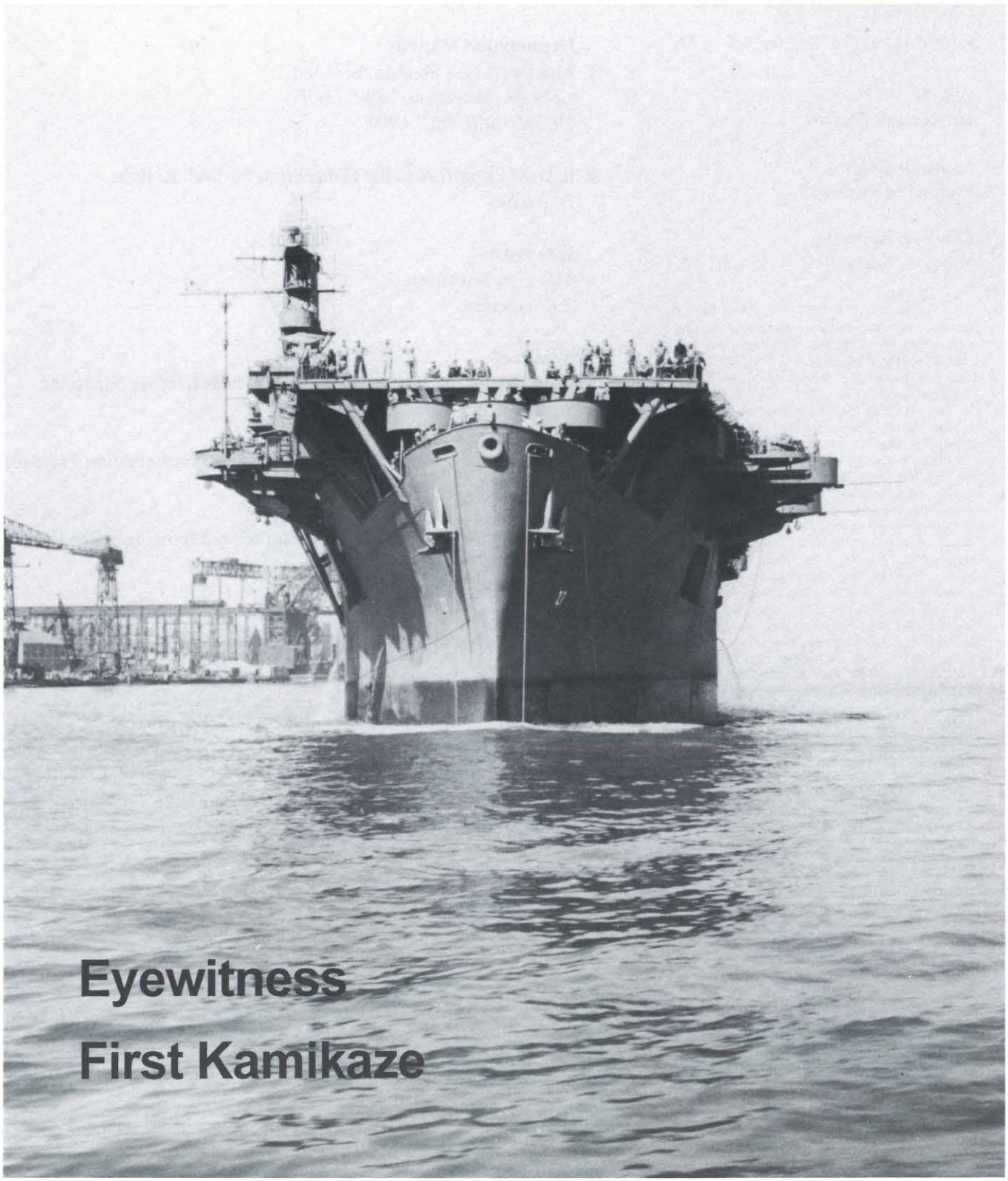
NAVY MEDICINE

September-October 1994



Eyewitness
First Kamikaze

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COVER: As a participant in the Battle of Leyte Gulf, the biggest naval battle in history, USS *Suwannee* (CVE-27), had the unwelcome distinction of becoming one of the first targets of a Japanese suicide plane. The story of that Kamikaze attack as seen through the eyes of a Navy physician appears on page 6. Photo from the National Archives.

Mobile NITE Lab Hits the Road

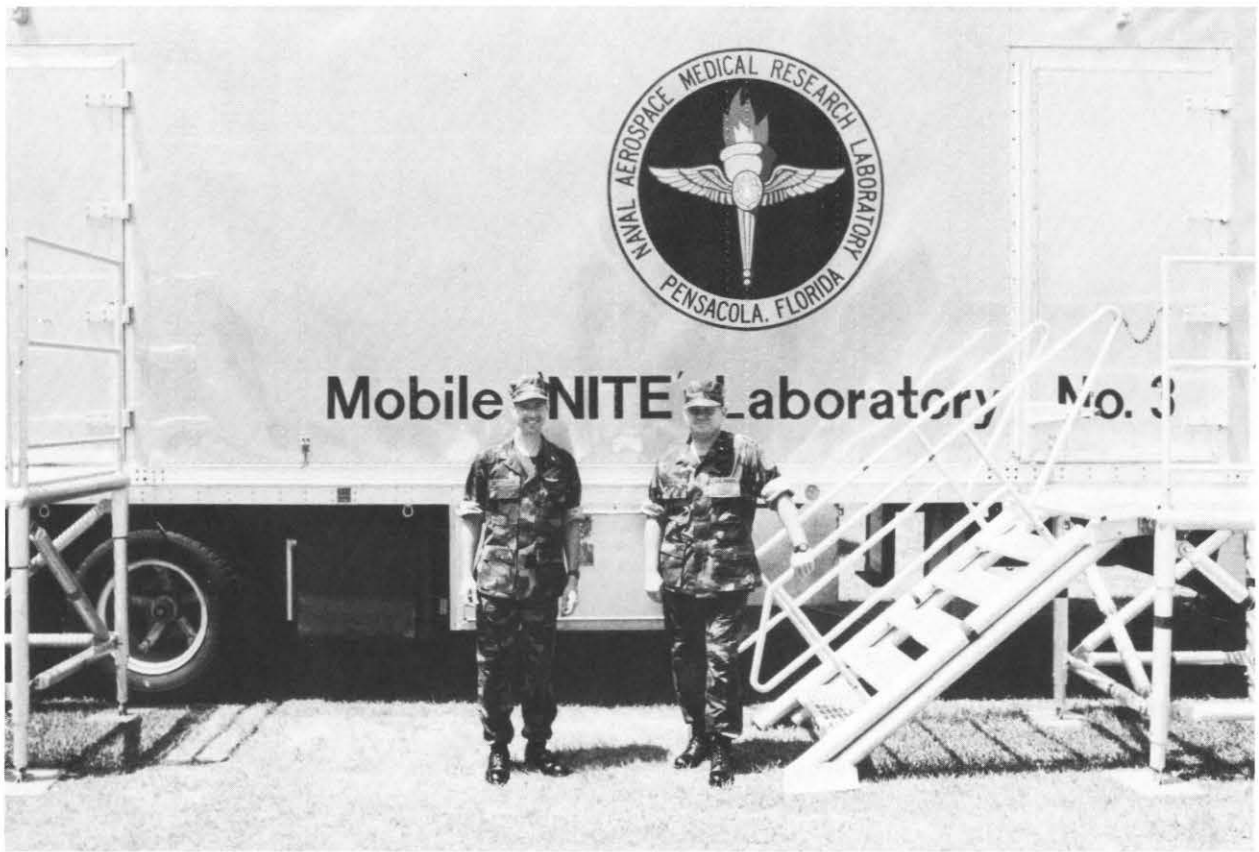
The Naval Aerospace Medical Research Laboratory (NAMRL) and the Naval Aerospace and Operational Medical Institute (NAMI), both located in Pensacola, FL, have responded to a request by the Naval Aviation Training Systems Advisory Group (NATSAG) to mobilize unaided and aided night vision training in an effort to conserve training travel funds and bring training directly to the users. Jointly, the commands have developed a prototype mobile Night Imaging and Threat Evaluation (NITE) Laboratory.

The concept of a mobile night vision training facility allows local commanders the flexibility of moving a fully equipped electro-optical (EO) training classroom to specific regional areas and bases where stationary NITE laboratories do not exist or are not accessible to personnel operating out in the field. The mobile NITE lab is designed to prove the concept that "just in time" training for both the active duty and reserve communities, who do not have ready access to stationary NITE labs, is a feasible solution to a complicated and expensive problem.

The main thrusts of the mobile NITE lab concept include supporting units attached to the Fleet Marine Force or Army during field exercises, mobile support of the landing craft air cushion (LCAC) community, training support for the aviation and surface warfare communities, and flexible training assets for units involved in any form of contingency planning. The mobile NITE lab can be parked dockside and utilized to provide initial or refresher night vision training for embarking ground forces, or any other rapid deployment required by national emergencies.

Central to the concept of providing mobile training is the idea that the instructors must be local subject-matter experts, who are attached to those units actually receiving the training. This helps in obtaining credibility for the training programs as well as providing the units with organic subject-matter experts once the formal training has been completed. To facilitate this, NAMRL and NAMI have developed a curriculum designed to teach personnel how to utilize the equipment in the trailer and the unaided and aided night vision training kits. Additionally, local instructors will receive training on other currently approved night vision curricula as outlined by the NITE lab model manager.

The prototype NITE lab is a NAMRL tractor trailer that was originally designed for field data collection. With the help of a local Seabee contingent and local command talents, the trailer has been renovated for use as the mobile NITE lab. The interior of the trailer was painted black and outfitted with 12 theater seats. A resilient, rubberized floor was installed. Once in the field, the physical setup of the laboratory requires minimal effort. It takes about 4 hours to set up the trailer's self-contained generators and staircases. The trailer is equipped with a head, and has a climate-control system designed to op-



erate under extreme temperature conditions.

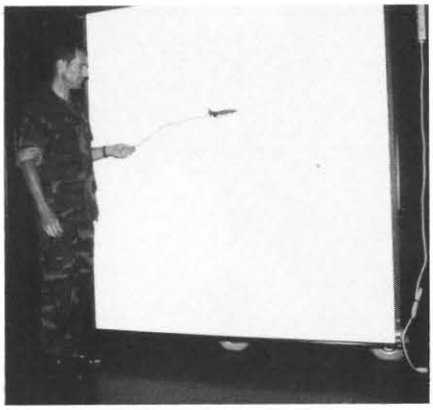
The lab includes an infrared terrain model equipped with necessary illumination systems to demonstrate the illusions produced by EO devices and a 50-foot eyelane to teach personnel how to properly adjust night vision devices. In addition, there are data-collection devices to validate training and collect information from night vision device users in the field, and a classroom to present approved night vision training curricula as well as the unique Unaided and Aided Night Vision Training programs developed at NAMRL and NAMI.

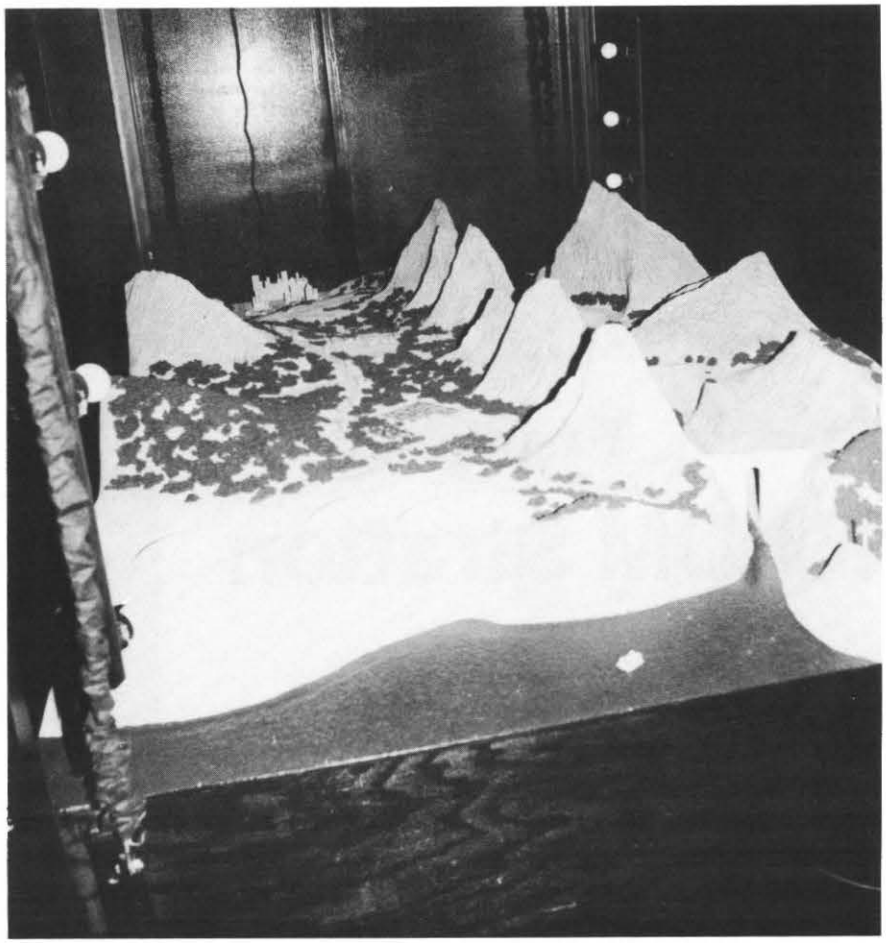
The Unaided and Aided Night Vision Training Kits taught in the mobile lab are specially engineered slides designed to demonstrate the illusions created by unaided night vision and by the night vision devices. These kits were originally designed to teach initial and refresher level aircrew about the idiosyncrasies of unaided night vision and aided night vision while utilizing EO devices in aircraft.

