 177th out of 188 in the UN Development Program's Human Development Index.²² It is heavily dependent on foreign aid despite the fact that it has abundant mineral resources, forests, and a climate that is favorable to agriculture. But civil wars and government corruption ravaged the country's economy and destroyed its infrastructure. Peace, UNMIL's deployment, and improved security conditions led to record economic growth, the direct result of high prices for the commodities Liberia exports.²³ Before the outbreak, Liberia enjoyed a growth rate of over 10 percent, and its gross national income per capita was \$806.²⁴ But the EVD epidemic led businesses to shut down and depart.²⁵ As a result, the growth rate dropped to one percent in 2014, zero percent in 2015 and only rose to two percent in 2016.²⁶

Rebuilding Liberia's economy is a continuing challenge since not all businesses have returned, and more aid will be required to help Liberia get back on its feet.²⁷ Liberia's banking system is extremely limited and practically non-existent outside Monrovia.²⁸ While Liberia has its own currency—the Liberian dollar—most people rely on post-2006 “big head” U.S. dollar bills for most of their transactions, especially large transactions.²⁹

History of Liberia³⁰

The United States has a long history with Liberia, which was colonized by freed American slaves in the 1820s and declared independence in 1847. Americo-Liberians, the freed slaves and their descendants, who founded the country, led the country for most of its history.

Civil Wars and Transitional Government

Liberia suffered a series of coups in the 1980s, leading to a civil war that raged on and off between 1990 and 2003. The civil war killed more than 200,000 Liberians and caused one million people to flee to neighboring countries.³¹ One of its rebel leaders, Charles Taylor, eventually became president but was indicted for war crimes by the Special Court for Sierra Leone in June 2003, and fled to Nigeria to escape prosecution.³² Taylor's departure led to the signature of the Comprehensive Peace Agreement, on August 28, 2003, and the ensuing formation of a transitional government.³³ The agreement also permitted the deployment of a small Economic Community of West African States (ECOWAS) force and the UN Mission in Liberia (UNMIL).³⁴ Liberia organized free and fair presidential and legislative elections in 2005 in which Ellen Johnson Sirleaf, was elected to the Presidency.³⁵ In January 2006, the new president convinced Nigeria's government to extradite Taylor for trial by the Special Court for Sierra Leone. In 2013, he was convicted of war crimes and sentenced to 50 years in prison.³⁶

Ellen Johnson Sirleaf's Presidency

In 2005, the President established a Truth and Reconciliation Commission (TRC) to investigate and report on gross human rights violations that occurred in Liberia between January 1979 and October 2003.³⁷ The TRC's work allowed surviving Liberians to share stories about the wars and offer recommendations for reconciling the different factions in the country's conflicts, leading

to the release of a 2009 report on reconciliation in Liberia.³⁸ The TRC process was important for building trust between Liberian government institutions and citizens, but this tentative trust was breached because of the government's failures in responding to EVD. President Johnson Sirleaf's presidency also saw a revival of Liberian civil society, which had been decimated by war. The number and quality of media outlets increased, though they must still be paid to provide newspaper, radio or television coverage of important events.³⁹ The Johnson Sirleaf presidency, along with support from UNMIL and international donors, has brought a period of stability and, until the EVD outbreak, unprecedented economic growth to Liberia.

*The United Nations Mission in Liberia*⁴⁰

After the 2003 peace agreement, the UN deployed UNMIL, a 15,000-strong peacekeeping mission. The mission's mandate was to help rebuild the country, support the establishment of the rule of law, conduct security sector reform programs, and organize democratic elections. UNMIL also provided support for developing the new Liberian National Police and reforming the country's judicial system. The mission further led a massive demobilization, disarmament, and reintegration (DDR) campaign for the country's 100,000 former combatants. UNMIL's successes contributed to decisions to decrease the mission's size progressively. During OUA, UNMIL was approximately 4,000 strong. By July 2016, the mission had drawn down to 1,500 troops and 600 police. The mission is expected to end in March 2018, after it helps support presidential elections in October 2017.

U.S. Support to the Government of Liberia (GOL)

The United States played a crucial role in supporting the development of a new Armed Forces of Liberia (AFL), including training, equipping, and conducting a thorough process for identifying and vetting personnel before they were permitted to join the AFL.⁴¹ Operation Onward Liberty (OOL), a U.S. effort to provide training to the new AFL began in 2010 and closed in 2016. It aimed to professionalize the AFL by providing training in areas ranging from basic infantry skills to staffing a joint staff headquarters. During the EVD outbreak, mentors trained 250 personnel from the AFL in the proper donning and doffing of personal protective equipment (PPE) so that they could assist in caring for EVD patients without contaminating themselves.⁴² Since the conclusion of OOL, the U.S. Embassy's Office of Security Cooperation has continued to provide support to the AFL with training focused on defense institution strengthening, professional development, maritime security, engineering support, and medical readiness.⁴³

*History of the 2014 EVD Outbreak*⁴⁴

After a little boy and several of his relatives in Guinea died of a hemorrhagic fever in December 2013, a team from the WHO gathered and submitted samples to the *Institut Pasteur*, which identified the disease as the deadly "Zaire" strain of EVD on March 23, 2014.⁴⁵ Despite attempts by regional health agencies to contain the epidemic, the virus had swept through neighboring Sierra Leone and Liberia by the end of March. By August, Liberia was particularly devastated by the virus with about 150 doctors and nurses infected, half of them dying.⁴⁶ With few medical facilities and trained medical personnel, Liberia was in the throes of a full-blown epidemic.⁴⁷ The chart below describes the total cases of EVD in Liberia (red) and its hardest hit neighbors.

As can be seen from the chart, the rate at which the number of cases began spiking in the summer of 2014 and then stabilized in Liberia in the spring of 2015.

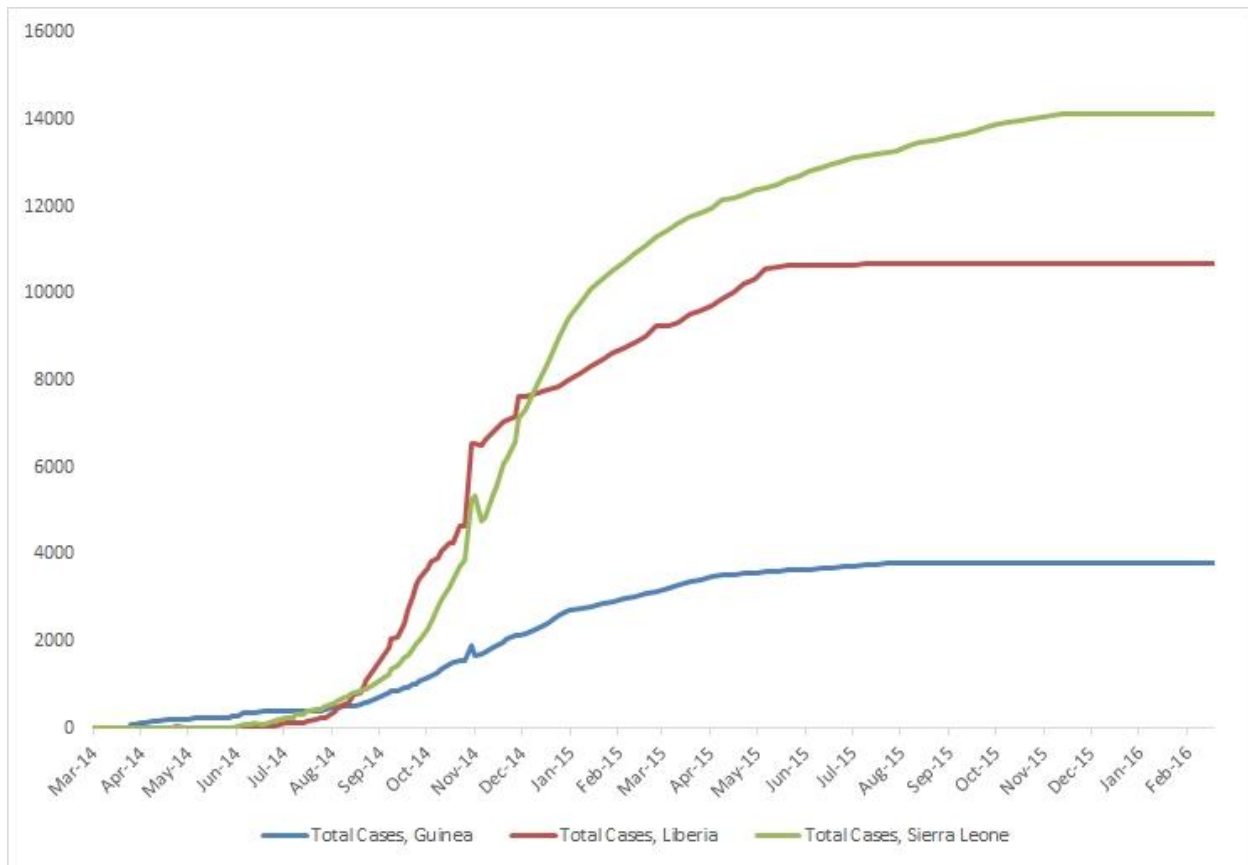


Figure 3: Timeline of Total EVD Cases in Liberia, Guinea, and Sierra Leone⁴⁸

On August 6, 2014, President Ellen Johnson Sirleaf declared a three-month state of emergency, imposing a curfew, limiting activities deemed to be conducive to the spread of the disease (such as markets), and requiring that bodies be cremated rather than buried as is traditional in Liberia.⁴⁹ In August and September, *Médecins Sans Frontières* (MSF) opened several treatment centers but they were quickly overwhelmed and couldn't accommodate the patients that were streaming in. After the epidemic ended, in April 2016, the CDC reported that during the epidemic, there were 15,227 laboratory-confirmed cases of Ebola in Liberia and that 11,310 people had died of the disease.⁵⁰ The map below shows the density of Ebola cases across the region, with darker colors showing larger numbers of cases.



Figure 4: Map of Total Cases of EVD during the 2014-2015 Epidemic in West Africa⁵¹

Operational Environment

This section describes the operational environment for OUA. It explains the nature of EVD and details the operational challenges the mission faced, in particular Liberia's poor infrastructure. It also provides an overview of the U.S and international response to EVD.

Ebola Virus Disease

Ebola Virus Disease (EVD) is a severe illness, with a death rate of up to 90 percent for those that contract it. It was first identified in 1976, when two outbreaks occurred, one near the Ebola River in the Democratic Republic of Congo (then Zaire), thus giving the virus its name. While its origin is unknown, scientists believe that fruit bats may be a host. People become infected with EVD either through contact with infected animals (usually following butchering, cooking or eating) or through contact with the bodily fluids of infected humans. Human to human transmission occurs when blood or other bodily fluids or secretions (stool, urine, saliva, and semen) of infected people enters a healthy person's body through broken skin or mucous membranes. Infection can also occur if the broken skin or the mucous membranes of a healthy person comes into contact with items contaminated with bodily fluids from an infected living or dead person. These may include soiled clothing, bed linens, gloves, protective equipment and medical tools such as used hypodermic syringes. Health workers, family members, and mourners are therefore at the highest risk of contracting the disease as result of contact with a living or deceased infected person. Bodies must therefore be immediately buried, preferably by a specially trained burial team whose members wear Personal Protective Equipment (PPE) to limit the risks of exposure.⁵²

Operational Challenges: Lack of Infrastructure

The operational environment in Liberia is extremely challenging. It is a small country, roughly the size of the state of Virginia, but its working infrastructure is almost non-existent,

particularly in terms of airfields and roads.⁵³ Liberia has only one major airport, just outside Monrovia, Roberts International Airport. The most significant operational challenge for OUA however, was poor quality or non-existent roads. Liberia's road system has a total length of 10,600 km but of these, less than a quarter are classified as all-weather roads and only 657 km are paved. In addition, the rainy season from May through October further deteriorates road capacity by washing them out and making many secondary roads completely impassable.⁵⁴ The table below details distance and travel time between Monrovia and major cities in Liberia.

Monrovia	Buchanan	Ganta	Gbarnga	Greenville	Harper	Voinjama	Zwerdu
Distance (km)	86	167	123	414	460	246	301
Time (hours)	2	4	3	8	12	8	12

Table 1: Travel Time and Distance from Monrovia to Major Cities⁵⁵

Liberia also lacks the capacity to respond to epidemics: its healthcare system was practically non-existent even before the epidemic. Liberia has fewer than one doctor per 1,000 people and the country's health ministry lacked the capacity to trace patients, develop public outreach campaigns, and educate the public about Ebola.⁵⁶ Moreover, local cultural practices facilitated the spread of the disease because families often prefer to have their loved ones die at home and then wash and bury the bodies themselves, thus exposing themselves to EVD. With limited health facilities and the compounded challenge of reaching such facilities (if they existed at all) on Liberia's dilapidated road network, the cost of transporting patients to medical facilities was problematic for most Liberians. In addition, at the height of the epidemic, medical facilities were turning people away due to lack of capacity; thus, people were dying right outside their gates.

Liberia also lacks a dependable electrical grid in Monrovia and across the country. To mitigate against outages, wealthy Liberians, businesses, and government agencies rely on backup generators for electricity. Most dwellings and buildings do not have running water, let alone potable water. Drinking water must be disinfected—or purchased from a bottled water provider. Modern sewage systems are non-existent. On the other hand, most people do have cellular phones, which they also use for minor banking transactions in lieu of cash. Broadband internet connections are available only in Monrovia or through a satellite link.

