

NAVY MEDICINE

May-June 1992



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COVER: As the Navy Nurse Corps recently celebrated its 84th anniversary, *Navy Medicine* interviewed the corps' new Director, RADM Mariann Stratton. See page 5. Photo by the Editor.

A Salute to the Navy Nurse Corps

The past few years have been monumental for Navy medicine as medical personnel have been mobilized to provide support in a variety of settings. From Operations Desert Shield/Storm, to Operation Fiery Vigil, to Operation Safe Harbor—we have been there. And within each setting, Navy nurses play an integral role in the delivery of quality care. The ability of Navy nurses to perform under such extreme circumstances is a direct result of the characteristics which distinguish them as Nurse Corps officers. Committed to the dual roles of naval officer and professional nurse, Navy nurses aptly demonstrate their remarkable adaptability and flexibility through their profound dedication to operational readiness, education, and training initiatives.

As current trends shape the Navy's health care delivery system, we are redefining and restructuring our health care system to ensure access, quality, management, and coordination of resources at an affordable price. As we shift from primarily inpatient services to more outpatient services, ambulatory care programs are expanding exponentially. Navy nurses have taken a proactive role in the development of health promotion programs within these settings. Nursing by its very nature has become a vital link in cost containment and improved access to care. As the first line contact for most of our customers, Navy nurses are on the cutting edge of change directly influencing the acquisition and optimal use of resources.

No doubt, the Nurse Corps is ready for more challenges ahead. Through collaboration and teamwork, this empowered group actively applies Total Quality Leadership concepts to meet the challenges of the 21st century.

Navy nurses play a crucial role in the present and future of Navy medicine. Seeking new ways to deliver quality care, they are change masters as they utilize their skills as clinicians, educators, and leaders. Congratulations to the Nurse Corps in the celebration of 84 years of excellence.

CHARLIE GOLF ONE.

VADM Donald F. Hagen, MC

Flag Officer Selectees

RADM-selectee **Stephen Todd Fisher** MSC, deputy assistant chief for personnel management, Bureau of Medicine and Surgery, is a native of Little Falls, NY. He received a B.A. degree in economics and biology from Washington and Jefferson College in 1963, a M.B.A. from Cornell University in 1965, and a M.A. in higher education from the Catholic University of America in 1985.

CAPT Fisher entered the Navy as an ensign in the Medical Service Corps in July 1965 following graduation from Cornell University. He served as military personnel officer at the National Naval Medical Center, Bethesda, MD, and in 1968 he was assigned to duty aboard USS *Repose* (AH-16) in the Republic of Vietnam as operating services officer and fiscal and supply officer. Subsequently, he reported to Naval Hospital, Newport, RI, where he once again served as personnel officer.

In 1972, CAPT Fisher joined the faculty of the Naval School of Health Care Administration where he taught numerous courses in the baccalaureate

and other management programs. During his tenure the name of the school was changed to the Naval School of Health Sciences and his roles changed to include those of director of management education and executive officer.

In 1981, he was assigned to the Office of the Chief of Naval Operations as the enlisted community man-

ager for the hospital corpsman and dental technician ratings. Following that tour, he served as medical administration officer and naval personnel officer at Headquarters, Fleet Marine Force, Pacific. Prior to his present assignment, he served as commanding officer, Naval Medical Clinic, Washington, DC.

CAPT Fisher's military decorations include the Meritorious Service Medal with two gold stars, Navy Commendation Medal with gold star, Navy Achievement Medal, and Fleet Marine Force Ribbon.



CAPT S. Todd Fisher, MSC

RADM-selectee **David S. Frost**, MC, special assistant for medical matters in the Office of the Naval Inspector General, was born on 12 May 1946 in Huntington, WV. He attended Virginia Polytechnic Institute, Blacksburg, VA, and received a B.A. degree in chemistry from the University of Kentucky in 1967 and his M.D. degree from the University of Kentucky School of Medicine in 1971. In addition, Dr. Frost received a M.A. degree in health services management from

Webster University, St. Louis, MO, in 1990.

As a senior medical student, he enrolled in the Ensign 1915 Program in 1970. Subsequently, he completed a rotating internship at Naval Hospital, Jacksonville, FL, and from 1972 to 1975, he served as a general medical officer and as department head in primary care at U.S. Naval Hospital, Rota, Spain. Returning to the States, Dr. Frost completed residency training in family practice at Naval Hospital, Charleston, SC, in 1977 and was assigned to the Naval Weapons Station in Charleston as the senior medical officer. He served subsequent tours as deputy commander, Charleston Air Force Base Medical Facility and as assistant chief for family practice at Naval Hospital Charleston. He also served as clinical assistant professor, Family Practice Department, Medical University of South Carolina, Charleston, from 1979 to 1984.

From 1981 to 1986, he served as departmental chairman of family practice residency programs at Naval Hospitals Charleston and Camp Pendleton, CA. Then from 1986 to 1988 he served as head, Medical Corps Assign-

ments at Naval Military Personnel Command. He returned to Naval Hospital Camp Pendleton as executive officer in 1988 and served as its commanding officer from 1989 to 1991. In August 1991, Dr. Frost assumed his current post. He is also an assistant professor in the Department of Family Practice at the Uniformed Services University of the Health Sciences School of Medicine, Bethesda, MD.

Dr. Frost is certified by the American Board of Family Practice and National Board of Medical Examiners. He is a member of the American Academy of Family Physicians, Uniformed Services Academy of Family Physicians, Association of Military Surgeons of the United States, and a fellow of the American Academy of Family Physicians. His military awards include the Legion of Merit, Meritorious Service Medal, Air Force Commendation Medal, and the National Defense Ribbon with star.

RADM-selectee **E. Lee Taylor, Jr.**, MC, USNR, associate dean and assistant to the executive vice president at Texas Tech University Health Sciences Center, Amarillo, TX, is a 1963 graduate of Florence State College (University of North Alabama) and a 1967 graduate of the University of Alabama School of Medicine. Before undergraduate school, he enlisted in the Air Force for 4 years.

Navy active duty assignments have included chairman and director, Family Practice Residency Training, Naval Hospital, Pensacola, FL, from 1975 to 1978; director, Medical Corps Programs and Clinical Investigation at HSETC, Bethesda, MD, from 1978 to 1980; and director, Medical Education and Training Division, Bureau of Medicine and Surgery, Washington, DC, from 1980 to 1983.

In 1983, Dr. Taylor returned to reserve status and accepted the posi-

tion of professor and chairman, Department of Family Practice, University of Alabama School of Medicine, from 1983 to 1990. His reserve duty assignments have included executive officer, Fleet Hospital 11 and Headquarters Detachment, Readiness Command Region Nine for which he served as commanding officer from June 1988 through October 1991. He is presently assigned to Naval Reserve Fleet Hospital 21, Detachment P1131A, Lubbock, TX.

Dr. Taylor is a member of the Naval Reserve Association and his awards include the Meritorious Service Medal (two awards), Navy Commendation Medal, Navy Meritorious Unit Medal, and five gold wreath awards from the Navy Recruiting Command.

RADM-selectee **Dennis I. Wright**, MC, commanding officer, Naval Hospital, Yokosuka, Japan, is a native of Bruce, MS. Upon graduation from the Medical College of the University of Mississippi in June 1968, he was commissioned an ensign in the Naval Reserve. He entered active naval service upon completion of an internship



CAPT David S. Frost, MC



CAPT E. Lee Taylor, Jr., MC, USNR



CAPT Dennis I. Wright, MC

and residency in pediatrics at the University of Mississippi Medical Center in June 1971 and was assigned to the medical staff of Naval Hospital, Guam. Subsequently, he entered Naval Flight Surgeon School, NAMI, Pensacola, FL.

In December 1973, he was designated a naval flight surgeon and was assigned to USS *Oriskany* (CVA-34) as senior medical officer. After two western Pacific cruises, he returned to the States and served as wing surgeon to Training Air Wing One, NAS, Meridian, MS. From February 1977 to June 1978, Dr. Wright served as director, Aerospace Medicine, Naval Aerospace and Regional Medical Center Branch Clinic.

Following full-time, out-service training as a fellow in neonatal-perinatal medicine at Emory University, Atlanta, GA, from July 1978 to June 1980 and subsequent assignment as head, Newborn Division, Department of Pediatrics, National Naval Medical Center, Bethesda, MD, Dr. Wright was augmented in the Regular Navy. In November 1982, he became chairman and head, Department of Pediatrics, National Naval Medical Center, and in June 1985, he was appointed director, Medical Service, Naval Hospital, Bethesda.

From June 1986 to 1988, Dr. Wright

served as director, Readiness Division (MEDCOM 41), Naval Medical Command, Washington, DC. Subsequently, he returned to Naval Hospital Bethesda as executive officer. In December 1988, he received temporary additional duty to Commander, Joint Task Force Middle East embarked on USS *La Salle* (AGF-3) deployed in the Arabian Gulf where he served as force surgeon until assuming his current post.

Dr. Wright is certified by the American Board of Pediatrics and Sub-Board of Neonatal-Perinatal Medicine. He is an associate professor of pediatrics (clinical neonatology) at the Uniformed Services University of the Health Sciences. He wears the Meritorious Service Medal with gold star in lieu of second award and Joint Service Commendation Medal.