Recognizing the need to train ground forces in addition to aviators, members of the Army Research Institute (ARI), Fort Benning Field Unit, contacted NAMRL and NAMI inquiring whether or not the Unaided Night Vision Kits for aviation could be modified for ground forces. Under a Memorandum of Agreement between the three principal commands (NAMRL, NAMI, and ARI), an Unaided Night Vision Training Kit for Ground Forces was developed. Input for the kits was also received from the 2nd Marine Division, Camp Lejeune, NC. These kits have become an integral part of the mobile NITE laboratory's educational regimen. Each kit consists of specially mounted slides, a projector cover, an SDU/5E strobe, a penlight, models for silhouette training, and a written and audio training guide.

To test the ability of the mobile NITE lab to be quickly and efficiently deployed, it was sent on 1- and 2-day trips to local area commands, including the Air Force's Hurlburt Field and Naval Air Station Whiting Field. During those brief deployments, visiting personnel from all services received unaided night vision training.

Most recently, the mobile NITE lab was requested by the U.S. Army Dismounted Battle Lab in Fort Benning, GA, to explore the concept of mobile night vision training for Army ground forces. The mobile NITE lab was deployed to Fort Benning to assist them in training personnel during their annual com-





Opposite page: **CDR Mittelman and CDR Still deployed at Fort Benning with mobile NITE lab.** ***Above:*** **CDR Mittelman teaches unaided night vision for ground forces.** ***Right:*** **Infrared terrain board demonstrates night vision goggles-induced illusions.**

manders conference. During that deployment, NAMRL and NAMI personnel briefed Army, Marine Corps, and NATO personnel on the feasibility of mobile NITE training in addition to teaching the newly developed Unaided Night Vision Training Program for Ground Combat Forces. As a result of these briefs, the Army will incorporate the Unaided Night Vision Training program into their night battle lab curriculum.

Following deployment to Fort Benning, the mobile NITE lab was transported to Marine Corps Air Station, Beaufort, SC. Night attack F/A-18 *Hornet* and *Harrier* aircrews were being forced to travel to Cherry Point, NC, for their required night vision training due to a lack of facilities at MCAS Beaufort. The mobile NITE lab allowed aviation medical safety officers, in conjunction with squadron safety officers, to conduct both unaided and aided night vision training to aircrews, saving the squadrons thousands of TAD dollars. This deployment represents the first time the mobile NITE lab was utilized for continuous training in the field and helps to prove that night vision training can be conducted in an efficient and effective manner outside the stationary classroom.

In addition to teaching the required night syllabi, local aerospace physiologists were trained by NAMRL personnel to collect data from training participants while they were in the trailer. This method of data collection enabled information to be collected in a familiar setting by the same personnel who conducted the training. Information gleaned from this data collection will ultimately aid NAMRL scientists in developing tests to better predict aircrew performance under nighttime conditions, both with and without the aid of night vision devices.

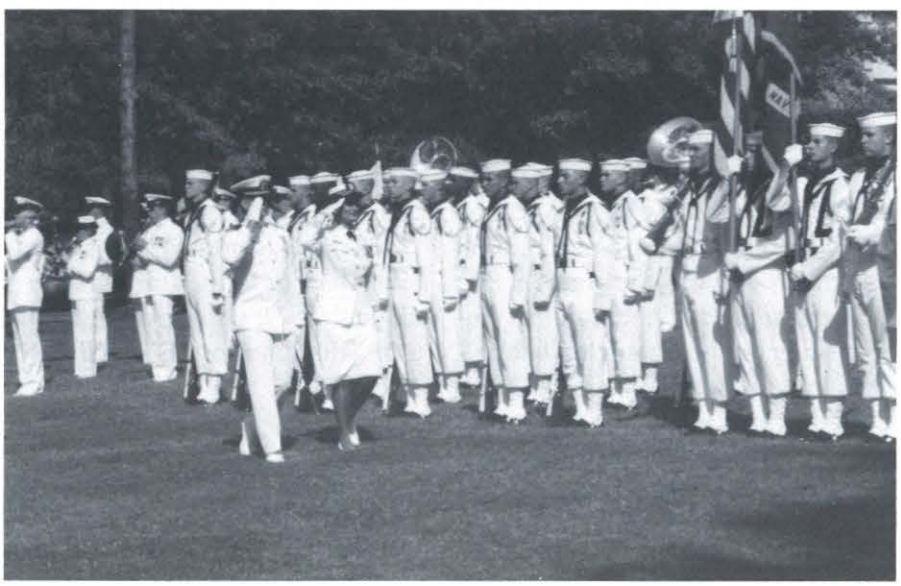
Mobile night vision training labs have the advantage of bringing necessary training directly to those personnel needing it the most. The mobile NITE lab has allowed the Navy to proactively introduce a new concept of training, which has been embraced jointly by sister Services. The concept has proven to be so exciting and successful for the Navy, Marine Corps, and Army, that even the Canadian Forces have requested use of the mobile lab. For further information on the mobile NITE lab, contact either CDR Mittelman or CDR Still at 904-452-3287. ❑

—Story by CDR Michael Mittelman, MSC, and CDR David Still, MSC, Naval Aerospace Medical Research Laboratory, Pensacola, FL.

RADM Engel Takes the Helm From RADM Stratton

On 2 Sept 1994, a glorious day for a transition ceremony, RADM Joan Engel, NC, became the 18th Director of the Navy Nurse Corps and Assistant Chief for Personnel Management, Bureau of Medicine and Surgery. The ceremony held at Admiral Leutze Park in the Washington Navy Yard, also marked the retirement of RADM Mariann Stratton, NC, the Director of the Nurse Corps and Assistant Chief for Personnel Management, Bureau of Medicine and Surgery for the past 3 years.

RADM Maryanne Ibach, NC, USNR, was the guest speaker and lauded RADM Stratton's visionary leadership and dedication to the Nurse Corps. RADM Ibach noted some of her specific accomplishments, including the expansion of operational roles for nurses, increasing the educational opportunities for nurses, and developing the Nurse Corps Strategic Plan "Charting New Horizons," which will serve as a model for nursing in the Navy. But above all, RADM Ibach stressed that RADM Stratton turned the motto "Navy Nursing is Nursing Excellence" from slogan into reality.



RADM Stratton then took the podium and thanked Navy nurses everywhere for the privilege of representing them as their Director. She urged her colleagues to continue to "Go where you are needed, do what you can, take a chance, and always, always, do what you know to be the right thing." Recognizing her successor, RADM Stratton pointed out that each of the Directors has been a link in the history of the Nurse Corps chain and with each new Director the legacy and accomplishment of the Navy Nurse Corps continues to grow.

On behalf of President Clinton, VADM Donald F. Hagen, Surgeon General of the Navy, awarded RADM

Photos by HM1 Bill Williams

Clockwise from far left: **RADM Engel reads her orders; Surgeon General of the Navy VADM Hagen administers the oath of office to RADM Engel— holding the Bible is RADM Engel's husband, LCOL Walter R. Limbach, USMC (Ret.); RADM Stratton salutes the National Ensign; and RADM Stratton reviews the Honor Guard.**

Stratton the Distinguished Service Medal. HMCM Michael Stewart, Force Master Chief, then presented RADM Stratton with an American Flag on behalf of all hospital corpsmen.

After reading her orders, RADM Engel outlined her agenda as Nurse Corps Director. Noting the rapidly changing environment in which Navy nurses are working, she pointed out that in this time of force restructuring, base realignments and closures, health care reform, demands for cost containment, and a changing world order, Navy medicine will continue to face many challenges. Quoting Abraham Lincoln, RADM Engel said, "The occasion is piled high with difficulty and we must rise to the occasion. As our case is new, so must we think anew and act anew." To deal with these new circumstances, RADM Engel stated, "We must encourage and support innovation and creativity while focusing on cost-effective ways of delivering quality health care." She also affirmed her commitment to the Nurse Corps Strategic Plan as a roadmap to the future. ❑

—D. Klubes, Historical/editorial consultant to the Command Historian, Bureau of Medicine and Surgery (09H), Washington, DC.

The First Kamikazes

Right: **USS *Suwannee* burns following the suicide attack of 26 Oct 1944.**

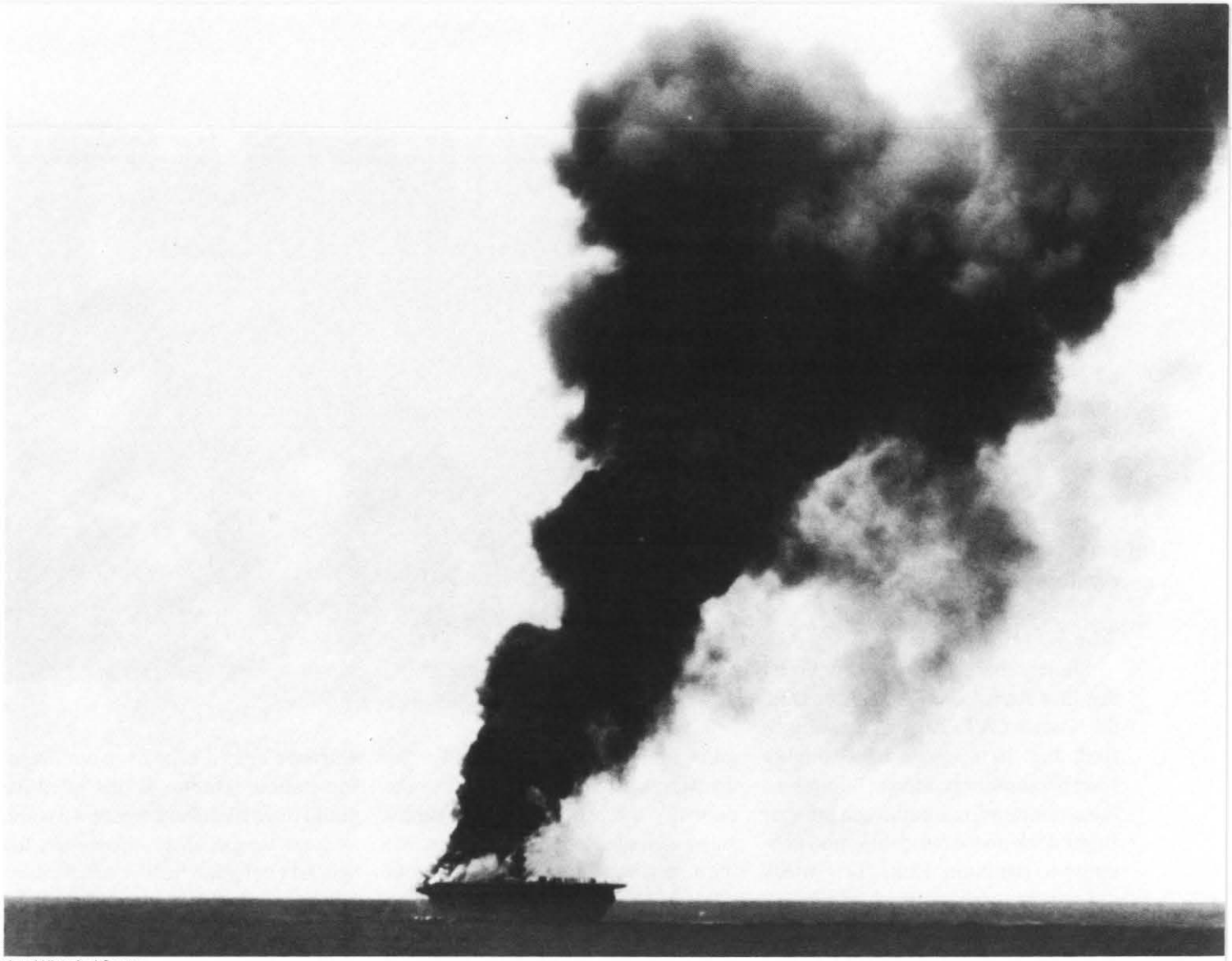
LT Walter B. Burwell, MC, USNR, joined the Navy after the attack on Pearl Harbor. In July 1942 he was assigned to USS Suwannee *(CVE-27) then under construction in Newport News, VA. The ship was formally commissioned on 24 Sept 1942. CVEs or escort carriers, were converted merchant ships or oilers. Smaller, slower, and cheaper to produce than fleet carriers, they solved the problem of providing continuous airborne support for convoys and amphibious operations. As part of the Philippines invasion at Leyte in October 1944,* Suwannee *had the unfortunate distinction of being one of the first U.S. Navy ships hit by a Japanese suicide plane. The following is Dr. Burwell's account of that action and its aftermath.*

The *Suwannee*'s sick bay had one standard hospital bed and four tiers of three bunks. We also had an operating room, and adjacent to that, a pharmacy and a sick call area, and a dental office. For the ship's company, we had a senior medical officer; I was the junior medical officer. Each squadron usually brought a surgeon with them. We also had about 12 corpsmen and a chief pharmacist's mate. We had a dentist aboard as part of our Ship's Company Medical Division. Of course, he would help out with first aid, health and sanitation inspections, and things like that, but he was kept pretty busy with his dental duties, because in those days the general public had pretty poor dental hygiene. And a lot of these boys coming aboard had probably never seen or heard of a dentist before.