Absence of Spoilers and Confidence Building

The mission was made easier by the fact that there were no spoilers or adversaries, other than EVD itself, and a belief, among some of the populace, that EVD was not a "real" disease. Many Liberians also lack faith in their government, in particular its ability to provide adequate services and security.⁵⁷ Conversely, the announcement of a U.S. deployment reportedly increased confidence in Liberians' belief that the epidemic could be successfully stopped. The only time

violence occurred was before the U.S. deployment when, in response to a quarantine being declared in West Point, Monrovia's biggest slum, riots spread and police killed a teenager.

Coordination and Cooperation with a Multitude of U.S. and International Stakeholders

One of the main challenges of the operational environment was working not just with American interagency counterparts but also with the myriad of other stakeholders present: the Liberian government; UN agencies, including the UN Mission for Ebola Emergency Response (UNMEER), UNMIL, WHO, and UN Development Program (UNDP); regional organizations such as the African Union (AU) and ECOWAS; nongovernmental organizations (NGO), such as Médecins Sans Frontières and many others; and private sector actors, such as Fluor or PAE which were implementing both USG and other foreign government or international organizations programs. The level of information-sharing and coordination required in this environment was particularly challenging, as was the fact that DOD operated in a supporting role, something that all actors at times struggled to understand.

The Initial U.S. Response

On August 4, 2014, the U.S. Ambassador to Liberia, Deborah Malac, declared a disaster due to the EVD outbreak.⁵⁸ The decision triggered USAID's Office of Foreign Disaster Assistance (OFDA) to activate its Disaster Assistance Response Team (DART). The DART comprised 15 individuals from various USG agencies, including USAID, CDC, DOD, the U.S. Department of Health and Human Services (HHS), and the U.S. Forest Service.⁵⁹ In Liberia, a USAID expert, Bill Berger, led the DART. On August 6, 2014, the CDC activated its Emergency Operations Center to the highest level to support the international EVD response. On August 8, 2014, the WHO declared the outbreak an international emergency. In early August, the U.S. CDC also sent staff to the health ministries of Guinea, Liberia, and Sierra Leone to help manage the outbreak response.

Soon after, unrest began to spread in Liberia. According to an August 16 USAID report, a group of protesters, wielding clubs and knives, attacked an isolation center in Monrovia's biggest slum. The protesters claimed that people had traveled from other parts of the city to get medical care, thereby depriving residents of limited beds close to home. Others said EVD wasn't real. They looted food and equipment, including items used to care for EVD patients. As a result, 17 patients with confirmed cases of EVD fled the isolation center, potentially exacerbating the spread of the disease.⁶⁰

On September 8, 2014, President Obama announced that the United States would build a 25-bed hospital for health workers, called the Monrovia Medical Unit (MMU).⁶¹ Located just outside of the capital, the MMU would provide treatment to sickened international and Liberian health workers. On September 9, however, President Johnson Sirleaf wrote a letter to President Obama requesting additional U.S. assistance in Liberia. In particular, she noted that treatment centers were overrun with patients and that the epidemic would soon "overwhelm" Liberia's government. She asked for the construction of 10 Ebola Treatment Units (ETU) to help manage the epidemic.⁶²

On September 12, a three-person U.S. Africa Command (AFRICOM) planning team arrived in Monrovia to support the DART. That day, in response to a Department of State (DOS) request, the Joint Staff issued an “execute order” (EXORD) for AFRICOM to provide the MMU. On September 15, the Joint Staff issued an expanded EXORD to include ETUs, six medical research laboratories, and almost 3,000 troops. AFRICOM directed U.S. Army Africa (USARAF) to ready a response.⁶³ The next day, on September 16, President Barack Obama announced the deployment of Operation UNITED ASSISTANCE, which would support the Lead Federal Agency (LFA), in this case, USAID/OFDA and its DART.

[The International Response: Regional Organizations and the United Nations](#)⁶⁴

After the WHO confirmed in March 2014 that the illness spreading through the region was in fact Ebola, regional governments began to take steps to stop the spread of EVD. The first organization to respond was ECOWAS, which, on March 25, 2014, declared EVD “a serious threat to regional security.” At the same time, ECOWAS’s health-focused sub-organization, the West Africa Health Organization, asked the ECOWAS Commission for \$250,000 USD to conduct epidemiology surveillance, train health care workers, and conduct public information campaigns. On August 1, 2014, the Mano River Union, the regional organization made up of the four countries through which the Mano River flows—Cote d’Ivoire, Guinea, Liberia, and Sierra Leone—and in which all but Cote d’Ivoire suffered a serious EVD outbreak—held an Extraordinary Summit in Guinea where the three affected countries announced plans to increase treatment centers and isolation measures.

On August 18, 2014, the African Development Bank announced \$60 million in support for WHO’s sub-regional coordination center located in Conakry, Guinea.⁶⁵ On August 19, 2014, the African Union Peace and Security Council authorized the deployment of a civilian-military humanitarian mission. On August 28, the WHO issued the EVD Response Roadmap, a plan developed by the organization and other responders to “guide response efforts and align implementation activities across different sectors of government and international partners.”⁶⁶ On August 29, 2014, the presidents of the three countries wrote a letter to the UN Security Council requesting a comprehensive international response.⁶⁷ On September 5, 2014, the UN activated its Crisis Response Mechanism which called on the heads of all UN agencies to work together to respond to a declared crisis.⁶⁸ In September, the World Food Program (WFP) reported that the EVD response was being slowed by limited commercial transport, a lack of drivers to service ETUs, heavy seasonal rains, poor road conditions, a lack of available warehouse space, and border closures.⁶⁹

[Strategic Guidance](#)

DOD, AFRICOM and USARAF did not receive explicit strategic guidance for the operation. As a result, they had to rely on the speech President Obama gave at the Centers for Disease Control on September 16 to determine strategic objectives.

September 16, 2014: The President Announces the Deployment of a U.S. Mission to Liberia⁷⁰

In a speech at the CDC and in the accompanying Executive Order, the President announced that the United States would deploy a mission with the following four goals:

- To control the outbreak.
- To address the ripple effects on local economies and communities to prevent a truly massive humanitarian disaster.
- To coordinate a broader global response.
- To urgently build up a public health system in these countries for the future.

The President added that the United States would achieve these goals by leveraging the unique capabilities of the U.S. military and broader uniformed services to help bring the epidemic under control. These efforts would entail command and control, logistics expertise, training, and engineering support.

AFRICOM was tasked with setting up a Joint Force Command (JFC) headquartered in Monrovia, Liberia, to provide regional command and control support to U.S. military activities and facilitate coordination with U.S. Government and international relief efforts. Major General Darryl Williams, commander of USARAF, AFRICOM's Army component would oversee the operation, which the President said would involve around 3,000 U.S. forces. The President also announced that:

- AFRICOM would establish a regional intermediate staging base (ISB) to facilitate and expedite the transportation of equipment, supplies, and personnel.
- Combat engineers would build additional ETUs, and the U.S. Government would help recruit and organize medical personnel to staff them.
- The Command would establish a site to train up to 500 health care providers per week, enabling healthcare workers to safely provide direct medical care to patients.
- The United States Public Health Service Commissioned Corps would deploy 65 Commissioned Corps officers to Liberia to manage and staff a previously announced Department of Defense hospital to care for healthcare workers who became ill.

Finally, the Joint Staff decided on two redlines for OUA: DOD personnel would not treat patients and OUA would provide assistance only in areas where DOD had unique capabilities.⁷¹

Design and Planning

AFRICOM and USARAF faced numerous challenges in the design and planning for OUA. First, as is the case in most humanitarian assistance operations, the triggering event occurred with little warning and thus prevented conducting the long-range planning to which military forces are accustomed. Put more simply, there was no plan in place by the time the operation was announced: AFRICOM and USARAF had to develop one on short notice. Two factors contributed to confusion in the design and planning process. First, the interagency as a whole only began to grapple with what a response to EVD might look like after the U.S. Ambassador to Liberia had declared an emergency on August 4, 2014, eight months after the first case was identified. Second, the urgency in deploying a response led to much of the design and planning, which occurred as the mission itself was deploying. In addition to receiving no specific strategic guidance, this obviously presented a major challenge for the operation.⁷² This section discusses the initial planning for OUA, the initial concept of operations for the mission, risks to the mission, how the mission was organized, the operation's mission statement and rules of engagement, and finally the planning process, both within DOD and with other USG, Liberian, and international stakeholders.

Initial Planning for OUA

The U.S. Ambassador's August 4, 2014 declaration of an emergency triggered several reactions across the USG. First, USAID deployed its DART and the CDC activated its emergency response mechanisms. Additionally, on August 5, 2014, the Secretary of Defense (SECDEF) established an internal Ebola Task Force with the Assistant Secretary of Defense for Stability Operations and Low Intensity Conflict (ASD SOLIC) serving as its chair (in accordance with the relevant DOD Directive).⁷³ Then on August 7, 2014, the Task Force distributed an "Ebola Information paper."

On August 18, 2014, the USARAF G35 established an operational planning team (OPT) which began analyzing the EVD outbreak. In August and early September 2014, AFRICOM issued a series of warning orders, directing components to begin planning for OUA. An August 2014 warning order put USARAF on alert to begin planning for leading a potential joint task force in support of USAID. While USARAF Commander Major General Darryl A. Williams would initially command the mission, he had no prior experience in the region. This notification coincided with a joint training exercise, Lion Focus 14, which was designed to certify USARAF as a Joint Task Force.⁷⁴ The exercise was immediately modified so that instead of being merely notional, it began planning for OUA. Lion Focus participants quickly realized that the most recent and similar operation to the one proposed in Liberia was Operation UNIFIED RESPONSE, which was in response to the 2010 Haiti earthquake. Planners at USARAF and AFRICOM began looking for relevant lessons learned from that operation. In the end, the main lessons used from the Haiti earthquake response were that the people of Liberia would be the center of gravity for the operation, and the operation's commander would require civil-military advisors to foster cooperation between the various interagency, international, NGO and private sector actors that were anticipated to be involved in the operation.⁷⁵

On September 12, USARAF received a warning order and began detailed contingency planning. Major General Williams, selected a team of 13 personnel to travel with him to Liberia to conduct a leader's reconnaissance. The team arrived on September 16, the day of President Obama's speech at the CDC.

The President's speech caused him and his team to remain in Liberia for 40 days to set up a Joint Force Command and plan for the transition of command to the 101st Division (Air Assault) when it arrived. Accordingly, the 101st was the designated headquarters for the JFC: it would lead the effort by providing a division level staff to direct and manage various units derived from 16 different installations.⁷⁶ This presented a challenge for Major General Williams because an Army Service Component Command (ASCC) is not typically tasked with acting as a JFC, even in the short term. As such, this was not a task for which the command had prepared or trained. Nonetheless, USARAF was arguably an appropriate choice for this mission because it is funded, staffed and resourced to coordinate land force operations throughout the African continent. The organization also maintains the function of a deployable command post, for short-term contingency operations up to 90 days in duration.⁷⁷ Despite USARAF possessing this function, Major General Williams was reportedly surprised when President Obama announced that he would command the JFC until the 101st (Air Assault) could deploy, because, as noted above, he had intended only to conduct a reconnaissance visit.⁷⁸

The speech also prompted AFRICOM and USARAF to initiate the Joint Operating Planning Process (JOPP) to "determine what kind of military capabilities were required, what support mechanisms would be needed and where to place the troops in respective countries."⁷⁹ AFRICOM and USARAF also worked closely with the CDC and USAID/OFDA to determine the tasks involved and what the corresponding request for forces to the Secretary of Defense should be.

Initial planning at USARAF faced another challenge: normally, "when USARAF needs to obtain forces for steady-state missions, USARAF requirements managers request allocation of external forces within a rolling two-year window, prior to execution." But for OUA, such a long timeline would obviously not meet the requirements. As a result, USARAF had to use "assigned and allocated forces within USAFRICOM." These were augmented by Joint Enabling Capabilities Command (JECC) planners, whose missions were changed through expedited collaboration with U.S. Transportation Command and the Joint Staffing in accordance with the broader Global Force Management Implementation Guidance and Procedures. Planners also found it challenging to address the shifting requirements. Indeed, at first, the only requirement was to build a treatment center for healthcare workers, but a week later, the objective was expanded to build additional ETUs, train healthcare workers, and deploy mobile laboratories.

The challenge for planners at AFRICOM and USARAF was compounded by the lack of familiarity with Liberia and the challenges associated with operating there.⁸⁰ USARAF intelligence analysts apparently did not focus much on Liberia because they viewed the country as stable: it was enjoying double digit economic growth, there was no reason to believe that transnational terrorism was a threat there, and things were expected to remain that way.⁸¹ As a result,

USARAF and AFRICOM reportedly lacked sufficient and adequately trained personnel to conduct an accurate assessment and come up with matching requirements for the mission.⁸²

The mission was designed based on both the assumption the epidemic would continue to spread and that stopping it would therefore require large isolation and treatment facilities to be constructed across Liberia. On September 26, 2014, the CDC issued a Morbidity and Mortality Weekly Report, which noted that cases were doubling in Liberia every 15-20 days and that there could be as many as 21,000 cases of EVD by the end of September 2014. The report also stated that, without additional interventions or changes in community behavior, there could be 1.5 million cases in Liberia and Sierra Leone by January 2015. The report argued that halting the epidemic would require not only treating 70 percent of cases in ETUs but also providing safe burials.⁸³

Operation UNITED ASSISTANCE Concept

As discussed in the strategic guidance section, the President's September 16, 2014 speech provided OUA with objectives and key tasks. OUA aimed to establish unity of action with USAID and the international effort to treat and contain EVD. Its main tasks were to set the conditions for support to USAID, provide immediate life-saving requirements, and then focus on building, manning, training and equipping personnel to sustain ETUs.