RADM-selectee **James C. Yeargin, DC**, force dental officer for the Reserve Naval Construction Force, graduated with a B.S. degree in chemistry from Stetson University, Deland, FL, and received his D.D.S. from Emory University School of Dentistry in Atlanta, GA. He began private practice in Daytona Beach, FL, and joined the Naval Reserve as a general dental officer and was assigned to NAS Jacksonville, FL. He later became the training officer of NDCL JAX/Pensacola 1408. Following this, he served with the Marines as a member of the 6th Dental Company. Subsequently, he served as executive officer, NDCL JAX/Pensacola 1408 and then as commanding officer, NRDC JAX 108. During his period of command, the unit was awarded the Admiral Vaughn Award for most outstanding dental unit in the Naval Reserve and the VFW National Defense Award as most outstanding unit in the state of Florida.

Dr. Yeargin then served as the staff dental officer, REDCOM Region Eight, where he later also served as the assistant inspector general. Next, he became commanding officer of Naval Medical Command Southeast Region



CAPT James C. Yeargin, DC, USNR

208. Following this tour, he returned to REDCOM Eight as director, Health Services.

Dr. Yeargin has attended the Strategic Medical Readiness Course at Bethesda, MD, and the Naval War College at Newport, RI. He has also served as a Naval Academy Blue and Gold Officer. He is a member of the American and Florida Dental Association for which he has served as a delegate and is a fellow in the International College of Dentists. He is also official dentist of the Daytona Beach International Speedway. In addition, he has a private practice in Ormond Beach, FL, and serves on the SECNAV National Naval Reserve Policy Board.

Dr. Yeargin's awards include three Navy Commendation Medals, National Defense Medal, Medal for Humanitarian Service, Armed Forces Service Medal, Expert Rifle Medal, and Expert Pistol Medal.

Prior to becoming a naval officer, CAPT Yeargin served in the Army. He was commissioned a lieutenant and rose to the rank of captain and company commander with duty at Fort Sam Houston, TX, and Fort Campbell, KY, with the 101st Airborne Division. He was awarded the Army Commendation Medal with V for valor, and an Outstanding Unit Award. □

A Conversation With RADM Stratton

RADM Mariann Stratton, 17th director of the Navy Nurse Corps and deputy commander for personnel management, joined the Navy in 1964 as a Nurse Corps Candidate. She was commissioned in 1965 and began her active service a year later as a staff nurse at Naval Hospital, St. Albans, NY. Subsequent duty stations included U.S. Naval Hospital, Yokosuka, Japan; Navy Recruiting Command, NY; U.S. Navy Dispensary, Asmara, Ethiopia; Fleet Support Office Dispensary, Athens, Greece; Naval Hospital, Corpus Christi, TX; Naval Regional Medical Center, Charleston, SC; Naval Medical Command, Washington, DC; and U.S. Naval Hospital, Naples, Italy. Prior to her current assignment, she was director of nursing services at Naval Hospital, San Diego, CA. She was selected as Nurse Corps Director in November 1990.

Among her many decorations, RADM Stratton wears the Meritorious Service Medal, Navy Achievement Medal (three awards), Navy Unit

Commendation, National Defense Service Medal (one bronze star), Overseas Service Ribbon (two bronze stars), and the Navy Expert Pistol Shot Ribbon. She is a member of the American Nurses Association, National Association for Female Executives, Women Officer's Professional Association, the Association of Military Surgeons of the United States, and Navy Nurse Corps Association.

Navy Medicine recently talked with RADM Stratton on the occasion of the Nurse Corps' 84th anniversary.

Navy Medicine: When I interviewed RADM [Mary] Hall about 3 years ago we discussed the problems the Nurse Corps was having at that time. I recall that recruiting and retention were big issues.

Admiral Hall initiated programs to resolve those problems. We will come



RADM Mariann Stratton, NC



HM2 Dan Kelly

close to established recruiting goals this year—the first time in many years—thanks to our scholarship programs. Just let me outline for you four of the ways we are resolving our recruiting problems.

Potential Nurse Corps officers are eligible for the NROTC and a 4-year scholarship in civilian universities. The Army offers a 3-year scholarship and the Air Force is just starting a 3-year scholarship. By 1995, we expect to have 102 graduates from the NROTC that year alone. The Medical Enlisted Commissioning Program is an in-service upward mobility program for hospital corpsmen, dental technicians, and other enlisted ratings, and we have 150 personnel in that program at any one time. The Health Services Collegiate Program, which used to be called the Baccalaureate Degree Completion Program, will have 300 graduating this year, and in the Nurse Corps Candidate Program there are 15 students.

This presents another unique situation because we're going to have 400 ensigns coming to our hospitals this summer, 400 ensigns who cannot be accommodated at the "traditional facilities." They used to go to the big four teaching hospitals and to the five family practice hospitals to get their experience and to serve their "preceptorship." We are now going to send a few overseas and to many of the smaller facilities. This presents unique challenges to our directors of nursing. Preceptorship programs for the new personnel will be of paramount importance. Although commands are getting a new nurse ensign, they are getting a brand new graduate who is a novice in nursing and who needs time to develop his or her skills as a professional nurse just as a physician graduating from medical school has to have an internship before he or she can comfortably proceed as a GMO or go on for a residency. We feel that a graduating nurse needs at least a year of

experience to be able to function at a more self-confident level.

With recruitment pretty much taken care of, I understand there are new issues and challenges.

Our biggest challenges today are facing the changes that are going on in health care coupled with what is going on in the Navy in terms of downsizing and limited budgetary and manpower resources to do the job we need to do. Our challenge is to provide the quality of care that we have always provided in an environment of diminishing resources while looking out for our people. We have to prevent them from "burning out" and keep their stress levels to a minimum. We have to accomplish all this while keeping people excited about health care in the Navy and making them feel that they are really changing things for the better.

In a recent issue of your *Director's Update* you spoke about innovation, creativity, risk-taking, and empowering nurses.

Yes. I do use those terms—innovation, creativity, risk-taking, and empowerment. The way health care itself is going and the way things are happening in the Navy in terms of diminished fiscal and personnel resources, we have to do things a different way. I have found that there are all kinds of fantastic ideas out there with our nurses who are practicing in clinics, hospitals, aboard ship, at the Bureau, at BUPERS, and on DOD staffs—everywhere. And what we are trying to do is to allow those ideas to surface and implement some of them. I tell the staff nurses that they are my subject matter experts in clinical care. They are out there with the patient. They are the ones practicing. They are in a position to come up with ideas to make patient care better, to make it more economical, to save themselves time, to help themselves work better. But in order to get people to come up with ideas like that you have to take away

the downside of taking risks. You have to allow them to use ideas that sometimes fail. You can't penalize people for ideas that fail. You have to let them know that we appreciate those ideas.

When we talk about nurses being risk-takers and being innovative, I ask you to look at where we would be if it weren't for risk-takers. The first big risk-taker in nursing was Florence Nightingale and she truly did take nursing out of the dark ages. She said nurses must have formal education. Nurses can't be people off the street who have no place better to go. She's the one who started formal education for nursing. She's the one who took the first big risk. She's the one who really started our profession.

Think back to the days when we were born. After a woman delivered, she was in the hospital at least 10 days after normal vaginal delivery. Then we moved to 3 days. Now we're moving to birthing centers where the whole family's involved and there in the room. It's no longer something from which the husband and other children/siblings are excluded. We've made huge strides in that area and we find that our patients are doing better. Because of our

nurses, we've started 24-hour discharge. You have to do a lot in a 24-hour discharge for an obstetric patient in terms of teaching, getting them prepared. Same-day surgeries—what a risk was! The first same-day surgery program was at San Diego. It was a nurse who put the program together and now many people are benefiting from it. That's taking a risk to improve patient care, to make things better for our patients. I'd also like to point out that it was nurses who set up most of the patient-teaching programs at our facilities. It was nurses who came up with many of the training programs for hospital corpsmen and new graduates at our facilities.

Why has all this innovation suddenly been so much in evidence?

I think that much of it can be attributed to total quality leadership [TQL]. I think this is the best management concept to hit the Navy since I've been on active duty. I think it is here to stay and that's because it works.

It sounds like you're sold on TQL.

I am, but one has to recognize that first of all we have to get everybody

educated. Everyone needs to understand what we are trying to accomplish and everyone needs to participate. That is going to take time. You don't set a vision, mission, guiding principles, and a strategy and expect it to be fully functioning in a year. You have to grow with it and through it and get everybody on board. I like the way total quality leadership is going because it empowers people to make changes, to come up with ideas, and to get the job done at the lowest level; that's what empowerment is all about.

What future role do you envision for Navy nursing?

We have unique challenges today. Nursing is different than it was 20, 10, or even 5 years ago just as the Navy is different; the needs of our people are changing. We're really moving in the direction of health promotion. Nurses are involved in health promotion—with smoking cessation clinics, well baby clinics, prenatal clinics, women's health clinics. In Orlando, they've even started a men's health clinic at the Recruit Training Command.

We are also expanding ambulatory care. Eventually, we're going to be focusing much more on treating the patient in the outpatient setting. Patients are going to have same-day surgery and they're going to go home from there. We're going to treat things that we have never even envisioned treating in an ambulatory care setting.

I envision Navy nurses making more home visits, at least if patients live on a Navy base. Nurses in Keflavik, Iceland, already visit patients in their homes.