Earlier Operations

The *Suwannee*'s first deployment was to support Operation Torch, the invasion of North Africa, in November 1942. In addition to providing air cover and helping to destroy the Vichy French Navy, we also ferried over a bunch of Army P-40s. On the way back, we ran into a terrific storm with a 59-knot gale. Tremendous waves peeled back the forward part of our flight deck. After repairs at the Portsmouth Navy Yard the *Suwannee* went to the Pacific. We arrived at Noumea, New Caledonia, in January 1943 and amazed the South Pacific veterans by steaming into the harbor with officers and crew at quarters in whites. We spent the next 7 months or so based at Efate Island. From time to time we'd sortie out and run up the "Slot" to Guadalcanal to support various operations. We made a quick trip back to San Diego in September 1943 for resupplying, refurbishing, things of that kind. But we made it back in time for the assault on Tarawa. We took part in the shore bombardment for that operation, and then, in succession, supporting landings at Apemama, Kwajalein, Eniwetok, Aitape, Hollandia, Saipan, Tinian, Guam, and Moratai.

I recall one very narrow squeak off Saipan one night. Our radar had picked up a bogey some miles out. You could hear reports of the action on our PA system. "He's 15 miles out, 10 miles," and so on. As the plane approached, our spotters actually saw him release a torpedo which came straight for us. I was at my battle station in the forward battle dressing station which was at the waterline and I heard the torpedo strike the side of the ship and then glance off. You could hear it bouncing off throughout the length of the ship—glunk, glunk, glunk, glunk. It never exploded. The explanation was that the pilot released the torpedo so close to us that it didn't have time to arm before it struck. I



Naval Historical Center

remember when we got back into dry dock, seeing the scars along the starboard side of the ship where the torpedo had scraped from front to back.

Leyte Gulf

On 12 Oct 1944, we left Seadler Harbor to participate in the Philippines invasion, supporting the landings at Leyte. As I remember, our fleet was divided into three groups—Taffy 1, 2, and 3 off the east coast of the Philippines. Our group, Taffy 1, was the southernmost and was to support the landings on Leyte. The Army seemed to have no great trouble with the initial landings on 20 Oct, and we were able to successfully repulse Japanese aerial attacks on our group.

But of course, the Japanese Navy came down to try to knock us out of our positions. By 18 Oct, we received reports from our search planes that the Southern Japanese Fleet had put out from Singapore and was heading for the Philippines. By 22 Oct, our submarines had spotted the Japanese Center Force heading for San Bernardino Strait. The Southern Force was destroyed at Surigao Strait during the night of 24 Oct. At the same time, Admiral Kurita's force came through the San Bernardino Strait to the north expecting to catch us in a pincer maneuver. Even those of us doing mundane jobs were aware that something was going on from all the radio activity and reports.

On 25 Oct we had gone to general quarters at dawn. After being released from general quarters, I had had breakfast and gone back to my stateroom to take a shower. Our captain announced on the PA system that the whole Japanese fleet was attacking Taffy 3 to the north of us. I looked out on the forecastle and sure enough it looked like there were a hundred ships on the horizon. At that point general quarters sounded and I had to go below to my battle dressing station in the forward part of the ship. It was one deck below the main deck—two or three below the flight deck. We were just about at the waterline. There was nothing unique about the battle dressing station; it contained 25-30

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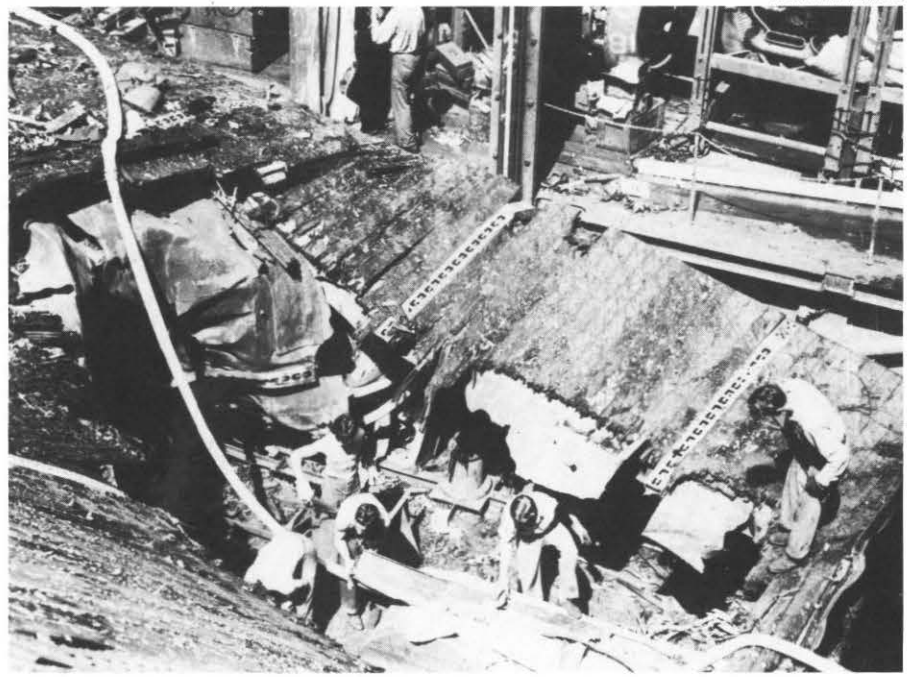

The forward elevator well on the hangar deck following the second attack.

bunks and medical supplies stored in lockers and was just below and aft of the catapult engine room. There was an open deck one deck above so you could look out on either side. This was ordinarily used as a barber shop and had a couple of barber chairs there. Many times during general quarters I would sit in one of those barber chairs because it was the most comfortable thing I could find.

The Kamikazes

Shortly thereafter, we were hit by the first Kamikaze. Our sister ship, the *Santee* (CVE-29), was actually hit first, but 19 minutes later another Kamikaze managed to get through all the antiaircraft fire and crash into our flight deck about amidships and penetrate to the main deck. This attack did not do nearly as much damage as the second attack the next day.

On the morning of the 26th we had maybe 25 wounded in the forward battle dressing station from the action of the day before. And we had things pretty much under control by that evening. In fact, we were not even at general quarters. My stateroom was only two decks above our battle dressing station and I told my corpsman that I was going up there to get a change of clothes and maybe lie down a minute, and that if he needed me to come and get me. For some reason, exhaustion just got the better of me before I even got up there and I crawled into a bunk in an adjoining sleeping compartment just forward of our battle dressing station and fell asleep.

I was asleep when the second attack occurred. The thing that woke me up was the sound of our antiaircraft guns going off. When I heard the guns, I jumped up and started for the dressing station. Just as I got to the doorway there was a terrific explosion and we lost our lights. I went into the dressing station and helped our corpsmen pull some of the wounded out from under wreckage when there was a second explosion. That one shattered all the bulkheads and broke water mains.

After the first explosion, my corpsman lit out for my stateroom to get me, thinking that's where I was. But when he got up there he found that my stateroom had been demolished and thought I was gone. I will never forget how after we got working again, he looked up and saw me and said, "My God, you can't be here." Indeed, he thought I was dead. "I'm so glad I'm not here by myself," he said.

The second explosion forced us to evacuate the battle dressing station. After the first explosion, there was smoke and fire fed by aviation gasoline pouring onto the deck above us. The wreckage in the passageway and ladder to the deck above by bomb and ammunition explosions, prevented entrance or exit to or from our dressing station. But up to that point we could have remained where we were, at least temporarily. However, the second explosion further wrecked our compartment, buckled our bulkheads, and ruptured water mains above and in our compartment, so that we began to flood. As the water level rose to knee height in our compartment, the ship was listing uncomfortably and lying dead in the water without steerage because of destruction of the bridge and wheelhouse. Isolated from the rest of the ship with only the reflection from the gasoline fires above and a few flickering battle lamps for light, I saw my wounded partially covered with wreckage and already awash and knew that we had to evacuate.

I think there were about 30 of us, including two corpsmen, two stretcher bearers, and perhaps 25 wounded resulting from the action of the day before, mostly consisting of extensive burns, blast and fragmentation injuries, traumatic amputations, compound fractures, and multiple severe

lacerations. About half the wounded were able to help themselves to some extent in dragging themselves about, but the remainder required stretchers to be moved.

Though I did not know the extent of damage to the compartments aft of us, I knew that they were unoccupied and sealed off during battle conditions. I informed my corpsmen that I would try to find an escape by this route as it seemed to offer our only hope of evacuation. We opened the hatch to the adjacent compartment, and I was able to get through it and lock it behind me without flooding from our compartment. Feeling my way with the help of a pocket flashlight, I found the compartment to be intact and dry, though without light or ventilation. Then I worked my way aft through several adjacent unoccupied compartments in the same way until at last I reached an open space on the main deck. Now, feeling certain that we could make our way out by this route, I returned to my group in the forward battle dressing station. There, with my corpsmen and stretcher bearers, and with the valiant help of some of the mobile wounded, we were able to move our stretcher-bound wounded through the hatches from one compartment to the next without leaving or losing a single member of our party to finally emerge on the open deck. From there, we entered the Chief Petty Officers' Mess, to find 2 corpsmen tending to about 20 more wounded. So, we joined forces to organize an amidship's dressing station and began to gather additional wounded in that area.

On the deck above, we found about 15 or 20 more wounded, mostly burns and blast injuries, who had made their way into bunks in the Chief Petty Officers Quarters. There was no immediate possibility of moving them to our already overflowing and understaffed amidship's station. One of my corpsmen and I gathered up what medical supplies we could carry and made our way up to the Chiefs' Quarters to treat the wounded there. Just as we arrived at the entrance to the compartment, a sailor, apparently in panic, came running along the passageway screaming, "Everybody's going over the side! The Captain's dead! Everyone on the bridge has been killed! Everybody's abandoning ship!" Now, havoc! Now, contagious panic and cold fear! The wounded who had crawled into the compartment began struggling to get out, screaming hysterically, "Where's my life jacket? Who took my life jacket? Turn that loose! G'mme that! No, it's mine!" Some were shoving toward the entrance, fighting and scrambling over one another. My heart sank as I stepped into the threshold to block the entrance and shout over and over, "Get back into your bunks! There's no order to abandon ship! You don't need your life jackets!"

I could see this was only having limited effect; so, with much inward trepidation but outwardly extravagant bravado, I made myself step into the compartment from the threshold, remove my own life jacket and helmet and hang them in clear view on a coat hook near the entrance. Then, I had to consciously force myself to move away from the entrance and the comfort and security of my life jacket and go into the compartment to tend the wounded, fearing that at any moment some panicky sailor might snatch my life jacket and belt, setting off a wild melee. It seemed to me that time hung in the balance for an eternity, but finally one after another of the men quieted down and crawled back into their bunks, so that gradually things began at last to calm down and sort themselves out.

In the meantime, one of our corpsmen tending the wounded on the flight deck saw the plight of those isolated by fire on the forecastle. He came below to report that medical help was critically needed there. It seemed to me that we would have to try to get

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The wardroom serves as an emergency sick bay.

From the collection of Dr. Walter B. Burwell

Surgeon's Division, USS *Suwannee*, November 1944. Dr. Burwell is seated second from the right.

through to them. So he and I restocked our first aid bags with morphine syrettes, tourniquets, sulfa, vaseline, and bandages, commandeered a fire extinguisher and made our way forward, dodging flames along the main deck. Along part of the way, we were joined by a sailor manning a seawater fire hose with fairly good pressure, and though the seawater would only scatter the gasoline fires away from us, by using the water and foam alternatively as we advanced, we managed to work our way up several decks, through passageways along the wrecked and burning combat information center and decoding area, through officers' country, and finally out on the forecastle. Many of the crew on the forecastle and the catwalks above it had been blown over the side by the explosions. But others trapped below and aft of the forecastle area found themselves under a curtain of fire from aviation gasoline pouring down from burning planes on the flight deck above. Their only escape was to leap aflame into the sea, but some were trapped so that they were incinerated before they could leap. By the time we arrived on the forecastle, the flow of gasoline had mostly consumed itself, and flames were only erupting and flickering from combustible areas of water and oil. Nonetheless, the decks and bulkheads were still blistering hot and ammunition in the small arms locker on the deck below was popping from the heat like strings of firecrackers. With each salvo of popping, two or three more panicky crewmen would leap over the side, and we found that our most urgent task was to persuade those poised on the rail not to jump by a combination of physical restraint and reassurance that fires were being controlled and that more help was on the way. Most of the remaining wounded in the forecastle area were severely burned beyond recognition and hope. All that could be done for the obviously dying was to give the most rudimentary first aid consisting of morphine, a few swallows of water, and some words of companionship, leaving them where we found them and moving on to others.

