

Articles

Experience of the 31st Combat Support Hospital in Operation Desert Shield and Desert Storm: A Commander's Story

Col William R. Smith, Jr., MC*

Lt Col Philip Lisagor, MC**

The purpose of this paper is to describe the mission of the 31st Combat Support Hospital from predeployment through deployment and redeployment during Operations Desert Shield and Desert Storm. The issues discussed will focus primarily on command and control of the unit's deployment and not on the medical mission.

On Aug 2, 1990, the military forces of Iraq invaded the Kingdom of Kuwait. In short order, they were able to overtake the defending forces of Kuwait and establish a defensive posture in that country and an offensive deployment of their Republican Guard Forces in southern Iraq.

As a result of this incursion, President Bush sent elements of the 82nd Airborne and the 24th Infantry Divisions into northern Saudi Arabia to thwart any potential plans for movement into that country by the Iraqi forces. Over the next few months, additional combat, combat support and combat service support personnel and equipment would be sent into Saudi Arabia as part of Operation Desert Shield. Included in the over 500,000 US troops were several hospitals, including the 31st Combat Support Hospital (CSH) based at Nellingen Barracks in Stuttgart, Germany.

During this deployment, the normal 200-bed (302 personnel) Deployable Medical System Hospital (DEPMEDS) was expanded to 372 beds and 488 personnel by personnel and equipment elements of the National Guard 115th Mobile Army Surgical Hospital (MASH) from Washington, DC, and the reserve 345th CSH from Jacksonville, Fla.

Hospital History

The present-day 31st CSH was constituted Jan 1, 1938 in the Regular Army as the 31st Surgical Hospital. On May 31, 1943 it was redesignated as the 31st Portable Surgical Hospital and activated on June 7, 1943 at Bushnell General Hospital in Brigham City, Utah. During WW II, the hospital supported combat operations in the Northern Solomons and Luzon and was awarded a Philippine Presidential Unit Citation with a streamer embroidered Oct 17, 1944 to Jul 4, 1945. After inactivation on Nov 5, 1945 it underwent additional name changes including the 31st MASH, 31st Surgical Hospital, and then finally, on Dec 29, 1972 the 31st CSH. The core Hospital was last based at Nellingen Barracks, under the operational control of the 30th Medical Group at Flak Kaserne in Stuttgart.

The 115th MASH and 345th CSH, both had similar name and location changes throughout their history. It is noteworthy that their deployment to Saudi Arabia represents a first campaign participation credit.

Pre-Deployment

On Nov 9, 1990, the 31st CSH was notified of a deployment order to Saudi Arabia as part of the medical support team for the VII Corps. At that time, the unit was at an Authorized Level of Organization (ALO) of 8.

This represented a significant inherent lack of preparedness for that mission, as an ALO 1 is 100%, an ALO 2 is 90%, and an ALO 4 is approximately 70% prepared for deployment. The unit was commanded by a captain in the peacetime posture and included only 92 assigned personnel with Mobile Unit Self-Transportable (MUST) equipment.

The Modification Table of Organization and Equipment (MTOE) of a DEPMEDS CSH is designed to have an O-6 (full colonel) commander and 302 personnel. It is also characterized by a different equipment and personnel package than the MUST system.

As a result of this mission assignment, a rapid upgrade, augmentation and equipment change had to be accomplished. This included augmentation of personnel from 7th Medical Command (7th MEDCOM) units in cooperation with the 1st Personnel Command. In addition, because the modernization of the unit for the desert environment demanded the DEPMEDS hospital configuration, a turn-in of the MUST equipment coupled with issue of and training on the DEPMEDS equipment had to be accomplished.

