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14. ABSTRACT

The two hospital ships, USNS MERCY (T-AH 19) and USNS COMFORT (T-AH 20), were originally designed to respond to traditional wars and to augment U.S. Government agencies in humanitarian assistance and disaster relief operations. Since their commissioning, the hospital ships have been deployed in support of their actual wartime requirements only twice, for Operations DESERT SHIELD/DESERT STORM and Operation IRAQI FREEDOM. For humanitarian assistance and disaster relief operations, their use has been limited.

The purpose of this paper is to support the proposal that Combatant Commanders and subordinate Joint Task Force Commanders should consider the employment of these underutilized assets to provide assistance to nations in need of humanitarian assistance. The demand for international humanitarian assistance has increased over the last decade and, concurrently, U.S. military involvement in humanitarian assistance operations has increased. The failure to use available assets, such as the hospital ships, may prevent achieving the optimal desired end-state.

The advantages of using hospital ships for humanitarian assistance and disaster relief operations include their high level of capability, versatility, mobility, and their strong symbolism of American goodwill. This author believes that these benefits outweigh the disadvantages of concerns for safety, financial burden, and manpower issues. Hospital ships are valuable assets to consider in the planning for joint, interagency, and multinational medical missions to benefit the world's potential humanitarian assistance recipients.

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THE USE OF HOSPITAL SHIPS FOR JOINT, INTERAGENCY, AND MULTINATIONAL HUMANITARIAN ASSISTANCE OPERATIONS

By

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A paper submitted to the faculty of the Naval War College in partial satisfaction of the requirements of the Department of Joint Military Operations.

The contents of this paper reflect my own personal views and are not necessarily endorsed by the Naval War College or the Department of the Navy.

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INTRODUCTION

The two hospital ships, USNS MERCY (T-AH 19) and USNS COMFORT (T-AH 20), were originally designed to respond to traditional wars and to augment U.S. Government (USG) agencies in humanitarian assistance and disaster relief (HA/DR) operations. Since their commissioning, the hospital ships have been deployed in support of their actual wartime requirements only twice, for Operations DESERT SHIELD/DESERT STORM and Operation IRAQI FREEDOM. For HA/DR operations, their use has been limited.

Recently, both hospital ships received notable attention for their response to the Indian Ocean tsunami disaster (USNS MERCY) and the Hurricane Katrina aftermath on the U.S. Gulf Coast (USNS COMFORT). MERCY was sent to the region for Operation UNIFIED ASSISTANCE supported by medical personnel from the U.S. Navy, U.S. Public Health Service (USPHS), Australian military, and Project HOPE, a non-governmental organization. MERCY arrived off the coast of Banda Aceh Feb. 5, 2005 and during the next two months provided a variety of medical and surgical services to the survivors of the tsunami.[1] This scenario of joint, interagency, and multinational humanitarian assistance operation is the type of operation that could and should be conducted more often.

In a recent U.S. Naval Institute "Proceedings" article, the author suggested that the hospital ships should be decommissioned due to obsolescence.[2] The purpose of this paper is to support the proposal that Combatant Commanders and subordinate Joint Task Force Commanders should consider the employment of these underutilized assets to provide assistance to nations in need of HA/DR. The demand for international HA/DR has increased

[1] Comlish, Jean R. <comlishjb@mercy.navy.mil> "Info Request." [E-mail to Maryann Mattonen <maryann.mattonen@nwc.navy.mil>] 18 January 2006.
[2] Joseph F. Rappold, CDR, MC, USN, "Navy Medicine in Critical Condition," Proceedings, (December 2005): 27.

over the last decade and, concurrently, U.S. military involvement in HA/DR operations has increased. The failure to use available assets, such as the hospital ships, may prevent achieving the optimal desired end-state.

While this paper is not intended to be a comprehensive review of the history and procedures for conducting HA/DR operations, it is important to understand some of the fundamental principles of humanitarian assistance. To start, this paper will provide a short discussion of why HA/DR operations are conducted and who typically participates in providing HA/DR. Secondly, there will be a discussion of the role of the U.S. Department of Defense (DOD) in HA/DR and why the U.S. military participates in these operations. Thirdly, financial figures from U.S. Agency for International Development's (USAID) *Annual Report for Fiscal Year 2004*[3] will be included to impress upon the reader the fiscal investment on the part of the USG for HA/DR. Next, benefits and disadvantages of using hospital ships for HA/DR operations will be discussed. Finally, recommendations for military decision-makers to consider regarding the conduct of HA/DR operations with the hospital ships will be presented.