According to Major General Gary Volesky, Commanding General, 101st Airborne (Air Assault), OUA's mission was to:

support the lead federal agency, USAID, by providing our unique military capabilities to help contain the virus and reduce the spread of Ebola in Liberia, and to execute our tasks with speed and flexibility that would not only help build confidence among Liberians that the virus could be defeated, but also to help garner the support of the international community to also assist in the fight against this disease.⁸⁴

The mission's objectives were as follows: set the conditions for the transfer of ETUs to USAID; enhance the capabilities and capacities of local authorities to mitigate EVD effectively; encourage affected people to seek treatment at local ETUs; enhance the Liberian and international community's capacity to conduct EVD treatment operations; and withdraw all U.S. forces safely. The concept of operations for OUA envisioned the deployment of forces in tailored packages for flexibility and expansion as USAID required. Mission success meant international relief efforts no longer required DOD assistance. The criteria for mission termination included the containment of the EVD outbreak and the establishment of Liberian, international, and NGO capacity to treat EVD cases effectively.

Risks to the Mission

Planners deduced that the biggest risk to the mission was potential exposure to and contraction of EVD. As noted above, however, DOD announced a policy barring its personnel from providing

treatment to EVD patients.⁸⁵ To mitigate the risk of civilian USG employees, contractors, and NGO workers, contracting EVD, DOD announced it would provide for safe medical evacuation and safe treatment at selected medical facilities inside the United States.⁸⁶ DOD also developed a policy for monitoring troops on their return to the United States, Germany, and Italy.⁸⁷ Other assessed risks included troops being the victim of crimes such as robbery or assault, troops contracting other tropical diseases such as malaria, and getting into traffic accidents on Liberia's poor roads.

OUA Organization

JFC UA reported to USAFRICOM “for military-related tasks and management of Ebola resourcing through the overseas humanitarian, disaster, and civic aid lines of accounting. Furthermore, logistical support, budgeting allocation, military orders, transportation, and other military operations were coordinated through USAFRICOM.”⁸⁸ The Commander of the Joint Force Headquarters for UNITED ASSISTANCE (JFC), initially Major General Williams and then Major General Volesky, served as the lead integrator of DOD effort in support of the lead federal agency (LFA). The JOPP led to the development JFC Task Organization:

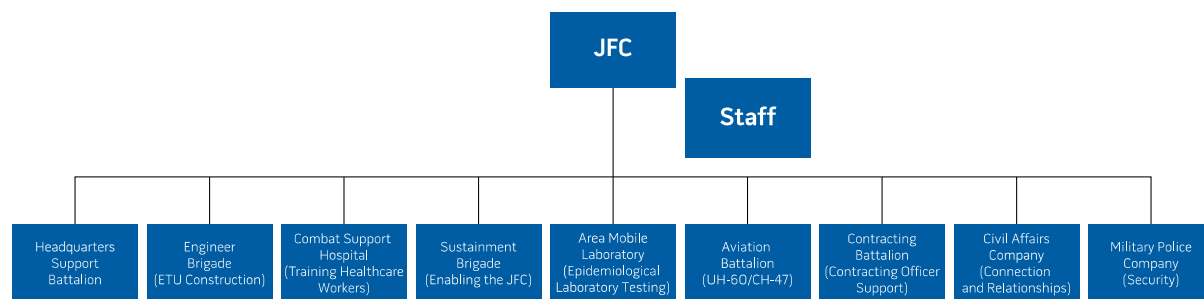


Figure 6: Joint Force Command Task Organization⁸⁹

Mission Statement

A formal mission statement was not developed, instead the JFC used the guidance provided to develop a concept of operations and key mission tasks. In accordance with Joint Publication (JP) 3-29 (*Foreign Humanitarian Assistance*), “The joint forces command develops a mission statement with clearly identified and achievable objectives. Key considerations in developing the mission statement include the military role in the specific mission and how DOD is to assist other USG departments and agencies, multinational partners, NGOs, and intergovernmental organizations.”⁹⁰ OUA’s objectives were therefore those outlined by the President in his September 16 speech, namely to control the outbreak, address the ripple effects on local economies and communities to prevent a truly massive humanitarian disaster, help to coordinate a broader global response, and build up a public health system in these countries so that they could respond to future emergencies themselves in the future. The JFC would do so by providing command and control, logistics support and sustainment, engineering support, and medical training support.

Rules of Engagement⁹¹

The mission's Rules of Engagement (ROE) permitted the use of force, up to and including the use of deadly force in self-defense and in unit self-defense. Since no forces were declared hostile, the use of force was based on necessity due to hostile acts or clear indicators of hostile intent. Use of force was also permitted use of force in defense of U.S. and Liberian nationals, if authorized by the commander. The ROE required the use of escalation of force procedures.

The ROE permitted forces to detain civilians temporarily for up to 24 hours if they were found to be threatening the force or interfering with mission accomplishment. Due to the risk of EVD transmission, the ROE mandated using personal protective equipment (PPE) to avoid direct physical contact. The ROE instructed forces to release detainees or transfer them to authorities as soon as detention was "no longer required by the immediate circumstances" and to inform the commander of any detentions immediately. The ROE instructed to "treat all detainees humanely." The ROE permitted the use of non-lethal riot control agents "only in defensive military modes to save lives and as authorized by the on-scene commander." Finally, according to the ROE, personnel would carry weapons and ammunition only upon approval of the commander.

The escalation of force procedures noted that in humanitarian missions, personnel should minimize the use of force and de-escalate all situations whenever possible. Further, if faced with a hostile act or demonstrated hostile intent, when a tactical situation permitted, forces should first attempt to avoid the threat through disengagement, bypass, or break off contact. If that was not possible, tactical situation permitting, forces should use Escalation of Force (EOF) procedures, not necessarily in the order described or precluding more aggressive measures and deadly force if that was the most reasonable option. EOF measures began by using audible signals (shouting warnings, etc.), using visual signs (hand and arm signals, spotlights, brandishing weapons, etc.), physical manipulation (shoving or blocking movement), and using less than deadly force (temporary detention with PPE or approved non-lethal weapons).

Joint Planning

As noted above, on August 18, 2014, the USARAF G-35 (political military staff) established an operational planning team (OPT) to gather information about the effects of EVD in Liberia, Sierra Leone, and Guinea. The ongoing Lion Focus 14 exercise allowed the OPT to assimilate sister-service planners who were there for the exercise into the OPT, thus leveraging their expertise and providing assistance in the planning effort.⁹² A unique aspect of OUA was the number of liaison officers (LNOs) sent from the 101st Airborne Division (Air Assault) headquarters to other headquarters. In fact, 24 LNOs were sent to USAFRICOM, USARAF, the U.S. Embassy, the Government of Liberia and its National Ebola Command Center (NECC), and the UN.⁹³ The LNOs proved valuable in facilitating information-sharing among the different stakeholders and helping to ensure that the transition from USARAF to the 101st Airborne Division (Air Assault) would be as seamless as possible. Deploying LNOs to the U.S. Embassy, the government of Liberia and the NECC also helped avoid duplication and to ensure that requests

for assistance were properly channeled. A key role for OUA during this first phase was providing logistical support for “theater opening,” that it facilitated the arrival of the initial personnel from USARAF and then the 101st Airborne Division (Air Assault), including accommodations, food, water, office space, and ensuring that they could begin working on arrival. Since USARAF does not have assigned forces, it had to rely on Joint and strategic partners. Planning for the transition from USARAF to the 101st was reportedly facilitated by the fact that the 101st sent a planning team to Vicenza, Italy after it had received a warning order from U.S. Forces Command (FORSCOM). That team then deployed to Monrovia the day after it received the official unit deployment order.⁹⁴

Planning with U.S. Interagency Partners: USAID and the DART

On September 13, 2014, at a National Security Council Principals Committee meeting, the DOD agreed to provide the following capabilities: first, a joint force command (to provide command and control); second, an intermediate staging base for logistics support—in particular receipt, processing, and distribution of materiel; third, establishing a training base capable of providing a weeklong training program of instruction (POI) for healthcare workers; and fourth, engineering assets for constructing 17 ETUs.⁹⁵

Because JFC-UA was in support of USAID and its DART, the first step was to figure out how DOD (and JFC-UA) would respond to USAID mission tasks. In these types of emergencies, when the DART is leading the response, it typically publishes a mission tasking matrix (MITAM). This tool helps USAID to identify tasks, and assign an organization to complete it. The MITAM also contains relevant background information. In a disaster response emergency, a MITAM traditionally reflects an agreement among entities in the field, but in OUA the JFC-UA commander did not initially have the authority to accept MITAMs. Indeed, a response management team and staff in the Office of the Secretary of Defense for Policy initially responded to MITAMs from Washington rather than Major General Williams reviewing them in Monrovia.⁹⁶ Eventually, Modification 2 to the Joint Staff OUA EXORD relaxed the requirement for MITAMs to be reviewed in Washington.⁹⁷

UN and Other International Organization Planning

On September 18, 2014, the UN Security Council (UNSC) passed a resolution and declared the outbreak a threat to international peace and security. It requested the establishment of UNMEER to coordinate the international response and assistance to the outbreak.⁹⁸ That day, a UN Disasters Assessment and Coordination (UNDAC) team deployed to Liberia to assist with information management and humanitarian coordination efforts.⁹⁹ That month, the UN also activated its logistics cluster in Liberia. On September 20, 2014, the UN established UNMEER.¹⁰⁰

During October, WHO and UNMEER announced a comprehensive 90-day plan to control and reverse the epidemic of EVD. The immediate objective was to isolate at least 70 percent of EVD cases and safely bury at least 70 percent of patients who die from EVD by 1 December 2014 (the 60-day target). The plan became known as the 70:70:60 program. The ultimate goal was to have capacity in place for the isolation of 100 percent of EVD cases and the safe burial of 100

percent of casualties by 1 January 2015 (the 90-day target). A WHO situation report in mid-December indicated that the international community was on track to meet the 90-day target.¹⁰¹

Planning with Liberian Government Officials: Operation United Shield and the National Ebola Coordination Center

Joint Operation with the Armed Forces of Liberia (AFL)

To help the AFL coordinate with the JFC, the two created “Operation United Shield.”¹⁰² The Commander’s Intent for the mission was to “provide combined capabilities in support of GoL and USG efforts to protect the force, contain EVD, alleviate human suffering, increase Liberian and international community response capacity, facilitate international assistance, and promote internal and regional stability.”¹⁰³ Key tasks included establishing combined Command and Control (C2) in Monrovia, Liberia; completing reconnaissance of ETU locations; completing construction of ETU sites; and establishing and maintaining a logistics hub in Dakar, Senegal.

The Concept of Operations (CONOPS) for Operation United Shield/OUA called for the force to deploy to multiple locations within Liberia to support the effort to contain the spread of EVD. It stated that the operation would be conducted in four cyclical stages until all ETUs were completed. The Pre-deployment/Reconnaissance stage would begin with the preparation and deployment of the combined U.S. and Liberian Recon Teams and end with Notice to Proceed (NTP). The Advance Echelon (ADVON)/Main Body stage would begin with the deployment of the advanced party and end with the arrival of the combined Liberian and U.S. forces Main Body. The Site Prep/Construction Complete stage would begin with the site preparation and end when ETU construction was completed. The Transition ETU/Redeployment stage would begin with the transition of the last ETU to USAID and end with the redeployment of forces and the end of mission.

The National Ebola Command Center (NECC)

On September 25, 2014, to facilitate planning and coordination among Liberian, U.S., and international officials, along with the Liberian Ministry of Health (MOH) established the NECC. USARAF and later the 101st Airborne Division, as well as USAID, the Department of State, the CDC, and others sent liaison officers to the NECC. In particular, the 101st Airborne Division used operations and civil affairs team members as LNOs.¹⁰⁴ The NECC was set up to serve as an operations center and functioned as the equivalent of a national-level civil-military operations cell or a humanitarian operations center. It worked as a clearinghouse for the more than 120 organizations that were working in the area.¹⁰⁵

Media and Public Communication

AFRICOM directed JFC-UA to develop a public affairs support plan for the mission. The plan would allow for full public affairs and media coverage of OUA’s activities across Liberia. This could include allowing media to embed with OUA personnel as well as OUA public affairs itself

producing print and video news stories and photos for dissemination across official DOD websites and social media.¹⁰⁶

At USARAF, the public affairs section focuses on command information and planning capabilities. For deployment to contingency operations, the section includes one field grade officer, one senior NCO, and two enlisted broadcast specialists.¹⁰⁷ But this team faced challenges since it was not part of the group that deployed with Major General Williams for the reconnaissance mission that ended up establishing the JFC. Moreover, public affairs requirements were not included in the initial planning guidance. As a result, USARAF public affairs personnel deployed later. The 101st Airborne Division (Air Assault) decided that a mobile public affairs detachment would likely best meet the mission's public affairs requirements, but this also proved problematic since the default was for a public affairs detachment to deploy, and it took nearly three weeks for the mobile detachment to arrive after the mission had transitioned to 101st in late October 2014. Fortunately, despite the absence of public affairs personnel, MG Williams was able to rely on support from public affairs offices within the U.S. Embassy in Monrovia, USAID, the CDC and the USPHS.