The DEPMEDS training at Germersheim, Germany, for core hospital personnel started on Nov 21, 1990 and was accomplished in one week instead of the normal three week course. During this period, a turn-in

*Chief, Department of Orthopedic Surgery, William Beaumont Army Medical Center, El Paso, TX 79920-5001.
**Brook Army Medical Center, Ft Sam Houston, TX 78234.

of the MUST and acceptance of the DEPMEDS equipment occurred. Furthermore, some augmentees arrived during this time frame, including the commander, chief nurse and executive officer, and were able to participate in this process.

The issued DEPMEDS set was not complete and lacked essential items such as ventilators, radiographic and laboratory units and reagents. Therefore, the reception, rail loading and shipping had to be done with requisition of a "ship-short" package from Ogden, Utah utilizing the DEPMEDS fielding team so that the short timeline for the deployment could be met. However, this would eventually result in a mission-ready hospital.

The issue, functional packing and rail loading of the DEPMEDS set was accomplished at the Rhine Ordnance Barracks near Kaiserslautern, Germany. The equipment was placed in military vans (milvans) and ISOs (a functional modular van for the two operating rooms, two central material services, a laboratory, a blood bank, an x-ray and a pharmacy) for the rail loading (Figs 1 & 2).

During this period, the Hospital Commander directed that certain augmented key personnel such as the anesthesia staff, chief nurse, executive officer, deputy commander for clinical services (DCCS) and operating room chief be allowed access to the equipment. This facilitated accurate identification of essential and useful equipment for all sectors of the hospital and incorporation of any practical shortcomings of clinical relevance in the equipment sets from the MUST set. All shortcomings were identified as part of the "ship-short" package and all equipment was packed in the milvans of ISOs during packing and rail loading for shipment.

The physicians and nurses started preparing for the deployment by participating in a Chemical Combat Casualty Care (C-4) course over two and one-half days at Neubruecke, Germany. The course was sponsored by 7th MEDCOM and was conducted on Dec 15

to 16, 1990. Simultaneously, many were familiarized with the prospect of working in a DEPMEDS hospital. Very few of them had ever seen a DEPMEDS hospital and were, therefore, unfamiliar with it. However, as their enthusiasm for the chemical course was heightened due to the uncertainty of the Gulf situation, so too was their eagerness to accomplish the mission in the DEPMEDS hospital.

On Dec 4, 1990 the hospital commander was officially attached as commander of the 31st CSH. By the actual deployment date of Dec 26 the assigned and attached strength was 212. The fielding, training and rail

loading of the hospital had been accomplished in just three weeks, compared to a normal training and fielding period of four months. A truly stupendous job with incredibly high morale was done by the 31st CSH in a very short time frame.

Deployment

As previously mentioned, 212 personnel, including the commander, two other physicians (DCCS and chief of medicine), a nurse (assistant chief nurse) and a physician assistant for the unit medical support were flown from Stuttgart to Dammam, Saudi Arabia, on Dec 26, 1990. This included most of the enlisted personnel eventually attached or assigned to the hospital. The physicians and nurses other than those mentioned were to deploy at a later date. Two chaplains were also included to provide spiritual and morale support for the deployment. The deployment date had been set so that we would arrive by air at the same time as the projected seaport arrival of our equipment and life support. To our inconvenience, this did not happen. Furthermore, upon arrival and housing in Warehouse 16 at Damman, we discovered that our equipment and life support (tents, communications equipment, rolling stock, heaters) would arrive at various times in the future and on six different ships instead of the one which we had been assured would carry all our supplies.