HUMANITARIAN ASSISTANCE/DISASTER RELIEF BACKGROUND

HA/DR operations have historically targeted victims of natural disasters, destructive conflicts, and epidemics. Types of natural disasters include floods, earthquakes, tsunamis, volcanic eruptions, tropical storms, and famines. Destructive conflicts are usually man-made events and include war, political upheaval or revolution, religious or political persecution,

[3] "USAID from the American People: Annual Report for Fiscal Year 2004 Office of U.S. Foreign Disaster Assistance." No date given. <http://www.usaid.gov/our_work/humanitarian_assistance/disaster_assistance/publications/annual_reports/pdf/AR2004.pdf> [20 January 2006].

chemical or toxic spills, or nuclear incidents. Lastly, types of epidemics include HIV/AIDS, malaria, and tuberculosis.[4]

During the past decade, humanitarian relief organizations have been faced with increasing demand for relief around the world. Consequently, there has been tremendous expansion of "financial, human, and material investment in the ability to intervene in disasters."[5] Major participants of HA/DR operations include United Nations organizations, governmental organizations, non-governmental organizations (NGOs), international organizations (IOs), private industry, consulting firms, and academic institutions. The global expansion of HA/DR operations can be attributed to 1) increased regional ethnic conflicts; 2) urbanization and increased vulnerable populations; 3) changes in the conduct of war; 4) increased numbers of NGOs; 5) increased military involvement in conflict settings; and 6) the "CNN factor" and the role of the media. In this context, the "CNN factor" refers to the power of the media to influence an organization or government to act, whether it needs to or not, to gain attention for desired financial benefit.[6]

DOD ROLE IN HUMANITARIAN ASSISTANCE/DISASTER RELIEF

The DOD supports international HA/DR operations as part of military operations other than war (MOOTW). As defined in Joint Pub 3-07, "MOOTW encompass the use of military capabilities across the range of military operations short of war."[7] Joint Pub 3-07 identifies 16 categories of MOOTW of which Humanitarian Assistance is one. The purpose of humanitarian assistance is to "…relieve or reduce the results of natural or manmade

[4] Maria Kett, "ABC of Conflict and Disaster: Displaced Populations and Long Term Humanitarian Assistance," BMJ, 331 (9 July 2005): 98.
[5] Michael VanRooyen, Raghu Venugopal, P. Gregg Greenough, "International Humanitarian Assistance: Where Do Emergency Physicians Belong?," Emergency Medicine Clinics of North America, 23 (2005): 121.
[6] Ibid., 116-123.
[7] Joint Chiefs of Staff, Joint Doctrine for Military Operations Other Than War, Joint Publication 3-07 (Washington, DC: 16 June 1995), I-1.

disasters or other endemic conditions such as human pain, disease, hunger, or privation in countries or regions outside the United States."[8] There is another type of humanitarian assistance program that falls under a different category of MOOTW called Nation Assistance. This other type of humanitarian assistance program is called the Humanitarian and Civic Assistance (HCA) program. The difference between these two programs is that Humanitarian Assistance is focused on emergency relief, while the HCA program is generally focused on planned activities in accordance with DODDI 2205.2.[9] In addition, the HCA program is required to be conducted in conjunction with other military operations and exercises that must satisfy specific training requirements. The use of the hospital ships for joint, interagency, and multinational humanitarian assistance operations could fall into either of these two categories of MOOTW. Recently, Rear Admiral Gregory A. Timberlake, USJFCOM Command Surgeon, stated that "…as the Global War on Terrorism continues to evolve, military forces continue to work in stability, security, transition, and reconstruction operations, of which, a substantial component of these operations have a medical flavor…."[10] The emergence of "Stability, Security, Transition, and Reconstruction" (SSTR) operations in the lexicon of DOD may signal a shift for the inclusion of Humanitarian Assistance from MOOTW to SSTR.[11]

Numerous factors have increased the U.S. military's involvement in international HA/DR operations. International HA/DR requires a broad range of services which the U.S. military is capable of providing. These services include providing security, especially for aid

[8] Ibid., III-4.
[9] Department of Defense, Humanitarian and Civic Assistance (HCA) Provided in Conjunction with Military Options, DODDI 2205.2 (Washington, DC: 1994).
[10] Jon Cupp, SGT, USA, "Command Hosts Annual Surgeon's Seminar." News from USJFCOM. 15 December 2005. <http://www.jfcom.mil/newslink/storyarchive/2005/pa121505.htm> [21 January 2006].
[11] Department of Defense, Military Support for Stability, Security, Transition, and Reconstruction (SSTR) Operations, DODDI 3000.05 (Washington, DC: 2005).

workers who have become targets of aggression or abduction and have experienced increased mortality.[12] The U.S. military has airlift and sealift capability to handle logistics and enable distribution of food, medicine, and supplies. Due to their advanced technology and communications systems, the DOD is capable of providing a highly organized response for large-scale operations. The end result is that due to international instability, the U.S. military will most likely continue to be involved in a growing number of HA/DR operations.