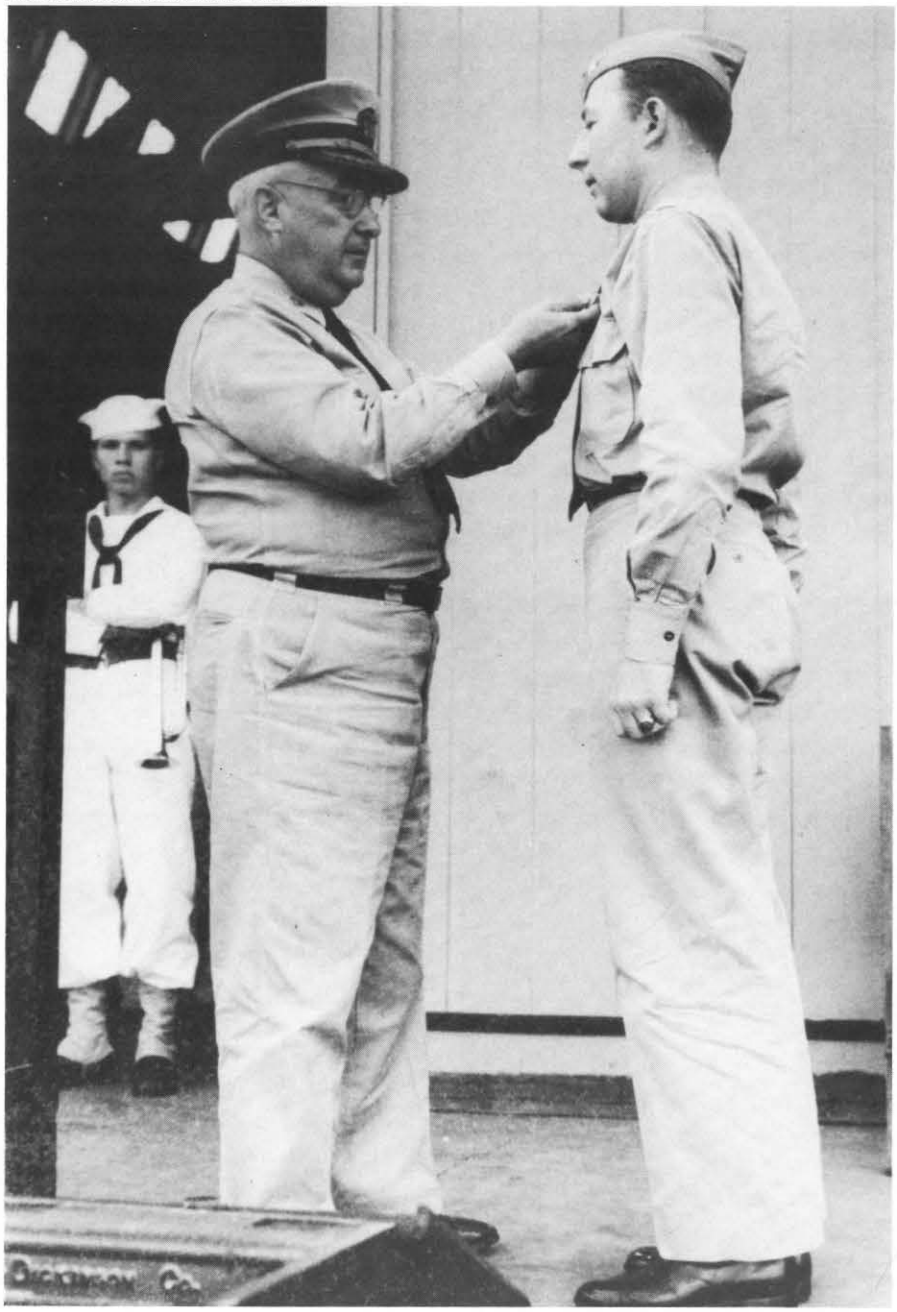
Nonetheless, within an hour or so after being struck in the last attack, power and steerage had been restored, fires were out, ammunition and gasoline explosions had ceased, pumps were working, and ruptured water mains had been shut off. But it was miraculous that we escaped destruction during this period, because we were vulnerable to further air or submarine attack.

By this time we had done what we could for the wounded on the forecastle, and I moved back to the amidship's dressing station. From there my corpsmen and stretcher bearers were searching out and gathering wounded. By nightfall, we began to run short of medical supplies and I realized that we needed to salvage the supplies left behind in the forward battle dressing station. I was able to recruit a small group of stretcher bearers to help me and we successfully made our way back to the forward battle dressing station. We found the compartment was still flooded with knee-deep water, but most of our supplies were salvageable in wreckage above this level. We were able to load up our stretchers with plasma, dressings, sulfa, vaseline, and morphine and haul them out. After two or three trips we had all our supplies safely out and distributed elsewhere.

Coming Home

For the ensuing 3 days we still had our hands full continuing to search for, find, and care for our many wounded scattered throughout the ship and burying the dead at sea. Then we proceeded to Kossol Roads, Palaus, where we transferred our most seri-

From the collection of Dr. Walter B. Burwell



LT Walter B. Burwell, MC, receives his Silver Star.

ously wounded to two hospital ships, the *Mercy* and the *Bountiful*. From there we went to Seadler Harbor, Manus Islands, to further "lick our wounds" for 5 days. There we cared for our less seriously wounded and made temporary repairs so we would be seaworthy enough to proceed to Hawaii.

We arrived at Pearl Harbor on 19 Nov. As we limped up the channel to the naval base, every Navy ship at anchor or in dock there "manned the rail" in a salute to the *Suwannee*, and our radio received this message: "Welcome to Pearl! Your successful fight against great odds will live as one of the most striking tales of Naval History. The people of our country and those of us in the Naval Service are gratified and proud of your outstanding performance of duty against the best the enemy could offer. As long as our country has men with your heart, courage, skill, and strength she need not fear for her future. To each and every one, a 'Well Done' — s/ADM Nimitz."

We stayed in Pearl Harbor only overnight, just long enough to transfer our remaining wounded to the Naval Hospital and to take on supplies, and then headed for major repairs at the Puget Sound Navy Yard in Bremerton, Washington, where we docked on 26 Nov 1944. The repairs took about a month. Because I was junior medical officer, I had to stay aboard for a week or so while it was being repaired and when the first section came back from leave I was able to go on leave. While I was on leave orders came through for me to report to the Naval Dispensary, U.S. Training Center, Gulfport, Mississippi. I went to Bremerton to be released and to pick up what was left of my belongings. While there, I walked through the ship once more. I realized I must have led a charmed life. The bunk I had been lying in at the time of the first explosion had been destroyed by the second explosion. It was absolutely unbelievable.

I departed with great pride in my ship and shipmates and their accomplishments, for I had witnessed innumerable instances of cool courage, bold bravery, and unselfish heroism blended with faith, friendship, and self-sacrifice. But I will say that I had gained no fondness for naval warfare, and I was thankful to go on to other endeavors.

For his heroic work on Suwannee *Dr. Burwell received the Silver Star.*— JKH

Naval Medical Center Oakland

A Leader in Navy Medicine

On 1 July 1944, Naval Medical Center Oakland, CA, was commissioned as Oak Knoll Naval Hospital, a medical treatment facility dedicated to the treatment and care of World War II casualties. In March 1994, almost 50 years later, that same facility has the distinction of being at the forefront of the Navy medical network, having earned full accreditation *with commendation* from the Joint Commission on Accreditation of Healthcare Organizations (JCAHO), with an accreditation decision grid score of 98 out of 100.

This high score was updated from the original 97 out of 100 awarded in 1993 after JCAHO reviewed patient care and the internal processes supporting provision of quality health care in May. Although the 1993 decision report was nearly faultless, a perceived deficiency related to life safety standards prevented the coveted accreditation with commendation.

"The only discrepancy [the JCAHO surveyors] found was in a passageway connecting two 1942 vintage buildings," explained CAPT Michael Little, MC, pointing out that the required "fire protection coating" was applied as soon as it was recommended by the joint commission. Little, who is director of medical services, added that NMCO's commander and executive officer challenged the joint

NMC Oakland: The people that made it happen.

commission's 1993 decision, asking the Chicago-based organization to re-evaluate their report.

After careful reevaluation and months of consideration, the JCAHO deleted the deficiency from its survey and notified the command of its decision to increase NMCO's grid score and award full accreditation with commendation.

But it was all in a day's work, Little said when he went over the steps that led to the historical accreditation. Little was one of three key personnel involved in the formation of a task force that prepared for the 1993 survey—himself, Dave Clark, head of Command Evaluation Department, and CDR Vicki Goff, NC, the command's quality assurance coordinator.

"We started the task force after the last survey," Little continued, explaining that it was made up of "about 30 people from all areas of the hospital and branch clinics who met biweekly, learning from each other in a sort of 'self-education tutorial'—looking at how we can best comply with current joint commission's manual and going over the old discrepancies from previous surveys."

All this may have been routine, but the end result was a smashing success—the culmination of years of hard work and ingenuity which the entire command is never likely to forget. "A 98 percent with commendation is extremely rare," beamed CAPT David Snyder, MC, the command's executive officer, when asked for his reaction. "It's hot stuff! It's the highest score ever achieved by any Navy hospital. Our fine staff has every reason to be proud of this unprecedented accomplishment."

From an organizational viewpoint, according to the medical center's commander, RADM Frederic Sanford, MC, "NMCO's final survey results boosted the Navy average for all its facilities to 90," something about which he said "the Surgeon General of the Navy was mighty pleased."

Begun in 1951, JCAHO is a private, nonprofit, nationally recognized organization made up of members from all major professional health care organizations. Its mission is to evaluate the quality of health care provided to the public by developing standards of quality in collaboration with health professionals and stimulating health care organizations to meet or exceed the standards through accreditation and the teaching of quality improvement concepts.

Requested strictly on a voluntary basis, the JCAHO survey is conducted every 3 years at civilian hospitals and military treatment facilities to evaluate the quality and suitability of care being rendered. The survey team is made up of civilians—a physician, a nurse, an administrator, and other specialists appropriate to the facility being surveyed.

According to a JCAHO spoke- person, the joint commission accred-its more than 5,400 hospitals and in excess of 3,600 other health care programs. In 1992 (the most recent year for which annual statistics are available), only 3.9 percent of hospitals surveyed received accreditation with commendation. ❑

—Story by Andree Marechal-Workman, Public Affairs, Naval Medical Center, Oakland, CA. Photo by HM2 James Sandridge.

Naval Medical Research and Development Command Highlights

●Gender-Neutral Performance-Based Strength Standards for Aviators and Naval Flight Officers

Successful operation of an aircraft is critical to completing mission requirements as well as to the safety of aircrew and equipment. While anthropometric screening standards have been in place for a number of years to assure aviation candidates can reach foot and hand controls, no strength standards are in place. This creates a serious safety concern as combat aviation opens to a wider population base.

Researchers at the Naval Aerospace Medical Research Laboratory, Pensacola, FL, are identifying appropriate strength requirements needed to safely perform duties in all naval aircraft. Performance requirements will incorporate instantaneous strength, sustained strength, and endurance of routine, emergency, and survival situations (e.g., high-G maneuvers, manual landing gear extension, ejection seat actuation, manual opening and closing of hatches and canopies).

Once requirements are identified, occupational performance tests and strength test batteries will be developed, validated against muscular demands of aviator tasking and established as strength performance standards. When this study is completed, a screening device and physical training program will be delivered to the Commanding Officer, Naval Aviation Schools Command and an Occupational Standards Strength Test Battery will be delivered to Chief, Naval Education and Training.

For more information contact CDR T.J. Singer, MSC, Research Area Manager for Aviation Medicine and Human Performance, at DSN 295-0878 or Commercial 301-295-0878.

●Health Issues of Women Aboard Ship Continues

With the increasing number of women serving in the Navy and Marine Corps and with more women deploying to combat-eligible assignments, questions concerning their health and health care needs are continually being assessed by the Navy. Building on the results of previous studies, researchers at the Naval Health Research Center, San Diego, CA, are conducting a pilot project assessing the health care needs of women aboard ship.

The study will identify a representative sample of ships (i.e., aircraft carrier, submarine tender, oiler, ammunition ship, repair ship) for determination of disease and injury rates concerning military women and initiate a controlled study of volunteer participants—1,000 women and 1,000 men aboard ship using comparison groups consisting of 1,000 women ashore. To ensure complete coverage of relevant issues, the research questions and questionnaires are being developed in coordination with BUMED, BUPERS, CINCLANTFLT and CINCPACFLT fleet surgeons and force medical officers, shipboard medical officers, and senior hospital corpsmen.

The results of this study will provide information of immediate relevance to health care for women aboard ship and will help to advance the operational objective of maintaining readiness of the entire crew. The study also will provide a scientific basis for designing more comprehensive longitudinal research studies about trends in military women's health care.

For more information contact LCDR P. Knechtges, MSC, Research Area Manager for Fleet Occupational Health, at DSN 295-0885 or Commercial 301-295-0885.

