Rebuilding Deployable Hospital Readiness

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Medical support for operations Desert Shield and Storm (ODS/S) included the largest deployment of Active and Reserve component Combat Hospitals since World War II and three times the number deployed to Vietnam. These hospitals represent a significant modernization investment and require extensive rebuilding in order to restore them to a pre-ODSS readiness level. This article summarizes how some of those involved in the modernization project and hospital deployment took the initiative to establish a disassembly and rebuild program.

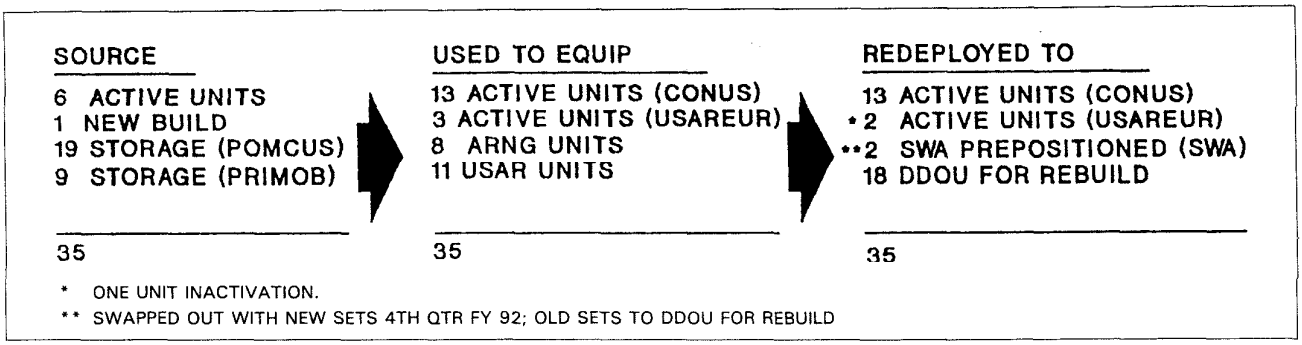

Figure 1. *Deployable Medical Systems hospital equipment sourcing–Operations Desert Shield/Storm.*

By Dec 31, 1990, 35 of the 44 hospital units deployed in support of Operations Desert Shield/Storm were equipped with Deployable Medical Systems (DEPMEDS) equipment. The nine units deployed without equipment went to established host nation hospitals. At war's end, the requirement to redeploy and rebuild 35 DEPMEDS equipped units presented an unprecedented workload and challenge for the Army Medical Department (AMEDD). Planning began in early January 1991, well before the start of the ground offensive, and involved numerous AMEDD and Defense Logistics Agency (DLA) activities.

Operation Desert Shield/Storm caught the Army in the middle of the DEPMEDS modernization project. The last deployable hospital modernization project was undertaken during the late 1960s and 1970s but fell short of completion due to lack of funding and congressional restriction. The result was a partially modernized hospital force, primarily in the Active Component (AC) which was equipped with Medical Unit, Selfcontained and Transportable (MUST) materiel. In addition, the responsibility for sustainment was left with the Materiel Commands (MACOMs) and units. With few exceptions, there were no Department of the Army (DA) managed equipment upgrades to keep pace with advances in medical technology. Materiel readiness of these hospital sets varied greatly and was a function of age, use, expertise, and available funding. Reconstitution of sets stored in Prepositioned Materiel Configured in Unit Sets (POMCUS) was the only centralized attempt to maintain readiness. The result was a degradation of our hospital capability over time, both from a serviceability and technology standpoint. MUST equipped hospitals saw limited action in Vietnam; and early experience during ODS demonstrated the shortfalls of this aging equipment, precipitating the decision to modernize all hospitals deployed to ODS.

The 35 deployed hospital units consisted of over 1,200 individual medical materiel sets (MMS), ranging in complexity from the high dollar–high technology surgery, X-ray, and intensive care units to the relatively low minimal technology care patient ward. Each of these sets consists of as many as 901 component line items totaling 19,457 pieces. The sets represented an inventory valued in excess of $160 million dollars, as well as the majority of our modernized hospitals at the time. Figure 1 summarizes the equipment sourcing, utilization, and the redeployment destination. Only two hospitals were projected for return to POMCUS, consistent with the drawdown in Europe; and the POMCUS sets used to equip/modernize AC units were retained by those units. All of these sets had been used to some extent, and the actual readiness status upon redeployment was unknown. Therefore, disassembly and rebuild was viewed as a must to return these sets to a viable deployable readiness condition.

