

# Sister Services

## First To Aid: USNS MERCY (T-AH 19) and USNS COMFORT (T-AH 20) Deploy to the Persian Gulf

CAPT Roger J. Pentzien, MC, USN\*

CAPT Paul D. Barry, MC, USN\*

*As dotted satellite images moved across the border of Iraq into Kuwait on Aug 2, 1990, allied forces soon came together under the umbrella of United Nations Resolution 660 to demand the removal of Iraqi troops and tanks from the small oil rich nation. Berthed in Oakland and Baltimore, the 1,000-bed hospital ships Mercy and Comfort, respectively, mobilized on Aug 9, 1990, deployed within their 5-day reduced operating status (ROS-5), transited the Pacific and the Atlantic and arrived on station in the Persian Gulf almost simultaneously in early September. Following their arrival, with boredom as their constant companion, the ships' companies assumed an additional mission: to serve as echelon III medical treatment facilities (MTFs) to troops that eventually numbered more than one-half million. Collectively, the T-AH platforms afforded the potential for state-of-the art trauma care.*



**Figure 1.** The T-AH design involved the modification of San Clemente Class tankers.



**Figure 2.** Wing tank configuration, as converted, permitted them to be ballasted to provide optimum sea-keeping and stability characteristics—USNS COMFORT under sail enroute to the Persian Gulf.

Since the end of the Vietnam War and prior to 1986, the Navy had no afloat medical facilities specifically designed to provide up-to-date medical and surgical care to deployed fleet units, Marine task forces or other armed forces requiring rapid mobilization to meet world crises. As a result of the lack of dedicated afloat medical capability, the Chief of Naval Operations approved requirements for two hos-

\*Bureau of Medicine and Surgery, Washington, DC 20372-5120.

Photo credits: HM1 Bill Williams and HM2 Thomas Balfour USN; both are assigned to the Naval School of Health Sciences (NSHS), Bethesda, MD 20889-5000.

pital ships known as the T-AH 19 Class. These ships are USNS Mercy (T-AH 19) and USNS Comfort (T-AH 20).

The quickest and most economical way to provide this capability was by converting relatively new existing ships. The Navy decided to modify two 894-foot San Clemente Class tankers, which could easily be outfitted to provide ample volume for installing the hospital, its support facilities and habitability units (Fig 1). These tankers also provided adequate range, sustained speed and hull stability characteristics (Fig 2). The Naval

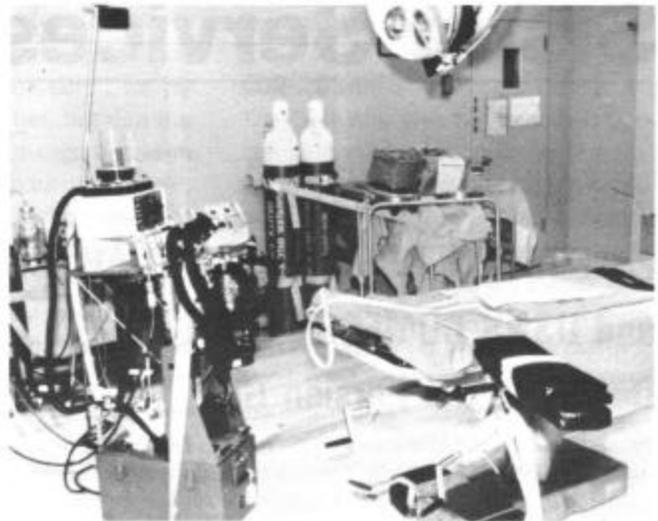
Sea Systems Command directed the conversion, which required a design conforming to commercial shipbuilding, US Coast Guard Passenger Ship and American Bureau of Shipbuilding standards.