This led to the first big challenge of the deployment. Due to the large numbers of personnel and equipment arriving at the port of Dammam continuously, we could not be housed in the warehouse until the arrival of our equipment. We were directed to leave the port for Tactical Assembly Area (TAA) Roosevelt within 72 hours regardless of the lack of life support equipment. Assurances were given that logistical support, including tents, heaters, water and Meals-Ready-to-Eat (MREs) would be available at logistics base A (logbase A) near our TAA. Despite the obvious potential

Colonel William R. Smith, Jr, MC obtained his BS degree in biology from Central State University in Wilberforce, Ohio in 1968, a PhD in biophysics from the University of Illinois in Urbana, Ill. in 1972, and an MD degree from Harvard University in Boston, Mass. in 1978. He received a commission in the Army in 1968 from Central State University. His internship and residency training in Orthopaedic Surgery was at William Beaumont Army Medical Center in El Paso, Texas between 1978 to 1983. Since then, he has served in the following positions: Staff Orthopaedic Surgeon, Frankfurt Army Regional Medical Center; Deputy Commander, Clinical Services, Bremerhaven MEDDAC; Chief, of Orthopaedics, Ft. Benning; Staff Orthopaedist, Joint Task Force Bravo in Honduras; Surgical Consultant for 7th Medical Command; Chief, Department of Surgery, 130th Station Hospital, Heidelberg; and most recently as Commander of the 31st Combat Support Hospital during Operation Desert Shield and Desert Storm in Saudi Arabia. He is presently assigned to the teaching staff of the Department of Orthopaedics at William Beaumont Army Medical Center, El Paso, Texas.

Lt Col Phillip Lisagor, MC obtained his BS degree in chemistry from the University of Illinois, Ill. This was followed by graduate work in chemistry and a MD degree from the University of Chicago. He did his internship training at the University of New Mexico, and a surgical residency at the University of California, East Bay Campus, Highland Hospital. He has been an attending surgeon at the Reno VA University of Nevada and in private practice in rural California. His military assignments were as follows: Staff Surgeon, 352nd Evacuation Hospital, USAF, Oakland, Calif; Consultant to a US Aid Project training Afghani Mujahdeen; and Chief of Surgery, 45th Field Hospital, Vicenza, Italy. He was the Deputy Commander for Clinical Services and Chief of Surgery at the 31st Combat Support Hospital during Operations Desert Shield/Storm. Presently, Doctor Lisagor is a surgeon with Brooke Army Medical Center, Fort Sam Houston, Texas.

negative impact on unit morale, morale remained high due to rapid information dissemination and outstanding NCO work.

On Dec 30, 1990, 122 of us left Dammam in buses with personal gear, cots, water, MREs and TA-50s on military trucks (S&Ps) in a convoy. Ninety personnel were left in port to secure and convoy our equipment and life support upon its arrival. Despite losing contact with one of the buses during the convoy, we arrived near the TAA on Tapline Road on the morning of Dec 31, 1990 after a nearly 350km ride. It was a surprisingly cold bus ride even with sleeping bags in our possession.

Upon arrival at the location near logbase A, we had problems as the 127th Medical Group, our higher headquarters, was not able to help us with tentage. We were, however, eventually able to secure lodging in the 2nd Combat Support Command's (COSCOM) convoy reception station which was a well-established compound with tentage and a nearby laundry and bath unit.

During the next week we were given the coordinates of our TAA, acquired a sufficient number of tents for our personnel on loan from the 30th Medical Group, and were introduced to "St. Elsewhere City." The "city" was marked by a suitcase and flat stretch of desert approximately two miles east of the 127th Medical Group Compound and represented the base cluster area. After site establishment by the advance party at the TAA, the main body moved there in one week. The movement of personnel and equipment was done by utilizing the civilian buses and military S&Ps of the convoy, despite their protestations and desires to return to Dammam. By keeping them with us, we were able to move our personnel and equipment to the TAA.

The quick mass deployment created great problems in regard to obtaining logistical support. Through dogged insistence and aggressive pursuit of options, we were able to secure a pick-

up and a 2½-ton truck early at the TAA to allow for logistical trips for life support, establishing of class accounts, and for daily command meetings at the 127th Medical Group and 2nd COSCOM.

Since this was not a routine field problem, camp establishment had to be accomplished while classes were being given to the enlisted personnel on basic trauma, life support, CTT, chemical casualty care, field sanitation, protective mask maintenance and bunker construction. Communication with higher headquarters and with the rear party was an arduous task. Even the establishment of a land line field phone was a complicated task.