Case management is something that we're seeing nurses move into more and more. USNH Rota is a family practice hospital and we have nurses there acting as case managers. They expedite and assist all the beneficiary population assigned to the base. We have nurses who meet incoming personnel at the plane. They review health

HM2 Dan Kelly



records and let the people know that they're going to be a part of the family practice setting. Nurses then meet with these patients and their families and help guide them through the system, making sure that they see the right primary care provider. Do they need to see the pediatrician? Do they need to see the obstetrician? Do they need to see the nurse practitioner? It's working beautifully. The beneficiaries, the hospital, and physicians and nurses all love it.

What is the nurse midwifery project all about?

At Camp Lejeune, we have started a nurse midwifery project in which we have a midwife department that totally supports the needs of the pregnant female. It involves dietetic and nutritional counseling in terms of parenting, teaching for parenting, and teaching for the physical needs of the infant, in addition to monitoring the health needs of the pregnant woman and getting her through a normal delivery. Then they follow them after the delivery. We have the obstetricians available for consultation. If we have a complicated case, then the physicians take over.

I understand that you have also placed quite an emphasis on research.

Yes. One of the requirements of a true professional is to conduct research in the arenas for which they're responsible. Admiral Hall began the focus on research when she had Ph.D. nurses recalled or recruited to come to our hospitals and help set up research programs at the big four teaching hospitals. Nursing research is becoming a reality. There are a lot of things we need to take a look at that are very specific to nursing. We're continuing to send nurses for their Ph.D.'s. And I am going to continue to send nurses to our hospitals to help expedite nursing research in those facilities.

The three services have been granted \$1 million to conduct tri-service nursing research this year. The Army, Navy, and Air Force will be working together to select proposals in order to

obligate the monies by September of this year. A call for proposals has now been completed; 15 submissions were made by Navy nurses! I want to make the point that we're not just waiting for our share of that million dollars to get started. Nurses are doing research right now in all our facilities.

I have also continued to emphasize publishing. Nurses are publishing in *Navy Medicine*, in *Military Medicine*, in the *American Journal of Nursing*, in the specialty areas, in critical care, in newspapers, everywhere. And I'm encouraging more and more of them to go ahead and submit what they're doing for publications. It accomplishes many things. It shares what they're learning with others and, as a side benefit, it shows the rest of the health care world what Navy nurses are doing. It gives us a chance to do a little additional recruiting, and focuses on our professionalism. The new RADM Hall Publication Award, recognizing her emphasis on research and publication, has recently completed its first cycle—10 submissions for this award were received.

Could you address the role nurses have been playing recently in the operational setting?

Well, let's begin by talking about the global setting in which Navy nurses have been performing outside what had been seen as our traditional roles. Nurses played a major role on the hospital ship USNS *Mercy* during its humanitarian mission to the Philippines a few years ago. Nurses also played a major role in care of evacuees and military personnel involved with Grenada. And today they are actively involved in caring for the Haitian refugees at Guantanamo Bay.

Then we saw nurses in operations Desert Shield/Desert Storm. Things happened during that time that we hadn't envisioned happening for a long time. We sent active duty nurses on to hospital ships and to three fleet hospitals. We had nurses in Bahrain, and with the Marines in the desert functioning as we have never functioned before. The largest officer

group called up was the Nurse Corps reserve. And again, we brought back lessons we learned there. If it's ever necessary again, we will do even better than we did this time.

Nurses are both military officers and professional nurses. They are educators both of patients and of hospital corpsmen. They are not only totally committed members of the health care team but are versatile as well. Not a week goes by that I don't get a request for a Navy nurse to fill a position in which nurses have never served before. I'm getting requests for nurses to run coordinated care programs, to work in case management, for the Naval Medical Research Institute, for the Naval Medical Information Management Center, in total quality leadership, in teaching. More and more their expertise is sought at NSHS [Naval School of Health Sciences] and HSETC [Health Sciences Education and Training Command]. I just don't seem to have enough for the demand.

Do you miss the duties you had when you were a nurse on the wards? Do you ever feel there's something lacking being an administrator now?

I have grown in the Navy and each job has served as a building block. Within the clinical setting, my biggest personal rewards came from having the patient get well and say, "Thank you. You had a lot to do with the fact that I'm walking out of the hospital." But, as an administrator, you don't get the day-to-day thank you's, and I miss that sometimes. What I think I can do now is enable all those nurses and hospital corpsmen out there to help individuals. I want every nurse and every hospital corpsman in nursing service to be where they are because they want to practice. I don't want to practice nursing in any setting other than the Navy and I want every Navy nurse to feel the same way. If I'm able to do that then I will leave here feeling I've done a good job. As a Navy nurse you can never lose sight of the individual patient. We are here for our patients and for one another. It's hard to say any more than that. —JKH

Navy Nursing—1992

84 Years of Caring

Compiled by LCDR Denise McDowell, NC, USN

On 13 May 1908, Congress approved the bill to establish the Navy Nurse Corps. By October 1908, the first 20 nurses, later called the "Sacred Twenty," reported to the Naval Hospital in Washington, DC. Since then, active duty and reserve Navy nurses have made significant contributions to military and professional nursing leadership, serving

the country with pride and distinction. Nurse Corps officers have served worldwide, flying with the wounded from battle areas, working with the fleet or hospital ships, setting up native nursing schools, clinics, and small hospitals in remote areas of the world, and practicing, teaching, and supervising in medical treatment facilities of all sizes.

The Navy Nurse Corps provides professional nursing care along a continuum ranging from battalion aid stations, hospitals, clinics, and aboard ships. In order to meet the diversified needs of the beneficiaries, Navy nurses function not only as clinicians, educators, and managers, but also as commissioned naval officers. As such, there are four distinguishing charac-



Family nurse practitioners, LCDR Debbie Coulapides (left) and LCDR Cathy Collins, examine their young patient at Naval Hospital, Rota, Spain . . .

. . . while their Rota colleagues, CDR Elizabeth Barker (left) and LT Debbie Williams, provide health teaching.

teristics which provide a unique focus for Navy nurses. These are the ability to serve as a naval officer and professional nurse, commitment to operational readiness, commitment to education and training of nurses and Hospital Corps staff, and adaptability and flexibility to deliver care to beneficiaries in a variety of situations and under stressful circumstances.

Today there are more than 3,000 active duty and 2,500 reserve Navy nurses. Clinical practice is the cornerstone of the corps, and Navy nurses are providing the opportunity to excel in a variety of areas. Career opportunities are also available as commanding officers, executive officers, researchers, administrators, educators, and practitioners.

Nurse Corps officers are seizing opportunities to develop imaginative and innovative approaches to nursing practice, wherever that practice is delivered. The essence of Navy nursing 1992 reflects creativity and risk-taking as Navy nurses influence the entire spectrum of health care, ensuring that quality health care remains the top priority. A few of the many programs initiated by Nurse Corps officers are highlighted.

Practitioner

Within the Family Practice Clinic at Naval Hospital, Rota, Spain, Navy nurses have developed a new and dynamic role serving as the vital link between the family and the health care community. Every family assigned to the Navy base is enrolled in the program based upon the sponsor's command. The clinic is divided into three teams, each of which includes two family physicians, one family nurse practitioner, one physician's assistant, one ambulatory care nurse, and two hospital corpsmen. Individuals and families are met upon arrival at the air terminal by a clinic representative who establishes an appointment with the



team nurse for record review and health care needs assessment. During this appointment, the nurse identifies special health care needs, updates the problem summary list, and when possible, introduces the patients to their primary health care clinician. Special needs are brought to the clinician's attention and appointments are made as necessary. Patients are also provided with telephone numbers for the team nurse and the appointment desk, the names of the primary care clinicians, and policies for use of the health care facilities on the base.

In addition to the initial encounter with the patients, team nurses are also active in patient education programs, basewide orientation programs, general medical training and health-related classes for the individual commands, coordination with the Navy Relief nurse for special needs patients, and followup appointments for patients. They triage same-day appointments and provide telephone advice and rapid-referral as needed. Popular among the base residents, the local AFRTS television station features a weekly health program which is hosted by the family nurse practitioners. Throughout the base, health information bulletin boards are maintained

by the nursing staff of the clinic.

In response to the 1991 Defense Authorization Conference Report directing the services to implement methods to improve access to care and reduce CHAMPUS costs, the Navy began the Certified Nurse Midwife Demonstration Project at Naval Hospital, Camp Lejeune, NC, in October 1991 with four certified nurse midwives (CNMs) serving as pioneers. The CNMs enroll panels of patients and work collaboratively with obstetrical staff physicians to provide the full spectrum of prenatal care, delivery, and follow-on services. This midwife project has substantially increased in-house deliveries and successfully recaptured the workload previously lost to CHAMPUS. As a direct result of the success of this program, the Navy plans to expand nurse midwifery to Naval Hospitals Camp Pendleton, Bremerton, Okinawa, Naples, and Twentynine Palms.