Prior to ODS, hospital and nonhospital medical sets in long-term storage were periodically programmed for 100% inspection and for replacement of unserviceable or obsolete materiel, traditionally called "reconstitu-

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ABBREVIATIONS USED

POMCUS – Prepositioned Materiel Configured to Unit Sets.

PRIMOB – Primary Mobilization Stocks.

FMS – Foreign Military Sales.

HA – Humanitarian Assistance.

DRMO – Defense Reutilization and Marketing Office.

PWRS – Prepositioned War Reserve Stocks.

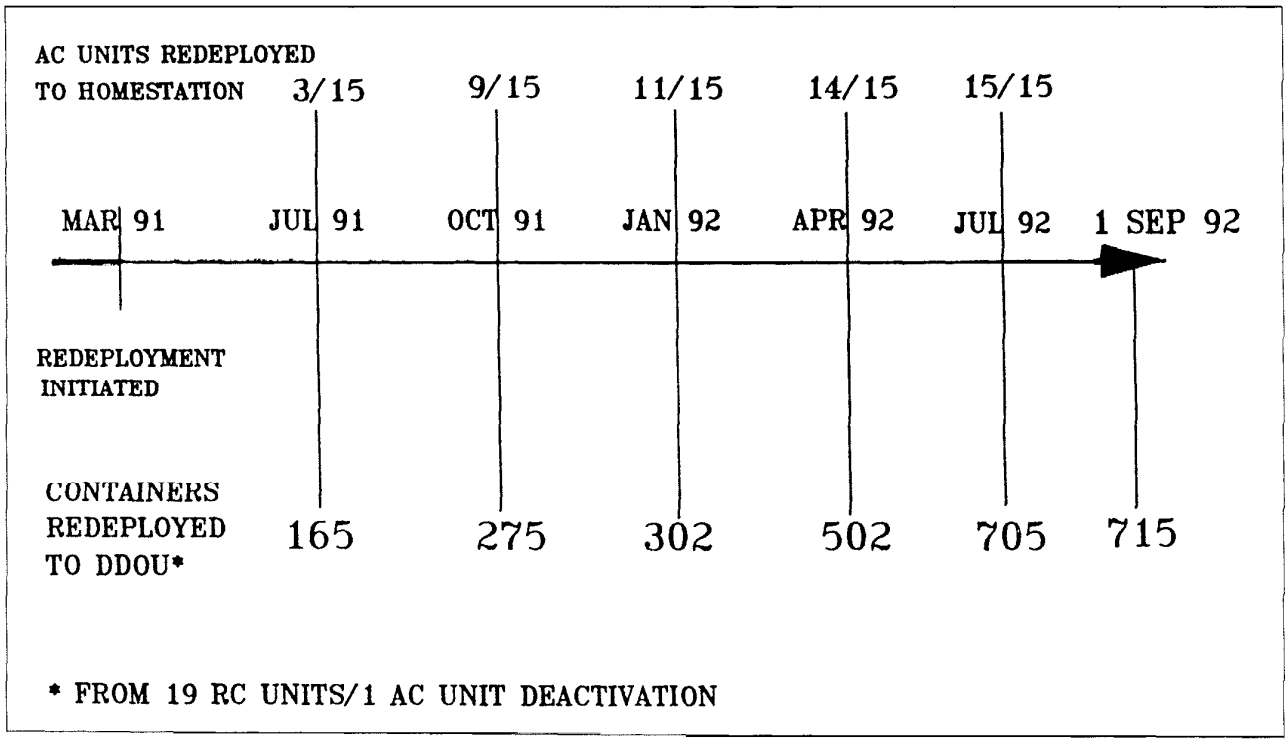

Figure 2. Redeployment Time Line for AC/RC ODS Hospital Units.