The physicians and nurses arrived in Dammam on Jan 10, 1991 and at TAA Roosevelt on Jan 12. They had an in-briefing and were immediately included in training for tent erection, bunker preparation, MOPP and protective mask training and maintenance, review of chemical casualty care, trauma management and combat skills training including escape from tents, low crawling and litter bearing. They did all of this enthusiastically and cooperatively. The surgeons, with the supervision of the DCCS, participated in a trauma management symposium which was the model for other units then moving into TAA

Roosevelt as part of the base cluster.

Shortly after the arrival of the physicians and nurses, the first convoy from the port party arrived with the milvans and ISOs of equipment and rolling stock from Dammam. After unloading the milvans from the S&Ps with proper placement on the perimeter of the compound, a functional repacking was performed. Each hospital section was able to repack their equipment in identified milvans in a down-loaded posture in preparation for the next phase of the deployment-movement to the Forward Assembly Area (FAA). The arrival of life support, communications and rolling stock enabled a significant equipment expansion of the compound in tentage, storage capacity and medical support.

Our mission was to establish a base cluster with other CSHs and MASHs in the TAA in a downloaded position. Upon receiving an execution order, we were to move to an FAA, erect the hospital and support the maneuver units of the coalition forces. Throughout the stay in TAA Roosevelt, efforts were made to solidify coordination with the 428th Medical Supply and Optical Maintenance (MEDSOM) for medications, medical equipment and "ship-short" items. Our pharmacy and physician staff established a template for "push packages" of



Figure 1. Equipment and supplies loaded for transport to SWA.

trauma medicine and supplies for delivery on an as-needed basis. In addition, coordination for blood re-supply and the acquisition of ventilators was accomplished.

It was during this time that our chain of command was finally established after several shifts in personnel and units. The chain of command was the 127th Medical Group, the 332nd Medical Brigade, 2nd COSCOM, and then VII Corps. The 332nd Medical Brigade was a reserve unit from Nashville, Tenn, with a Brigadier General commanding. It represented the highest level of our chain of medical command in the Corps. The command structure of the 332nd Medical Brigade eventually included key active duty staff members from the 30th Medical Group as the S-1 through S-4 staff.

The stay in TAA Roosevelt resulted in a few key issues which were addressed. The verbal and nonverbal anxiety in many personnel took various forms. Of significance were complaints about the "M&Ms" of morale-meals and mail-and concerns about bunker preparation, safety and security. After relying on another unit (507th Air Ambulance Company) for one hot meal per day for approximately one week, the Mobile Kitchen Trailers arrived and were powered, enabling us to provide two hot meals

per day. This was a very welcome change for most of the soldiers from their MREs.

A problem beyond our control was that of mail. The APO number changed three times. This resulted in inconsistency and the absence of mail for many soldiers, which obviously engendered significant anxiety and ridicule from the other soldiers.

The construction of bunkers was another source of anxiety. The enlisted soldiers were eventually given "days off" of routine work and training to finalize bunker construction which solved the problem.

The biggest challenge for the 31st was presented by the 332nd Medical Brigade command staff after a regularly scheduled briefing three days before movement to the FAA. There were some significant concerns lodged by the command structure of the 115th MASH with reference to their mission preparedness. As a result, a plan was devised to send personnel from their hospital to other units for shortages and to supplement the 31st with the remaining personnel. In addition, the 345th CSH was converted to a MASH, resulting in 53 of their personnel being added to the 31st. This resulted in a total 31st CSH unit size of 489 personnel as of Jan 25, 1991. The mix of nurses and OR per-

sonnel would eventually enable us to efficiently staff and operate a 372-bed, forward deployed "fat" CSH.