Naval Reserve Nurse Corps officers are directly responsible for the success of the Reserve Weekend Surgery Program (RWSP) at Naval Hospital, Oakland, CA. Staffed by reserve medical personnel from Naval Reserve Readiness Command Region Twenty (REDCOM 20), the RWSP was the

LCDR Kathleen Pierce, NC, is an instructor at Bethesda's Naval School of Health Sciences facilitator's course.

first program in the Naval Reserve to supply mutual support to active duty and eligible beneficiaries on a weekend basis. The program runs 2 weekend days per month, and beginning in October 1991 the U.S. Army Reserve began participating in the program. During the past 3 years, 250 surgical cases were performed with a CHAMP-US cost avoidance of \$350,000. In addition, the majority of the reserve unit members were recalled to active duty at Naval Hospital Oakland during Operation Desert Shield/Storm and were able to reopen the main operating room to a full seven-room schedule within 7 days of recall. The members of RWSP have been awarded the Meritorious Unit Citation for this innovative program.

Medical reserve personnel from REDCOM 20 are also responsible for the implementation of the Reserve Women's Health Center (RWHC), established to provide mutual support to Naval Hospital Oakland OB/GYN clinics and to train Reserve Forces medical personnel. Averaging 40 outpatients per Saturday, RWHC is open



1 day per month with plans for expansion in progress. Primary care services are targeted for postpartum, family planning, well-women annual examinations, and repeat Pap-test examinations for active duty personnel and eligible beneficiaries.

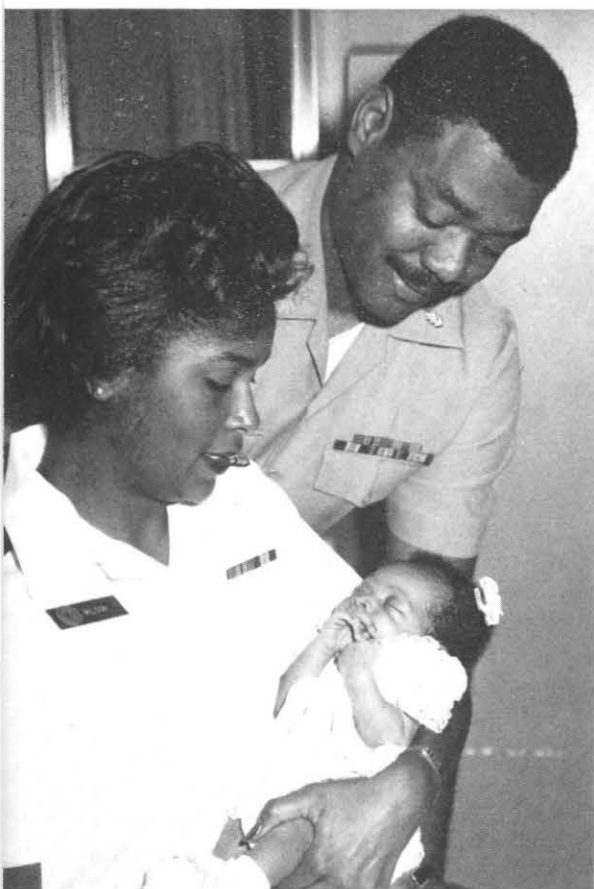
In order to streamline nursing administration and increase the opportunity for junior nurses to gain expertise in the ambulatory care setting, Naval Hospital, Pensacola, FL, has embarked upon an exciting new venture to reorganize Nursing Services based upon clinical specialty rather

than by inpatient/outpatient categories. Relinquishing the traditional model, Nursing Services now has three main department heads: Medical Nursing, Surgical Nursing, and Maternal-Child Nursing. The department head for Medical Nursing is now responsible for the medical pediatric ward and clinic, ICU, the acute care and family practice clinics, and serves as the nursing liaison with the emergency room contractor. The department head for Surgical Nursing is now responsible for the operating room, recovery room, inpatient surgical ward, same-day surgery unit, plus the surgery and orthopedic clinics. The department head for Maternal-Child Nursing Department has assumed responsibility for nursing in the OB/GYN clinic, labor and delivery, postpartum ward, and the newborn nursery.

A special assistant for ambulatory care nursing has also been established at Naval Hospital Pensacola in order to meet the needs of rapidly expanding ambulatory care services. This officer advises all department heads on ambulatory nursing issues, makes regular assist visits to all branch clinics, and coordinates the expanding health promotion patient education and women's health initiatives.

Family nurse practitioner, LCDR Sue Herrold, provides care to Haitian refugees at Guantanamo Bay, Cuba.





CDR D. Wilson, MC, and LT V. Wilson, NC, beneficiaries of Naval Hospital Camp Lejeune's midwifery program, pose with their new daughter.

Many innovations have evolved as a result of this reorganization initiative. Staffed by nurses from the labor and delivery unit on rotations of 2 months in length, an antepartum fetal assessment unit has been established with the OB/GYN clinic to conduct all routine nonstress tests. The Surgical Nursing department has established a preoperative admission unit for the central processing and instruction of all scheduled surgery patients throughout the hospital. It is staffed alternately by nurses from the inpatient surgery ward, operating room, and same-day surgery unit. Furthermore, elected junior staff nurse representatives are now members of the Nursing Practice Council in order to further increase the accountability and involvement of junior nurses.

Nurse Corps officers have been instrumental in the planning and actions in support of base drawdown at U.S. Naval Hospital Subic Bay. Political unrest, major weather disasters, and the eruption of a 600-year dormant volcano have been among the many challenges faced while in the midst of the drawdown. Dramatic increases in patient acuity followed the closure of Clark Air Force Base Hospital thereby shifting the medical requirements to a larger retired population.

The reduction of staff and planning for adequate support of mission objectives has necessitated much flexibility and rapid adaptation to change. Department head/division officer guidance has been required to ensure that current health care services are adequate and that temporary support assets are available until base turnover is completed. Matching staff expertise with both beneficiary needs and the loss of civilian professional and ancillary staff has been essential. Normal staffing assets have now been reduced to 14 Nurse Corps officers. Ultimately, three nurses will augment an LHA shipboard medical department staff beginning in November.

Nurse Corps officers have been proactive in planning for the needs of the beneficiaries within this unique environment. Cross-training programs started early creating nurse proficiency in multiple specialized areas transforming obstetrical, pediatric, emergency room, and general duty medical-surgical nurses into operating room, intensive care, and medical evacuation nurses. Other areas requiring nursing collaboration include the projection of medical supplies, ambulatory care needs, and obstetrical care provisions.

In early November 1991, U.S. Naval Base, Guantanamo Bay, Cuba, became the "Safe Harbor" for migrants exiting Haiti. U.S. Naval Hospital Guantanamo Bay was called upon to provide screening, support, and logistics to Coast Guard cutters involved in the intercept. Navy nurses from the hospital were involved in the screening

and care of Haitian migrants on board Coast Guard cutters and Navy ships. As the habitat upon the ships worsened, a camp was established on the base. At Camp Bulkeley, Navy nurses played an active role in establishing a sick call and infirmary to provide inpatient care to those Haitians identified with an increased acuity level. This was inclusive with their ongoing role of providing care to the isolated island community and fleet.

Late November, as the influx of Haitians increased, a Joint Task Force was established. Medical personnel from the Navy, Army, and Air Force participated in the care of over 12,000 Haitian migrants at Camp McCalla. This evolution and the active participation of Navy nurses continues today with the screening, repatriation, and continued care of a population with significant infectious diseases.

The direct result of Naval Reserve Nurse Corps initiatives, Fleet Hospital 500, Combat Battle Zone 22 (FH 500 CBTZ 22) in Denver is the first Readiness Center to offer the complete Hospital Corpsman Proficiency Course, a recently mandated course that provides reserve junior enlisted Hospital Corps personnel mass casualty training. Forty-three corpsmen, from three separate detachments, formed four-person teams and performed first-responder assessments of a variety of casualties ranging from minor to life-threatening injuries. The day-long training was a combined effort of many reservists from the fleet hospital and PRIMUS units.

In order to improve patient outcomes and provide the best possible care through systematic observation and study of clinical problems, the Nurse Corps has begun to formalize the role of nurse research at Naval Hospitals Bethesda, Portsmouth, San Diego, and Oakland. The nurse researcher works as an independent investigator, collaborates with other scientists, acquires extramural funding, and disseminates findings. Areas of responsibility include administration, education, clinical practice, and research. With the implementation of



HM2 Napoleon Stevens, NSHS Bethesda

Instructor CDR John Powers, NC (right), supervises a nurse anesthetist in one of Naval Hospital Bethesda's ORs.

the DOD Appropriations Act and subsequent availability of \$1 million for military nursing research, the role of the nurse researcher will continue to expand throughout the Navy's health care system.

Nurse Corps representation at staff colleges and in combined degree pro-

grams has become a reality within the Staff War Colleges, MSN/MBA programs, and MSN/informatics programs. A most recent Nurse Corps pioneer assignment has been at the Industrial College of the Armed Forces (ICAF), part of the National Defense University (NDU) located at

Ft. McNair, Washington, DC. This educational billet is rotated every 24 months among the three military services. The first year involves assignment to the Health Fitness department at NCU followed by the second year as a full-time ICAF student. ICAF prepares selected military officers and civilians for senior leadership and staff positions through postgraduate, executive-level courses of study. The nurse attending this program emerges with a broad-based understanding of national security decision making and its relationship to difficult resource management issues, including medical resources and distribution of assets.

Since June 1991 the Bureau of Medicine and Surgery has included health promotion in its strategic plan. Staying well is a priority and Navy nurses are actively participating in making wellness a reality through health promotion programs. The most significant breakthrough is the first health promotion coordinators workshop, "Total Fleet Fitness: The Future of Naval Power." This workshop is a 2-day intensive program designed to provide guidelines to assess command health promotion needs, establish baseline health status of personnel, implement effective programs, and monitor command progress.