Major General Williams soon learned he was staying in the same hotel as international media representatives so he had to obtain clearance quickly to speak with them, which he did by September 19, 2014. Major General Williams, U.S. Ambassador Deborah Malac, and the DART Team leader Bill Berger decided at the outset that they would conduct interviews together, something they first did at a joint press conference on September 25, 2014. This allowed them to explain how their various agencies were working together. On the flip side, there were times when scheduling all three senior leaders together was difficult, limiting media access in some cases. Once a Joint Public Affairs Support Element deployed however, these scheduling challenges abated.¹⁰⁸

During OUA, information operations personnel coordinated messaging through the U.S. Embassy in Monrovia and with the Liberian Ministry of Information, Cultural Affairs and Tourism. The U.S. Embassy hosted weekly coordination meetings. With the primary target audiences, including the Liberian population, military forces, and international organizations and NGOs, different sets of products had to be developed to reach these audiences. USAID worked with the Liberian authorities to disseminate radio and print products about Ebola safety. At the home stations of deployed U.S. units, public affairs officials also worked to communicate important facts about EVD transmission to local communities and deployed service members' families.¹⁰⁹

Deployment and Intervention

The operation can be divided into four phases: the first phase was the initial response which spanned from September 16 to the transfer of authority to the 101st Airborne Division (Air Assault) on October 25; the second and third phases, to support USAID relief efforts through enabling and transition, spanned from October 25 to February 11, 2015 when the President announced the beginning of the JFC's redeployment; and the fourth phase, redeployment and closeout of the operation which began on February 11, and ended when OUA was terminated

on June 30, 2015. This section looks at each phase in turn, though the phasing construct, which typically sees sequential implementation of lines of effort (LOEs), was not viable during OUA: the LOEs were conducted simultaneously and spanned all of these phases.¹¹⁰

PHASE 1: Initial response from September 16 to October 25, 2014: USARAF sets the theater, establishes and leads the JFC¹¹¹

In this first phase, AFRICOM tasked the JFC with:

- Establishing a JFC headquarters “for C2 of military activities and to coordinate U.S. government interagency and foreign international relief efforts.”
- Establishing “an engineering capability in Liberia to provide site selection and construction of ETUs, the MMU, medical training sites, and logistical support areas.”
- Establishing a training center that could train 500 workers per week.
- Enforcing force protection measures both for health and more generally so that threats and risk to personnel and the facilities being built would be minimized.
- Establishing and sustaining an ISB located in Dakar, Senegal.
- Transitioning to civil control.¹¹²

To accomplish these objectives, the JFC worked along four lines of effort (LOE): command and control (C2); engineering support; medical support; and sustainment. The command and control line of effort included establishing a forward stationed command cell, a Joint Operations Center split between Liberia and Vicenza, and USARAF’s main command post in Vicenza. The engineering support LOE included planning and constructing the ETUs and the MMU, as well as planning, identifying and deploying laboratories. The medical training support LOE included developing training requirements, determining trainer to student ratios, developing a curriculum, and creating and supporting mobile training teams. The sustainment LOE involved sustaining deployed personnel, turning over ETUs and other facilities to USAID, and ensuring that all U.S. built facilities could continue to operate after the mission ended. This section discusses each LOE in turn.

Command and Control

For the C2 LOE, USARAF created three cells: a forward-stationed command cell, a joint operations center (JOC) split between Monrovia and Vicenza, and USARAF’s main command post in Vicenza. The JFC commander, Major General Williams, established his office in the U.S. embassy in Monrovia where his staff included the command sergeant major, political advisor, and a small support staff. This created a mechanism for communication and coordination with interagency partners, particularly USAID and DOS, as well as with international organizations, NGOs, and private contractors. The JFC supported USAID by providing a synchronization matrix and a common operational picture.¹¹³ DART Team Leader Bill Berger, as well his operation center, also worked from the embassy, thereby further facilitating coordination between the various agencies.

Second, the JFC set up offices in a forward joint operations center, approximately thirty minutes from the embassy, focused on overseeing engineering, medical, and sustainment efforts on the ground.¹¹⁴ Specifically, USARAF deployed its expeditionary command post which consisted only of the remnants of the doctrinal contingency command post, because it had been cut from ASCCs as part of force structure reductions. With approval from USAFRICOM, USARAF integrated the JECC to fill joint manning document positions and directed the support of fellow USAFRICOM components.

Third, USARAF relied on its main command post in Vicenza. It integrated key specialties from across the staff to support forward operations in Liberia, and thus enabled USARAF to act as its own land component command.¹¹⁵ The JOC focused on overseeing engineering, medical, and sustainment efforts on the ground but a large number of personnel on the joint manning document remained in Vicenza because of concerns over sustainment capacity in Liberia.¹¹⁶

USAID/OFDA/DART

In September, OFDA provided nearly \$7 million to scale up the scope and geographic reach of its existing burial team program.¹¹⁷ This represented a crucial part of containing the epidemic since the WHO estimated that 20 percent of new EVD cases occurred from contact between the bodies of infected people and those who handled them to prepare and conduct burials. But this presented a particular challenge for relief providers because cultural practices in the region dictate that families handle bodies and perform other rites for burial. Educating the public about the need to suspend these practices and calling on safe burial teams instead was therefore crucial.¹¹⁸ OFDA planned to support and manage 55 burial teams and 28 disinfection teams, in all of Liberia's 15 counties.¹¹⁹

During OUA, the DART was responsible for “coordinating the interagency response, assessing the situation, and identifying gaps in response reports.” The DART used a Mission Tasking Matrix (MITAM) to request support from Joint Force Command UNITED ASSISTANCE (JFC-UA). The figure below shows the relationships between the various USG agencies involved in the U.S. response.

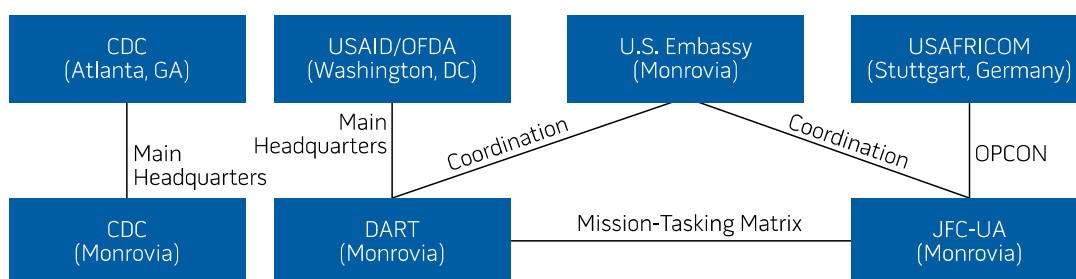


Figure 5: Relationship Diagram of Major U.S. Government Structures Fighting EVD¹²⁰

Engineering Support: Building and Staffing the MMU

President Obama announced that the United States would build the MMU on September 8. The 25-bed facility, intended to treat sickened Liberian and international healthcare workers, would be built by DOD and staffed by uniformed officers of the U.S. Public Health Service (USPHS). A three-person USPHS team soon arrived in Monrovia to assist with establishing the hospital.¹²¹ By September 28, 2014, all the needed components for the MMU had arrived. Construction began on October 4 and was completed 17 days later.

Engineering Support: Building the ETUs

Planning and constructing the ETUs was hampered by several obstacles, to include determining an appropriate design, selecting sites, dealing with the rainy season, understanding the limitations of Liberia's infrastructure, adjusting the construction requirements as the disease pattern changed, and staffing healthcare workers.¹²² A U.S. Army captain who was embedded in the DART produced an initial design, which was then refined through cooperation with the WHO, Médecins Sans Frontières, USAID, DOD, and the Liberian Ministry of Health (MOH). Eventually, a design was adopted which met the Ministry's clinical requirements but was also adaptable.¹²³

Site selection was a challenge because the Liberian MOH initially wanted to put an ETU in each county. But finding a site required community buy-in, determining local infrastructure requirements to establish the site, access to water, determining the type of terrain, and available construction skills. Moreover, potential sites ranged from private industrial locations to mid-jungle clearings. Some of the proposed sites were too small for the standard design, so the design had to be modified as a result, for example by increasing the ETU's distance between confirmed and unconfirmed cases. Another challenge was the availability of a water well at the ETU location, despite the fact that DOD hired every available well-drilling company.¹²⁴

The Operation UNITED SHIELD operations order (OPORD) stated that planning for ETU construction required three operational stages. The pre-deployment/recon stage would begin with the pre-deployment planning and preparation of the recon teams and end with the re-deployment of the recon team and the notice to proceed (NTP). The trigger to proceed to the next stage was the NTP. The objectives stipulated that Liberian and U.S. personnel were identified and ready to deploy; suitable ETU sites were identified; military and contract support operations were functional; local government and key local leaders had been engaged and were aware of ETU construction plans; and notice to proceed was given. The ADVON/Main Body stage began with the deployment of the Advanced Party to the site and setting the conditions for receiving the Main Body. The stage ended with the arrival of Liberian and U.S. Main Body. The trigger to proceed to the next stage was when all key personnel and equipment required to begin site prep arrived at the ETU site. The objectives for this phase required that conditions were set to begin site preparation; the Bill of Materials had been delivered; the Liberian and U.S. force was on site and fully operational; and the local community was aware of new ETU construction. The Site Prep/Construction Complete stage began with site preparation and ground breaking. The stage ended when the ETU construction was complete. The trigger to proceed was when the ETU was ready to be transitioned. The objectives in this stage were site

preparation; groundbreaking beginning with involvement from local Liberian Government and population; and tents and Logistical Packages (LOGPAC) had arrived.

Medical Training Support: Building the Training Center, Developing Curricula, and Deploying Mobile Training Teams

This LOE had 3 main components: building and staffing the training center, developing curricula, and staffing and deploying mobile training teams. This section looks at each in turn.

Establishing and staffing the Training Center for Medical Personnel

The USARAF G-3 training division was ordered to lead the effort to establish the training center. The team consisted of one U.S. Army Lieutenant Colonel, one major, and one sergeant major. They worked together to plan, resource, establish, and transition the Center to the 86th Combat Support Hospital out of Fort Campbell, KY.

The G-3 team found that sites recommended by the forward staff were unsuitable. They however learned of other options thanks to consultations with the mayors of Monrovia and Paynesville, as well as with Liberian business and community leaders. Eventually, with support from Liberian authorities, USARAF selected the National Police Training Center in Paynesville. Meanwhile, the G-3 team also discovered that the WHO was already running a training center for Liberian health workers, albeit a much smaller one than the one envisioned for OUA and one that lacked the capability to conduct training outside Monrovia. The G-3 team then spent several days at the WHO training center to learn how it worked and how its operations could inform that of the DOD training center.

During this period, the team also visited ETUs under construction so that the model ETU would reflect an actual facility, thus making training more realistic. To help mitigate the impact of the epidemic on the Liberian economy, the G-3 team contracted many local businesses to support building safety renovations, vehicles for the mobile training teams, food for the students, training instructional booklets, and other training materials.¹²⁵

Developing curricula and a program of instruction

The USARAF G-3's surgeon cell planned for training delivery and worked on determining the optimal student-to-trainer ratio, which they decided was 10 students to one instructor. But this initial determination was made before the command's surgeon met with Liberian MoH officials, USAID, and WHO. In particular, meeting with the WHO training center's instructors helped the G-3 team to identify requirements ranging from training booklets to the personal protective equipment (PPE) requirements for instructors and students. Moreover, the WHO center visit contributed to modifying the composition of the U.S. training center's team to include a doctor and two nurses. The student-to-teacher ratio remained the same but the additional medical experts helped to provide more complete instruction, to include important topics such as EVD transmission, epidemiology, prevention, clinical diagnosis, and triage.¹²⁶ In the end, the team decided that the center would be staffed so that several 10-man teams of three medical noncommissioned officers and seven enlisted medics who would serve as assistant instructors

could permit training of up to 50 students at a time.¹²⁷ A train-the-trainer program was also developed to provide Liberia with more sustainable capacity.¹²⁸

Several concerns delayed the start of training. In particular, when trying to identify personnel to provide the training, the planners found few DOD professionals had the qualifications required for providing medical care in this kind of environment. Additionally, the planners also found a lack of proficiency existed among DOD personnel in using PPE.¹²⁹ The proposed trainers therefore had to attend the WHO training course. Afterwards, the trainers conducted training rehearsal exercises in the new facility to practice before welcoming students.

Staffing and deploying mobile training teams

The unexpected delays in ETU construction led to an expansion of the training mission, specifically the addition of four mobile training teams. This allowed synchronization between team training and ETU construction, and simplified USAID recruitment and training of healthcare workers during ETU construction. The mobile training teams spent a week at each of the remote training sites.¹³⁰

Medical Training Support: Deploying Laboratories

Before the laboratories became operational, the turn-around between testing and EVD diagnosis consumed four-to-five days. After the laboratories were deployed, confirmation only required two to four hours. This played a major part in successfully isolating actual EVD patients from those suffering from other diseases. On October 1, 2014, DOD technicians completed the mobile laboratory site assessments near the Bong ETU and at the Island Clinic ETU in Monrovia. Six additional DOD technicians and the two mobile laboratories had arrived on September 28,¹³¹ followed by two mobile U.S. Navy laboratories arriving in Monrovia on October 5.