Each Regional Combatant Commander (RCC) maintains a Theater Security Cooperation Program (TSCP) for the purpose of extending U.S. influence, and developing or strengthening coalition relationships throughout their area of responsibility (AOR). For example, USPACOM's Center of Excellence in Disaster Management and Humanitarian Assistance "…manages capacity building programs in peacekeeping, stability operations, HIV/AIDS mitigation, disaster response, and consequence management."[13] Much of USEUCOM's attention is currently focused on working with the African Union and other regional organizations to promote stability in Africa by assisting with health issues such as HIV/AIDS and "…other diseases that have humanitarian and strategic consequences."[14] Theater plans within USSOUTHCOM involve medical readiness training exercises (MEDRETEs), disaster relief operations, and HCA operations.[15] In USCENTCOM,

[12] VanRooyen et al., 117.
[13] "Testimony of Admiral William J. Fallon, United States Navy, Commander U.S. Pacific Command, Before the SENATE Armed Services Committee on U.S. Pacific Command Posture," USPACOM Speeches and Transcripts. 8 March 2005. <http://131.84.1.218/speeches/sst2005/050308fallon_sasc.shtml> [21 January 2006].
[14] "Statement of General James L. Jones, USMC, Commander, United States European Command, Before the Senate Armed Services Committee on 1 March 2005." USEUCOM Posture Statement. 1 March 2005. <www.eucom.mil/english/Command/Posture/SASC_Posture_Statement_010305.asp> [21 January 2006].
[15] "Operational Overview." US Southern Command Mission. 29 December 2005. <http://www.southcom.mil/pa/Facts/OpOverview.htm> [21 January 2006].

partnerships with many nations have been developed to coordinate projects in Iraq, Afghanistan, and as part of Joint Task Force- Horn of Africa based in Djibouti.[16]

THE NEED EXISTS

Each RCC could include hospital ships as part of their TSCP within their AORs. There is no shortage of need. To understand the scale of assistance already provided by the U.S. to nations in need throughout the world, see Table 1. During Fiscal Year 2004, USAID and other USG agencies (DOD and U.S. Department of Agriculture) funded $3.7 billion in seven countries in Europe, the Middle East, and Central Asia; $1.3 billion in 24 African countries; $34 million in 11 countries in Latin America and the Caribbean; and $11 million in 12 countries in Asia and the Pacific. Funded HA/DR activities included management of primary health care and feeding centers, and airlift of supplies, shelter materials, and food.[17]

USAID, a component of the U.S. Department of State, is the lead federal agency for U.S. international HA/DR. USAID's Bureau for Humanitarian Response and its Office of U.S. Foreign Disaster Assistance (OFDA) coordinate the HA/DR. OFDA is responsible for providing HA/DR in response to international crises and disasters. OFDA was first established in 1964 and since then the office has responded to an average of 50 disasters each year and more than 2,000 individual disaster declarations over the past 40 years.[18]

BENEFITS OF THE HOSPITAL SHIPS

The two hospital ships are both converted super tankers operated by the Military Sealift Command (MSC). MERCY is homeported in San Diego, California and COMFORT

[16] "United States Central Command Combined Joint Task Force- Horn of Africa, In Support of Operation Enduring Freedom." Combined Joint Task Force- Horn of Africa. 16 January 2006. <http//www.hoa/centcom.mil/index.asp> [21 January 2006].
[17] "USAID from the American People: Annual Report for Fiscal Year 2004 Office of U.S. Foreign Disaster Assistance." No date given. <http://www.usaid.gov/our_work/humanitarian_assistance/disaster_assistance/publications/annual_reports/pdf/AR2004.pdf> [20 January 2006].
[18] Ibid.