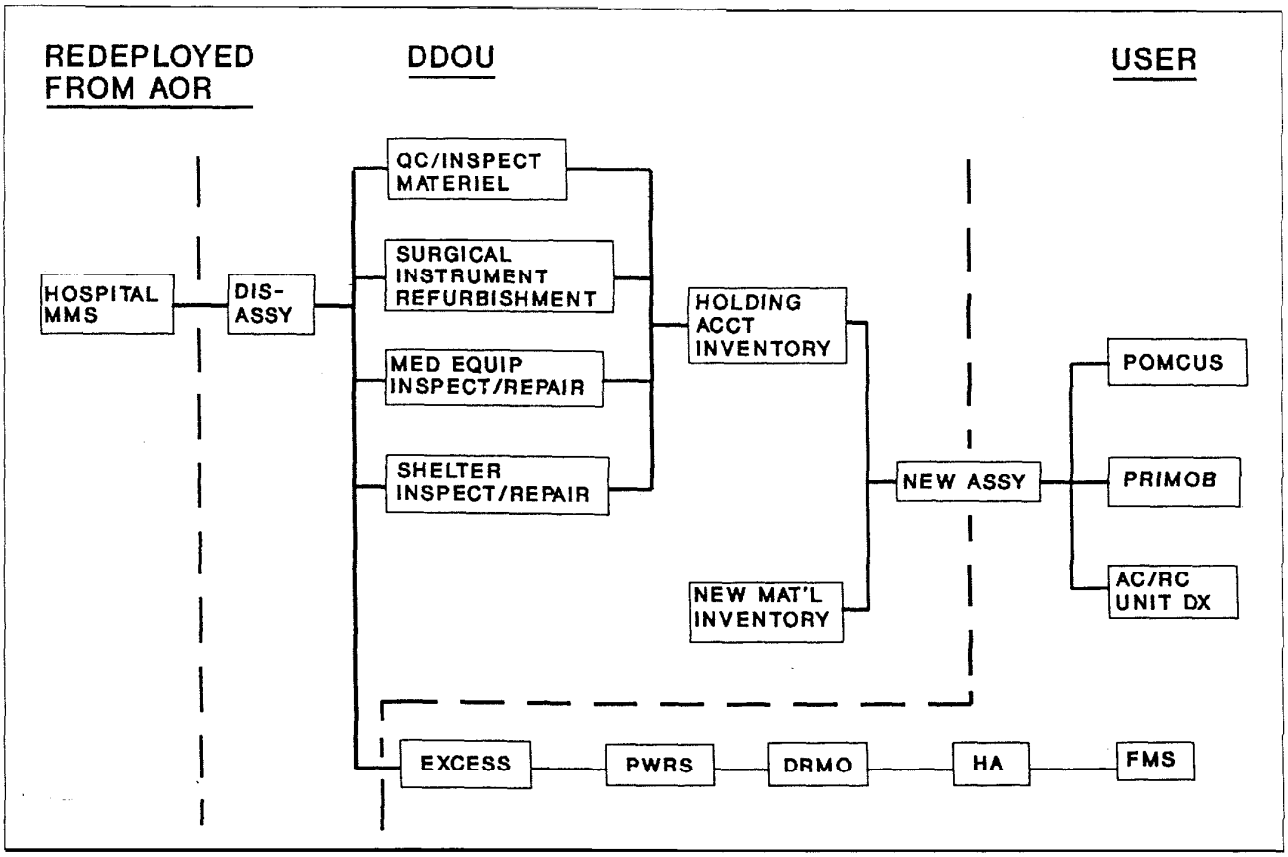

Figure 3. Hospital Rebuild Program — US Army Medical Materiel Agency/PM DEPMEDS.

tion" at the US Army Medical Materiel Center, Europe (USAMMCE). The emphasis was primarily on those hospital unit sets stored in Europe as POMCUS. During this process, supply and equipment components were inspected for serviceability, obsolete materiel replaced, and equipment removed for repair as required. The set would then be reassembled. The identity and integrity of specific sets would always be maintained through this process. Workload was greatly influenced by physical space limitations, resourcing, and competing USAMMCE priorities. On occasion, USAMMCE was also tasked to reconstitute sets used during a Return of Forces to Germany (REFORGER) exercise.

The initial assessment of the potential ODS workload by the DEPMEDS Project Office indicated that the traditional approach to medical set "reconstitution" would not meet the requirement given the following factors:

a. Restoring a pre-ODS level of readiness in an acceptable timeframe.

b. The mix of Active (AC) and Reserve (RC) Component units.

c. The unknown component status of the 1,230 individual medical materiel sets (MMS) to be redeployed.

d. The lack of a sufficient set reconstitution capability.

e. Uncertain funding.

f. Uncertain and lengthy redeployment timeline (Fig 2).

g. Projected Medical Force 2000 (MF2K) conversions.

h. The drawdown projected for Europe (forward, deployed, and POMCUS).