For 84 years, Navy nurses have made a difference in the Navy's health care system whether serving at sea, in the field, in the air, or ashore. Through vision and strength, the Nurse Corps is actively addressing the challenges ahead to ensure quality care for all. Navy nursing is nursing excellence. □

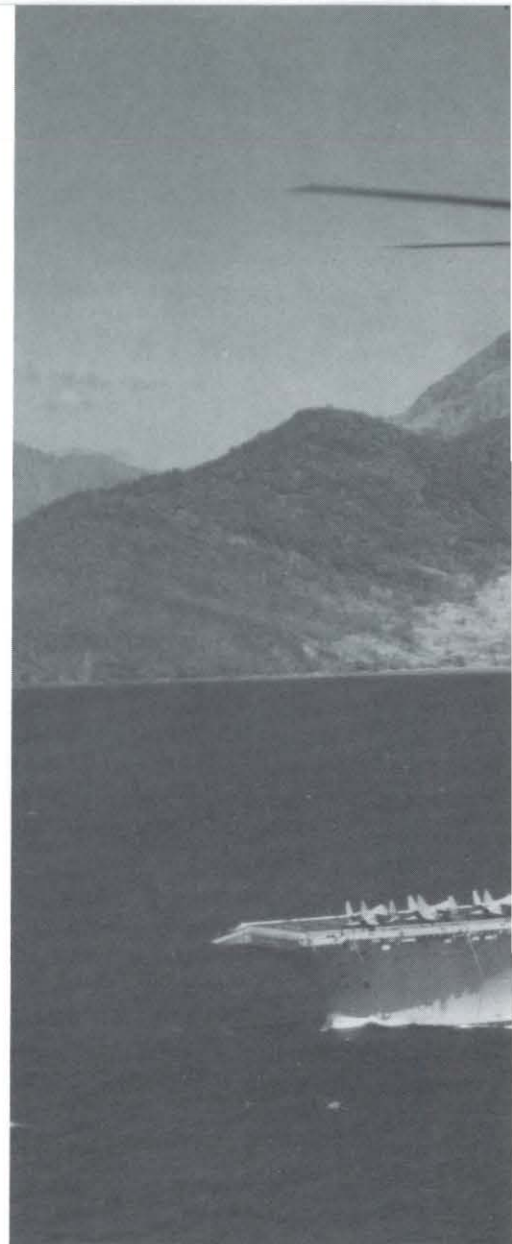
LCDR McDowell is Executive Assistant to the Director of the Navy Nurse Corps (MED OONLA), BUMED, Washington, DC 20372-5120.



Flight nurses LCDR Chris Abelein and LT Terri Ulises pose with a Navy PBY from another era.

Carrier Nursing

LCDR Russell S. Poyner, NC, USN



PJ3 Martens

In large and small naval hospitals the Nurse Corps officer has been an integral part of the health care team for many years. Responsibilities have traditionally included ward management, teaching, and, of course, direct patient care. It wasn't until the early 1980's that these traditional nursing roles began to be regularly exercised in nontraditional settings.

The nurse anesthesia community accepted the challenge as they became the first Navy nurses to be assigned

Training the crew in first-aid procedures is one of the carrier Nurse Corps officer's primary responsibilities.



**USS
Kitty
Hawk
(CV-63)**

under PCS orders to fleet aircraft carriers. Initially assigned to provide anesthesia support, these pioneers soon assumed collateral responsibility for day-to-day management of the ward corpsmen and provided comprehensive first-aid training for the ship's crew. It was not long before these duties required more of their time and effort than those related to their specialty training.

In 1988 the Nurse Corps was faced with a shrinking nurse anesthetist cadre, as was the civilian community. Therefore, still tasked with coverage for 15 operating carriers, as well as CONUS and overseas medical treat-

ment facilities (MTF), reassessment of the staffing for carrier billets became necessary. The value of having a multifaceted Nurse Corps officer aboard carriers having been clearly demonstrated, a plan was formulated that would allow for continuous comprehensive nursing coverage as well as anesthesia support when these vital ships were deployed.

During 1989, as the nurse anesthetists completed their 1-year tours of duty, they were relieved by "general duty" Nurse Corps officers. In particular, officers with experience in critical care and ER/trauma were identified and detailed to fill these billets.

The graph shows the number of nurses reporting specific collateral duties.

By mid-1990, general duty nurses were serving aboard all operational Atlantic and Pacific Fleet carriers, except USS *Midway* (CV-41),(1) in an expanded 2-year billet.

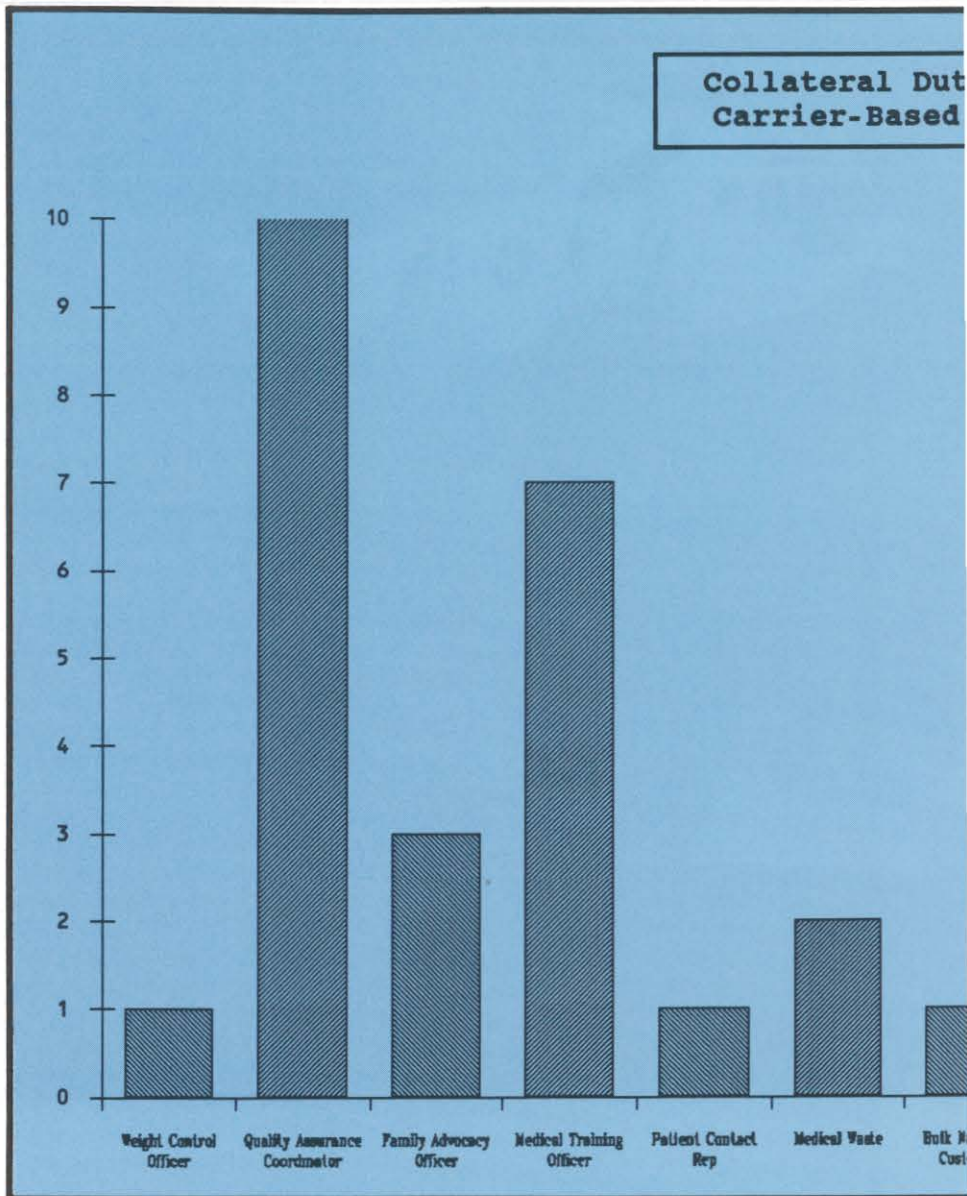
It was envisioned that this new plan would give the carrier the continuous nursing and educational care it needed while allowing the nurse anesthetist community to better utilize its shrinking resources. Providing the experienced Nurse Corps officer with the unique opportunity to work independently as a member of a cohesive medical care team was an additional factor. Has this been accomplished? And, how do these nurses perceive their new roles?

Discussion

A questionnaire concerning the role of the Nurse Corps officer was mailed to 14 fleet carrier medical departments during October 1990. A follow-on mailing was conducted in January 1991. Operation Desert Shield, to be succeeded by Desert Storm, became a factor in the data-gathering process while providing a real-life impetus for getting the program under way.

The response to the questionnaire was very positive.(2) These nurses enthusiastically described their roles and were eager to forward recommendations concerning Nurse Corps officers who would eventually follow in their footsteps. Based on the information so willingly shared, a profile of today's carrier-based Nurse Corps officer emerges. He is a lieutenant commander with over 16 years active duty, is prior enlisted, and has prior sea service time. Averaging 36 years of age and married with three dependents, he has a B.S.N. degree and 13 years nursing experience.(3) His primary subspecialty is medical-surgical nursing although he has additional experience in a critical care setting.