is in Baltimore, Maryland. Both ships are normally maintained in a five-day reduced operating status (ROS), which means they can be activated and deployed within five days. While in ROS, the manning configuration is comprised of 18 civilian mariners and 58 active duty U.S. Navy personnel. Upon deployment, the manning configuration may consist of up to 63 civilian mariners and 1,214 U.S. Navy personnel.[19]

Hospital ships have two missions. The primary mission is to provide rapid, flexible, and mobile acute medical and surgical services to support Army, Air Force, and Marine Corps Air/Ground Task Forces deployed ashore, and Navy forces afloat. Their secondary mission is to provide mobile surgical hospital services for use by appropriate USG agencies in disaster relief or limited humanitarian care incident to these missions or peacetime military operations.[20]

Considering the increased demand for HA/DR throughout the world, the two hospital ships are underutilized assets. In reviewing the deployment history for both ships since their commissioning (see Table 2), there have been few deployments in support of their primary and secondary missions. Excluding exercises, MERCY has only been deployed three times since its commissioning nearly 20 years ago. COMFORT has been deployed slightly more often than MERCY with six deployments, excluding exercises, since its commissioning 19 years ago.

Hospital ships are more capable, versatile, and mobile than the more commonly used relief organizations' field hospitals. Hospital ships are fully capable upon arrival in theater and do not require any set-up time. Unique capabilities of the hospital ships that are not

[19] "History." History: USNS COMFORT (T-AH 20). No date given. <http://www.comfort.navy.mil/facts.html> [1 February 2006].
[20] "Mission." USNS Mercy/Mission. No date given.<http://www.mercy.navy.mil/htm/Mission.htm> [20 January 2006].

typically present in field hospitals include: 1) 12 operating rooms; 2) surgical specialties such as orthopedic and plastics; 3) blood bank with 3,000 frozen and 2,000 fresh blood units; 4) diagnostic laboratory; 5) radiology services including ultrasound and CT scan; 6) water production facilities; 7) two oxygen producers which can generate 40 gallons per hour; 8) refrigeration; and 9) communications and information technology support including e-mail and web access.[21]

The hospital ships have versatile in-patient bed configurations. They have a maximum 1,000-bed capacity including 80 Intensive Care Unit (ICU), 20 Recovery Room, 400 Intermediate Care, and 500 Minimal Care beds. Combatant Commanders may plan for much less bed capacity and adjust their manning appropriately. Hospital ship mobility is also an advantage as medical care may be provided ashore and afloat, underway or at anchor, and they may relocate from theater to theater as needed.

Possibly, the most significant reason to incorporate hospital ships into HA/DR operations is their strong symbolism of American goodwill. Due to their distinctive bright white hulls with prominent red crosses, the hospital ships provide a presence in an operating area that leaves a lasting impression. This visibility extends American influence overseas in a non-invasive manner and promotes peace and stability in particular regions. An example of this American goodwill took place during the summer of 1998 when COMFORT participated in Exercise BALTIC CHALLENGE '98. This exercise was conducted to improve cooperation among the U.S. and the Baltic nations in peace support operations. BALTIC

[21] John Zarkowsky, "Hospital Ships, T-AH 19 Mercy Class," No date given, Strategic Medical Readiness & Contingency Course #04-30 CD-ROM, Bethesda, MD: Naval Medical Education & Training Command, 19-30 June 2004.

CHALLENGE '98 took place off the west coast of Lithuania and involved 4,600 military personnel, 17 ships and 22 aircraft from the U.S. and 11 European nations.[22]

Medical training and humanitarian assistance were just two of the many objectives of this joint and combined exercise. Of significance, the crew of COMFORT conducted a 230-person mass casualty drill and trained more than 100 medical personnel from the Baltic nations in casualty care. But what the people of Lithuania and their neighboring nations will likely remember most was the extraordinary care and compassion provided by the crew of COMFORT to a 13-year old Lithuanian boy with a brain tumor. The American Embassy sent a request for neurosurgery to COMFORT when the ship was in the operating area. The boy was brought aboard COMFORT, evaluated and prepared for surgery. The tumor was successfully removed and after the boy recovered he returned to Lithuania and to his very grateful family.[23] One can presume that the extensive publicity surrounding this one story had a profound affect on the hearts and minds of the Lithuanian people.

