THE JOURNAL interviews --
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General Scotti, quoting Lt Gen Frank F. Ledford, the Army Surgeon General, when referring to Desert Shield/Storm: "It was the fastest mobilization in US history. We did in three months what it took us three years to do in Korea." As the fighting force built up in the Gulf region, the US Army, Europe (USAREUR) played a major supporting role providing medical personnel and supplies to the region, and preparing to receive, treat and further evacuate casualties.

JOURNAL: How many health care workers and what type of specialties were sent to Saudi Arabia? By what criteria did you select those to be deployed and when did deployment start?

SCOTTI: The medical units that were sent to Southwest Asia were selected by the CENTCOM Commander and the USAREUR Surgeon. 7th MEDCOM started to prepare its medical units for deployment in August, shortly after the invasion of Kuwait by Iraq. A medical brigade headquarters was sent to the Gulf region from the United States for command and control. We in Europe, being closer to the Middle East, deployed all the health care workers we could spare. All in all we sent more than 2000 medical personnel: 1300 from the Army and 700 from the Air Force. Very early on we sent veterinary units to establish a healthy food chain, secure safe water supplies and to create acceptable living conditions for the military working animals. While we did have some problems with food borne diseases in the beginning, these could rapidly be pinpointed and the cases eliminated. We also deployed preventive medicine, dental and medevac units early on. The first USAREUR unit deployed was the 45th Medical Company (Air Ambulance) which self-deployed 12 Blackhawk helicopters with extended-range fuel tanks from Germany to Saudi Arabia to provide patient evacuation to Navy hospital ships. The flight from Europe to SWA took five days--the longest self-deployment of helicopters in Army history. We also sent down optical specialists to fit protective masks with inserts and support contact lens use in aviators. Another first was the team sent down with liquid oxygen (LOX) generators that had been tried and tested during REFORGER exercises here in Europe. One of our major missions here in Europe was to provide medical support for VII Corps, which went to Saudi Arabia from Germany as a complete entity of approximately 70,000 troops. Medical support included shipping and establishing DEPMED hospitals.

Since we in Europe were not primarily prepared to support a war scenario outside of Europe, we encountered many problems and had to stay very flexible as we made our decisions on how to best provide for Desert Shield/Storm in terms of people, equipment and supplies.

JOURNAL: Moving the required equipment, supplies and hospital structures to and within the Gulf region must have involved a monumental effort. How was this task accomplished and what were the lessons learned?

SCOTTI: It was indeed a monumental effort. The first priority was armor and aviation units to provide a defense for Saudi Arabia. Combat support units

took some time to get into the combat zone. However, two hospital ships were deployed early on, and they with light Air Force hospitals and modern Saudi hospitals tided us over until the Army could get its hospital structures, personnel and supplies to SWA. We used every available means to ship our medical units to the Gulf region from Europe. The Military Airlift Command eventually provided much of our transportation requirements. Since we in Europe were always forward deployed, we were ready to send hospitals and equipment to SWA on short notice. We deployed three fully-equipped and staffed DEPMED hospitals and 17 that were to be staffed once they were in place in the combat zone. We did learn that in future conflicts we should be prepared to have more shipping space to transport our heavy structures and to attempt to package our materiel into smaller, more mobile components. DEPMED hospitals stored in Europe were not fully equipped. We supplied required materiel that was available in Europe. Many items had to be ordered from the States to either reach SWA via Europe or to be shipped there directly. Getting the right pieces of equipment to the right hospitals, the TEMPER tents and deployable units into the right places, plus all the trucks and non-medical equipment such as tents, generators, air conditioners, etc, was only possible through a concerted effort of all three services. This support and cooperation continued even after everything was in place.

One of the organizations that immediately got into full gear was the United States Army Medical Materiel Center, Europe, which has embedded in it one of the MEDSOM (Medical Supply, Optical and Maintenance) units that went to the Gulf region. It was joined by other MEDSOM units from the States. According to EUCOM statistics, $56 million worth of medical supplies were shipped from Europe. I must say that the medical logistical people deserve great respect for having accomplished this monumental task. By the time the ground strikes started, enough materiel was either in SWA or on its way to have been sufficient for any eventuality.

Another noteworthy first was the implementation of TAMMIS, the Theater Army Medical Materiel Information System. This allowed the medical supply and logistics people in Southwest Asia to communicate directly with USAMMCE and the United States.