Typically, he reported aboard from a naval hospital where he had served as a division officer (charge nurse).

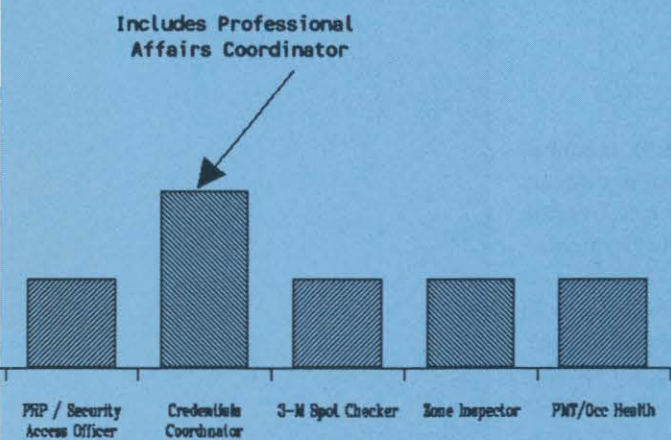


Before reporting, he had not received any specific training to prepare him for his new shipboard duties. Once on board, Damage Control and Ship's Maintenance and Material Management (3M), although initially foreign concepts, aided in his assimilation with the new environment. Shipboard Fire Fighting School offered a stark realization that his new environment would be fraught with dangers that must be dealt with quickly and efficiently. It became especially evident that the ship's crew must be a self-sustaining population that fights fires and repairs mechanical casualties without the benefit of outside assist-

ance. Equally so, the medical department must depend solely on its pool of expertise to treat any illness or injury that may occur while isolated from fixed MTFs.

The medical department aboard a CV/CVN is also composed of a senior medical officer (SMO), typically a senior commander or captain flight surgeon, a general surgeon, a general medical officer (GMO), a physician's assistant, a Medical Service Corps administrative officer, and approximately 30 hospital corpsmen. When deployed this group is augmented by two additional flight surgeons, 8-10 additional corpsmen (depending on

of
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the size of the embarked airwing), and a TAD anesthesiologist or nurse anesthetist. Health care services available on this floating city are, therefore, commensurate with a small community hospital.

How does the Nurse Corps officer fit into this group? As an experienced officer, he comfortably assumes the role of special assistant to the SMO. He retains primary responsibility as the clinical expert over the inpatient setting and shares military leadership responsibilities with the administrative officer and the department's leading chief.

Patient care and medical training

equally occupy his time. He supervises the ward corpsmen, makes daily patient rounds, and verifies the orders of the medical officers. Daily professional assessment and patient care planning provide the basis for the provision of quality patient care. Providing total perioperative nursing care, including circulating duties and post-anesthesia recovery, for emergent and elective surgical cases is frequently required at any time of the day or night. Working closely with the operating room technicians and embarked anesthesia support, he ensures the safety of the patient in the surgical environment.

As medical training officer he is afforded the opportunity to interact with many departments on the ship. For example, conducting a mass casualty drill may involve his coordination of events between as many as six separate departments. This might include air, which controls the assets on the flight deck; weapons, which controls elevators vital to the efficient processing of multiple victims; and dental, which must activate and process the walking blood bank.

The ship's Medical Response Team (MRT) is its ambulance service on foot. Five team members literally strap life support equipment to their backs

LCDR Ron Yakshaw, NC, cares for a crewmember aboard USS Enterprise.





The author (center) conducts first-aid training during a general quarters drill aboard USS *Theodore Roosevelt*.

and respond to the scene of the emergency. An aircraft carrier has over 2,000 spaces located in a 17-story structure. Therefore, the ongoing training of the MRT is as much a test of its ability to get to any space aboard the ship in under 4 minutes as it is the actual treatment rendered. Additional training must be provided for the marines of the embarked Marine Detachment (MARDET) who augment the MRT as stretcher-bearers.

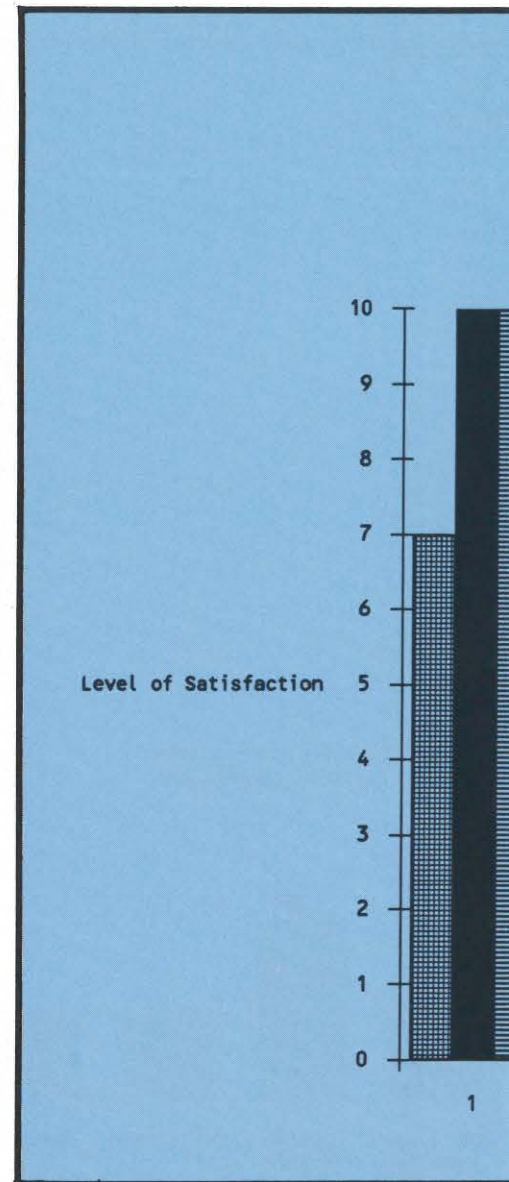
Limited medical assets make it paramount that the crew, sometimes numbering in excess of 6,000 men, are capable of providing initial life-saving measures during combat. A plan to provide extensive first-aid training must be developed and implemented. General quarters provides the medical training officer his training ground. Rigorous drilling of these skills utilizing wound moulage and a "flopper" (term fondly applied to the simulated victim) provides immediate feedback as to the efficacy of his program. Additional training requirements are directed by the type commander, or TYCOM. These include shipwide

Basic Life Support (BLS) training, education in environmental dangers such as heat and cold injuries, hearing conservation, and personal hygiene.

Not unlike his peers ashore, our Nurse Corps officer wears additional hats representing collateral duties. Serving as the departmental quality assurance (QA) coordinator, he implements the departmental QA plan, develops and conducts pertinent studies evaluating the quality of care, and investigates occurrence screens and incident reports. If nominated by the commanding officer to the position of family advocacy officer, he will work closely with the local family advocacy representative to assist the active duty member experiencing problems with family violence and dysfunction in the home.