### Background

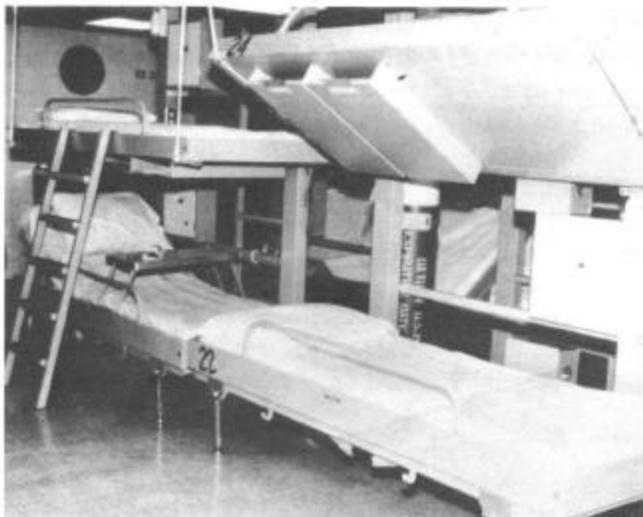
The hospital ship concept of operation calls for the Military Sealift Command to manage the platforms. Each is run by a civilian master and crew, responsible for the safety, external communications and operation and maintenance of all major and auxiliary



**Figure 3.** Receiving patients suffering from wounds, disease or non-battle injury primarily by helicopter.



**Figure 4.** One of the twelve spacious, modern operating rooms aboard the T-AH platform.



**Figure 5.** Sixteen wards comfortably accommodate patients.



**Figure 6.** Fueling at sea (FAS).



**Figure 7.** Receiving cargo by Vertical Replenishment (VERTREP) maximizes sustainability at sea.



**Figure 8.** Slightly less than 34,000 laboratory tests were completed on board MERCY and COMFORT during operations Desert Shield and Desert Storm.

machinery systems, including damage control and refrigeration. The deployed Medical Treatment Facility (MTF) is managed by the Bureau of Medicine and Surgery, commanded by an officer of the Navy Medical Corps and manned by a crew of approximately 1,200 men and women.

During peacetime, the ships are normally in a reduced operating status (ROS), maintained by cadre crews of about 45 military and 15 civilian mariners. These crews keep the ships in a high state of readiness, capable of reaching full operating status (FOS) within five days after notification to activate and deploy. This ability was clearly demonstrated during the ships' short notice deployment to the Persian Gulf in support of Operations Desert Shield/Storm.

Both ships are unarmed and may be operated only as hospital ships in order to receive protection afforded by the Geneva Convention.

### Mission

The primary mission of the T-AH platform is to provide a mobile, flexible, rapidly responsive afloat medical

capability, giving acute medical and surgical care in support of amphibious task forces, Marine Corps, Army and Air Force elements, forward deployed Navy elements of the fleet and fleet activities located in areas where hostilities may be imminent. The secondary mission of the T-AH is to provide a full service hospital asset available for use by other Government agencies involved in support of disaster relief operations worldwide.

In support of the primary mission, the hospital ships are capable of the following major required operational capabilities (ROCs):

- Providing a safe, stable, mobile platform for carrying out the assigned mission.
- Receiving patients suffering from wounds, disease or non-battle injury, primarily by helicopter and boat while anchored or underway (Fig 3).
- Providing surgical, medical and psychiatric care to patients until they are returned to duty or evacuated to other overseas (echelon IV) facilities or to the continental United States for further treatment and rehabilitation (echelon V).

- Providing 12 operating rooms and 1,000 beds, which include 80 for intensive care, 20 for post-anesthesia (recovery) care, 280 for intermediate care, 120 for light care and 500 for limited care (Figs 4 & 5).

- Capability for fueling at sea (FAS) from other ships (Fig 6).
- Capability for receiving and delivering dry cargo (supplies, provisions) by vertical replenishment (VERTREP) connected replenishment (CONREP) or by boat (Fig 7).