●Campylobacter Vaccines

Enteropathogenic campylobacters, principally *Campylobacter jejuni,* are recognized as major diarrheal disease pathogens worldwide. An estimated 400 million cases occur annually, with 2.5 million occurring in the United States. In U.S. military personnel, *C. jejuni* has been implicated as a cause of diarrhea in over 35 percent of the troops experiencing disease episodes during field maneuvers in Thailand, and in 10-20 percent of Navy and Marine Corps personnel with diarrhea after port visits in Egypt and South America. Treatment and control of *Campylobacter* infections is becoming complicated because of an increase in multiple antibiotic resistance. Vaccination offers one of the best options for disease prevention in high risk U.S. forces.

Researchers in the Infectious Diseases Department at the Naval Medical Research Institute, Bethesda, MD, developed two prototype oral vaccine candidates, a killed whole cell candidate and a live, attenuated candidate. The killed whole cell vaccine candidate has undergone the most extensive evaluation and was transitioned into advanced development by the U.S. Army Medical Materiel Development Activity in 1991. Further evaluation of this vaccine is being planned using human volunteers with the intent to license this product for DOD and civilian use. The first safety tests of the vaccine is scheduled for FY94 with field efficacy trials tentatively scheduled to begin in FY96/97.

For more information contact CDR C.J. Schlagel, MSC, Research Area Manager for Infectious Diseases, at DSN 295-0881 or Commercial 301-295-0881.

Naval Health Sciences Education and Training Command (HSETC) Highlights

●Naval Training Requirements Review

To keep pace with the ever-changing requirements of Hospital Corpsman "A" and "C" School training, HSETC is surveying the Navy health care team for on-the-job requirements of specific NECs. As part of the Naval Training Requirements Review to review, validate, and revise all NEC training programs, HSETC is now sending the Training Requirement Inventory questionnaire to Navy doctors, nurses, and corpsman/technicians. The questionnaire replaces the "job task list" originally used, providing a more thorough evaluation of job skill requirements. The Training Requirement Inventory also strives to obtain a broader base of input than older methods of course validation. After it is returned, a "validation conference" of specialty/enlisted technical advisors, supervisors, practicing technicians, and schoolhouse staff analyze the data and formulate policy to develop or modify training curricula to meet the needs of the end user. HSETC asks health care professionals, who receive the questionnaire, to please take the time to respond, either individually or with a group of technicians or specialists. Your input will have a direct impact on Navy medical training and readiness.

●Independent Duty Corpsman (IDC)

Naval Medical Center Oakland, CA, will host the second annual Independent Duty Corpsman Operational Medicine Seminar 3-7 April 1995 at the Parc Oakland Hotel. A variety of clinical and administrative topics will be discussed. The seminar affords all IDCs an opportunity to sharpen skills and increase awareness of available resources. More than 260 IDCs from numerous fleet, shore, and overseas commands attended the 1994 conference, declaring it an overwhelming success.

For more information on the 1995 conference call HM1 Jeffrey K. Schmidt at DSN 828-5420 or Commercial 510-633-5420. For fleet/operational funding information contact DTC L. Nazario at DSN 295-0925 or Commercial 301-295-0925. For IDC/CE information contact HMCS(SW) Dennis G. Sprouse at DSN 295-0631 or Commercial 301-295-0631.

●Reserve Dental Technician Proficiency Courses

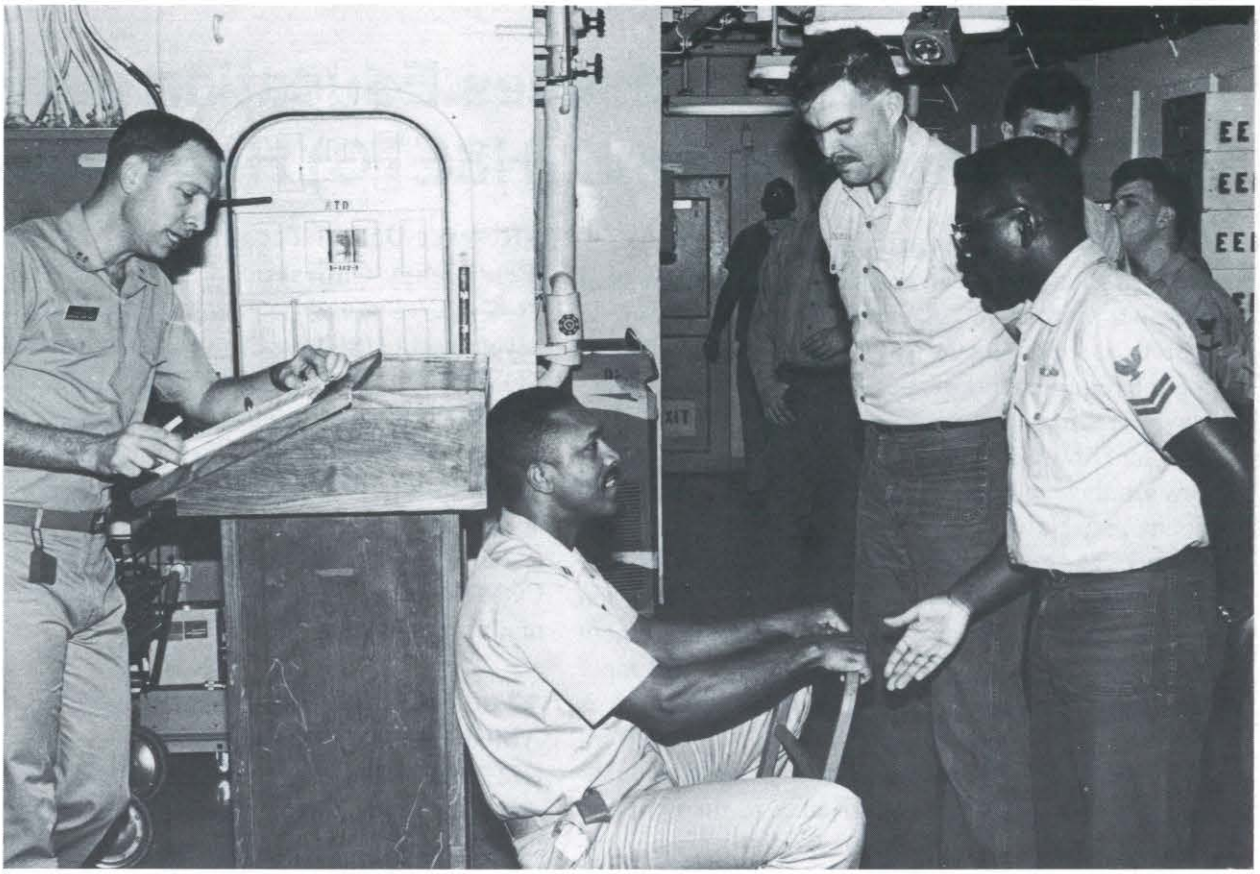
Two reserve dental technician proficiency courses developed by HSETC will be available in print through COMNAVSURFRESFOR in FY95. The basic course provides a review of the major concepts of DT "A" School. The advanced course covers major topics of medical administration for dental technicians E-6 and above.

For more information call CDR Munson, COMNAVSURFRESFOR at DSN 363-6486 or Commercial 504-942-6486.

●Tuition Program for Reserves in Allied Medical Programs

HSETC Reserve Programs Department (Code 27) is receiving applications for the Reserve Allied Medical Personnel (RAMP) program, which prepares personnel to fill critical Reserve Navy Enlisted Classification (NEC) Codes. The program provides payment of tuition and some related expenses for selected students in accredited training programs. Hospital corpsmen and dental technicians who are actively drilling in Reserve units should contact their local RAMP Liaison Personnel (RLP) representative for information regarding the application and selection process. Reserve HMs and DTs (E-1 through E-6) choosing local civilian associate degree programs in specific medically-related technical fields are encouraged to apply. The most needed categories include: HM-8483 (surgical technician), HM-8452 (advanced X-ray technician), HM-8506 (advanced laboratory technician), HM-8478 (advanced biomedical repair technician), HM-8479 (biomedical equipment systems technician), HM-8466 (physical therapy technician), DT-8783 (dental surgical technologist), and DT-8753 (advanced dental laboratory technician). Many more NEC requirements exist in small numbers; applications will be considered individually.

Anyone with suggestions for Navy medical education and training issues should call CDR Spolnichi at DSN 295-0776 or Commercial 301-295-0776.



A Recreational Approach to Advancement Examination Preparation

CDR John R. Pedrotty, MC, USN

LT James Stobinski, NC, reads a question while LT Junius Lewis, MSC, observes as judge. HMC Alston McGann reaches out for the chair before his opponent HM3 Michael Bohnsdahl. Scorer/timekeeper is far right.

Navy corpsmen have long been faced with the daunting challenge semiannually to study the "right stuff" for advancement. Simply review the *Bibliography for Advancement Study,* NAVEDTRA 10052-AM, which provides a list of training manuals, instructions, technical manuals, and other publications in support of the Naval Standards (military/leadership knowledge) and Occupational Standards prescribed in Section I of the *Manual of Navy Enlisted Manpower and Personnel Qualifications Classifications and Occupational Standards,* NAVPERS 18068E.(*1,2*)

It really doesn't have to be so painfully dry. Here's a method we used with Fleet Surgical Team Four (FST-4) aboard USS *Inchon* (LPH-12) while supporting Operation Restore Hope in Somalia.

Faced with finding a stimulating way to encourage the team's corpsmen to study harder for an upcoming advancement exam and review training lecture material, LT James Stobinski, the FST-4 OR nurse, resurrected a method he had first experienced in nursing school. It was initially modified by his medical colleagues at Naval Hospital Guantanamo Bay in 1993 and further refined by FST-4 medical officers during deployment to Somalia. It involves incorporating a game show format utilizing questions that are directly applicable to advancement from a number of resources including the *HM Study Guide for HMC, HM1, HM2, and HM3, Northstar Hospital Corpsman Study Guide, Hospital Corpsman 3&2, Hospital Corpsman 1&C,* recent on board advancement-oriented lectures, and other publications recommended in *The Advancement Handbook for Petty Officers (Corpsman).*(*3-7*) Each training week is divided into 3 days of hour-long lectures by medical department officers and 1 day of corpsman skill drills wrapped up on Friday with a Corpsman Bowl.

The Bowl is divided into three phases with two opposing teams. There are two 30-minute periods in which a multiple choice or true or false question is asked to a contestant from each team in serial fashion. Points are awarded for each correct answer to the appropriate team and also recorded for each individual when they are the winning contestant. One final, challenging "double jeopardy" type question is asked at the end of the two periods *after* each team has wagered a chosen amount of points from their accumulated team total. The team with the most points after "double jeopardy" is the winner and an appropriate tangible award is given each member of the team after the Bowl.

Two bluejacket teams are formed each week with different members. Team captains are selected on a rotating basis. Occasionally, another unit will challenge with their first string against the home team's finest. As an essential part of the process, three khaki medical personnel serve as the question reader, judge, and scorer/timekeeper using a layout similar to the one shown in photo.

A question is read by the reader to one contestant from each team who stands to either side of the back of a chair with hands held at ease behind the back. The judge sits backward on the chair facing the contestants. After the multiple choice question is fully read and the statement made "the answers are" or at any time during a true or false question, a contestant may quickly strike the back of the chair with the closest hand signaling intent to answer the question. The contestant may choose to wait until part or all the multiple choice answers have also been read by the reader. The contestant who strikes the chair first, as determined by the judge, *after* the minimum amount of the question has been read is allowed to make the first response. If the answer is wrong, as determined by the reader (who has the answer sheet), or the first responder

struck the chair too early, according to the judge, then the other contestant unaided by any team member may immediately answer the question or may choose to have the entire question and possible answers read before answering. If the second responder is wrong, the initial responder may consult with the rest of the team members before making a response.

A maximum of 30 seconds is allowed before making a response. During the first 30-minute round, 15 points are awarded for a correct first response, 10 points for a correct second response, and 5 points for a correct third response. Team points are recorded on a large scoreboard by the scorer, and points earned by each individual are simultaneously recorded on a unit roster. As many questions are possible are covered from a variety of topics preselected by the reader during each 30-minute period. After a short break, the second 30-minute round is played using an identical format but awarding *double* the point value for each correct response (i.e., 30, 20, 10).

At the completion of the second round, each team captain will confer with all the team members and wager all or a portion of the team's accumulated points before one final challenging "double jeopardy" question is read to both fully assembled teams. Each team is given 3 minutes to confer among themselves before each team captain gives a response. The final tally is computed for each team adding the wagered points for a correct team answer and subtracting the wagered points for an incorrect team answer. The winner is the team with the most points. Team members receive an immediate tangible award and appropriate recognition for the following week.

Additionally, points which have been tallied for each individual during the game regardless of team are added to an individual's accumulated total from the training cycle. This updated cumulative overall standing is posted weekly in divisional spaces. Special recognition by the unit is given to the top performers at the end of the training cycle along with the obvious weekly "bragging rights." This posting is known to be a powerful stimulus for each individual to study harder the following week to improve their standing.

The key to the success of this hybrid game format is that it takes place in a friendly, relaxed atmosphere. There is immediate positive reinforcement for a correct answer (the team *and* the individual get points which can lead to a tangible reward) and there is instant recognition and encouragement from team members (hand slaps, etc.).