This unique additional mission presented a significant challenge because of morale and unit identification problems. However, our approach was direct and aggressive. Given the disillusionment of the unit personnel with reference to mail and life support concerns and, for many, a third or fourth unit change, they were at times rather anxious and concerned. We went directly to them and in open forums attempted to demonstrate honesty in answering tough questions and concerns relative to their safety and life support. The concept of "oneness" at the 31st CSH was emphasized through both the officer and NOC chain of command and by several formations as one large hospital. We also emphasized that living quarters would be mixed since separation into three different camps within the same perimeter would not be tolerated.

Probably the most important aspect of the formation of one unit was that the three days prior to movement to the FAA were filled with intensive training in basic soldiering and survival skills, NBC defense, patient decontamination, ATLS and mission readiness. This also included erection of segments of the hospital *Temper* (coverage) with the participation and cooperation of both officer and enlisted personnel. This greatly expanded our flexibility for the eventual mission and allowed everyone to become familiar with the *Temper*. Many of the personnel had never seen a DEPMEDS hospital, much less worked in one. This also facilitated familiarity with peers and reinforced the concept of one unit in preparation for the movement to an uncertain situation in a combat environment. It allowed the personnel to bond with each other for reasons of security and in choosing eventual tentmates as part of the concept of unit mixture. It was of significant credit to all of the officers and enlisted soldiers and chain of command that the sense of "oneness"

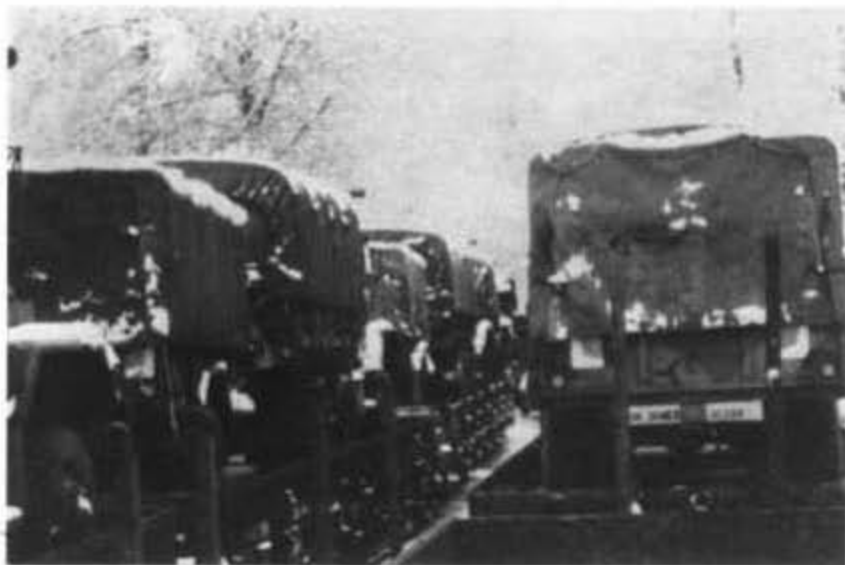


Figure 2. Equipment and supplies loaded for transport to SWA.

was achieved and the "Total Army Concept" worked extremely well. It simply took commitment, concern and cooperation by the entire chain of command under such an air of uncertainty.

Forward Assembly Area

Given only three days to assimilate three different units into a cohesive unit, we moved from the TAA in an echelon pattern. A 64-vehicle convoy was used in the first move of equipment and personnel, and 32 vehicles were used in the second move. This included all of the milvans and ISOs of life support equipment and rolling stock intrinsic to the 31st CSH, plus that acquired from the 115th MASH and 345th CSH. The movement plan was performed in six phases. Phase I involved preparation with equipment and personnel prioritization, milvan load plans, advance security party, staking of the hospital and command and control. The remaining phases involved reconnaissance of the new site, disestablishment of the TAA, movement, re-establishment in the FAA and conduct of the mission.