Planning for the deployment of mobile laboratories was hampered by DOD's unawareness of this existing military capability. In particular, the laboratories were not included "on any list of potentially deployable forces" and at the time "were not visible in the global force management system" so AFRICOM and USARAF personnel, unless they happened to know about these capabilities, were unable to plan for their use.¹³² DOD laboratories are typically tasked with identifying rare and infectious diseases. The Defense Threat Reduction Agency (DTRA), the Naval Medical Research Center (NMRC), and the Army Medical Research Institute of Infectious Diseases (USAMRIID) all have laboratories but they apparently were not all visible in the databases that planners use.¹³³ The Navy laboratories are ad hoc laboratories so they were requested, using a MITAM, from the NMRC, then provided with DTRA equipment and deployed.¹³⁴ Moreover, not all laboratories (or their personnel) are capable of testing for rare diseases such as EVD. Some of the laboratories had to be created by merging equipment from one organization with personnel for another, in particular equipment from DTRA with personnel from USAMRIID that were deployed to Sierra Leone at the time and were shifted to Liberia. The Army has a single deployable area support laboratory, the 1st Area Medical Laboratory (AML). To support OUA, the 1st AML task organized into four laboratories, integrating people with equipment for the deployment.¹³⁵ According to a JCOA interview with a 1st AML representative, that unit is the only deployable area support laboratory in Army Forces

Command and in the Army inventory. In previous years, there were two laboratories but one of them was deactivated a few years prior to OUA.¹³⁶

Sustainment

Planning for sustainment was facilitated by the immediate deployment of liaison officers and a planning team from the 101st Airborne Division (Air Assault) G-4 and the 101st Sustainment Brigade Staff to the USARAF G-4 in Vicenza, Italy. These personnel helped USARAF planners with developing a request for forces and operation orders, generating situational awareness, and establishing an initial relationship between USARAF and the 101st Airborne Division.¹³⁷

Planning for OUA was more difficult because USARAF lacked a typical theater sustainment command (TSC) or an expeditionary sustainment command (ESC) which normally acts as a forward command post. It also meant that the 101st Brigade Staff had to coordinate directly with U.S. Transportation Command (TRANSCOM), the Surface Deployment and Distribution Command, the Air Mobility Command, the Defense Logistics Agency (DLA).¹³⁸

USARAF relied on Joint Task Force Port Opening capabilities to open aerial logistics nodes in Liberia and Senegal.¹³⁹ By October 20, 2014, “the mobility division of USARAF had requested, tracked, and received 51 strategic airlift flights of over 1,500 short tons” within the AOR. Simultaneously, DLA and the Surface Deployment and Distribution Command had arranged for the sealift of 750 additional 20-foot containers to the AOR. Other important force multipliers for the logistics mission included: U.S. Transportation Command, Army Materiel Command, DLA, and the 123rd Contingency Response Group.

During OUA, the sustainment LOE focused on enabling medical and engineering tasks and establishing the expeditionary infrastructure needed to sustain the flow of personnel and equipment. To address this infrastructure challenge, JFC-UA worked with TRANSCOM to provide sealift and airlift, material tracking and cargo handling. JFC-UA also used rotary-wing aircraft to transport materiel and personnel to remote locations in Liberia.¹⁴⁰ The early deployment of the 101st Airborne Division (Air Assault) G3/Air staff section, which arrived three weeks before the rest of the Division took command, played an important part in speeding construction and delivery.¹⁴¹

The 101st Sustainment Brigade defined its mission as “supporting USAID and the Joint Force Commander in Liberia during OUA to assist the U.S. government’s foreign humanitarian assistance/disaster relief efforts to contain EVD by providing theater opening, theater distribution and sustainment operation.”¹⁴² Requirements for sustainment also changed since initial guidance—support for the MMU—had “only directed the delivery of 2500 cots, but it rapidly expanded to include directing extensive construction materials for the ETUs, establishing training programs, and delivering supplies across Liberia during the rainy season.”¹⁴³

*Deploying the Initial Forces*¹⁴⁴

As noted above, on September 16, the day of the President's speech, Major General Williams, and a 14-member staff arrived in Monrovia, for an initial leader's reconnaissance and assessment. On September 20, approximately 40 personnel joined the advanced echelon. These personnel were to augment the assessment effort, act as liaison, and report the situation on the ground. On September 23, 40 additional personnel, including a team of 15 U.S. Navy Seabees, joined the JFC. They would provide engineering support and conduct site surveys for the ETUs, supply storage, and the training center. On September 25, 25 members of a port operations team from U.S. Transportation Command joined JFC-OUA. The team's purpose was to conduct assessments in Liberia and Senegal for airfield and port locations that would support the arrival of follow-on personnel and equipment. On October 5, the 123rd Contingency Response Group, Kentucky Air National Guard (81 personnel) arrived in Dakar, Senegal, to establish the intermediate staging base. As of October 6, the USG had sent more than 130 civilian medical health care and disaster response experts and nearly 350 military personnel to West Africa. On October 8, DOD announced it would send 100 U.S. Marines to Liberia. On October 9, approximately 92 Marines from the Special Purpose Marine Air-Ground Task Force-Crisis Response, based in Moron Air Base, Spain, and four MV-22B Ospreys arrived in Monrovia. Because some specialty fields are not typically involved in an Army division headquarters or a Brigade Combat Team, those specialties—in particular epidemiology and medical laboratories—had to be requested separately.¹⁴⁵ As of October 15, more than 430 DOD personnel were in Liberia to support the EVD response. DOD also announced plans to send four tilt-rotor aircraft and two C-130 cargo planes to Liberia.

Developing Situational Awareness

An essential aspect of setting the theater is conducting a theater assessment and developing situational awareness. This process had begun in earnest on September 16, when Major General Williams arrived in Monrovia. A challenge for USARAF and the 101st Airborne Division (Air Assault) was reportedly the dearth of up-to-date information available. Even with support from other U.S. military and civilian organizations, the data collected to develop situational awareness and intelligence preparation of the battlefield turned out to be inaccurate. In particular, the latest detailed information was from operations conducted by the U.S. Marine Corps in 2008. The lack of information, and ensuing faulty assumptions—in particular an initial belief that Roberts International Airport in Monrovia lacked capacity to manage large amounts of aircraft and cargo—meant that only further assessments allowed for these perceptions to be corrected.¹⁴⁶ While accurate data was available, it was not easily accessible, as a single resource, to those developing these products.¹⁴⁷

Another challenge was understanding the available data on the epidemiological spread of EVD. Most of the EVD data was portrayed cumulatively, thereby giving the impression that the situation was only getting worse and the epidemic couldn't be contained. As a result, "The J-2's first task was to understand the EVD trends and find a way to best portray those trends and data in such a way that the commander could make decisions and recommendations to USAID on the placement and utilization of DOD assets and capabilities."¹⁴⁸ Because of confusion over

the data and its meaning, the J2 decided to embed qualified analysts at the Liberian Ministry of Health and at the NECC to help better define EVD case counts and aggregate data.¹⁴⁹

United Nations Mission for Ebola Emergency Response

UNMEER was established on September 20, 2014, following the passage of UN Security Council Resolution 2177 which called on relevant UN agencies and member states to support the fight against EVD. The resolution noted the Secretary-General's appointment of two senior officials tasked with responding to EVD: first, the United Nations System Senior Coordinator for Ebola Virus Disease; and second the Deputy EVD Coordinator and Operation Crisis Manager. It also noted the Deputy EVD Coordinator had been tasked with managing the above-mentioned Crisis Response Mechanism of the United Nations. It noted that the Crisis Response mechanism had two objectives. First, to consolidate the operational work of the UN System, Member States, NGOs and other partners focused on providing assistance to the affected countries. Second, to ensure UN System assistance to developing, leading, and implementing an effective response to the broader dimensions of the outbreak that include food security and access to basic health services.

The resolution also encouraged regional governments to take steps to provide improved diagnosis, isolation, and treatment of cases as well as to improve prevention and public awareness measures. It further called on member states to lift travel restrictions on the affected countries, noting that the restrictions "contribute to the further isolation of the affected countries and undermine their efforts to respond to the EVD outbreak and also calls on airlines and shipping companies to maintain trade and transport links with the affected countries and the wider region." It also requested the Secretary General to help UN entities accelerate their response to the outbreak. The resolution further requested the Secretary-General to develop a strategic communication platform. It also called on Member States to provide urgent resources and assistance, including deployable medical capabilities such as field hospitals, laboratory services, logistical, transport and construction support capabilities, and airlift, and dedicated clinical services in ETUs and isolation units. On September 19, 2014, France and Germany announced the establishment of an air hub in Dakar, Senegal.¹⁵⁰

*UNMMER's Objectives, Operational Principles, Main Activities, and Key Enablers*¹⁵¹

UNMMER deployed financial, logistical and human resources to Guinea, Liberia and Sierra Leone to support the push to zero cases. The mission had six operational principles: adopting a regional approach, the centrality of national ownership, complementing the work of governments and partners, providing clarity for national governments in what they could expect from the UN, providing a single UN system-wide approach in responding to EVD, and providing a UN response specific to the needs of each country. The mission's objectives were to stop the outbreak, treat the infected, ensure essential services, preserve stability and prevent further outbreaks. The mission's main activities were case management, case finding including providing laboratories and contact tracing, providing safe and dignified burials, and conducting community engagement and social mobilization. To do so, the mission used the following key

enablers: logistics, staffing and human resources, training, information management, cash payments, and coordination.

Transition to 101st Airborne (Air Assault)

By the time the JFC transitioned, the JFC had deployed almost 700 U.S. service members to the region. The team designed and constructed the Monrovia Medical Unit, mobile laboratories, and a medical training facility. It fulfilled 19 tasks from the USAID mission tasking matrix, delivered 106 tents and 4,400 cots, established air and seaports of debarkation in Liberia and Senegal, established an intermediate staging base in Senegal, and executed 94 contracts valued at more than \$57 million.¹⁵² On October 19, Major General Gary Volesky—commander of the 101st Airborne Division (Air Assault) arrived in Liberia to replace Major General Williams. On October 20, the headquarters element of 101st Airborne Division (Air Assault) began arriving in Monrovia. Activities to transition JFC leadership from USARAF to the 101st Airborne Division (Air Assault) also began. On October 25, authority was transferred from Major General Williams to Major General Volesky.

PHASES 2 and 3: October 25, 2014-February 11, 2015: the 101st Airborne Division (Air Assault) Assumes Command, Provides Support to USAID Relief Efforts, Enabling and Transitioning to USAID

This section discusses OUA's efforts to provide support to USAID relief efforts by building ETUs, transitioning the MMU to the USPHS, training healthcare personnel, deploying mobile laboratories, enabling all these efforts and transitioning the day-to-day operations of these facilities to the USAID partners who would run them. During this period, the lifting of state of emergency in Liberia, on November 13, 2014, also helped to make operations easier, in particular because of the lifting of the curfew, which had until then, limited operations to daytime hours.

ETU Construction

ETU construction continued throughout this phase, with the completion and opening of all 10 DOD facilities during this period. On October 31, the GoL officially opened an ETU, constructed with USG assistance, at the old Liberian Ministry of Defense site in Monrovia.¹⁵³ On November 10, the first ETU constructed under DOD supervision and with GOL/AFL assistance opened in Monrovia.¹⁵⁴ On December 27, a DOD-supported construction team completed an ETU in Nimba County's Ganta town and handed it over to USAID/OFDA partner Project Concern International which opened the ETU on December 31. That day, Nimba County's Tappita ETU was officially transferred from the DOD partner that constructed it to USAID/OFDA partner NGO Heart to Heart International. On December 29, the ETU in Grand Cape Mount's Sinje town opened. Between December 31, 2014 and January 5, 2015, USG partners opened three ETUs, one each in Gbarpolu, Grand Gedeh, and Nimba counties. On January 22, 2015, a DOD-constructed, USAID/OFDA-supported ETU opened in Zorzor town, Lofa County, on the Liberia-Guinea border. On January 28, 2015, the DOD-constructed ETU in Barclayville town, Grand Kru County, opened. With this final site open, all 10 DOD-constructed sites were operational.

As a result of the weather and poor road conditions, it took up to two months to build some ETUs, much longer than the planned five weeks.¹⁵⁵ But because the epidemic ebbed as ETU construction progressed, their number and size had to be adjusted. Instead of building 17 ETUs, as initially planned, DOD was asked to build only 10. The number of beds per ETU was also cut in half, from 100 to 50, as a result of the epidemic slowing down.”¹⁵⁶



Figure 7: Map of ETUs and Their Status in Liberia as of 14 November 2014¹⁵⁷

Monrovia Medical Unit (MMU)

On October 27, a 65-person USPHS team arrived in Monrovia to staff the MMU. The team had trained with CDC and planned to participate in additional training in Monrovia prior to providing care at the MMU. Because of these delays in training and staffing, the MMU opened on November 5, 2014. Another delay in transitioning the MMU from DOD to the USPHS stemmed from the absence of procedures for handing over equipment from DOD to USPHS. Nonetheless, the MMU began accepting patients as soon as it opened.

Training Center

On October 27, the DOD Ebola Training Center (ETC) opened in Paynesville, Liberia and received its first class of 91 clinicians and non-clinicians.¹⁵⁸ Between October 2014 and February 2015, the ETC trained 1,500 ETU staff members. By the end of December 2014, the mobile training teams that the JFC had established and trained had further visited 11 remote training locations and trained over 400 ETU staff members, including both clinicians and non-clinicians.¹⁵⁹

Laboratories

During this period, DOD opened and staffed six diagnostic laboratories across Liberia. OUA also helped to increase the testing capacity at Liberia's national laboratory, which was housed at the Liberian Institute for Biomedical Research.

Initial Transition Challenge: Determining Precise Requirements for Controlled Monitoring

One challenge for the transition and redeployment was that the troops required controlled monitoring on their return to their home duty station. But there was initial confusion as to what this monitoring required, and in fact, the requirements changed over time. Indeed, on October 10, 2014, the Undersecretary of Defense for Personnel and Readiness issued a memorandum ordering 21 days (twice the incubation period for EVD) of controlled monitoring for Soldiers with no known exposure to EVD. This would require Soldiers to check their temperatures twice a day for the entire period and conduct an in-person clinical interview with trained personnel to review symptoms. But the guidance also stated that asymptomatic soldiers could simply go home and to work. After the JFC transfer of authority from USARAF to the 101st Airborne Division (Air Assault), CNN reportedly asked Major General Williams, who had just returned to Italy, what the controlled monitoring included. The uncertainty around what precisely the monitoring entailed prompted OSD and the Chairman of the Joint Chiefs of Staff to issue an Instruction which required 21 days of controlled monitoring for "all DOD Service Members who are assigned, deployed, or transited through the EVD outbreak area."¹⁶⁰ The clarification helped to ensure that troops had indeed not been exposed to EVD. It also increased the confidence of the communities in the United States, Germany, and Italy, to which the troops returned after their time in Liberia.¹⁶¹

PHASE 4: February-June 2015: OUA Redeployment and Close-out; UNMEER Scales Down and End

On February 1, 2015, DOD began drawdown and transition activities. On February 11, 2015, President Obama praised USG EVD response efforts in West Africa. President Obama announced the withdrawal of the majority of DOD staff with only 100 to remain (out of almost 3,000) until zero cases were reached. In March 2015, a brigade level headquarters of 32 soldiers, commanded by a colonel, replaced the 101st Airborne Division (Air Assault) headquarters. By April 1, 2015, most DOD forces had redeployed. On April 15, 2015, the 48th Chemical Brigade Headquarters, Fort Hood, TX, assumed responsibility for providing DOD support. The MMU was turned over to the GOL on April 30, 2015, by which time the USPHS had treated 42 patients from nine countries; 18 patients were formally diagnosed with EVD, and nine died.¹⁶² On May 6, the USAFRICOM Commander sent a "Termination Memorandum" to the Secretary of Defense. On May 9, 2015, the WHO declared Liberia EVD-free. On June 30, 2015, OUA was terminated. By then 28 patients had been treated at three of the U.S. built ETUs.¹⁶³ On July 31, 2015, UNMEER closed.