The Military Airlift Command did a phenomenal job. From the very beginning of the conflict in August through the ground war in February, MAC pilots and aircraft were constantly on missions. One of the lessons of value for future contingencies is that our previous doctrine in regard to shipping medical materiel primarily by air must be revised. We must make plans to have maritime shipping space available. We also learned that it is advisable to use a one service supply agent for the whole theater, since this makes the whole system more manageable.

JOURNAL: To quote General Ledford once more, "The DEPMEDS clearly represent the best medical equipment ever seen on a battlefield." Were they at their highest readiness level? What problems were experienced with the DEPMEDS and the equipment? Did physicians have a chance to evaluate these hospitals and the equipment before they were shipped? How far forward could you deploy these structures?

SCOTTI: DEPMEDS, a new system of medical facilities was halfway through its fielding in August 1990. When the decision was made to complete fielding rather than utilize the previous generation of medical facilities, e.g. MUST hospitals, the equipment and supplies required needed to be shipped from storage and commercial sources. The imcomplete hospitals, non-medical equipment and the necessary new materiel were married up in SWA. As these facilities were needed at the onset of the ground war, CENTCOM's timetable allowed for the process to occur. A few of the DEPMEDS that were sent to Saudi Arabia were never set up because the war ended so quickly. Rapid advances by our forces did pose a problem in regard to our hospitals keeping up. We need to study ways of configuring these rather bulky structures so that they can be moved quickly as needed.

One of the problems that we did experience was that very few of our active units had worked or trained in DEPMEDS and did not know what facilities and equipment they would actually have to work with in a wartime scenario. This was partly due to the fact that during peacetime there were only a very limited number of fully-equipped DEPMEDS fielded, and partly because of the competing requirement to provide peacetime care to our beneficiaries, which reduces the amount of time available for field training for our clinical personnel. However, since we had several months to prepare before the ground war started and some of our top experts to staff the hospitals, we managed to have our medical personnel trained and familiar with the equipment and materiel available. Many of the Reservists actually had more experience in working in

DEPMEDS surroundings than the active duty people, since a number of the DEPMEDS were given to the Reserves a few years ago for training purposes.

One of the negative side-effects of not having had people more knowledgable of and familiar with the deployable medical system is that early on, individuals requested equipment that they had previously used in their civilian practice or in their peacetime practice in a fixed military medical facility. That duplicate demand put huge stress on the supply system, and had the war lasted a long time, the maintenance of these various types of equipment used to perform the same function would have been enormous. I like to compare this situation to someone being asked to go into a strange kitchen to cook a banquet for 20 people. There's nothing wrong with the kitchen, but it is not the one the individual is familiar with, so he/she doesn't know where the utensils are, and doesn't have the precise condiments that he/she is used to. It is very stressful to have to cook a meal in a strange kitchen and very stressful to have to treat patients in a strange hospital.

In the future, we plan to actually field DEPMEDS to medical units and to have our health care workers spend some time actually working in surroundings similar to the combat scenario. We already have one established in Landstuhl and will field another with the residual Corps here in Europe. With the Army Medical Department in Europe being responsible for a wide variety of contingencies, both combat and non-combat, it is our responsibility to make sure that the same mistakes are not made twice.

JOURNAL: Much of the high-tech, sophisticated medical equipment was developed with Western conditions in mind. How did this equipment stand up to the desert climate and the desert sand?

SCOTTI: The best answer to this question could, of course, be obtained from the people who actually had to work with the equipment under such extreme conditions. The high temperatures and the fine sand placed unique stress on the equipment. It became clear early on that the power packs, which had been developed for the previous generation of MUST hospitals, were not going to perform efficiently. It took a while for all the air conditioning equipment to reach SWA and for all the ventilators to work. While the DEPMEDS were not capable of preventing all the sand from coming through, they kept it down to a point at which the majority of our equipment worked fine.

JOURNAL: Colonel Dunn, the former commander of the US Army Research Institute of Chemical Defense at Aberdeen Proving Ground, stated that at the beginning of Desert Shield only 5% of physicians and Physician Assistants had completed the 5-day chemical casualty course. Since the threat of possible chemical and biological warfare was very real, how were the health care workers in Europe prepared to deal with the possible large number of chemical and biological agent casualties?