The corpsmen really look forward to the Corpsman Bowl each week as an excellent morale booster in which to have fun in a very relaxed atmosphere while improving themselves for their next advancement exam. Personal assignment of points leads to friendly competition and a method of gauging progress in preparing for advancement. Those who study hardest, regardless of rate, are at the top of the list. We have noticed individuals who formerly were not well integrated into the team blossom. They become better accepted due to their academic prowess. This leads to tighter bonding and unit cohesiveness among both corpsmen and khaki who conduct the Bowl.

Further educational benefit accrues during the game if medical department officers take time out during the Bowl to offer further instruction or clarification of learning points on difficult questions. Managers may compare standings during a training cycle to performance on the subsequent advancement test in order to adjust review material and to reinforce the value of good study habits. This educational tool seems to be especially well suited for training involving a large amount of memorization. Application of this process is limitless and with a bit of imagination can easily be applied to other areas of training such as Military Requirements, Damage Control, Warfare PQS (ESWS, EAWS, SWMDO), Service School Training, NATOPS, and training cycle lecture review.

References

1. *Bibliography for Advancement Study,* NAVEDTRA 10052-AM.
2. *Manual of Navy Enlisted Manpower and Personnel Qualifications Classifications and Occupational Standards,* NAVPERS 18068E.
3. *HM Study Guide for HMC, HM1, HM2, and HM3,* Naval Education and Training Center, Pensacola, FL, 29 July 1992.
4. *Northstar Hospital Corpsman Study Guide,* Northstar Study Guides Inc, P.O. Box 68, Dubberly, LA 71024.
5. *Hospital Corpsman 3&2,* NAVEDTRA 10669-C.
6. *Hospital Corpsman 1&C,* NAVEDTRA 10670-C.
7. *The Advancement Handbook for Petty Officers (Corpsman)*—ordered before 31 March each year from Commanding Officer, Naval Educational Training Program Management Support Activity (Code 0322), Pensacola, FL 32509-5400.

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Dr. Pedrotty is the former family practice specialist on Fleet Surgical Team Four embarked aboard USS *Inchon* (LPH-12). Dr. Pedrotty currently is on the family practice staff at Naval Hospital, Newport, RI.

The THCSRR Model:

Determining Navy Medicine's Readiness Manpower Requirements

LT Timothy H. Weber, MSC, USN

As budgetary and legislative pressures continue "rightsizing" the Navy, Navy medicine has responded by developing the Total Health Care Support Readiness Requirements (THCSRR) model. This model allows Navy medicine to accurately determine and project its active duty manpower readiness requirements to the subspecialty level based on the two readiness missions of Navy medicine: wartime and day-to-day operational support to the fleet and Fleet Marine Force (FMF).

Navy Medicine's Missions

Critical to understanding how Navy medicine defines its manpower readiness requirements is an understanding of Navy medicine's three missions.

1. Wartime Mission: To meet wartime demands for medical care in a scenario defined by two nearly simultaneous major regional conflicts (MRCs). This mission includes mobilizing two hospital ships, supporting the fleet and the Marine Corps' operations ashore and afloat, numerous fleet hospitals, and maintaining OCONUS military treatment facilities (MTFs) and dental treatment facilities (DTFs).

2. Day-to-Day Operational Support Mission: Provides active duty Navy personnel, or "blue suit" personnel, to support the fleet, FMF, and OCONUS MTFs/DTFs, on a daily basis. This mission is supported by a CONUS rotation base allowing Navy medical personnel to rotate to and from operational platforms and overseas assignments.

3. Peacetime Health Benefit Mission: Provides health care for 2.5 million beneficiaries through the direct care and CHAMPUS systems.*

While all three missions are imperative to Navy medicine, the first two, the wartime and day-to-day operational missions, determine the number of active duty Navy personnel in uniform. It is only because of these two missions that Navy personnel are available to support our third mission, the peacetime benefit mission, providing medical and dental care in our CONUS MTFs and DTFs.

Model Background

The impetus for the THCSRR model comes from the fiscal and legislative pressures placed on the Department of Defense (DOD) to "rightsize" the total force structure. Specific pressures faced by Navy medicine come from a study of the military health services system (MHSS) and the MHSS's wartime manpower requirements. Conducted by the Office of the Secretary of Defense, Program Analysis and Evaluation, this study, commonly called the "733 Study" due to its origination in Section 733 of the 1992 National Defense Authorization Act, was to determine the total medical care requirements needed to support all three services during a post-Cold War wartime scenario.** Inclusive in the 733W Study's requirements are the number of Navy medicine personnel to man theater operational platforms (e.g., fleet hospitals and hospital ships)

*The manpower requirements needed for the peacetime health benefit mission are determined by the Efficiency Review (ER) process. This is in contrast to the THCSRR model which determines the manpower *readiness* requirements.

**The 733 Study was actually a two-part study. One part examined the peacetime requirement while the other part examined the wartime requirement. This article places a "W" after the number 733 to denote that it is speaking of the wartime portion of the study.

VADM Hagen on THCSRR

Navy medicine is at a crossroads. The pressure to downsize has never been greater. While the fleet is being reduced to the smallest force structure in decades, the Navy Medical Department has remained at fairly constant levels. What is the right size for the Medical Department?

For years, the level of medical personnel has been a function of the "wartime" mission of Navy medicine; full mobilization to fight the former Soviet Union and other Warsaw Pact members. With the end of the Cold War, the historic wartime mission manpower requirements of the Navy Medical Department have been reduced to levels well below our current manpower structure. Congressionally directed studies of DOD medical programs have shown that for future wartime missions, we need far fewer uniformed personnel than we have today. Therefore, it is understandable that there is great pressure to reduce their number.

However, Navy medicine must devote a larger percentage of its resources than the other services to support forward-deployed forces. On the average, about 30 percent of our Navy medicine family is in a deployed or overseas status to support the Navy and Marine Corps forces as part of our day-to-day operational mission. Recognizing this unique aspect of the Medical Department is very important to determining its proper size.

For the past year, members of my Pentagon-based staff have been working tirelessly with the support of BUMED to develop a model that clearly defines the readiness missions of the Navy Medical Department and the uniformed personnel needed to support those missions. In this edition of *Navy Medicine,* the model is presented for your information. It has previously been used successfully throughout the Pentagon. Now, for the first time, the model provides an accurate assessment of the uniformed personnel requirements for all the Navy Medical Department's readiness missions.

I encourage you, as a member of the Navy medicine team, to review carefully the article on the "THCSRR." Share the model with your shipmates and stay focused on the bright future of Navy medicine.

and provide a force structure that allows for echelon 1 and 2 care, OCONUS MTFs/DTFs, research and development activities, continuous training (trainers only), and headquarters staffs (e.g., CINC, BUMED).

The report from this study conjectured that as the number of active duty personnel are drawn down, so too should the level of wartime medical manpower requirements decrease. In other words, the three service's medical manpower requirements for the two MRC scenarios were significantly reduced from the prior global wartime scenario.

To adequately assess the manpower readiness requirement to support the day-to-day operational mission, the Surgeon General of the Navy, VADM Donald F. Hagen, asked the Center for Naval Analyses (CNA) to conduct a study to examine the manpower requirements needed for the day-to-day operational mission. This study, titled "Measuring the Impact of the Navy's Downsizing on Medical Officer Billets," included defining the requirements for Navy medicine's mission to support the fleet, FMF, OCONUS MTFs, and the isolated (ICONUS) MTFs at Twentynine Palms and Lemoore: all platforms where only active duty Navy personnel can perform the medical mission. This study, completed in March 1994, incorporates the requirement for a rotation base, in accordance with BUPERS policy.

THCSRR Model

While both the 733W and the CNA studies examine different aspects of Navy medicine's overall mission, neither combine the wartime and the day-to-day operational missions into a single manpower requirement. Consequently, VADM Hagen tasked his POM (Program Objective Memorandum) FY96 Medical Assessment Task

Force (PMATF) to develop a single manpower readiness requirement model that would incorporate the 733W and CNA studies. This model is now known as the Total Health Care Support Readiness Requirement (THCSRR), and is currently being used to portray the active duty manpower needs of Navy medicine for FY99. In addition to the development of the THCSRR, the PMATF created an allocation model that allows Navy medicine to distribute the THCSRR's "blue suit" requirements to support the peacetime health benefit mission.

Fundamentally, the THCSRR model has two main components. The first component derives active duty manpower readiness requirements necessary to complete both wartime and day-to-day operational support missions. The second component programs the sustainment requirements needed to maintain the readiness manpower requirements for future years.

To arrive at the THCSRR the first component is obtained from a *union** of the manpower readiness requirements, denoted in both the wartime and day-to-day operational studies, at the subspecialty level. This union is known as the Medical Operational Support Requirement (MOSR). The MOSR is created by combining two data bases. The first data base included active duty requirements from the 733W Study. The second data base included active duty requirements from the CNA study (this includes the rotation base needed to support this operational requirement). A union of the requirements from these two studies results in a third set of requirements that define the minimum number of fully trained active duty personnel required to accomplish both missions. Figure 1 shows the union of these data bases.

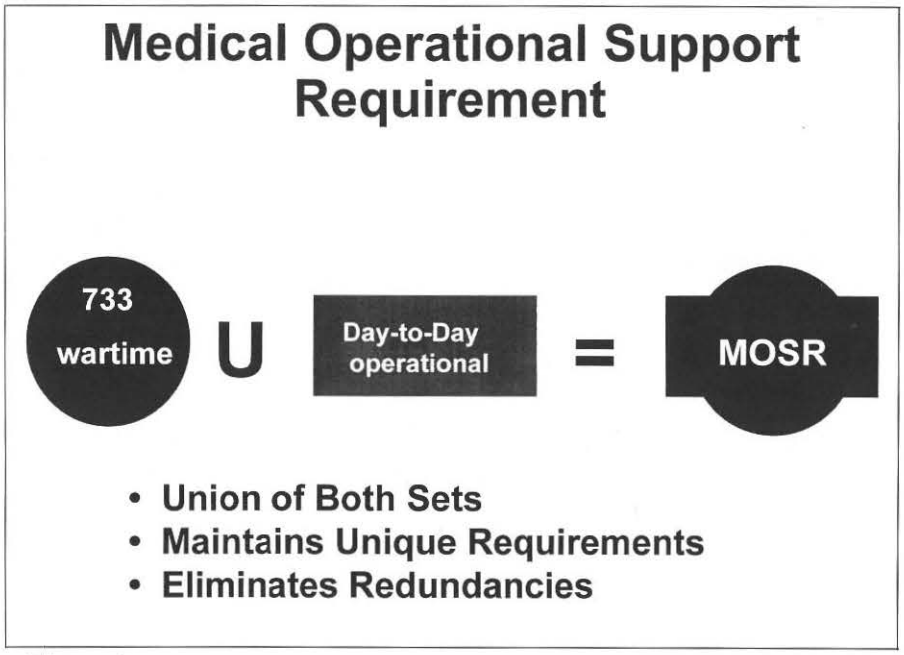

Figure 1

A hypothetical example of this union of the 733W and CNA studies is given below. If there is a wartime requirement for 100 hospital corpsmen operating room technicians (OR techs), but there is only a day-to-day operational requirement of 70 OR techs; the union of these two requirements is 100 OR techs. (Note: the day-to-day operational mission requirement includes a rotation base.) By creating a union of these two different requirements the resultant 100 OR techs are the minimum number of OR techs necessary to meet the requirement of either mission.

In creating such a union, several problems involved with determining manpower requirements are solved.

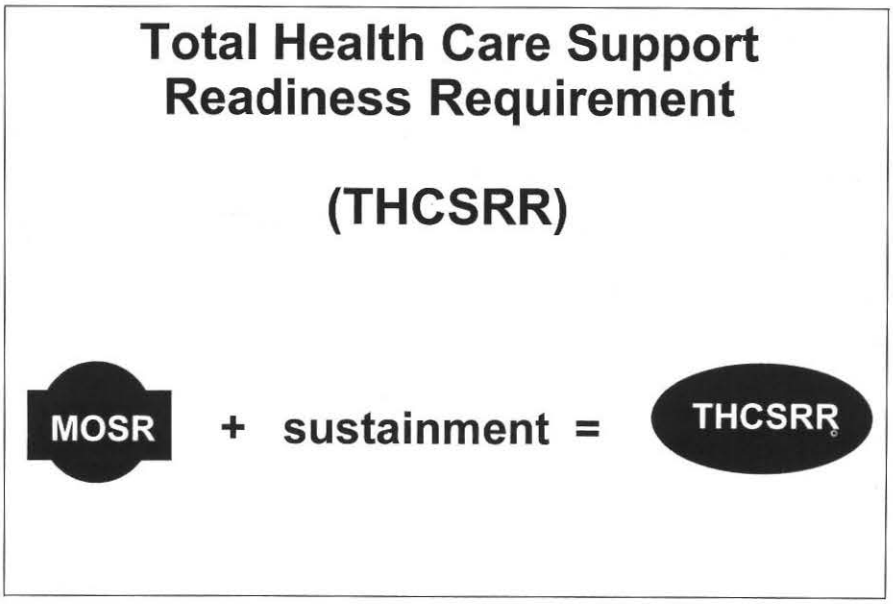

Figure 2

*An example of a union: Data set one consists of the letters A,B,C. Data set two consists of the letters B,C,D. The union of these two sets is A,B,C,D, not A,B,B,C,C,D.