Assessment and Insights

Operation UNITED ASSISTANCE was a Foreign Humanitarian Assistance (FHA) mission tasked with supporting the lead federal agency, USAID, to end the EVD outbreak in Liberia and to help the country build the necessary capacity to respond to future outbreaks itself. According to JP 3-29, *Foreign Humanitarian Assistance*, such missions consist of “activities conducted outside the United States and its territories to directly relieve or reduce human suffering, disease, hunger or privation.”¹⁶⁴ This section relies on the relevant doctrinal principles outlined in JP 3-29 to provide an assessment of OUA and insights on its execution.

The Nature of FHA

OUA was clearly an FHA operation: U.S. forces conducted a mission that was limited in scope and duration; designed to supplement or complement Liberia’s own efforts; and worked in support of USAID.¹⁶⁵ There were two clear redlines for OUA, thereby limiting its scope: DOD personnel would not provide direct medical care to patients, and the mission would only provide capabilities unique to DOD. Moreover, President Obama announced that the mission would draw down as soon as its primary tasks were completed, namely building the ETUs and transitioning them to USAID partners for day-to-day operations, building the MMU, training healthcare workers, deploying mobile laboratories, and sustaining the mission as a whole. Finally, OUA worked closely with all of the entities present in Liberia to provide the needed support.

Achieving Unity of Effort: Determining the Mission, Key Tasks and Objectives When in Support

Achieving unity of effort in FHA is a challenge, not only because of the multiple actors involved in such mission, but also because of DOD’s role *in support* of these actors, rather than as the *supported* entity. An inherent challenge in achieving unity of effort is that “the Joint Force commander may not be responsible for determining the mission or specifying the participant agencies” but must use presidential and interagency policy and guidance to develop a mission statement with clearly identified and achievable objectives. This proved to be a challenge for AFRICOM and USARAF since the relevant presidential and interagency policy guidance was so limited. In fact, as discussed above, there was no strategic guidance for OUA. As JP 3-29 notes, it is normally the Geographic Combatant Command—in this case AFRICOM—that coordinates a mission statement with the LFA. But in this case, a formal mission statement was not developed, instead the JFC used the guidance provided to develop a concept of operations and key mission tasks.

Coordination and Cooperation in FHA: Achieving Unity of Effort

In FHA, unity of effort can only be achieved with effective, timely coordination and cooperation. More specifically, “Unified action is the synchronization, coordination, and/or integration of the activities of governmental, nongovernmental and international entities with military operations to achieve unity of effort.”¹⁶⁶ During FHA operations unity of command may not be possible but the requirement for unity of effort becomes paramount.¹⁶⁷

A joint DOD/USAID/State Department Inspector General's report on OUA further discusses the interagency coordination challenges that arose during the response.¹⁶⁸ First, it was an adjustment, both for the Army and for USAID, to have USAID be in the lead and personnel in uniform be in support. This is understandable after years of the reverse in Afghanistan and Iraq. Military and civilian personnel were accustomed to working together but struggled with allowing USAID to determine requirements and implement programs, with DOD providing support as needed. Second, a lack of understanding among the various agencies of the role of counterpart agencies in the response further hampered the response efforts. For example, USAID found that OFDA did not have relationships with other key players, particularly with the CDC or with the USPHS making coordination and cooperation with them more difficult. USPHS found that the lack of familiarity with its role precluded its involvement in planning certain activities it should have been involved in.

Nonetheless, the JFC Commander establishing an office within the U.S. Embassy helped to create good and direct communication with all the stakeholders, particularly the U.S. Ambassador, USAID, the Office of President Johnson Sirleaf, and the leadership of the AFL.¹⁶⁹ The JFC Commander was also able to rely on the embedded mentors from Operation ONWARD LIBERTY to "bridge initial gaps between the JFC headquarters and the Liberian military leaders."¹⁷⁰

These difficulties reflect another inherent aspect of FHA: the fact that it requires extensive interagency coordination, a process that is often described as "more art than science." In FHA, the formal coordination structures to which the military is accustomed may be entirely absent.¹⁷¹ If this is the case, it can be particularly important for the JFC to provide such a structure as means to communicate and coordinate with all the stakeholders involved in the response effort.

Within the USG, OUA innovated an approach to cooperating with the USAID DART by embedding DOD liaison officers and planners directly into the DART.¹⁷² This was the first such embed of military personnel—in this case an engineer, a logistician and an air planner into the DART.¹⁷³ The Armed Forces of Liberia and the Liberian Ministry of Health themselves took a leading role in facilitating coordination by creating the National Ebola Coordination Center and working together with OUA to form operation United Shield. OUA helped to facilitate coordination further by sending liaison officers to these structures and helping to develop relevant products, such as a common operating picture, setting up an APAN network, and analyzing EVD data.¹⁷⁴ But establishing early and effective liaison did not completely mitigate cooperation challenges.¹⁷⁵ For example, Liberian Health Ministry and the WHO were reluctant to share information about the epidemic because of privacy concerns. This made modeling and subsequent decision-making more difficult.¹⁷⁶

Conducting a Needs Assessment

FHA must be based on a comprehensive needs assessment. Normally, the host nation conducts this assessment, with support from USAID and other USG agencies and departments, as well as from international organizations, such as the UN or the WHO, and NGOs, or Médecins Sans

Frontières.¹⁷⁷ In the run up to OUA, no such assessment was conducted though the WHO, Médecins Sans Frontières, and regional governments, who were overwhelmed in their own response efforts, repeatedly asked for additional assistance. By October 2014 however, the CDC had issued a morbidity report that detailed what would happen should no assistance be provided, and the WHO issued an Ebola Response Strategy that also explained the needed response (namely that 70 percent of patients be safely isolated and 70 percent of people who died be buried safely) for the epidemic to be contained. These efforts were widely criticized however for coming too late. The WHO in particular was criticized for missing key indicators, early in the epidemic, that the disease was spreading at a much faster rate than it appeared. The USG was also criticized for taking too long to decide to support a response in the first place.

Joint Intelligence Preparation of the Battlefield

FHA requires an accurate and extensive joint intelligence preparation of the battlefield, which can then be applied to planning and execution.¹⁷⁸ This is one area where USARAF and AFRICOM's performance was inadequate, in part because both lack the resources, personnel and financial, to prepare detailed analyses. As a result, there was no existing Joint Intelligence Preparation of the Operational Environment (JIPOE).¹⁷⁹ The one that was developed, however, assumed that the mission would require heavy weapons, armored vehicles, and even facial recognition software, when none of these were appropriate to consider deploying for OUA.¹⁸⁰

In addition, AFRICOM and USARAF failed to adequately leverage existing resources in Liberia, in particular the defense attaché and security cooperation offices at the Embassy, as well as expertise gleaned from the Marine Corps' ongoing Operation Onward Liberty and a disaster preparedness program which had begun in 2012 to help Liberia and other African countries prepare for infectious diseases (in this case influenza).¹⁸¹ In addition, both could have relied on the expertise of UNMIL, which after almost 10 years in Liberia at the time, had extensive knowledge of the logistics challenges associated with operating there, in particular road conditions and the serviceability of helicopter landing zones. This knowledge was only leveraged once planners actually met in person with UNMIL staff. The USG could have also relied on U.S. personnel, both activity duty and contractors, who were working for UNMIL at the time.

This ironically poor knowledge about the region permeated through other government agencies involved in planning for and supporting OUA.¹⁸² DTRA's efforts to model the spread of the epidemic were based on erroneous assumptions about the region's population, as well as about how EVD itself spreads. Even if EVD did not follow so-called traditional disease outbreak models, DTRA's models did not account for local burial practices (i.e., washing and touching the corpse), the fact that populations in the region are highly mobile both between countries and from rural areas to urban ones, or that West Africans also travel frequently beyond the sub-region.¹⁸³

Force Protection in FHA

Force protection—a paramount concern for the JFC—is based on the type of operational environment to which the FHA mission deploys: permissive, uncertain, and hostile.¹⁸⁴

In Liberia’s permissive environment, the biggest threat to the force—that soldiers might contract EVD themselves—was mitigated by the DOD redline prohibiting direct treatment of patients. Even so, the JFC took further steps to protect soldiers.¹⁸⁵ For example, soldiers practiced the donning and doffing of PPE, a detailed process for EVD, so that, should a situation arise where this was needed, they could do so without endangering themselves or others. The ROE and EOF procedures also required donning PPE to come into direct physical contact with potentially ill Liberians.

The Joint Deployment Process in FHA

OUA’s joint deployment process did not follow the traditional four phases envisioned in JP 3-29: planning; pre-deployment activities; movement; and joint reception, staging, onward movement and integration (JRSOI).¹⁸⁶ The lack of strategic guidance impeded the planning phase in particular. The lack of medical knowledge about EVD also made pre-deployment activities difficult to implement since training for donning and doffing PPE had to be developed before the troops could be deployed. Movement was also slowed by inaccurate (and changing) impressions of what the airport in Monrovia could handle in terms of aircraft. The JRSOI phase occurred as the mission was being planned and as the 101st Airborne Division (Air Assault) prepared for its deployment, and also began moving into theater. This complicated the entire joint deployment but was necessary for the response to EVD to not be further delayed.

Nonetheless, OUA adapted successfully to some of the evolving conditions on the ground. For example, as the epidemic ebbed as the ETUs were being built, the facilities were right sized—the number of beds was diminished and the design was simplified. Similarly, OUA increased its support to medical training and laboratories. On the other hand, USARAF had some difficulties with adapting to the situation on the ground. For example, planners “started writing requests for forces before the entire mission planning was complete,” and as a result over 500 pieces of equipment ended up never being used after they were deployed.¹⁸⁷

Sustainment in FHA

FHA operations tend to be logistic intensive and require significant engineering support. OUA conducted many of the engineering missions typical of FHA including training, improving roads as needed, and constructing the ETUs. This required additional engineering support, which was largely contracted out to local Liberian firms, in particular well-drilling.¹⁸⁸ The Defense Logistics Agency and U.S. Transportation Command in particular played key roles in supporting the mission.¹⁸⁹

Information Sharing in FHA

FHA requires the determination of classification standards early in the operation and review as the operation progresses.¹⁹⁰ In FHA, “Information sharing is critical to the efficient pursuit of a common humanitarian purpose.”¹⁹¹ On arrival in Liberia, the JFC found very quickly that

working in a classified environment would impede crucial information-sharing. The JFC therefore decided that OUA would operate on an unclassified basis and would share everything.¹⁹² Moreover, even within the USG, not all departments and agencies use Common Access Card-enabled computers and networks. Relying on such a system would have further hampered the mission. In addition, international stakeholders are also unable to use such a system. The JFC further therefore decided to provide a collaborative information environment—in this case a simple, login-enabled, unclassified mission-specific network called APAN (i.e., All Partners Access Network)—to enable cooperation.¹⁹³

Transition and Termination in FHA

According to JP 3-29, ending military FHA operations involves the successful transition of relief activities to U.S., intergovernmental, or HN relief organizations. Termination occurs when the relief efforts have successfully transitioned or when the SECDEF directs, or at the discretion of the HN. Planning for transition should be incorporated as early as possible in all aspects of operational planning for FHA.¹⁹⁴ DOD and USAID began planning for mission termination and transition from the beginning.¹⁹⁵ This effort included planning for handing over the ETUs to DOD and USAID partners, and monitoring their functioning for about two weeks to ensure it was sustainable.¹⁹⁶ Similarly, the MMU was slated for turnover to the Liberian authorities. The training center and the laboratories were considered temporary and would therefore operate only as long as necessary.

For U.S. forces themselves, redeployment planning was, as usual, conducted simultaneously with joint force deployment.¹⁹⁷ Challenges related to the transition between USARAF and the 101st “included determining what roles and responsibilities USARAF would continue to execute post-transition.”¹⁹⁸ As a result, both worked together to define the re-and post-transition support requirements. USARAF captured and published roles and responsibilities in the final JFC order before the mission transition.

Assessment in FHA

In FHA, the JFC must evaluate task performance and their contribution towards achieving the effects outlined in the mission’s objectives. It’s important to differentiate measures of effectiveness—which assess whether the activities achieved the desired outcome—from measures of performance, which look at how well the tasks were performed. In an FHA such as OUA, measures of effectiveness would therefore include a decrease in the number of deaths and a decrease in the incidence of the disease to a manageable level.¹⁹⁹ Only well devised measures can help determine whether a causal relationship exists between the completed tasks and the desired effects.²⁰⁰

Both measures of effectiveness and measures of performance clearly show that OUA was a success. However, establishing this causal link between the tasks OUA accomplished and the end of the EVD epidemic is difficult.²⁰¹ Certainly, OUA successfully completed the tasks it was assigned: ETUs were constructed, health personnel were trained, and mobile laboratories were deployed. That being said, by the spring of 2015, only 28 patients had been treated, at only

three of the facilities built by the United States (so most of the ETUs never saw any patients).²⁰² The deployment of mobile laboratories helped bring down the time required to confirm an EVD case from several days to two-to-four hours, helping health officials separate confirmed EVD patients from those that “merely” had malaria or some other illness. The trained health care workers will be an important road block to a future epidemic as well.