There were many stories of "health diplomacy"[24] during Operation UNIFIED ASSISTANCE. One in particular involved an 11-year old boy with respiratory failure who was found floating in the ocean on a piece of debris by local fishermen more than two days after the tsunami had struck the region. He was initially taken to a camp for displaced persons. An Australian medical team came upon this boy weeks later and found him critically ill suffering from what was termed "tsunami lung." He was transferred to MERCY, placed on a mechanical ventilator, and treated with antibiotics, blood transfusions, and other

[22] "U.S. and 11 European Armed Forces Train for Peace Support in Baltic Challenge 98." DefenseLINK News: U.S. and 11 European Armed Forces Train for Peace Support in Baltic Challenge 98. 30 June 1998. <http:www.defenselink.mil/releases/1998/b06301998_bt333-98.html> [26 January 2006].
[23] Harold Kennedy. "Navy Offers 'Comfort' to Wounded Troops." NDM Article- Navy Offers 'Comfort' to Wounded Troops. June 2001. <http://www.nationaldefensemagazine.org/issues/2001/Jun/Navy_Offers.htm> [26 January 2006].
[24] Thomas Pryor, "Story of Hope," Reflections on Nursing LEADERSHIP, (Fourth Quarter 2005): 27.

medical support. After four weeks, the boy was well enough to return back to the only surviving members of his extended family, an aunt, uncle, and cousin. As expected, the boy's family was extremely grateful for the care provided to this young boy. Pryor (2005) stated that MERCY was initially "…viewed by the Indonesians with suspicion and uncertainty."[25] Hopefully, this and other stories of health diplomacy have helped alter that mentality and provided the foundation to overcome the "political, social, cultural and religious barriers"[26] within the South East Asia region.

DISADVANTAGES OF THE HOSPITAL SHIPS

So far, this paper has discussed the benefits of using the hospital ships for HA/DR operations. Others may argue that there are disadvantages to using them that may outweigh the potential benefits. The disadvantages to be discussed here include force protection (Is it safe?), the financial burden (Who pays for this?), and finding the appropriate manpower (Who and how much is right?).

The safety of the hospital ship and its crew is a major responsibility for the Combatant Commander. Under the Geneva Conventions, hospital ships are protected against hostile fire. *The Commander's Handbook on the Law of Naval Operations* explains the combatant status of medical personnel and the protected status of properly designated and marked hospital ships as:

> Medical personnel, including medical and dental officers, technicians and corpsmen, nurses, and medical service personnel, have special protected status when engaged exclusively in medical duties and may not be attacked. Certain classes of enemy vessels and aircraft are exempt under the law of naval warfare from capture or destruction provided they are innocently employed in their exempt category.[27]

[25] Ibid.
[26] Ibid.
[27] Department of the Navy, The Commander's Handbook on the Law of Naval Operations, NWP-1-14M (Norfolk, VA: October 1995), 8-3, 11-2.

As the lead-up to the Global War on Terrorism made perfectly clear, there are enemy factions in existence that do not recognize the Geneva Conventions. Though the bright white hull with red crosses make it easier for the enemy to identify hospital ships as noncombatants, it also places the proverbial bull's-eye on the side of the ship. The hospital ships are not designed to protect themselves from enemy attack. There are limited small arms on board that are used for internal security and to repel boarders. In the unlikely event that MERCY or COMFORT was seriously damaged from enemy attack, each ship is equipped with lifeboats and rafts. Should either ship come under chemical or biological attack, each are equipped with decontamination showers to minimize the effects of this type of attack. Ultimately, if the threat of attack becomes too great, the ship will expeditiously depart the operating area.[28]

Funding for HA/DR operations, with or without the added financial burden of the hospital ships, is another major responsibility for the Combatant Commander. DOD HA/DR operations may be funded by one or some combination of the following: 1) Overseas Humanitarian, Disaster, and Civic Aid (OHDACA) funds; 2) Navy Operations & Maintenance (O&M) funds during immediate response or under some specific legal authority; 3) The Combatant Commander Initiative Fund; or 4) funds from other agencies. Generally, all costs incurred by the DOD arising from the conduct of HA/DR operations will be reimbursed by the supported federal agency.[29]

The U.S. Navy spends about $15 million per year to maintain both hospital ships; that is $7.5 million per ship. To break that down further, the per diem rate for each ship while in a ROS is about $25,000 per day and is $100,000 per day while in a full operating status

[28] Kennedy.

(FOS) or underway. Items paid for while in a FOS include "…crew costs, fuel, food, consumables, spare parts, port costs (tugs, pilots, berthing fees), maintenance, and MSC overhead costs."[30] Depending on how big a purse one carries, the added cost of operating a hospital ship within an AOR may be seen as a burden.