First, a union eliminates redundancies. For example, if the requirements for the 100 and 70 OR techs were added together, to equal 170, Navy medicine would have 70 extra OR techs with the same skills, doing the same job. Second, a union allows for the maintenance of unique requirements to be filled since the union is created at the subspecialty level. (For example, the union of A,B,C,D, described in the footnote, maintains the unique requirements of the first data set, A,B,C and the second data set B,C,D.) Third, a union creates a credible argument for the needs of Navy medicine's manpower readiness requirement. As such, Navy medicine has for the first time, through the MOSR, validated the true manpower readiness requirements to support the entire readiness mission.

Once the MOSR has been defined the second component of the THCSRR model was determined by quantifying a sustainment requirement for the MOSR. Sustainment requirements allow for a continuous flow of qualified personnel into MOSR specified jobs as people attrite either from the Navy or from their current skill level and move to a higher skill level. The sustainment requirement, therefore, is the calculated number of billets required for officers and enlisted in training and must be *added* to the MOSR. To demonstrate the need for sustainment the hypothetical OR tech example is used again. The MOSR for OR techs was 100. If the attrition rate for OR techs is 10 percent then Navy medicine must replace those 10 OR techs (100 x 10 percent = 10) in order to "sustain" the MOSR. By adding the MOSR (100) and the sustainment pieces (10) together the THCSRR is complete and equals 110. Therefore, adding the MOSR and the sustainment pieces together, as shown in Figure 2, completes the THCSRR model and provides the *total* active manpower readiness requirement for Navy medicine.

Allocation Model

The PMATF, in addition to developing the THCSRR model, created a second model to allocate the calculated manpower readiness requirements in accordance with mission priorities. The first missions filled by the THCSRR are the "fact of life" missions of Navy medicine: support to the fleet, FMF, OCONUS/ICONUS MTFs and DTFs. Listed in fill order are the remaining mission priorities: headquarters and support activities, primary centers of operational missions, primary centers of medical training, primary centers of fleet/FMF training, and other mission support activities. The prioritization of these missions is essential since the THCSRR model has defined a new manpower readiness requirement to accomplish both of the readiness missions.

Benefits of THCSRR

There are three primary benefits to the THCSRR model.

Benefit 1: The THCSRR model is dynamic. By basing manpower readiness requirements on the wartime and day-to-day operational missions, both of which are defined by DOD and have certain platforms attached to each mission, the THCSRR model is able to accommodate any changes made to these missions. For example, if DOD determines that there needs to be one less operational platform or OCONUS MTF, the THCSRR model output from the model will produce a new set of manpower requirements that reflects the effects of subtracting this platform, and, if applicable, the associated rotation base.

Benefit 2: The THCSRR model illustrates impact of changes to mission priorities. The THCSRR model has the capability to demonstrate the impact/change of reconfiguring Navy medicine's mission priorities, as defined in previous section. The ability to demonstrate such impacts is a beneficial and useful strategic manpower management tool for planning in the future years.

Benefit 3: THCSRR model's requirements are valid. Subspecialty-level union of wartime and day-to-day operational mission requirements allows Navy medicine to have credible requirements to present to DOD and congressional manpower experts. By achieving such credibility, as well as being the first of the military services' Medical Department to have such a requirements model, Navy medicine is able to demonstrate true "blue suit" manpower requirements.

THCSRR Execution

While Navy medicine has gained the ability to define the most efficient and effective mix of "blue suit" manpower readiness requirements, full implementation of the THCSRR will not be without challenges. Navy medicine is driving toward total THCSRR implementation by FY99. The complexities of contractual reviews, data entry into the Total Force Manpower Management System (TFMMS), training pipelines, and personnel planning, to name a few, require dedicated effort over the next 5 years to ensure Navy medicine will be able to meet its readiness mission.

If your command would like a detailed briefing on the THCSRR model, please contact the N-931 staff at DSN 227-1494 or Commercial 703-697-1494. ❑

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Navy Medicine September-October 1944

Jennifer Mitchum

In the Central Pacific, U.S. forces continued an offensive that would eventually take them to the Imperial Palace. The first 6 months of 1944 were decisive with Kwajalein, Eniwetok, Saipan, Tinian, and Guam falling successively. To neutralize the Carolines, American air and sea forces raided heavily fortified Truk and neighboring islands in the spring of 1944. Next, U.S. forces would move against the Palau Islands, which are about 1,200 miles west of Truk, and Morotai Island in the Netherlands East Indies.

Peleliu and Angaur

Planners chose Peleliu, on the southern end of the Palaus, for the first beach assault. On 15 Sept, the troops that went ashore met little mortar or small arms fire. The enemy had retreated inland to more defensible positions. Within 2 days, troops captured their prime objective, Peleliu airfield.

On 17 Sept, Army troops proceeded to land on nearby Angaur. They quickly overran the island and organized resistance ceased on 20 Sept. In taking the island, 237 Americans were killed.(1) Two transport medical beach parties went ashore and operated two care stations until 21 Sept. At one station, doctors and corpsmen mainly treated accidental wound fragment injuries, minor coral cuts, sunburn, chafed skin, sore feet, and other illnesses; less than half the casualties resulted from direct enemy action.(2) Moreover, the Army quickly established the 17th Field Hospital, a 500-bed unit which was augmented with 100 beds from USS *Solace* (AH-5), and the 41st Portable Surgical Hospital, a 300-bed facility. By F+2, both were receiving patients.(3)

Meanwhile, the Japanese forces had emerged on Peleliu. From fortifications carved out of solid rock bluffs further inland, the enemy fought with tenacity. Army troops on Angaur returned to Peleliu to assist marines in eliminating the defenders cave by cave. Casualties mounted with every inch of ground gained.

Initially, fierce fighting ashore prevented medical companies from landing. Thus, transport beach medical parties tended to casualties during the first 5 to 10 days. In addition to its field units, the Army assigned 2 corpsmen per platoon or 40 corpsmen per battalion ashore.(4) However, stretcher bearers, regimental and battalion medical units, and malaria control and sanitary units eventually landed.(5)

Evacuation

Rough terrain made land evacuation difficult on both Angaur and Peleliu. In some instances, Navy medical personnel lowered litter casualties over high rocky cliffs by ropes and pulleys.(6) Moreover, collecting companies relied on Army quarter-ton trucks, Dodge ambulances, and, most often, DUKWs (amphibious trucks) to plough through mud and swamp to bring casualties to seaward evacuation points.

There, at the reef's edge, doctors and corpsmen determined the sever-

ity of injuries and provided whatever medical attention possible before evacuating casualties to LSTs (landing ship, tank) and LCVPs (landing craft, vehicle, personnel) that would take the wounded to transports and hospital ships. This new type of medical section, known as the "Reef Beach Medical Section," facilitated seaward evacuation. Furthermore, LST-225 served as a casualty transfer point and lay about 1,500 yards off the Peleliu shore.(7) Aboard LST-225, Navy medical personnel rendered additional first-aid treatment and triaged wounded before evacuating them further out to transports and hospital ships. Such transfer points at sea helped eliminate confusion in the evacuation process.

Transports were key in the Navy Medical Department's care program. Less than an hour after troops landed on Peleliu, specialized medical teams aboard transports were busy treating everything from shrapnel and blast wounds to neurosis.(8) The use of penicillin and whole blood were essential in preserving lives. Consequently, Navy medical personnel on some transports established blood banks for their ships. For example, servicemen aboard attack transport *Fayette* (APA-43) donated almost 30 quarts of "O" type blood, as well as other types for cross matching.(9)

Hospital ships *Samaritan* (AH-10), *Bountiful* (AH-9), *Solace* (AH-5), and *Relief* (AH-1) began arriving in the Peleliu-Angaur area F+3 and served much like floating ambulances, receiving patients from the beaches and other vessels, and evacuating them to rear bases. *Samaritan* and *Bountiful* left the area with wounded almost immediately while *Solace* and *Relief* remained in the area for several days. A member of USS *Solace* observed the severity of the battle stating, "The patients we were receiving were shot up as badly as any we had seen so far...both sides were taking a shellacking."(10) The Navy medical team aboard *Solace* handled over 1,000 cases in the Palaus operation; over 800 were battle casualties.(11)

In the 10-day period prior to medical companies sufficiently setting up ashore, 3,756 casualties were evacuated seaward from Peleliu. Most were by transports. Between 15 Sept and 14 Oct, 5,554 casualties were evacuated by sea and 258 by air during the Palaus operation.(12)

Sanitation and Disease

Peleliu's tropical climate and swampy conditions coupled with corpses and waste made the island a fly and mosquito haven. To rid the island of insects and other pests, sani-

Men wounded in action D-day on Peleliu are carried to an evacuation station.

tation control units sprayed the area with DDT.

Sanitation and malaria control units had difficulties instituting preventive and suppressive measures because of the Palaus climate and terrain. Due to inadequate sanitation, some men developed enteritis and fungus infections.

Malaria incidence, however, was low. In the Army's 81st Division, which was encountering malaria for the first time, seven cases were reported. In the veteran First Marine Division, 72 members were hospitalized for recurrent malaria between 24 Sept and 1 Oct. Only four cases were serious enough to be evacuated and the others required only a few days of hospitalization.(13)

The Palaus Secured

By 30 Sept, the southern Palaus were secured although many defenders remained in isolated pockets of the islands. It would take a little over 2 months to eliminate this resistance. The First Marine Division received the brunt of the fighting as 46 percent (5,031) of the division became casualties. Navy Medical Department casualties were also high with 1 doctor and 45 corpsmen being killed and 7 doctors and 208 corpsmen wounded.(14) The Army suffered a little over 1,900 casualties and the Peleliu Island Command had almost 200.(15)

Morotai

The day troops invaded Peleliu, Army troops landed virtually unopposed on Morotai Island. Small enemy parties tried to launch banzai attacks. However, American troops wiped out these banzai charges, while losing 31 (killed or missing) and 85 wounded. Other defenders died while trying to escape to Halmahera by barge and a few took to the mountains.(16) Almost immediately, American personnel began building an air base.

The Ulithi Islands

On 23 Sept, the Army proceeded to occupy several islands in the Ulithi Island group which was 500 miles north of the Palaus. The Japanese had evacuated the islands a month earlier. Thus, casualties were extremely light.

With occupation of the Palaus, Morotai, and Ulithi, the Americans controlled the approaches to the Philippines and now had the advanced bases needed to support MacArthur's return to the Philippines.

Leyte

General Douglas MacArthur's dream from the moment he was ordered to evacuate the Philippines in 1942 was that he would one day return to liberate the islands from the Japanese. MacArthur's goal became a reality on 20 Oct, when he and thousands of American troops waded onto the beaches of Leyte island in the Philippines.(17) Once secured Leyte was to be the staging area for liberating the rest of the archipelago.

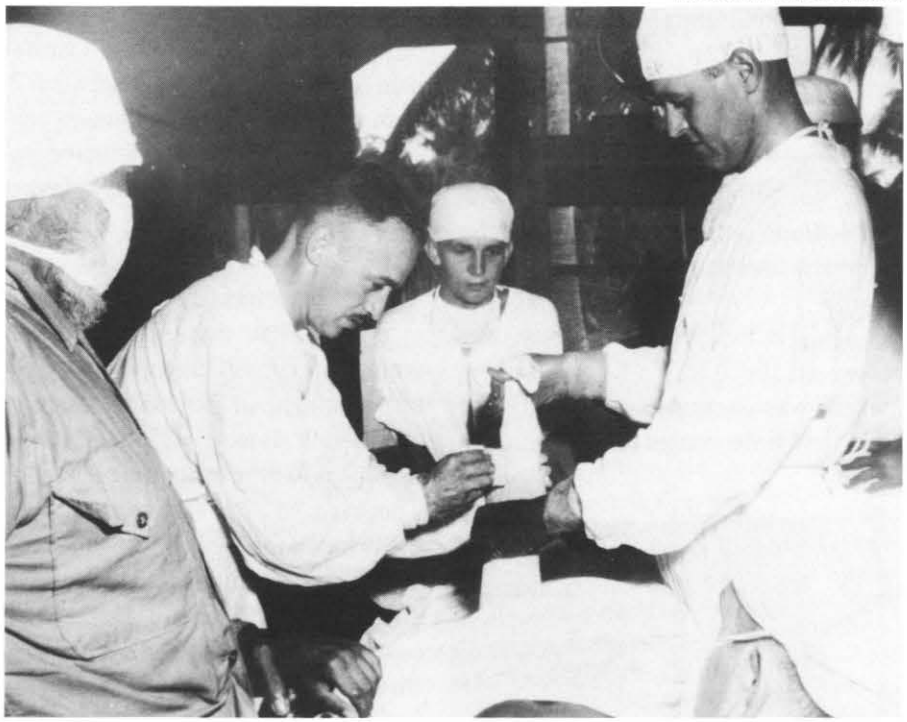
Enroute aboard transports, Navy physicians and corpsmen immunized sailors and soldiers against cholera, typhus, and plague. Moreover, atabrine was used as a malaria suppressant. Although no serious epidemics were reported, many experienced diarrhea.