According to the Inspector General’s (IG) report, the USAID assessment found that the focus on increasing the number of ETU beds might have taken away from other efforts that ultimately were found to be successful. Because many of the ETUs were not operational until after the outbreak peaked, and in fact many of them never saw any patients, it might have helped more to focus on adopting prevention measures, in particular significant behavioral changes including safe burials and isolation of suspected cases.²⁰³

Nonetheless, the deployment of U.S. personnel reportedly helped build confidence in the Liberian government’s ability to respond and strengthened its legitimacy in the eyes of the country’s citizens. Moreover, OUA and the wider international response clearly played a role in returning Liberia to its pre-EVD conditions (though of course rebuilding the Liberian economy is still ongoing).²⁰⁴

Conclusion

Operation UNITED ASSISTANCE was the first U.S. military operation deployed in response to an Ebola epidemic. In the event that the United States faces deploying this type of mission in the future, the following best practices can be learned from Operation UNITED ASSISTANCE:

- *Improve monitoring of infectious disease and create a mechanism in the National Security Council for expediting decision-making in the case of Humanitarian Assistance/Disaster Relief (HA/DR) emergencies.*

The U.S. Ambassador to Liberia, Deborah Malac, declared a disaster in Liberia on August 4, 2014. This decision prompted the National Security Council (NSC) to task OFDA and the DART to lead the whole of government response to the EVD outbreak.²⁰⁵ But although the NSC had assigned that responsibility to USAID, it took several weeks for a larger response to be considered. According to a Joint Inspector General Report, internal assessments of the response to the crisis found that, according to the CDC, “The disease would have been associated with far fewer EVD cases and deaths . . . had response efforts been implemented earlier, faster, and effectively.”²⁰⁶ The announcement, in early September, that the United States would build a facility for healthcare workers outside Monrovia was met with criticism: it was perceived as focused only on foreigners rather than aimed at helping the citizens who were dying of EVD. Liberia’s immediate response was to request additional assistance. It was another week before the President announced OUA’s deployment. This mechanism should be able to assess the severity of similar situations and make decisions faster so that fewer lives are lost and U.S. responses are more relevant and adapted to the situation at hand.

- *Improve the overall USG capacity to respond to infectious disease.*

OUA revealed several shortfalls in the USG ability to respond to infectious disease, including some that had not been identified as potential requirements, particularly patient transport systems and PPE requirements.²⁰⁷ Moreover, “According to the Joint Staff Surgeon General, DOD’s medical capabilities, and many that are specifically applicable to PI&ID [pandemic influenza and infectious disease] are unknown and unseen to a broader DOD audience, let alone in other parts of the USG.”²⁰⁸

- *Increase the human and financial resources available to AFRICOM and USARAF for planning and executing HA/DR missions.*

In forming the JFC, USARAF’s “impromptu approach” was impeded by the lack of assigned forces which “would have enabled more detailed planning and reduced operational risk that accrued over time.”²⁰⁹ The request for forces (RFF) process delayed the deployment and decreased the effectiveness of the response. Moreover, AFRICOM and USARAF Joint Intelligence Preparation of the Battlefield was lacking and based on incomplete and out of date information. In some cases, planners had to wait until they were deployed to acquire a usable understanding of the operational environment. AFRICOM requires additional human and financial resources if these kinds of problems are to be resolved. Africa’s 54 countries all face a diverse set of security challenges, ranging from an infectious disease crippling government capacity to transnational violent extremist networks. While it is not always in the interest of the United States to respond to such threats, plans for doing so should be in place. More generally, because HA/DR missions occur, by definition, on short notice, planners should develop an in-depth understanding of country-specific mission variables. They should anticipate that if such an emergency occurs, they will not have the time to search for resources and acquire information from multiple sources. Instead, they should rely on readily available, accurate, and up to date information about these countries and regions to conduct accurate intelligence preparation of the battlefield.²¹⁰

- *Improve doctrine and training for humanitarian operations and continue to clarify roles and responsibilities for the Joint Force when it operates in support of the lead federal agencies*

As noted by Major General Williams in a *Military Review* article, there is a lack of doctrine and training for humanitarian operations.²¹¹ It would be helpful to develop an interagency “playbook” to facilitate a whole of government approach. But planning for future operations would be eased by clarifying not just USG roles and responsibilities but also how to “integrate USG efforts of pandemic influenza and infectious disease planning, execution, and authorities. Particular emphasis should be placed on identifying and addressing gaps and seams between international and domestic efforts.”²¹² Such missions must also be exercised, not just within DOD, but also with the interagency, and using scenarios that assume USAID will be the lead federal agency.²¹³

Once the operation has deployed, the JFC should develop a common operating picture shareable with U.S. agency partners and external partners such as the UN and NGOs. Moreover, USAID’s mission tasking matrix must be focused at the JFC level.²¹⁴ Approval for projects in this type of environment should not be at the Secretary level, which it was in some cases during OUA. Making such decisions in Washington rather than in theater risks implementing projects

that do not reflect operational needs. Field teams, including the JFC should be empowered to lead strategy development and inform tactics in support of the identified response strategy.”²¹⁵

OUA made important contributions to ending the EVD outbreak in Liberia. Once the order to deploy was given, troops, materiel, and expertise were in the region very quickly and played an important part in building confidence in the relief efforts. The difficulties that arose in assessing the operational environment, planning the mission, and conducting it served to highlight the need to improve capabilities within AFRICOM and USARAF. Given the strategic conditions in Africa, it is likely that another public health emergency will warrant the deployment of a similar mission in the future.

Appendix A: List of Acronyms

AFL	Armed Forces of Liberia
AFRICOM	Africa Command (United States)
AML	Area Medical Laboratory
ASCC	Army Service Component Command
ASD SOLIC	Assistant Secretary of Defense for Stability Operations and Low Intensity Conflict
AU	African Union
AU PSC	African Union Peace and Security Council
C2	Command and Control
CDC	Centers for Disease Control
CONOPS	Concept of Operations
DART	Disaster Assistance Response Team
DLA	Defense Logistics Agency
DOD	Department of Defense
DOS	Department of State
DTRA	Defense Threat Reduction Agency
ECOMOG	ECOWAS Monitoring Observer Group
ECOWAS	Economic Community of West African States
EOC	Emergency Operations Center
EOF	Escalation of Force (Procedure)
ESC	Expeditionary Sustainment Command
ETC	Ebola Training Center
ETU	Ebola Treatment Unit
EVD	Ebola Virus Disease
EXORD	Execute Order
FDR	Foreign Disaster Relief
FEMA	Federal Emergency Management Agency
FORSCOM	U.S. Army Forces Command
GCP	Global Campaign Plan
GDP	Gross Domestic Product
GNI	Gross National Income
GoL	Government of Liberia
HHS	Department of Health and Human Services (USA)
ISB	Intermediate Staging Base
JFC	Joint Force Command
JOC	Joint Operations Center
JOPP	Joint Operating Planning Process
JSCP	Joint Strategic Capabilities Plan
LFA	Lead Federal Agency
LOE	Line of Effort

LOGPAC	Logistical Package
MITAM	Mission Tasking Matrix
MMU	Monrovia Medical Unit
MOD	Ministry of Defense (Liberia)
MSF	Medecins Sans Frontières (Doctors Without Borders)
NECC	National Ebola Command Center
NGO	Non-Governmental Organization
NMRC	Naval Medical Resource Center
NTGL	National Transitional Government of Liberia
NTP	Notice to Proceed
OFDA	Office of US Foreign Disaster Assistance
OOL	Operation Onward Liberty
OPORD	Operational Order
OPT	Operational Planning Team
OUA	Operation UNITED ASSISTANCE
PI&ID	Pandemic Influenza and Infectious Disease
PKSOI	Peacekeeping and Stability Operations Institute
PPE	Personal Protective Equipment
ROE	Rules of Engagement
SRSG	Special Representative of the Secretary General
SSR	Security Sector Reform
TRC	Truth and Reconciliation Commission
TSC	Theater Sustainment Command
UN	United Nations
UNDAC	UN Disasters Assessment and Coordination
UNDP	UN Development Program
UNMEER	United Nations Mission for Ebola Emergency Response
UNMIL	United Nations Mission in Liberia
UNMOL	UN Observer Mission in Liberia
UNSC	UN Security Council
USAID	U.S. Agency for International Development
USAMRIID	U.S. Army Medical Research Institute of Infectious Diseases
USARAF	U.S. Army Africa
USG	United States Government
WFP	World Food Program
WHO	World Health Organization

Appendix B: Chronology of Events

2014

- March 23: Institut Pasteur confirmed the presence of EVD.
- August 8: WHO declared the EVD epidemic a “global health emergency”
- August 29: 3 Presidents wrote to the UN Security Council requesting a response/assistance.
- September 8: President Obama Announced US will build ETU for medical (the MMU) personnel outside Monrovia.
- September 9: President Johnson Sirleaf wrote to President Obama to request additional assistance.
- September 16: President Obama announced the deployment of a mission to Liberia, including the MMU, ETUs, laboratories, and 3,000 troops
- September 16: MG Darryl A. Williams, Commander, U.S. Army Africa (USARAF), and a 14-member staff arrived in Monrovia, Liberia, for an initial leader’s reconnaissance and assessment.
- September 18: UN Security Council declared the outbreak a “threat to international peace and security,” called for UNMEER to be established.
- September 20: Approximately 40 personnel joined the advanced echelon. These personnel were to augment the assessment effort, act as liaison, and report the situation on the ground.
- September 23: Approximately 40 personnel, to include a team of 15 U.S. Navy Seabees, joined Joint Forces Command-Operation UNITED ASSISTANCE (JFC-OUA). Their purpose was to provide engineering support and conduct site surveys for the ETUs, supply storage, and the training center.
- September 25: 25 members of a port operations team from U.S. Transportation Command joined JFC-OUA. The team’s purpose was to conduct assessments in Liberia and Senegal for air field and port locations that would support the arrival of follow-on personnel and equipment.
- September 28: A 25-bed hospital and two mobile laboratories were delivered to Monrovia.
- October 2: The first DOD mobile laboratory began operating in Montserrado County, Liberia.
- October 5: The 123rd Contingency Response Group, Kentucky Air National Guard (81 personnel) arrived in Dakar, Senegal, to establish the intermediate staging base cargo hub.
- October 5: Two additional mobile laboratories arrived in Liberia
- October 9: Approximately 92 personnel from the Special Purpose Marine Air-Ground Task Force-Crisis Response, based in Moron Air Base, Spain, and four MV-22B Ospreys arrived in Monrovia.
- October 20: The headquarters element of 101st Airborne Division (Air Assault), Fort

Campbell, KY, began arriving Monrovia. Activities to transition JFC leadership from USARAF to the 101st Airborne Division (Air Assault) began.

- October 25: MG Williams, officially transferred command of the military portion of OUA to MG Volesky, Commander, 101st Airborne Division (Air Assault).
- October 27: The U.S. run training center for medical personnel opened and a 20-member team of U.S. Army medical trainers began instruction for the first cohort of 68 students.
- November 7: The MMU was pronounced operational.
- November 10: The first U.S. built ETU was completed. The 100-bed facility was transferred to the nongovernmental International Organization for Migration, and opened for patients.
- November 12: The MMU admitted its first patient.
- December 7: U.S. force levels peaked at 2,900 personnel in West Africa.
- December 24: All 6 DOD laboratories were open and operational.

2015

- January 28: The final U.S.-Built ETU Opened.
- February 1: DOD began drawdown and transition activities.
- February 11: President Obama Announced the withdrawal of
- April 1: Most DOD forces redeployed.
- April 15: The 48th Chemical Brigade Headquarters, Fort Hood, TX, assumed responsibility for providing DOD support.
- May 6: The USAFRICOM Commander sent a "Termination Memorandum" to the Secretary of Defense.
- May 8: The WHO declared Liberia Ebola free.
- June 30: OUA was terminated.
- July 31: UNMEER was closed.

Appendix C: Table of Friendly Forces

The list of units in this appendix is not exhaustive. The author could not find a centralized and official list of all units assigned to or supporting OUA. This list therefore also includes, as available, U.S. and international civilian actors who participated in the mission.²¹⁶

DOD	<ul style="list-style-type: none"> ▪ Army Up to 2,900 including from USARAF (Vicenza, Italy) and the 101st Airborne Division (Air Assault) ▪ Navy Up to 31 personnel, including 15 Seabees ▪ Marine Corps Up to 92 personnel from the Special Purpose Marine Air-Ground Task Force-Crisis Response, based in Moron Air Base, Spain/ ▪ National Guard 81 personnel from 123rd Contingency Response Group, Kentucky Air National Guard (to Dakar) ▪ Other 25 members of a port operations team from US TRANSCOM
USAID	100 Staff from various bureaus plus HQ staff 1,600 total staff for USAID contractor PAE—these personnel were largely local hires in Liberia
DOS	Number unavailable but Embassy Staff plus regional bureau staff and others in relevant Bureaus in Washington provided support.
CDC	800 personnel deployed to West Africa on more than 1,500 missions. 2,900 workers have staffed the EOC at CDC's headquarters. By late March 2015, 315 employees were deployed as part of the Ebola response.
USPHS	Rotating teams of more than 65 members of the USPHS.
UNMEER	376 personnel authorized (or which 280 were filled by February 2015).
WHO	3,500 for Liberia (largely contact tracers, community awareness and education, logistics support etc).
MSF	At its peak, nearly 4,000 national staff and over 325 international staff cross the three countries.