It also became evident during the assessment that the scope of this project would cross numerous organization and command lines and include the existing matrix support activities charged with executing the DEPMEDS modernization project. The US Army Medical Materiel Agency (USAMMA), responsible for hospital fielding and sustainment; Defense Personnel Support Center (DPSC), as the wholesale supply source; Defense Depot Ogden Utah (DDOU), as the production facility; and the DEPMEDS Project Office, as the executive agent, all had a vested interest in this effort. In addition, US Army, Europe, Third Division US Army, US Forces Command, National Guard Bureau and Office of the Chief, Army Reserve were interested in returning ready hospital sets to prepositioned storage sites. Prior to ODS, these activities were focused on a multiyear hospital modernization project. During Operation Desert Shield, the focus shifted to equipping and training deploying units. This set the stage for re-directing the focus toward restoring readiness of the redeploying sets.

The disassembly and rebuild concept developed during the planning sessions in early 1991 focused on using DDOU as the primary site for processing the equipment and sets redeployed from 20 RC units. The 15 AC units would redeploy their equipment and sets to home stations. Although simple in concept, numerous changes to DLA automated systems were required to support this effort and would prove to be a significant undertaking. Due to the complexity and competing priorities, the changes would not be fully tested and activated until September 1992. In addition, the availability of sufficient funding for rebuild was initially uncertain but ultimately obtained by the DEPMEDS Project Office through the ODS supplemental appropriation.

Figure 3 portrays the disassembly and rebuild concept developed for processing sets returned to DDOU. This new process includes the following:

a. complete disassembly of medical sets.

b. Inspection of supplies and equipment.

c. Refurbishing surgical instruments.

d. Medical equipment repair.

e. Movement of serviceable materiel to a newly established Army owned holding account.

f. New assembly (Rebuild).

Materiel from the holding account and new procurement was envisioned to continue "feeding" the DEPMEDS assembly line, producing medical sets for new unit fieldings, replacing the primary mobilization (PRIMOB) assets used during ODS, and modernizing and rebuilding for the future.

Medical materiel sets and associated support items of equipment (ASIOE) were returned to DDOU for disassembly and began arriving in July 1991. As of Sep 1, 1993, a total of 1,370 containers (MILVANS and ISO shelters) had been received. The disassembly and repair effort began in November 1991 and was planned in the following sequence:

a. Disassembly and inspection of all tentage (TEMPER), ISO shelter modules, major MMS, and segregation of medical equipment.

b. TEMPER fabric cleaning, inspection of medical equipment, TEMPER components, and surgical instruments.

c. Disassembly of minor sets, inspection of individual components, surgical instrument repair/refurbishing, TEMPER and ISO shelter repair, and medical equipment repair.

d. Continuous movement, if serviceable, of materiel to the holding account.

Disassembly, inspection repair, and movement of materiel to the holding account continues today. A total of 426,000 component items within 610 ISO shelters/MILVANS have been inspected and returned to inventory for use in the assembly program. This represents a cost avoidance in excess of $9.3 million through August FY93. In addition, 4,600 pieces of medical equipment valued at $5.8 million have been inspected and repaired by the USAMMA medical equipment repair shop at DDOU. The availability of this serviceable materiel in the holding account for re-use is proving both economical and efficient.

The newly organized disassembly and rebuild program is managed by the DEPMEDS project office and USAMMA, in coordination with DLA and DPSC. It is executed by DDOU as a parallel operation to the DEPMEDS assembly program. This effort represented a significant workload during 1992/93 and will continue

Table I. Common Task Test Performance Sheet (1 OCT 1992 - 30 SEP 1993).