Finding the appropriate hospital ship manpower for HA/DR operations is a multi-faceted issue. There are several concerns that the Combatant Commander needs to address during the planning stages of the operation. First, due to the cultural and procedural differences that exist between the U.S. military and many relief organizations, the working relationship with an embarked relief organization is a challenge. These differences must be overcome in order to maximize interoperability and unity of effort. As a result of these cultural differences, NGOs may be reticent to participate with the U.S. military because of their concern for neutrality, independence, and impartiality. NGOs perceive a greater level of accessibility, credibility, and safety when they follow these tenets and therefore may be reluctant to participate in or cooperate with U.S. military operations. In addition, the U.S. military and humanitarian relief organizations typically plan operations differently. U.S. military planning "…is generally top-down and the focus of transition is passing responsibility from military to civilian organizations."[31] Humanitarian relief organizational planning is typically bottom-up and promotes coordination and collaboration. Their focus of transition "…is moving from relief phase to recovery and reconstruction."[32]

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[29] Joint Chiefs of Staff, Joint Tactics, Techniques, and Procedures for Foreign Humanitarian Assistance, Joint Publication 3-07.6 (Washington, DC: 15 August 2001), C-1.
[30] White, James J. <james.white@nwc.navy.mil> "Question for you." [E-mail to Maryann Mattonen <maryann.mattonen@nwc.navy.mil>] 16 January 2006.
[31] "Executive Summary Report: Disaster Relief Workshop." Executive Summary Report- drw. 8 May 2005. <https://ares.apan-info.net/QuickPlace/drw/Main.nsf/h_Toc/7B018F93A1E70C2F0A256FFC0009CE17/?OpenDocument> [7 January 2006].
[32] Ibid.

A second manpower issue the Combatant Commander needs to consider regards performance expectations or job descriptions of the embarked relief organization personnel. It is critical that the performance expectations be clearly written in the form of memoranda of understanding (MOUs) in order to prevent misunderstandings or delays in the ability of the organization to participate in providing the appropriate care.

A third manpower issue that needs to be addressed is professional credentialing of the healthcare providers and verification of appropriate skill sets. Professional credentialing for the Project HOPE volunteers for Operation UNIFIED ASSISTANCE was handled through Project HOPE in conjunction with the host hospitals from which the volunteers were affiliated. The Commanding Officer of the medical unit on MERCY reviewed and approved all credentialing files. All embarked volunteers were properly licensed (MD, RN, etc.) and credentialed, however, professional competency and skill sets varied. Professional competency and skill sets of healthcare providers among various medical facilities, civilian and government, are typically not standardized. For example, all U.S. Navy ICU nurses are required to be certified in Advanced Cardiac Life Support (ACLS), but this requirement is not a standard requirement for civilian ICU nurses. In addition, U.S. Navy nurses are required to maintain proficiency in all aspects of intravenous (IV) therapy, but many civilian hospitals have IV Teams that maintain the IV lines for all patients within the facility. The end result is that there is a huge gap in experience level among civilian nurses for starting IV lines on a regular basis.[33]

Finally, the last manpower issue the Combatant Commander needs to consider is right-sizing the crew. After all, more is not always better and in fact, it may be overkill. Depending on the planned bed-capacity, each HA/DR operation can call for up to

approximately 1,200 physicians, dentists, nurses, medical support and logistic personnel to be pulled from their normal duties. During BALTIC CHALLENGE '98, 690 active and 60 reserve personnel primarily from National Naval Medical Center (NNMC) in Bethesda, Maryland, but also from other naval medical commands along the East Coast, were deployed on COMFORT. In order to minimize interruption of hospital services, 400 reservists and 300 contract health care providers were required to backfill the deployed staff at NNMC. Although hospital services were not decreased, the temporary loss of regular staff for this deployment did result in a temporary closure of the galley and a reduction in some administrative functions at NNMC.[34]

RECOMMENDATIONS

The following listed items are recommendations for Combatant Commander and Bureau of Medicine and Surgery (BUMED) consideration:

1. **Planning**- Establish collegial working relationships with other U.S. military services, interagency organizations, and multinational partners and plan now for future deployments. Engage the participants early in the planning of humanitarian assistance operations and work closely with country teams, defense attaches, and ambassadors to plan for appropriate healthcare needs. In addition, a) determine which organizations are interested in and capable of participating; b) develop rosters naming specific individuals in order to save time with the credentialing review; c) ensure specialties are listed on these rosters in order to match individuals for specific missions; and d) determine organizational length of commitment to mission, (e.g., 30 days, 6 weeks, etc.) and procedures for rotation of staff and volunteers within the operating area.