Each ship also has two dental surgery suites, four dental examination rooms, a dental prosthetics laboratory, a lens fabrication facility, a main laboratory, a satellite laboratory and blood bank, four complete radiology suites, a

*Captain Roger J. Pentzien, MC, United States Navy, served as Director, Medical Services, National Naval Medical Center, Bethesda before assuming duty as Commanding Officer, Medical Treatment Facility, USNS COMFORT (T-AH 20). He is also an Associate Professor of Clinical Psychiatry, F. Edward Hebert School of Medicine, Uniformed Services University of the Health Sciences, Bethesda, MD.*

*Captain Paul D. Barry, MC, United States Navy served as Director, Community Health Care, Naval Hospital Oakland, California before assuming duty as Commanding Officer, Medical Treatment Facility, USNS MERCY (T-AH 19).*

CT-scanner, pharmacy and a physical therapy suite with full body and extremity immersion tanks.

Conserving the fighting forces' strength is clearly the primary goal. This goal is ultimately achieved while maintaining a very positive contribution to high morale and promotion of the individual's willingness to fight. By establishing a visibly creditable medical system from Battalion Aid Station (echelon I) to Combat Clearing Station (echelon II) to Fleet Hospital and Hospital Ship (echelon III), and by ensuring timely and efficient evacuation, maximal preservation of life and limb was assured.

### Deployment

When the ships received the call to activate, FOS crew members began augmenting the MTFs from Naval hospitals, medical and dental clinics and other shore and afloat commands throughout the United States and the world. In all, more than 200 medical and line commands were eventually represented on the two platforms.

With their deployment, the two ships embarked on what was to be an 8-month mission. Recalled reservists played a key role in manning *Mercy* and *Comfort*, as did embarked surgical teams from Canada and Australia, respectively.

While deployed, the ships traveled over 60,000 miles and consumed almost six million gallons of fuel. Together, the ships saw nearly 16,000



Figure 9. Of the 2,600 radiologic studies completed, nearly 300 were CT-scans.

outpatients and admitted over 1,400 patients, including four sailors injured in a high-pressure steam leak on the *USS Iwo Jima* and eight soldiers from an army transportation company who accidentally ingested methanol.

More than 600 surgical procedures were performed on the MTFs, ranging from arthroscopies to complex neurosurgery. Not a single patient developed a post-operative complication on either ship. Other notable benchmarks on the two platforms included over 4,700 safe helicopter events, nearly 14,000 prescriptions filled, slightly less than 34,000 laboratory tests completed, 3,000 eyeglasses made, 1.6 million meals served and 2,600 radiological studies performed, including almost 300 CT-scans (Figs 8 and 9).

In Nov 1990, *Comfort* participated in operation Imminent Thunder, an amphibious exercise conducted in northern Persian Gulf waters. During Operation Desert Storm, *Comfort* was positioned in close proximity to Kuwait, just off the coast of Saudi Arabia near Khafji. Following six weeks (42 days) of allied bombing, Iraqi troops surrendered by the tens of thousands when coalition forces rolled like thunder into Iraq and Kuwait. The shooting ended 100 hours after the ground campaign began. Just prior to completing operations in the Persian Gulf, *Mercy* received the 21 American and two Italian prisoners of war released by the Iraqi government for initial medical treatment and evaluation.

### Redeployment

During the second week of March 1991, the two ships set out to redeploy to their home ports on opposite coasts of the United States. They arrived home in mid-April and returned to ROS-5—“Charlie, Golf, One”—Standing By and Always Ready to Assist (Fig 10).

### SUMMARY

What began in the heat of early August had stirred up perhaps the greatest military machine in history. Every member of the United States