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- ⁹¹ This section summarizes Operation UNITED ASSISTANCE/United Shield, OPORD, Appendix C, Enclosure 1 (ROE Card) to Appendix 1 (Rules of Engagements) to Annex C (Operations) for Operation United Shield, p. C6-C7.
- ⁹² Center for Army Lessons Learned, “Joint Forces Command Operation UNITED ASSISTANCE Case Study,” Handbook, No. 16-22, July 2016, Lessons and Best Practices, p. 5, (hereafter CALL, OUA Case Study).
- ⁹³ CALL, OUA Case Study, p. 29.
- ⁹⁴ Williams et al., *Military Review*, p. 81.
- ⁹⁵ JCOA Study, footnote 106, p. 82.
- ⁹⁶ JCOA Study, footnotes n.54-56, pp. 77-78.
- ⁹⁷ JCOA Study, p. 8 and footnote n. 54, pp. 77-78.
- ⁹⁸ UN Security Council, Resolution 2177, S/RES/2177, September 18, 2014.
- ⁹⁹ UNDAC’s mandate included support to the National EVD Command Center and humanitarian partners.
- ¹⁰⁰ UNMEER’s Special Representative of the Secretary General (SRSG), Ismail Ould Cheikh Ahmed (a Mauritanian diplomat), arrived in Ghana on September 22.
- ¹⁰¹ WHO EVD Situation Report, December 17, 2014, available from: apps.who.int/EVD/en/status-outbreak/situation-reports/EVD-situation-report-17-december-2014, accessed January 11, 2017.
- ¹⁰² JCOA Study, p. 49. Operation United Shield was a combination of OUA and Operation White Shield (the AFL’s operation). It was “designed to establish the agreement with the AFL to build the ETUs.” JCOA Study footnote n. 319, p. 100. OPORD, Operation United Shield p. 1.
- ¹⁰³ OPORD United Shield, p. 1.
- ¹⁰⁴ CALL, OUA Case Study, pp. 26, 43.
- ¹⁰⁵ CALL, OUA Case Study, p. 28.
- ¹⁰⁶ OUA Base Order, 3.B.1.Q.2. +34.
- ¹⁰⁷ Doherty and Whetson, p. 7.
- ¹⁰⁸ Doherty and Whetson, pp. 7-9.
- ¹⁰⁹ CALL, OUA Case Study, p. 36.
- ¹¹⁰ CALL, OUA Case Study, p. 24.
- ¹¹¹ This section is summarized from Williams et al., *Military Review*, pp. 78-80.
- ¹¹² Williams et al., *Military Review*, pp. 78-80.
- ¹¹³ JCOA Study, p. 8.
- ¹¹⁴ Williams et al., *Military Review*, p. 77.
- ¹¹⁵ Williams et al., *Military Review*, p. 81.

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- ¹¹⁶ Williams et al., *Military Review*, p. 78.
- ¹¹⁷ USAID Fact Sheet #5, September 10, 2014.
- ¹¹⁸ WHO, Note for the Media, “New WHO safe and dignified burial protocol - key to reducing Ebola transmission,” November 7, 2014, available from: www.who.int/mediacentre/news/notes/2014/ebola-burial-protocol/en, accessed March 20, 2017.
- ¹¹⁹ USAID Fact Sheet #7, September 25, 2014.
- ¹²⁰ Lightsey, p. 64.
- ¹²¹ JCOA Study, p. 50.
- ¹²² JCOA Study, p. 47.
- ¹²³ JCOA Study, p. 47.
- ¹²⁴ JCOA Study, p. 47.
- ¹²⁵ Captain Ross M. Hertlein, “Operation UNITED ASSISTANCE: Joint and Strategic Partners Enabling Success,” Ch.3, in CALL, “Setting the Theater,” pp. 24-25.
- ¹²⁶ Hertlein, p.22
- ¹²⁷ Major Michael Gacheru, “Lesson in Establishing a Training Center to Counter a Pandemic,” in CALL, “Setting the Theater,” p. 21.
- ¹²⁸ JCOA Study, p.11.
- ¹²⁹ JCOA Study p. 19
- ¹³⁰ JCOA Study, p. 11; Hertlein, p. 25.
- ¹³¹ The two additional laboratories would provide quick testing capabilities for ETUs at Bong and Island Clinic. Rapid testing is vital to remove negative cases from facilities and open beds for other suspected cases.
- ¹³² JCOA Study, p. 31.
- ¹³³ JCOA Study, p. 20.
- ¹³⁴ JCOA Study footnote n. 140, p. 85.
- ¹³⁵ JCOA Study, p.20.
- ¹³⁶ JCOA Study, p. 20 and footnote n. 141 and 142, p. 85.
- ¹³⁷ CALL, OUA Study, p. 13.
- ¹³⁸ CALL, OUA Study, p. 15.
- ¹³⁹ Captain Ross M. Hertlein, “Operation UNITED ASSISTANCE: Joint and Strategic Partners Enabling Success,” Ch.3, in CALL, “Setting the Theater,” pp. 15-16.
- ¹⁴⁰ JCOA Study, p.8.
- ¹⁴¹ JCOA Study, p. 10.
- ¹⁴² CALL, OUA Study, p. 13.
- ¹⁴³ *Military Review*, p. 80.
- ¹⁴⁴ OUA Case Study, Chronology of Events, p. 171.
- ¹⁴⁵ Lightsey, p. 64.
- ¹⁴⁶ CALL, OUA Case Study, pp. 27, 40.
- ¹⁴⁷ Call, OUA Case Study, p. 40.
- ¹⁴⁸ CALL, OUA Case Study, p. 42.
- ¹⁴⁹ CALL, OUA Case Study, pp. 42-43.
- ¹⁵⁰ The hub would be capable of dealing with 100 metric tons a week.
- ¹⁵¹ UNMEER Website, available from: EVDresponse.un.org/un-mission-EVD-emergency-response-unmeer, accessed February 9, 2017.
- ¹⁵² Williams et al., *Military Review*, p. 80.
- ¹⁵³ WHO EVD Situation Report, December 17, 2014, available from: apps.who.int/EVD/en/status-outbreak/situation-reports/EVD-situation-report-17-december-2014, accessed January 11, 2017.

¹⁵⁴ USAID, Press Release, “First U.S. Constructed ETU Set to Open,” November 10, 2014, available from: www.usaid.gov/news-information/press-releases/nov-10-2014-first-us-constructed-EVD-treatment-unit-set-open-liberia, accessed November 15, 2016.

¹⁵⁵ JCOA Study, p. 49.

¹⁵⁶ JCOA Study, p. 49. In addition, a German NGO agreed to build four ETUs and the AFL built two. See JCOA Study footnotes n. 317 and n. 318, p. 100.

¹⁵⁷ USAID Fact Sheet #7, November 12, 2014, available from: www.usaid.gov/EVD/fy15/fs07, accessed January 17, 2017.

¹⁵⁸ CALL Bulletin, p. 21. This class consisted of 58 healthcare workers, 12 ETU support staff, and 21 future cadre for the training center. The students received five days of training based on the WHO program of instruction. The training provided three days of classroom instruction followed by two days of hands-on instruction in a mock ETU. The majority of these students were healthcare volunteers who, at the conclusion of training, were sent out across Liberia to serve as the core staff at ETUs nationwide.

¹⁵⁹ Hertley, p. 25.

¹⁶⁰ CALL, OUA Case Study, p. 40.

¹⁶¹ Chairman of the Joint Chiefs of Staff Instruction, CJCSI 4220.01A, “Post-Deployment Policy for 21-Day Controlled Monitoring of DOD Service Members and Civilian Employees Returning from Ebola Virus Disease Outbreak Areas in West Africa,” December 17, 2014, available online at http://www.jcs.mil/Portals/36/Documents/Library/Instructions/4220_01a.pdf?ver=2016-02-05-175038-763, accessed May 22, 2014.

¹⁶² JCOA Study, p. 52.

¹⁶³ Norimitsu Onishi, “Empty EVD Clinics in Liberia Are Seen as Misstep in U.S. Relief Efforts,” *The New York Times*, April 11, 2015.

¹⁶⁴ JP 3-29, p. ix.

¹⁶⁵ JP 3-29, ix.

¹⁶⁶ JP 3-29, I-2.

¹⁶⁷ JP 3-29, x.

¹⁶⁸ This paragraph summarizes the box “Inter-Agency Coordination Challenges” in USAID Office of the Inspector General, DOD Office of the Inspector General, DOS Office of the Inspector General, HHS Office of the Inspector General, Lead Inspector General Quarterly Progress Report on U.S. Government Activities, “International Ebola Virus Disease Response and Preparedness, Quarterly Report on EVD Response and Preparedness Activities, Fiscal Year 2015, Fourth Quarter,” September 30, 2015 (hereafter IG Report), pp.36-37.

¹⁶⁹ JP 3-29, IV-4.

¹⁷⁰ U.S. Embassy in Liberia, “Operation Onward Liberty (OOL) Successfully Concludes Six Year Engagement,” August 11, 2016, available from: lr.usembassy.gov/operation-onward-liberty-ool-successfully-concludes-six-year-engagement, accessed March 23, 2017. See also, Williams et al., *Military Review*, p. 80.

¹⁷¹ JP 3-29, xii.

¹⁷² JCOA Study, p. 37 and footnote n. 256, p. 96.

¹⁷³ JP 3-29, xiv.

¹⁷⁴ JP 3-29, xiv.

¹⁷⁵ JP 3-29, IV-15.

¹⁷⁶ JCOA Study, p. 25.

¹⁷⁷ JP 3-29, xiii.

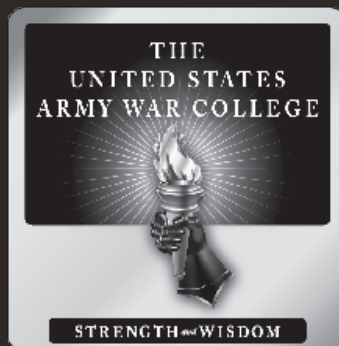
¹⁷⁸ JP 3-29, xiii.

¹⁷⁹ JCOA Study, footnote n. 169, p. 87.

¹⁸⁰ JCOA Study, p. 26 and footnotes n.170-171, p. 87.

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- ¹⁸¹ JCOA Study, p. 27.
- ¹⁸² JCOA Study, p. 23.
- ¹⁸³ JCOA Study, p. 25.
- ¹⁸⁴ JP 3-29, xiii.
- ¹⁸⁵ JP 3-29, xvi.
- ¹⁸⁶ JP 3-29, xiv.
- ¹⁸⁷ JCOA Study, p. 30.
- ¹⁸⁸ JP 3-29, IV-13-14.
- ¹⁸⁹ JP 3-29, xiv.
- ¹⁹⁰ JP 3-29, xv.
- ¹⁹¹ JP 3-29, xv.
- ¹⁹² Presentation by MG Volesky at the Stimson Center, April 20, 2015, available from: www.stimson.org/content/operation-united-assistance-us-military's-relief-efforts-west-africa, accessed November 2, 2016.
- ¹⁹³ JP 3-29, xv; JCOA Study, p. 37.
- ¹⁹⁴ JP 3-29, IV-15-16.
- ¹⁹⁵ JCOA Study, p. 41.
- ¹⁹⁶ JCOA Study, p. 42.
- ¹⁹⁷ JP 3-29, IV-33.
- ¹⁹⁸ Williams et al., *Military Review*, p. 81.
- ¹⁹⁹ JP 3-29, IV-6.
- ²⁰⁰ JP 3-29, xv.
- ²⁰¹ Lightsey, pp. 67-69.
- ²⁰² Ibid.
- ²⁰³ IG Report, p. 42.
- ²⁰⁴ JP 3-29, IV, 5.
- ²⁰⁵ IG Report, p. 26-27.
- ²⁰⁶ This section summarizes the box "Initial Phase of the U.S. Government's Response to the Outbreak," in IG Report, p. 26-27; JCOA Study, p. 21.
- ²⁰⁷ JCOA Study, p. 20.
- ²⁰⁸ JCOA Study, p. 20.
- ²⁰⁹ Williams et al., *Military Review*, p. 78.
- ²¹⁰ CALL, OUA Case Study, p. 41.
- ²¹¹ Williams et al., *Military Review*, p. 82.
- ²¹² JCOA Study, p. 21.
- ²¹³ Williams et al., *Military Review*, p. 82.
- ²¹⁴ Ibid.
- ²¹⁵ IG Report, p. 43.
- ²¹⁶ This table uses data from: DOD News, "DoD Releases Breakdown of Ebola Response Effort," January 8, 2015, www.defense.gov/News/Article/Article/603892/dod-releases-breakdown-of-ebola-response-effort, accessed March 20, 2015. PAE, "Team PAE Fights Ebola in Liberia," February 9, 2016, www.pae.com/news/pae-news/team-pae-fights-ebola-liberia, accessed March 23, 2017. IG report, p. 72. The White House, Fact Sheet, Progress on our Ebola Response at Home and Abroad, February 11, 2015, obamawhitehouse.archives.gov/the-press-office/2015/02/11/fact-sheet-progress-our-ebola-response-home-and-abroad, accessed March 23, 2017. UN Secretary General, "Secretary General's UN Ebola Response Multi-Partner Trust Fund Report," Interim Report for the Period from October 2014 to January 2015, http://ebolaresponse.un.org/sites/default/files/mptf_report20022015final_0.pdf, pp. 27-

42. MSF, "Ebola Facts," www.msf.org/en/diseases/ebola, accessed March 23, 2017; CALL, "OUA Case Study," pp. 170-171.



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