[33] Ibid.

2. **Force Protection**- To enhance shipboard security, consider installation of non-lethal weapon systems on the hospital ships such as the Long Range Acoustic Device (LRAD). The LRAD is a crowd-control and combatant deterrent sonic weapon and was most recently employed by the luxury cruise ship *Seabourn Spirit* to repel pirates while sailing off the coast of Somalia in November 2005.[35] Another non-lethal weapon to consider that is currently under development by the U.S. military is the Active Denial System (ADS). The ADS is a directed-energy (microwave laser) weapon system with a range of one kilometer that when directed at a human target causes an intensely painful burning sensation.[36]
3. **Manpower**- Increase manpower pool with reservists within the medical specialties of each U.S. military service. In addition, offer as a training platform for military and civilians for public health, primary care, preventive medicine, and emergency medicine. Partner with academic institutions (medical, nursing, and public health schools) that offer programs that would benefit from the robust clinical experience that can be gained when engaged in humanitarian activities.
4. **Public Affairs**- Ensure a vigorous public affairs program to promote American goodwill in the operating area and to educate the citizens within the operating area of the mission of the HA/DR operation.
5. Consider this proposal for the current and future versions of hospital ships.

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[34] NNMC Public Affairs. "Navy Medical Team to Deploy for Baltic Exercise." Journal Main Page. 4 June 1998. <www.dcmilitary.com/navy/journal/archives/jun4/j_b6498.html> [26 January 2006].
[35] "Long Range Acoustic Device." Long range acoustic device- Wikipedia, the free encyclopedia. No date given. <http://en.wikipedia.org/wiki/Long_range_acoustic_device> [30 January 2006].
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CONCLUSIONS

The demand for international HA/DR is high. Because "…of the extreme logistical demands and security concerns…",[37] U.S. participation in these relief efforts will likely increase. The two hospital ships are underutilized assets that can be employed for many of these types of missions.

The advantages of using hospital ships for HA/DR operations include their high level of capability, versatility, mobility, and their strong symbolism of American goodwill. This author believes that these benefits outweigh the disadvantages of concerns for safety, financial burden, and manpower issues. One cannot put a price on the value of American goodwill achieved during BALTIC CHALLENGE '98 and Operation UNIFIED ASSISTANCE. Hospital ships are valuable assets to consider in the planning for joint, interagency, and multinational medical missions to benefit the world's potential humanitarian assistance recipients.

[37] Scott R. Lillibridge, CDR, USPHS, Frederick M. Burkle, Jr., CAPT, USNR, Eric K. Noji, CDR, USPHS, "Disaster Mitigation and Humanitarian Assistance Training for Uniformed Service Medical Personnel," Military Medicine, 159 (May 1994): 402.

APPENDIX A

Table 1. FY 2004 OFDA & OTHER USG AGENCY FUNDING				
Country	**Disaster**	**OFDA Aid**	**Other USG Aid**	**Total USG Aid**
AFRICA				
Angola	Complex Emergency	$6,805,825	$86,832,373	$93,638,198
Burundi	Complex Emergency	$11,340,199	$29,897,964	$41,238,163
Chad	Refugee Emergency	$114,000	$61,806,572	$61,920,572
Cote D'Ivoire	Complex Emergency	$652,548	$10,181,512	$10,834,060
Democratic Republic of the Congo	Complex Emergency	$22,395,336	$42,980,796	$65,376,132
Djibouti	Floods	$100,000	0	$100,000
Eritrea	Complex Food Insecurity	$3,431,177	$62,086,694	$65,517,871
	Storm	$50,000	0	$50,000
Ethiopa	Complex Health/Food Insecurity	$21,168,488	$253,958,908	$275,127,396
Guinea	Fire	$50,000	0	$50,000
Kenya	Drought	$300,000	$17,583,700	$17,883,700
Lesotho	Complex Food Insecurity	$352,341	$15,500,000	$15,852,341
Liberia	Complex Emergency	$23,407,527	$49,419,646	$72,827,173
Madagascar	Cyclones & Drought	$679,008	$4,493,400	$5,172,408
Morocco	Earthquake	$787,003	$160,000	$947,003
Namibia	Drought & Floods	$100,000	0	$100,000
North & West Africa	Locust Emergency	$3,678,590	$2,120,330	$5,798,920
Sierra Leone	Complex Emergency	$2,110,802	$13,761,915	$15,872,717
Somalia	Complex Emergency	$4,274,262	$23,550,100	$27,824,362
Sudan	Complex Emergency	$106,547,007	$283,453,265	$390,000,272
Togo	Epidemic	$38,000	0	$38,000
Uganda	Complex Emergency	$8,960,762	$60,952,580	$69,913,342
Zimbabwe	Complex Emergency	$6,674,351	$78,500,000	$85,174,351
ASIA & THE PACIFIC				
Democratic People's Republic of Korea	Accident	$238,933	0	$238,933
Indonesia	Complex Emergency	$1,500,000	0	$1,500,000
	Earthquake	$50,000	0	$50,000
	Explosion	$50,000	0	$50,000
	Floods	$200,000	0	$200,000
Laos	Drought	$150,000	0	$150,000
Nepal	Complex Emergency	$763,997	0	$763,997
Pakistan	Earthquake	$50,000	0	$50,000
Philippines	Landslides	$190,000	0	$190,000
South Asia	Floods	$509,933	$7,704,970	$8,510,550
Sri Lanka	Drought	$100,00	0	$100,00
Taiwan	Typhoon	$50,000	0	$50,000
Vanuatu	Cyclone	$45,000	0	$45,000