SCOTTI: The preparation that we provided health care workers here in Europe depended on whether they were deploying with the units to the Gulf region or remaining here to treat casualties as they arrived. The Chemical Defense Institute sent lecturers to Europe to give 1-week refresher courses to all individuals to be deployed. They were instructed in some of the latest methods of decontamination and treatment and in the use of some brand new drugs to diminish the consequences of chemical and biological warfare. Those health care workers remaining behind received intensive training on dealing with the possible casualties evacuated to Germany--the expected number was large. The training, both didactic and practical, was also given to the staff from the United States that augmented our remaining staff. The training that Colonel Dunn's staff provided for our people was invaluable. We have not had to handle any significant number of these cases since World War I.

Although we were prepared to treat large numbers of these types of casualties, we did not have special hospitals or wards designated to receive the patients. Once they reach the hospitals, their treatment is very similar to that provided to other acute hospital patients. Decontamination itself must follow as quickly after contamination as possible--this would have had to be done in SWA. We did have special teams designated to take care of large numbers of patients with the blisters which are the consequence of mustard gas, one of the chemicals that Iraq had used during its conflict with Iran.

JOURNAL: Would you say that the health care workers, both active duty and reserve, had the right training in casualty drills, advanced life support, cardiac trauma, life support and combat medicine in general for this type of war setting? Were they able to apply their clinical training to a combat situation?

SCOTTI: No one has had the experience in civilian life of taking care of the number and diversity of injuries that might be expected from an all-out war where both forces have maintained significant offensive capability. A situation like that so rarely occurs in the civilian world that one must use one's imagination to try to develop the right training for it. I think that all the clinical experience and learning that is within the current capability of our medical personnel is certainly applicable to the war environment, but the unique juxtaposition of certain individuals and particular equipment can never be fully prepared for. In the military, we provide regular training in combat medicine, including field training, but actually being confronted with the real situation was going to be a new experience for many of our young health care workers. So, no matter how much training someone received, he/she will not be comfortable with it once they are involved in a real all-out war situation. We were fortunate to have had the chance to provide more training within the war zone itself before the air war started.

JOURNAL: The Preventive Medicine team played, of course, a unique role in Southwest Asia, what with getting the soldiers ready for deployment, mass vaccinations, and providing preventive measures for dehydration and other unique medical conditions as well as protective measures against possible chemical and biological warfare agents for the half million soldiers in the Persian Gulf. Do you think that years of emphasis on preventive medicine paid off in Southwest Asia?

SCOTTI: Absolutely! The need to have the soldier free of illness and in prime health condition so that he/she can be committed at the time and place of the commander's choosing is the first and foremost responsibility of military medicine. From a preventive medicine point of view, the troops sent to SWA were probably in the best physical state possible, fitter than any troops committed to war at any time in history. The preventive medicine programs that we have pushed for so many years have paid ample returns, be it the substance abuse, weight or exercise programs, or the vaccination and epidemiology efforts. We had our troops ready to stand the strains of a desert war. We sent our preventive medicine teams to SWA early on during Desert Shield to ensure that the environment was such for our soldiers that we had the lowest non-effectiveness rate ever recorded. The Army veterinarians that also belonged to the early-deployed kept the theater supplied with food of such purity that food-borne disease was negligible. The work done by the engineers and the preventive medicine people in ensuring that the water supply was safe was fabulous. I would say that there are more preventable medicine problems at National Boy Scout Jamborees than there were in the deployment of a half million people to SWA.

JOURNAL: The Medical Department in Europe always had to be prepared for a possible armed conflict, although it was thought that this conflict would take place against the Warsaw Pact countries. Can one presume that plans were ready to organize a sufficient blood supply for the war region, should this have become necessary?

SCOTTI: The blood supply program here in Europe is a joint one, working together with the Armed Forces Blood Center in the United States. Shipping blood to Saudi Arabia begun almost immediately after the first troops were deployed. This was the first war in which we would have utilized large amounts of frozen blood--a technology that was perfected only over the last 15 years, and in use for only one year. We had to quickly train enough technicians to be available to return the pre-stored frozen blood into liquid blood, since the machines and the method are relatively new. The American public, as well as citizens from many other countries, were very generous with their donations, and the capability of the rapid air shipment was such that we never had a doubt about adequate blood supply at all times.

JOURNAL: The medical facilities in Europe had to prepare heavily for possible casualties from the war region and for medical evacuation. What is your experience with converting Regional Medical Centers into the types of hospitals that would have supported such large numbers of patients?