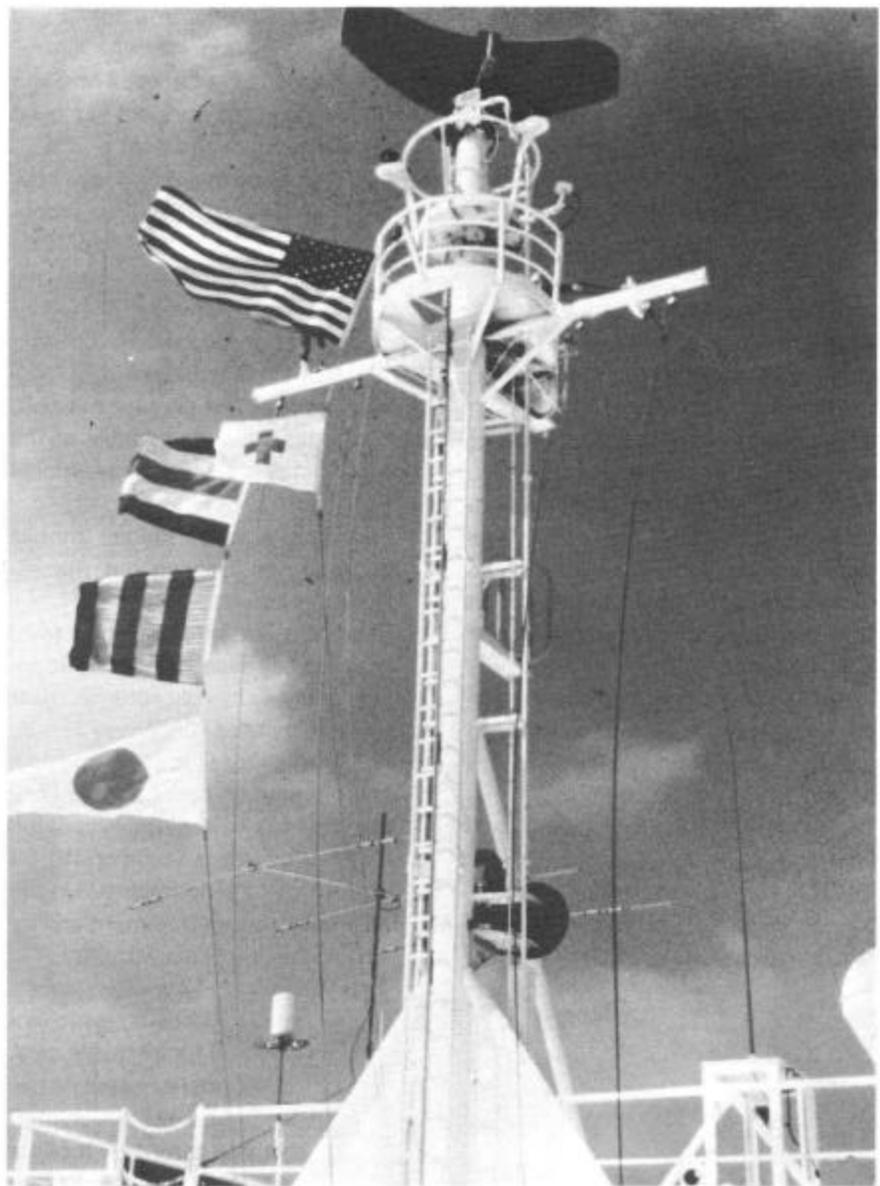


Figure 10. “Charlie, Golf, One”—Standing By and Always Ready to Assist.

military was a volunteer, and in the front ranks were women as well as men. This was one of the best trained and motivated forces ever assembled. With “a line drawn in the sand,” the Iraqi invasion was not to be tolerated despite Iraq’s allegedly having one million battle-hardened men under arms, plus 500 combat aircraft and 5,500 tanks. Activating *Mercy* and *Comfort* quickly brought into the area of responsibility (AOR) combat medical facilities second to none.

While early projected casualty estimates ranged between 300 and 30,000, the end of Desert Storm

saw 379 American men and women who had left home in service of their country not return. As we continue to honor those that did not return, so too we honor those who still serve in the Gulf. As we continue to compile and analyze the “Lessons Learned” from both Desert Shield and Desert Storm, we can be thankful that the full capabilities of the T-AH platforms were never tested. And as we look to the future, we must remain ready: the number one mission of a military medical department is to support and conserve the fighting strength of our nation. ●