Table 1.	FY 2004 OFDA & OTHER USG AGENCY FUNDING- Continued			
Country	**Disaster**	**OFDA Aid**	**Other USG Aid**	**Total USG Aid**
EUROPE, THE MIDDLE EAST, & CENTRAL ASIA				
Afghanistan	Complex Emergency	$9,896,870	$1,223,534,393	$1,233,431,263
	Drought	$50,000	0	$50,000
Georgia	Floods	$50,000	0	$50,000
Iran	Earthquake	$8,461,437	$2,012,285	$10,473,722
Iraq	Complex Emergency	$31,768,009	$2,443,395,170	$2,475,163,179
Romania	Storms & Floods	$50,000	0	$50,000
Russian Federation	Hostage-Taking	$130,230	$747,000	$877,070
Tajikistan	Floods	$50,000	0	$50,000
LATIN AMERICA & THE CARIBBEAN				
Bahamas	Hurricanes	$394,767	0	$394,767
Bolivia	Social Conflict	$50,000	$9,519,000	$9,569,000
Brazil	Floods	$100,000	0	$100,000
Dominican Republic	Floods & Hurricane	$400,000	0	$400,000
Grenada	Hurricane	$1,055,196	$3,664,000	$4,719,196
Haiti	Complex Emergency	$4,294,762	$1,748,700	$6,043,462
	Floods	$569,152	$1,163,909	$1,733,061
	Tropical Storm	$1,558,948	$5,211,704	$6,760,652
Jamaica	Hurricane	$705,712	$3,504,406	$4,210,118
Nicaragua	Floods	$78,545	0	$78,545
Panama	Floods	$50,000	0	$50,000
Paraguay	Fire	$50,000	$222,000	$272,000
Peru	Winter Emergency	$50,000	0	$50,000

Adapted from "USAID from the American People: Annual Report for Fiscal Year 2004 Office of U.S. Foreign Disaster Assistance." No date given. <http://www.usaid.gov/our_work/humanitarian_assistance/disaster_assistance/publications/annual_reports/pdf/AR2004.pdf> [20 January 2006].

APPENDIX B

Table 2. DEPLOYMENT HISTORY			
USNS MERCY (T-AH 19)		**USNS COMFORT (T-AH 20)**	
1987	CIVHUM Mission to Philippines	1990	Operations DESERT SHIELD/ DESERT STORM
1990	Operations DESERT SHIELD/ DESERT STORM	1994	Operation SEA SIGNAL
1995	Exercise KERNEL BLITZ	1994	Operation UPHOLD DEMOCRACY
1997	Exercise KERNEL BLITZ	1996	Comfort Exercise (COMFEX 96-3)
1999	Exercise KERNEL BLITZ	1998	Exercise BALTIC CHALLENGE 98
2000	“Show the Flag” South America	1999	“Show the Flag” Armed Forces Day NY
2001	Exercise KERNEL BLITZ	2000	“Show the Flag” Comfort 2000
2005	Operation UNIFIED ASSISTANCE	2000	“Roving Sands”
		2001	Operation NOBLE EAGLE
		2002	Rescuer/MEDCEUR 02
		2003	Operation IRAQI FREEDOM
		2005	Hurricane Katrina

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