SCOTTI: Here in Europe, we prepared a variety of facilities to accept evacuated casualties. In Germany, three of our large hospitals--the 2d General Hospital at Landstuhl near Ramstein Air Force Base, the 97th General Hospital in Frankfurt near Rhein Main, and the 98th General Hospital in Nuernberg, near the Nuernberg aviation facility--were specially beefed up and

prepared to take the initial onslaught of casualties which would return to the Army hospitals in Germany. We ultimately cared for 8000 people that were returned from the Gulf region over the months of deployment. The Landstuhl hospital, for example, expanded to the extent of being able to have 1,000 hospital beds. Contingency plans for these tranformations were, of course, constantly updated over the past few years. Since Landstuhl lost many of its physicians and other health-care workers to Southwest Asia, it received over 1,000 Reservists to provide primary and specialty care on a day-to-day basis and to possible casualties.

Because we had deployed 70,000 troops from Europe whose families were still residing in Europe, we had equipped a number of our other hospitals to function as community hospitals where our remaining beneficiaries could obtain ongoing care and rehabilitation.

Since EUCOM was tasked with receiving casualties evacuated from the combat zone, it was directed by CENTCOM to set up 5,500 additional beds; casualties were to be stabilized in SWA, flown to Europe for definitive care, and sent back to the United States as their conditions permitted and at the discretion of the treating physicians.

The Air Force contributed to this requirement for beds through both their active hospitals and a number of contingency hospitals that were opened in hangers and buildings of opportunity. These "turn key" facilities had been prepared for possible use over the last decade in anticipation of a Warsaw Pact contingency. We chose not to activate our contingency hospitals because we had large active hospitals already in place at the air heads. We were also fortunate in that our German allies offered us as many hospital beds as we should require.

JOURNAL: Although there was much fear in regard to the threat of chemical and biological warfare, and there were problems with boredom and dead time during the waiting of Desert Shield, morale was said to have been very high, and few mental health problems needed to be treated. Do you ascribe this to the shortness of the war, or is it a reflection of years of mental health promotion within the military?

SCOTTI: The low incidence of non-effectiveness from emotional conditions, and the few casualties of the conflict who have had symptoms in this area subsequently, are primarily due to the amazing discipline and the high morale within the combat units. Our soldiers had respect for themselves, their colleagues, their commanders and their equipment. Additionally, the war was short, and we won. But that was after a remarkably long period of anticipation which would, I believe, have generated a number of emotional casualties had it not been for the professionalism of the force we deployed. There were a number of behavioral health teams of psychiatrists, psychologists, clinical psychiatric nurses and a whole variety of enlisted specialists that were working not only with individuals but with units and with communities. They worked not only among those deployed, but also among those remaining behind in the military communities awaiting their loved ones. Those who did not deploy went through the enormous stress of very hard work to ensure that deployed troops were supplied and equipped, even though they did not actually have the experience of serving in Southwest Asia.

JOURNAL: The Burn Care Center in San Antonio made extensive preparations to treat the burn patients that are the result of modern warfare. Since Europe is so much closer to Saudi Arabia, were preparations also made at any of 7th MEDCOM's Medical Centers to treat burn patients or to stabilize others before evacuation to CONUS?

SCOTTI: The preparations for caring for large numbers of burn patients was the most technologically ambitious portion of our preparation here in Europe. In all our receiving facilities, specific locations were prepared for burn patients. In fact in all of our facilities, the areas normally devoted to, for example labor and delivery or recovery rooms, were altered to take care of burns. We also opened all-new areas with monitors and the accoutrements of caring for burn patients in terms of supplies.

I was offered assistance by the German military medical community as well as the German community as a whole, but, as is the case in most countries, the availability of burn beds is minimal--in point of fact they had less than 110 burn beds in all of Germany, both military and civilian.

JOURNAL: Whilst Germany cannot participate in an armed conflict outside of NATO, the Federal Armed Forces had offered their full support. What form did this support actually take?

SCOTTI: The German Federal Medical Corps and their Surgeon General, Lt Gen Gunther Desch, came to us right after the beginning of Desert Shield and offered everything that they could possibly supply. This included preparing 1,000 beds within their military medical facilities, and offering to receive casualties with particular reference to eye and thoracic surgery cases. Beds in the civilian community were also offered, as well as helicopter and bus ambulance services to shuffle patients from air heads to primary hospitals and specialty centers. They also offered us tons of specialty equipment and set up rapid communication links. As a matter of fact, all of these arrangements were made without a formal written agreement being drawn up, with no signatures affixed, no fund cites or money changing hands. It was all done in great camaraderie and collegiality. What greater proof could there be to show that NATO worked and that the German-American professional friendship was not a paper exercise but reality.