The hospital movement required approximately 55 S&Ps and a Rough Terrain Cargo Handler (RTCH) for the loading and unloading of the milvans (Fig 3). The commitment of these resources for the move required high level command involvement since we did not enjoy high priority. They were obtained only through persistence and elevation to the 2nd COSCOM level. It was not an easy task when viewed from the user level. In fact, once the loaded S&Ps arrived in the FAA, a return to the TAA was necessary to escort a different RTCH to the FAA to facilitate unloading of the waiting, uploaded milvans and ISOs. The RTCH in the TAA was not available to us for use in the FAA. This is stated only to emphasize the difficulty encountered in completing the mission when in competition for the movement assets required for a DEPMEDS hospital set. The hospitals were lower on the priority listing for the RTCH

and S&P assets.

The FAA was located approximately 12 miles north of Tapline Road and approximately 25 miles south of the Iraq-Kuwait junction on Main Supply Route "black." It was a forward-deployed position for this "fat" CSH in Medical Center East, approximately 100 miles northwest of the TAA. In this position to the right of the medical support theater for VII Corps units, we were in direct support of the "breaching" operation through Iraqi lines by the 1st Infantry Division and the 1st United Kingdom Infantry Divi-

sion. It was anticipated that the greatest number of casualties might occur there and we would be in support of that mission.

Once the first convoy arrived, a rapid establishment of the living quarters and the hospital began. Due to enthusiasm, cooperation and high unit morale, the hospital was fully erected in four days and operational in five (Figs 4-6). This was a significant feat given the 7- to 8-day estimates to accomplish the task suggested by higher command. The opening ceremony for the hospital occurred



Figure 3. A Rough Terrain Cargo Handler.



Figure 4. Aerial view of the 31st Combat Support Hospital.

on Feb 18, 1991 and the ground war started on Feb 24. At the start of the ground war, a 372-bed DEPMEDS hospital with four ISO operating rooms and seven operating tables had been erected and staffed. We had finally acquired all of the "war-stoppers" such as blood, ProLife 105 ventilators, blood typing reagents and oxygen, and were mission-ready.

A description of the medical mission of the hospital will be described more extensively in another article. It should be mentioned here, however, that 211 inpatients (101 US, 10 British,

and 100 enemy prisoners-of-war) and 295 outpatients were treated during the operation of the hospital. There were 71 anesthetic episodes with multiple operations per episode performed. Over 60% of the episodes occurred during a 48-hour period from Feb 25-27, 1991, when the seven operating tables were utilized continuously day and night. The brevity of the war and lack of the predicted large volumes of patients made this a suboptimal test of the DEPMEDS hospital. With the volume ventilators and four respiratory therapists, we

were able to evacuate patients on ventilators and thereby minimized our holding time. With the ProLife 105 and Bear 33 ventilators, rapid evacuation of ventilator-dependent patients was both practical and manageable.

Furthermore, with the smaller volume of patients, triage decisions resulted in no expectant categories. Therefore, all patients received maximal resuscitative efforts even with head injuries. If the volume had been greater, such an easy pyramid of decisions may not have been possible.

Special credit must be given to the Reserve and National Guard augmentees to the 31st CSH. It must be noted that, at every level and position, both officer and enlisted, they added to our mission capability. They provided us with outstanding physicians, field sanitation, respiratory therapy, operating room and ward nursing and technical personnel, medical maintenance, logistics, motor pool support, patient administration and medical regulating personnel. They greatly enhanced our readiness posture and helped prepare and sustain us throughout the deployment and medical mission. Furthermore, the addition of both active duty and reserve physicians (general surgeons and senior NCOs), as individual augmentees from CONUS, greatly enhanced the completion of the medical mission. The hospital closed on Mar 4, 1991.