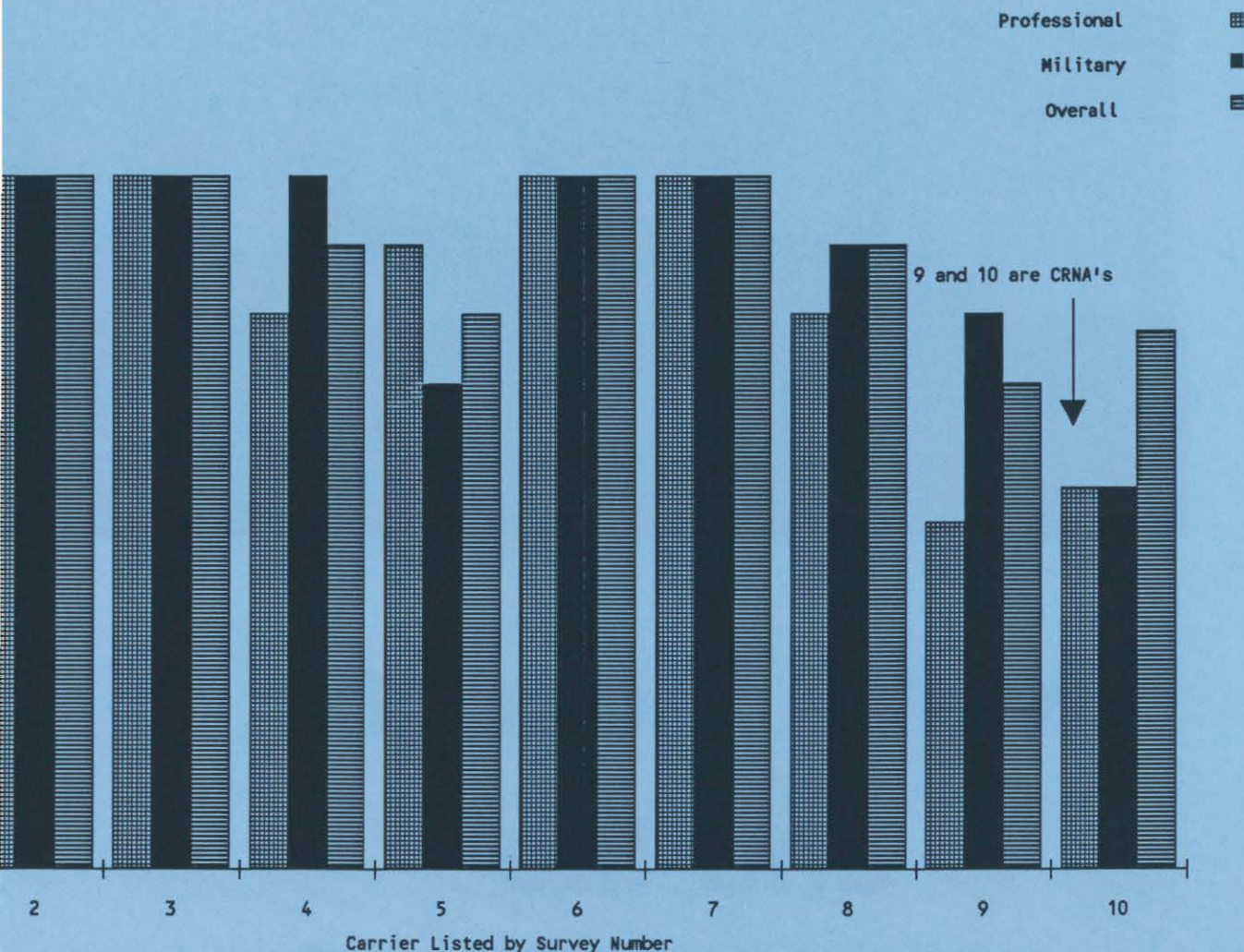
Recommendations

Nurse Corps officers seeking a growth position, both personally and professionally, should well consider assignment aboard a CV/CVN. If one meets the criteria set by the Nurse Corps detailers, he should also reflect



on this responder's comment. "The importance of being a strong generalist can not be overstated." The role of the nurse aboard a carrier draws from almost every corner of nursing practice. A broad background of experience, confidence as a public speaker, and a demonstrated ability to adapt easily are necessary to meet the challenge successfully. BLS instructor certification, completion of the Combat Casualty Care Course, operating room familiarization, and a good working knowledge of quality assurance are also considered to be valuable qualifications best obtained before assignment.

Self-Evaluation of Experience



Conclusion

The role of today's Nurse Corps officer assigned to fleet aircraft carriers involves the elements of traditional nursing in a nontraditional setting. As a specialist in patient care, he completes the health care team. As an educator, he maintains the readiness of his department and the ship to meet contingencies that hopefully will not be required. And, as a manager, he ensures the delivery of quality health care throughout the medical department.

Meeting the challenge of providing nursing care in this arduous sea-going billet has proven to be highly satisfying

for these nurses. They rate their overall experience a 9 on a scale of 1 to 10. A typical final comment was: "(the Nurse Corps officer) adds continuity and experience to patient care . . . making an effective contribution to the health care team. The job is wide open."

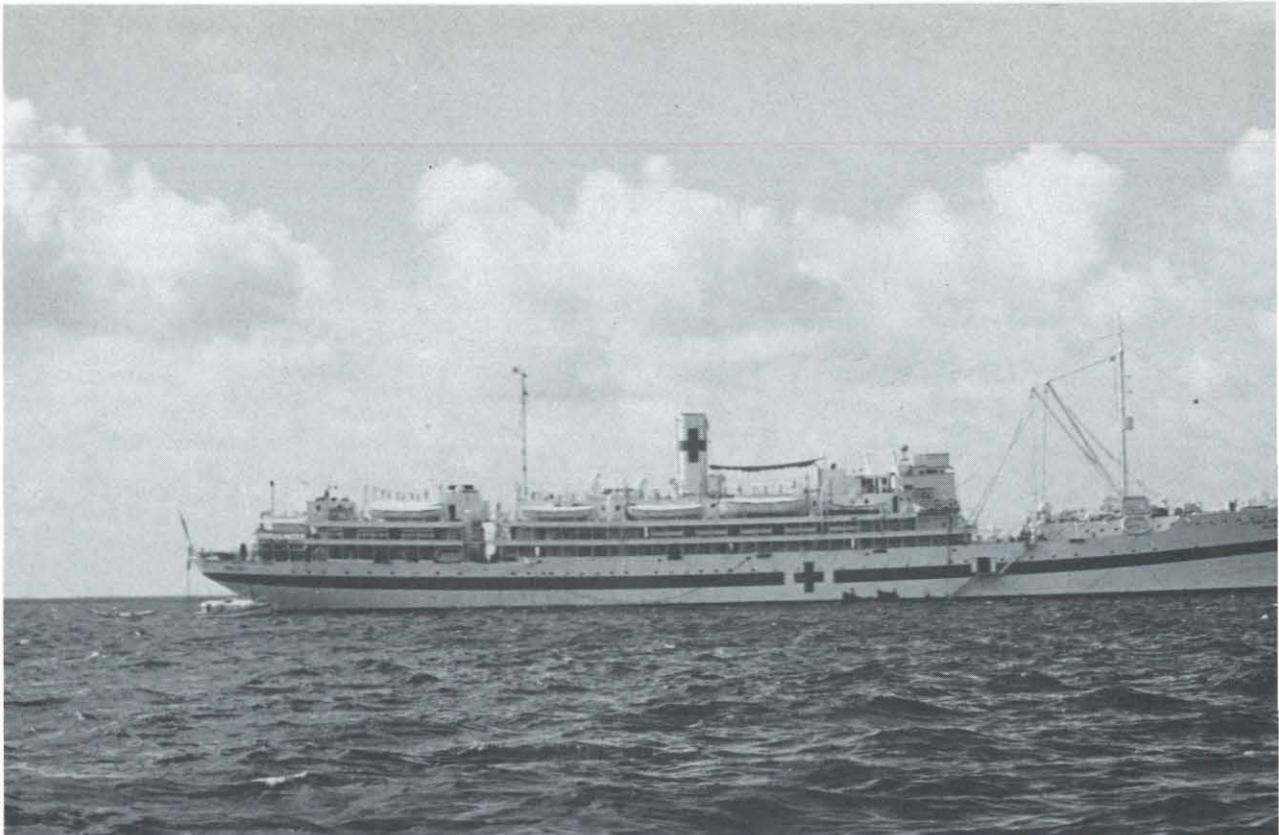
As the Navy closes out the 1990's and enters the 21st century, a leaner operating force will meet the challenges presented by the Saddam Husseins of the future. At the heart of that force, however, will remain the carrier battle group. And, the Navy Nurse Corps will continue to be there to support the fleet in this nontraditional setting.

References

1. Prior to Operation Desert Shield/Storm, CV-41 was embarked on its last deployment. The nurse anesthetist assigned was not due to be replaced before decommissioning. USS *Abraham Lincoln* (CVN-72) was not considered fully operational.
2. There were 10 responses to the questionnaire. Three of the remaining four carriers were in extended yard periods and, at the time of the survey, did not have a Nurse Corps officer assigned. One officer did not respond.
3. Three of the 10 responders were masters-level trained which, for the given population, represents twice that of the general Nurse Corps population as presented in the January 1990 *Nurse Corps Information Update*. □

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Photos from BUMED Archives



Nurse Pioneers and the Hospital Ship *Relief*

LCDR Christine Curto, NC, USN

Since 1908 Navy nurses have appreciated unique and challenging assignments, distinguishing them from many of their civilian counterparts. The first nurses, known in the Navy nurse community as the "Sacred Twenty," were led by Esther Voorhees

Hasson. These 20 nurses established Navy nursing's clinical roots at the Naval Medical School and Naval Hospital in Washington, DC.⁽¹⁾ After their first few months of training and indoctrination, they were sent to naval hospitals in the United States, Japan,



USS Relief (AH-1): The sixth ship to bear that name, the only Navy hospital ship ever designed from the keel up, was launched in 1919 and served through the end of World War II. *Below:* First Lady, Mrs. Grace Coolidge (in cape), visits *Relief* about 1926.



Esther Voorhees Hasson, the first Superintendent of the Navy Nurse Corps.

the Philippines, and Hawaii, "where it was deemed advisable to station women nurses."⁽²⁾ In the ensuing years, the more unusual assignments were those at the overseas island locations of Samoa, Guam, and St. Thomas and St. Croix in the Virgin Islands.⁽³⁾ During World War I, a few Navy nurses were selected for hospital ship nursing.

Although nurses have served aboard hospital ships since the

Spanish-American War, nursing aboard USS *Relief* was unique, since it was the "first ship of the U.S. Navy designed and built from the keel up as a hospital ship."⁽⁴⁾ In a 1923 letter to the editor of *The American Journal of Nursing (AJN)*, Navy nurse Helen S. Wood wrote that "the hospital ships carry nurses, and a detail aboard one is much coveted by all who are good sailors."⁽⁵⁾ In 1934 Navy nurse Alberta Carriere elaborated on this sentiment when she wrote that "almost every nurse accepts duty on the USS *Relief* with misgiving—will she get seasick? Every nurse relinquishes duty with a new source of misgiving—will she ever like the humdrum of land-living again!"⁽⁶⁾

Nurses who are the subject of this article actually served aboard the sixth ship in U.S. Navy history to be named *Relief*. Commissioned in 1920, it

served both the Atlantic and Pacific naval fleets until its decommissioning in 1946. It is interesting to note that of the six ships named *Relief*, two served as Navy hospital ships.