Leyte's terrain, which consisted of many extinct volcanoes, knifelike spurs and ridges, and deep ravines, formed an effective barrier between the island's eastern and western coastal areas. Thus, while plodding American foot soldiers endured the muddy jungle and dodged snipers' bullets on the northeastern beaches, the Japanese fortified on the western side. Therefore, U.S. troops were able to establish beachheads relatively easily and initial casualties were comparatively light. At the end of the second day, there were 83 killed and 145 wounded.(18)

Navy Medicine

For the most part, the Navy Medical Department handled beach medical activities and evacuation of troops. Transport medical beach parties, consisting of a medical officer and eight corpsmen, went ashore and set up aid stations. Army medical collecting

Photos from BUMED Archives



Navy physicians treat a native on Falalop Island in the Ulithi Atoll.

units, consisting of an Army doctor, a dental officer, and two Army medics, accompanied Navy medical beach personnel, and usually brought wounded back to aid stations within 20 minutes of their injuries.(19) Moreover, the Army established a battalion clearing station about 300 yards inland the day after the initial landings.

Evacuation

Torrential rains turned roads and airfields into beds of mud making ambulances useless. LVTs (landing vehicle, tank), DUKWs, and more often Weasels were used to gather and transfer wounded from inland positions. In some instances, collecting section personnel showed their ingenuity. For example, personnel laced wounded to bamboo pole-attached stretchers, and then yoked the entire contraption to water buffalos which dragged the patients to where they could be transferred for evacuation to the beaches. Once on beaches, amphibious vessels ferried wounded to transports and hospital ships.

Casualties came aboard transports usually within an hour and a half of their injuries. Subsequently, medical personnel performed several tasks including suturing abdomen, chest, and scalp wounds, performing debridement, and dusting wounds with sulfonamide powder. At least 3 doctors and 20 corpsmen served aboard each transport.(20)

Two Army hospital ships as well as Army-staffed Navy hospital ships USS *Mercy* (AH-4) and *Comfort* (AH-3) operated in Leyte Gulf. Moreover, hospital ships *Solace*, *Relief*, and *Bountiful* were stationed at Ulithi and ready to assist. As in other Central Pacific operations, hospital ships continued to serve much like floating ambulances, transferring casualties to rear base medical facilities.

Hospital ships remained in the area only a few hours at a time. Thus, surgically augmented LSTs were used extensively. These LSTs had a complement of 5 surgeons and 35 corpsmen and could berth approximately 350 casualties.(21) Aboard LST-464, which had a more substantial medical facility, patients received definitive treatment. In addition to being a care facility, LST-464 served as a blood bank. However due to poor sanitation and illumination, LSTs were not ideal substitutes for hospital ships.

The Battle of Leyte Gulf

From 23 to 26 Oct, American ships and planes battled enemy air and sea forces in the largest naval battle in history.(22) To counter the overwhelming U.S. power in the Pacific, what was left of the Japanese fleet attempted to disrupt the Philippines invasion. As the battle raged across hundreds of square miles, U.S. submarine, surface, and air forces combined to defeat the Japanese Navy.

Kamikazes

Desperate to turn the tide, the Japanese launched a new weapon, the kamikaze, named for the divine wind which dispersed a 13th century Mongol invasion fleet. Using their aircraft as guided bombs Japanese pilots deliberately plunged into American ships. The first organized kamikaze attack occurred on 25 Oct when five enemy pilots dove into U.S. escort carriers in Leyte Gulf, sinking one and damaging three others. The next day, more kamikaze attacks took place, causing further damage and demonstrating a terrifying new aspect of the Pacific war. (See cover story)

The Saga of the Princeton (CVL-23)

Although kamikazes were the newest Japanese weapon, conventional

bombs continued to take a heavy toll. One such example was the destruction of USS *Princeton*. The story of this light carrier also highlights the problems doctors and corpsmen faced treating an overwhelming number of casualties amidst raging fires and chaos.

After two Japanese bombs penetrated *Princeton*'s flight deck spreading fires and choking smoke throughout the ship, the cruiser *Birmingham* (CL-62) came alongside to assist. Shortly thereafter, an explosion shattered *Princeton* hurling large fragments of steel and parts of bodies into the air and onto *Birmingham*. More than 200 of the ship's crew were killed and over 400 wounded.(23) But despite their anguish and agony, all hands were said to have performed admirably even in the face of death. The executive officer of *Birmingham* commented on the situation stating, "...Men with legs off, with arms off, with gaping wounds in their sides, with tops of their heads furrowed by fragments, would insist, 'I'm all right. Take care of Joe over there,' or 'Don't waste morphine on me Commander, just hit me over the head.'"(24)

Following the attack, the junior medical officer, initially the only doctor aboard, and about 15 corpsmen devoted a few minutes to each of the patients—stopping hemorrhages, administering morphine, sprinkling wounds with sulfa powder, and bandaging the wounded. The ship's company, trained in first aid, helped out considerably by freeing Navy medical personnel to treat shock and severe hemorrhages. Within a few days, Navy medical personnel assigned to other ships came aboard to assist those on *Birmingham*. Moreover, hospital ship *Samaritan* relieved the ship of some of its casualties.

Apart from the few abdominal operations, Navy medical personnel did not render definitive treatment. Instead they attempted to save as many lives as possible by first rendering the most basic treatment to the greatest number. This practice helped lower the mortality rate. Among the 420 wounded aboard *Birmingham*, only 8 cases were fatal.(25)

By the evening of 26 Oct, the U.S. fleet had all but destroyed what remained of the Japanese fleet. Even though the Japanese Navy would not seriously threaten the Allied advance toward Tokyo, the kamikazes had opened a new and very destructive chapter in naval warfare.

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Scientific Team Launches Military-Based Intervention for STD/HIV Prevention

Prevention has become a major thrust in AIDS research as it is increasingly evident an HIV vaccine or curative chemotherapy will not be imminently available. Further, this fatal illness is completely preventable through changes in individual risk behaviors. However, the prevention effort is hindered by a lack of information on effective methodologies and educational programs to change what are often well established risk behaviors. The Navy medical community has formed a multidisciplinary team to develop and test military specific behavioral interventions for the prevention of HIV and other sexually transmitted diseases (STDs). In addition, a cornerstone of the approach is to validate noninvasive diagnostic testing for STDs for improved screening and treatment. This team consists of medical researchers at the Naval Health Research Center (NAVHLTHRSCHCEN), San Diego, CA; the Naval Medical Research Unit No. 2 (NAMRU-2), Jakarta, Indonesia; the Naval Environmental and Preventive Medicine Unit No. 5 (NEPMU-5), San Diego, and NEPMU-6, Pearl Harbor, HI; the Consolidated Preventive Medicine Unit, Okinawa, Japan; and the University of California, San Francisco (UCSF). The program is funded by both the Naval Medical Research and Development Command and the National Institutes of Health. This dual-funding line reflects the applicability of this research to the civilian community.

The first platform selected was military personnel on Western Pacific deployment due to the increasing prevalence of HIV infection in some of the foreign ports and the potential impact of STDs on operational readiness. Study design includes an experimental group receiving the STD behavioral intervention and a comparison group receiving basic life support (BLS) training, with approximately 800 male Marines enrolled. Study activities involve early-deployment baseline STD screening and a questionnaire, STD intervention training (or BLS), and late-deployment STD screening and a questionnaire. The effectiveness of the STD intervention training will be evaluated both biologically (acquisition of STD infections) and through analysis of the self-report questionnaire data of STD knowledge, attitudes, and behaviors.

The behavioral intervention is 8 to 10 hours of interactive education delivered by preventive medicine technicians (PMTs). It was developed by the UCSF researchers in collaboration with Navy investigators, particularly from the preventive medicine community, and line Marines. It is different from standard STD education programs in that it is Marine-specific and emphasizes skills-building. The components are "multimedia," with didactic slide sessions, educational games, skill-building exercises, role-playing, and videos.

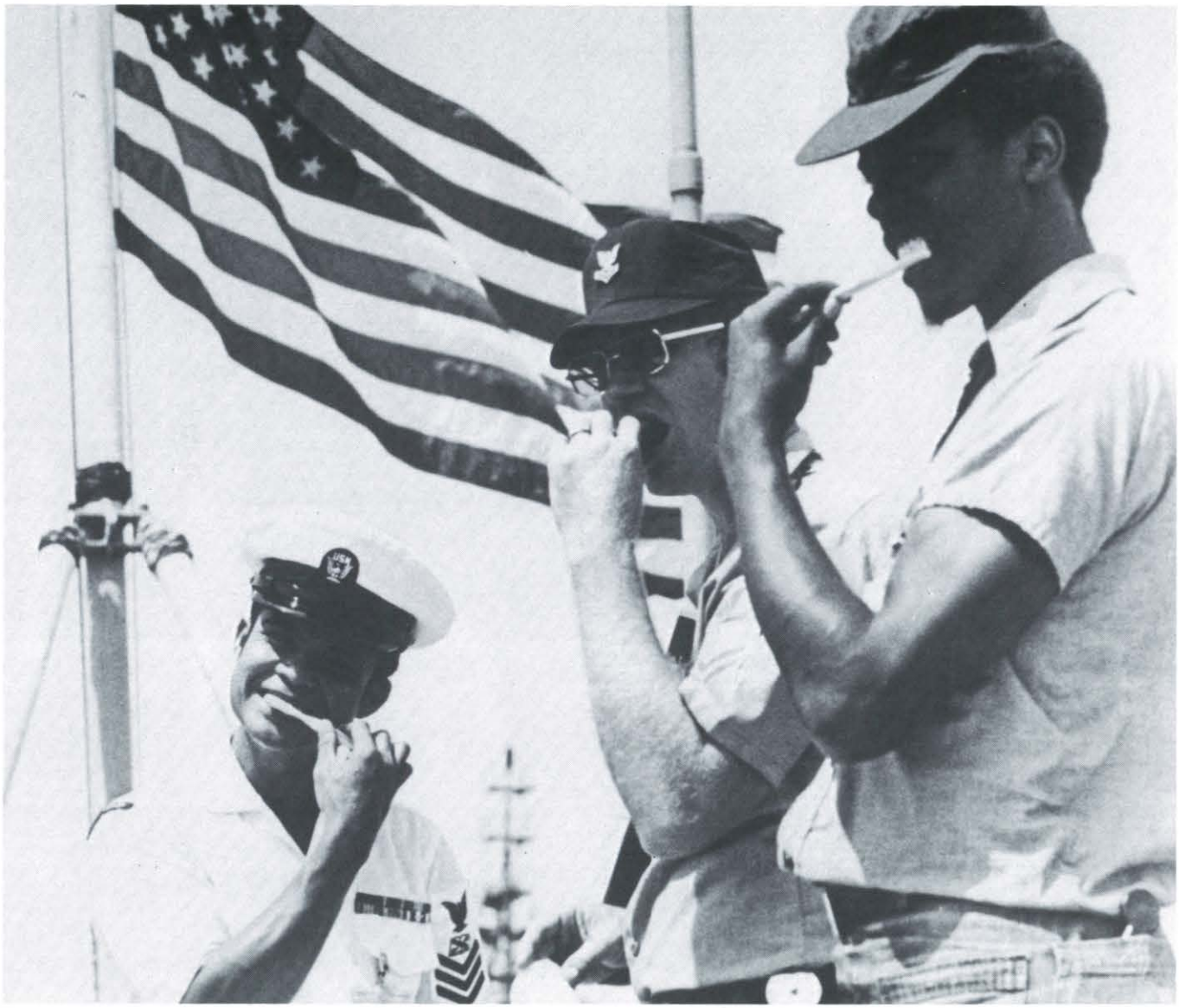
The first video depicts Marines on liberty during a WestPac deployment and the consequences of behaviors. The second video, a dialogue with three HIV-infected active duty personnel (two men and one woman), powerfully portrays the impact of being HIV-infected. Key elements of the intervention include STD knowledge, perceived susceptibility, peer influence, use of alcohol, and safer sex practices. Intervention training has been successfully completed, demonstrating this to be a feasible approach. Verbal and written feedback from Marine participants and PMT instructors have enthusiastically endorsed the STD intervention.

A major biologic research component of this program is to evaluate a new molecular technology capable of diagnosing two common STDs (chlamydia and gonorrhea) on a urine specimen. Urethral swabs, which are uncomfortable, are one of the barriers to STD detection, treatment, and counseling. Validation of this technology would provide a rapid, painless, and more acceptable alternative for STD diagnostics for active duty personnel.

Future efforts for this research team include the application of these strategies to shore-based military personnel. They further hope to begin similar efforts in active duty women to design and implement effective programs for the prevention of not only STDs but also unplanned pregnancies. The ultimate outcome is to educate military personnel and to teach them how to defend themselves and their families against life-threatening illness and disease.

For more information please contact CAPT Stephanie Brodine at 619-553-6889.

Navy Medicine circa 1975



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Fantail Dentistry: Using portable marine field equipment set up on the fantail of USS *Reeves* (DLG-24), three sailors practice brushing their teeth.

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