NAME _____ SSN_____

PAY GRADE_____ UIC_____

DATE CTT COMPLETED_____ CTT POC_____

Date Taken	Task Test	Skill Level	Task Number	Short Title	GO	(NO-GO)	(N)
____	1	1	878-920-1002	VEHICLES/AIRCRAFT	(0)	(0)	(0)
____	2	1	031-503-1004	WEAR M17 MASK	(0)	(0)	(0)
____	2A	1	031-503-1012	WEAR M24/M25 MASK	(0)	(0)	(0)
____	2B	1	031-503-1025	WEAR M40 MASK	(0)	(0)	(0)
____	2C	1	031-503-1028	WEAR M42 MASK	(0)	(0)	(0)
____	3	1	071-329-1001	IDENTIFY TERRAIN	(0)	(0)	(0)
____	4	1	031-503-1015	WEAR MOPP GEAR	(0)	(0)	(0)
____	5	1	081-831-1005	PREVENT SHOCK	(0)	(0)	(0)
____	6	1	071-329-1003	DETERMINE AZIMUTH	(0)	(0)	(0)
____	7	1	071-325-4425	EMPLOY CLAYMORE	(0)	(0)	(0)
____	8	1	071-331-0801	USE PASSWORD	(0)	(0)	(0)
____	9	1	081-831-1000	EVALUATE CASUALTY	(0)	(0)	(0)
____	10	1	081-831-1016	FIELD/PRESSURE DRESS	(0)	(0)	(0)
____	11	1	071-329-1002	GRID COORDINATES	(0)	(0)	(0)
____	12	1	031-503-1007	DECON SKIN/EQUIP	(0)	(0)	(0)
____	13	2	113-573-8006	USE SOI	(0)	(0)	(0)
____	14	2	093-403-5010	RECOGNIZE ORDNANCE	(0)	(0)	(0)
____	15	3	031-503-3005	PREPARE NBC 1	(0)	(0)	(0)
____	16	3	071-430-0002	DEFENSE BY SQUAD	(0)	(0)	(0)
____	17	4	071-326-5626	PREPARE OPORD	(0)	(0)	(0)
____	18	4	071-430-0008	REORGANIZE PLATOON	(0)	(0)	(0)

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into FY 1994. Funding currently programmed for rebuild and the DEPMEDS program will restore our hospital readiness to a pre-ODS level. Replacement of sets to PRIMOB and POMCUS storage began in the fourth quarter FY 92. The disassembly/rebuild program now in place not only has been the key to restoring readiness but will give the Army a sustainment capability for the future. It provides the capability for depot level "overhaul" and facilitates building replacement sets configured to the updated component listings approved by the Assistant Secretary of Defense for Health Affairs (OASD-HA) for Tri-Service use.

The concept developed for the 15 active units included redeployment of sets and equipment to home stations followed by 100% inspections and inventories to determine losses and damage. In some cases, as noted in Figure 1, units were equipped from prepositioned stocks (PRIMOB and POMCUS) and trained just prior to deployment or just after arrival in-theater. This modernization, although successful, was expedient; and the units required expert assistance in restoring readiness and reconciling documentation upon redeployment. As shown in Figure 2, redeployed equipment began arriving in June 1991; but the AC unit redeployment was not completed until May 1992. On-site assistance visits by USAMMA and DEPMEDS Project Office representatives were conducted during the December 1991 to May 1992 timeframe focusing on the following:

a. Replenishing the MMS and upgrading the FY 84/85 version sets to the FY 87 component version.

b. Reconciling property records and MTOEs for units modernized ahead of schedule in theater.

c. Assessing maintenance support requirements.

d. Disposing of excess.

e. Exchanging USR reporting data.

f. Determining funding requirements.

g. Collecting observations for lessons learned input.

The reconstitution effort for AC units afforded an opportunity to upgrade MMS drawn from storage (PRIMOB and POMCUS). These sets were among the first fielded in 1985/86 and did not incorporate the upgrades included in the 1987 OASD-HA approved sets. In addition, upgrading to the 87 version would enhance the follow-on updating to the FY 90 approved configuration and follow-on conversion to Medical Force 2000 units.

SUMMARY

In summary, the requirement generated by ODS to restore 35 hospital sets to pre-ODS levels presented a significant challenge to the Army/DLA medical logistics community. Not only was this challenge met; but through teamwork and persistence, we have for the first time established a viable sustainment capability for our combat hospitals. Assuming adequate sustainment funding, the AMEDD will be able to not only rebuild and update hospitals in long-term storage; but also have those sets issued to AC and

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RC units. Optimally, this will be accomplished on a direct exchange basis so as not to degrade readiness in the process. Continued updating/modernization must be programmed because of the rapid turnover of some medical technologies and the need to keep pace with state-of-the-art treatment methods for the combat casualty. This can best be accomplished centrally and through rebuild rather than being left to the result of competing command priorities. The MUST project during the late 1960s and 70s was a significant hospital modernization effort but a sustainment failure. Hospital sets and equipment were procured and fielded by DA but not adequately sustained through continued modernization and rebuild. This is a lesson that cannot be ignored. Our DEPMEDS equipped hospitals represent a tremendous investment and capability that must be sustained as we move forward into the next century. ●