JOURNAL: Of what value were the over 25,000 medical reserves that were called up to active duty during the Gulf crisis both in Southwest Asia and here in Europe, where 3000 reservists back-filled for the health care workers that were deployed to Southwest Asia?

SCOTTI: The credentials and the professionalism of active duty and reserve component personnel are identical. They go through the same educational programs, schooling, standards and practice of medicine. The Reservists' commitment is entirely voluntary, and the military must depend on their willing participation in all facets of military training and work. When the Active and Reserve Components came together during Desert Shield/Storm, it was more than a mere summing of the parts. They came from diverse backgrounds and experiences and had to blend together into a team that could function effectively and promptly. I think, in the final analysis, the blended teams did a better job than each component could have accomplished separately. What would be ideal, of course, is unit integrity--units that train together in peacetime work together in war. But in the absence of the capability to train entire units together during peacetime, the way we combined the various units during this contingency was a really workable choice--even if a second one.

JOURNAL: A soldier with a toothache who is expected to fight is obviously a poor soldier. How would you judge the dental readiness of those soldiers that were sent to the Gulf region?

SCOTTI: The Active Component soldiers had received a level of preventive and actual dental care such that they could be deployed quickly without fear of subsequent impairment. The Reserve Component personnel that were called up had a less successful preventive program, and a great deal of work had to be done prior to their deployment. Some of this work continued after deployment in that dental units were far forward and quite capable of handling a whole spectrum of normal and extraordinary dental conditions, including oral surgery.

JOURNAL: Soldiers going to war leave family and loved ones behind. The American military traditionally has a great reputation for providing support and comfort to the family members. What programs were developed in 7th MEDCOM to assist the family members?

SCOTTI: We had to care for the families of deployed troops as well as for the families of members of our own units that were deployed. This was done in both a community and a unit configuration. We can say that the Army insured that military communities, whether they were here in Europe or back in the United States, had support services paralleling and exceeding those they had before deployment. We made a commitment that the stability and support of military communities is a wartime as well as a peacetime mission, and we kept to our word during this conflict.

JOURNAL: The US military has been training for such a situation as the Gulf War since Vietnam. Did this conflict allow you to test the theories and plans which had only been paper drills before? Do you have the feeling that years of training, research and development paid off? What do you think are the most important lessons learned from Desert Shield/Storm?

SCOTTI: The Gulf War provided us a real opportunity to see if all our work and preparation over the past decade could stand the test of real life. We could test our supply and communication systems and our ability to move large volumes of equipment and personnel in a short time over great distances. It did not really test our clinical capabilities and the evacuation system, since the

number of patients was so few. If I had to pick out three lessons that were learned from this conflict, I would say one, that we must be prepared to support the medical infrastructure of military communities after deployment at the same level as we did before deployment. Two, that medical personnel must have had adequate time to train with the people, the equipment, and in the facilities that they will utilize in war. Three, that we need to have a hospital system which can effect in some manner the same mobility as the forces they support. We do not now have a medical hospitalization system that can keep up with troops that advance 150 miles a day.

The war in SWA is over! We had the opportunity to test our system and to observe where our shortcomings are. But I would like each member of this command, those who were deployed to the war region and those who stayed behind to provide the needed support, to know that I am extremely proud of our accomplishment in SWA. I am proud to be part of such a professional team.

JOURNAL: I don't want to close this interview without touching on one of your peace missions that was consequent to the Gulf War. An allied medical force totalling more than 700 health care workers and assistants were sent to Turkey to assist 700,000 Kurdish refugees who lived in squalid camps along the Turkish-Iraqi border. What role did 7th MEDCOM play in providing assistance to Operation Provide Comfort?

SCOTTI: We were very privileged to provide the leadership of the assessment team that evolved into the Task Force "Provide Comfort" Surgeon's staff, and to provide the logistical links for medical and much of the humanitarian supplies. It was also a great honor to be able to work through the task force surgeon to bring together the medical personnel of all services, from over 20 foreign countries, including both government and non-governmental humanitarian agencies, to work as one team. It was, to my mind, and has been documented as such in the medical literature, the finest example of teamwork yet evidenced. The unique skills of special forces medical personnel in dealing with the displaced communities and developing and organizing indigenous leadership were a particularly high point in Provide Comfort.

This double issue is the first in a series of three special issues dealing with the preparations for and the services performed during the actual combat and the lessons learned by the medical services of the US military and coalition forces during Operations Desert Shield and Desert Storm.