Rear Assembly Area (RAA)

Upon completion of the medical mission, we convoyed in several groups back to the RAA and relocated with all of the units under the 332nd Medical Brigade. This represented probably the most difficult period in terms of maintenance of unit morale and cohesiveness, and significantly tested the leadership of the officer personnel. In the RAA, the general sense that the mission was complete and that it was time to return to Europe or CONUS, was prevalent. It was a period of uncertainty and anxiety about rumors of other missions to



Figure 5. The 31st Combat Support Hospital receiving patients.



Figure 6. H₂O system of the 31st Combat Support Hospital.

Kuwait or Iraq, and it was a challenge to maintain a sense of necessity for the downloaded posture.

Concerns for rumor control, leadership imperatives and unit morale were especially challenging. When rumors surfaced dealing with impending re-deployment, availability or unavailability of creature comforts, uniform disparities from unit to unit, and concerns of reservists for the necessity of their retention surfaced, it was especially challenging for command to maintain high morale.

Our approach to these issues was through commander's tent rounds in which the command staff visited the tents to address issues affecting the soldiers. Fortunately, this approach helped to control the morale problems and minimized our problems as compared to those of other units. Despite the problems encountered, the attendance of our physician and nursing staff at after-action reviews by specialty was universally favorable. It meant that most things had been done well. The redeployment to Europe and CONUS, first by the physicians and nurses and then by the main and rear bodies, occurred in late April with conclusion of the mission to Saudi Arabia.

CONCLUSIONS

This mission was unquestionably a success, as was the entire liberation of Kuwait. However, it must be noted that the deployment and medical mission of the 31st CSH succeeded because of the unquestionably high quality of soldiers. They made it work and maintained high morale in the face of significant adversity of the logistical support system. The DEPMEDS hospital worked despite profound problems of support and mobility.

The DEPMEDS hospital system requires a lot of logistical largesse in order to move, set up and function. Of particular note is the difficulty encountered in this mission with movement of the milvans and ISOs. Movement was dependent on competition with the maneuver units for trucks,

RTCHs and cranes. Instead of competing for those elements, dedication of a truck company with heavy handling elements would greatly enhance the DEPMEDS readiness posture. This could be accomplished by placing operational control of such a unit at the medical brigade or group level.

Field hospitals should be maintained as close to ALO 1 levels as possible. As mentioned previously, the 31st worked because of the quality and morale of the soldiers. That will not always be the case, and to handicap a unit's readiness from the outset would be harmful to their capability and to mission accomplishment. Like the combat arms branches, the Medical Corps needs to be more high-tech oriented with the capability to deploy quickly with a minimal amount of adjustment time or personnel familiarization.

To enhance our mission readiness for future contingencies, an experienced and trained cadre of potential commanders, DCCSs and chief nurses should be maintained. This should include familiarization with the DEPMEDS hospital system as part of the assignment tour to a forward deployed unit as early in that assignment as possible. It is from that group of officers and enlisted that a realistic profis filler list should be established.

A free-standing DEPMEDS hospital site for training and familiarization of those personnel would suffice if a functioning one is not feasible. The latter would be preferable, but would probably require significant thought and command input. The ongoing peacetime use of a MASH or CSH for real time training would help minimize many of the personnel staffing decisions or logistical issues which surfaced during this mission.

Medical and Nurse Corps officers need to be better soldiers and receive more training in leadership for times of actual combat. Especially at the field grade and higher levels, clinical competence should be reinforced by acceptance of the necessities of leadership. Abdication of those qualities

should not be tolerated or given to Medical Service Corps officers except at their requisite level of command responsibility. This has to be emphasized at all levels of command in MEDDACs and MEDCENs and stressed as part of career development. It would enhance their flexibility and tolerance for the problems encountered in deployment scenarios with logistical and support issues. Many of these problems were "self-inflicted" due to unfamiliarity with equipment and the tasks required in the field environment.

Finally, the 31st Combat Support Hospital accomplished its unique mission. This illustrates that the "Total Army" concept works and that the quality of the Army Medical Department personnel is second to none. ●