The first *Relief* was a stores ship built in 1835. The second *Relief*, built as a passenger liner between 1895 and 1896, was converted to a hospital ship in 1898 when she was acquired by the U.S. Army for Spanish-American War service. This vessel was transferred to Navy in 1902 and used to service the naval fleet in Mexico and the Great White Fleet in the Pacific. Damaged during a typhoon in 1908, the second *Relief* became a stationary floating hospital and dispensary off the coast of the Philippine Islands and stayed in that service through the remainder of World War I. In 1918 *Relief's* name was changed to *Repose* so that a new hospital ship, being built

in the Philadelphia Navy Yard, could bear the name *Relief*.

The third *Relief* was built in 1910, purchased by the Navy in 1918, and used as a tender until 1921, when it became a private boat. The fourth *Relief*, built in 1907, was acquired and commissioned by the Navy in 1918 for use as a steel wrecking tug. Built in 1904, the fifth *Relief* was a lightship for the Lighthouse Service of the U.S. Treasury Department until 1918, when the Navy began using it for the same purpose.(4)

In 1920 the Philadelphia Navy Yard community, as well as the Navy medical community, were proud of the newly commissioned USS *Relief*, "the largest and most modernly equipped vessel of its kind."(7) With a bed capacity of 500 at the time she was built, the new *Relief* ranked "among the largest metropolitan hospitals . . . [one of] about thirty-one hospitals in the United States of five hundred beds or more."(8)

Relief's First Nurses

Nurses applying to the Navy in the 1920's were required to have been "graduated from a reputable training school requiring a residence of at least two years; [to] give evidence of registration from states where laws governing registration [were] enforced; [to] be a citizen of the United States; unmarried; between the ages of 25 and 35 . . . and pass a satisfactory examination."(9) These standards had changed little from those initially set by the "Sacred Twenty" in 1908 and were in line with the professional ideology begun by American nursing leaders Isabel Hampton Robb, Adelaide Nutting, and Lavinia Dock in the late 1800's.(10)

J. Beatrice Bowman, one of the "Sacred Twenty," drew an assignment as *Relief's* first chief nurse in charge of 10 staff nurses. Anticipating the new nurses, the commanding officer wrote the Superintendent of the Navy Nurse Corps, requesting that "the nurses assigned to this duty should be chosen from those who have a basic optimism and who can be relied upon to demon-

strate a spirit of cooperation in meeting the unusual conditions under which they must work and live."(9) These nurses were to direct the activities of the 184 hospital corpsmen assigned to the ship. In the beginning, Miss Bowman was concerned that her nurses not succumb to seasickness. She reported that "all on board thought we would be seasick and we were watched closely . . . bulletins [were] carried by mouth to all parts of the ship if some one or more looked pale."(11) Miss Bowman assured those in Washington that "aside from three having a slight touch of mal-demer all proved themselves as good sailors as could be found . . . even those who felt badly were plucky enough to report on duty every day and tried to throw off all ill feeling."(11) There seemed little concern about the nurses' skills in delivering patient care.

The nurses were assigned a separate area in the superstructure of the ship for their quarters, which consisted of a central community room from which extended five staterooms. The chief nurse had a separate stateroom and each nurse's stateroom was "fitted with two berths, upper and lower, two secretary bureaus, two toilet lockers, a good sized wardrobe, and a wash stand with running fresh water."(12) They managed their own mess including the expenses for food and overseeing the activities of their own steward.

The Early Years

By reading articles written by *Relief's* nurses and physicians during the 1920's, one gets the impression that patient care was very similar to that in land-based hospitals of the time. It seems that there was no compelling need to address any unusual or specific patient problems or note changes, if any, in nursing work patterns. The emphasis was on describing the hospital ship and the foreign locations visited, probably because the vessel was not involved in war activities during the initial decade of its existence. Miss Bowman assured the readers of *AJN*, however, that "we look upon this as very serious work—not as a plea-

sure trip—and the dignity of our position is of great consequence to us."(13)

The nurses were not idle, as they put the new hospital in commission on the way to Cuba to provide nursing and medical care to personnel attached to the Atlantic Fleet.(14) Using sewing machines they worked from morning to bedtime making items such as glove holders and dressings. In 1922 one nurse wrote about her experience on "Ward A, in contagion, which is aft and above decks," claiming "pneumonias were my specialty at that time and you know they keep one busy, so, if up to this time I have given you the impression that there was no work for us on the ship, you must change it at once, for we have always been fairly busy; and in Cuba, very very busy."(15) Miss Bowman and her staff nurses did not mention the work of the corpsmen in their letters.

Nurses and medical staff highlighted the ship's capabilities, attributes highly valued during that time and regarded as beneficial and necessary for providing adequate care to the sick. *Relief* had a sophisticated system of circulating fresh air to all the hospital and ward spaces. It was possible to heat that air when necessary and to isolate patients with contagious diseases on a specially designed ward in the aft part of the ship. Additionally, the vessel had an advanced lighting system, using both natural and artificial light in the patient ward areas as well as in the operating room suites. Those in leadership positions were most proud to be able to provide the crew and patients freshly prepared food and milk from its "mechanical cow."(16) *Relief's* advanced design enabled efficient movement of patients throughout the ship. With a variety of outpatient departments and six operating rooms, *Relief's* ability to serve the fleet was unparalleled.

To help justify *Relief's* existence during peacetime, a complete field hospital was housed in the ship's hold which could be assembled to extend care to those on land.(16) This capability did, indeed, become useful in 1931 when it was used in Nicaragua to aid in



Serving aboard *Relief* during World War II, ENS Beatrice Rivers, NC, supervises the preparation of plaster casts for broken limbs.

the earthquake relief effort there. Again, in 1933, the field hospital was used after a severe earthquake in Long Beach, CA.

Pacific Operations

In 1923 *Relief* left Caribbean waters to join the Pacific Fleet, operating as far north as Alaska and as far west as Hawaii. Sailing with the Pacific Fleet until 1941, the crew visited ports in the Samoan Islands, Australia, and New Zealand. During this same period, *Relief* also operated as a fleet hospital ship and shore-based hospital in the San Pedro/Long Beach, CA, area for major periods and, as such, served a naval population of between 35,000 and 45,000 personnel. In 1934 a medical officer recorded that there were 2,140 patients hospitalized on the ship (a daily average of 114 patients); 417 operations were performed in the main operating room, as well as 566 nose and throat operations.⁽¹⁷⁾

In 1934 Carriere wrote of her adventure and unusual experience.⁽⁶⁾ Her description of the ship's structure and amenities was similar to those who

preceded her, but she was more specific as to the difficult and varied work performed by the nurses.

During the year, from August 1933 to August 1934, "anesthetics were given to 1,343 patients . . . of these, however, only 51 were by inhalation, 189 were spinal and 1,103 were given locally."⁽⁶⁾ Emergency operations were mentioned as being performed frequently aboard *Relief*, especially appendectomies. Surgical procedures ran "the full gamut of those performed on land with one exception—there are no women or children as patients."⁽⁶⁾ There was an operating-room nurse on board who was also a graduate anesthetist, performing double duties in the operating room. Carriere reported that, during that time, the operating-room nurse assisted in 640 eye, ear, nose, and throat operations and at 703 operations performed by the other surgeons which included orthopedic surgery.⁽⁶⁾ A dietician was the other nurse specialist, but Carriere did not detail this nurse's responsibilities other than to say that she developed and supervised the patients' various diets.

The presence of these specially trained nurses was part of a vision held by Bowman, who had become Superintendent of the Navy Nurse Corps in 1922 and served until 1935. One of her goals for Navy nurses was the advancement of their educational opportunities. Working with the Surgeon General of the Navy, she instituted special courses for Navy nurses—anesthesia, dietetics, laboratory work, physiotherapy, and a course in nursing of tuberculosis patients.⁽¹⁸⁾

Carriere also described the ship's wards. The officers' quarters could accommodate 10 patients; the medical ward, 40; the general surgical ward, 60; the orthopedic surgical ward, 60; the eye, ear, nose, and throat unit, 28; the urology ward, 40; isolation wards, 50; and the 8 convalescent wards, 64. She was very impressed by the very last ward in oxygen tents which were "available and used frequently for pneumonia."⁽⁶⁾ "Psychopathic cases and those diagnosed as suffering from communicable disease [were] kept in quarters which [were] isolated from

Off duty *Relief* nurses relax in this 1934 photo.



the main wards by a very narrow bridge.”(6) Even in the 1930’s (as in the 1920’s), the isolation wards were an important component of the hospital system.

World War II Service

In 1941 *Relief* was reassigned to the Atlantic Fleet, serving as a base hospital in the waters from Charleston, SC, to Argentia, Newfoundland. When the Japanese attacked Pearl Harbor, *Relief* immediately sailed from Argentia to Casco Bay, ME, to provide for the needs of the victims of the war in the Atlantic. In 1943 the hospital ship joined the Pacific Fleet.

In the Pacific, *Relief* operated with up to four other hospital ships. In 1944, in order to expand to a capacity of over 700 patients, she was outfitted with additional bunks attached to bulkheads on her decks.(19) Casualties were received by *Relief*, then transported to designated shore hospitals, so that the hospital ship could return to take on more patients. Because of the type of warfare fought at sea at the

time, rendezvous points were established to meet ships carrying the injured soldiers. When one hospital ship was loaded to capacity, it would move on and be replaced by another, returning after having delivered its patients to a safe location, mostly to Guam but also to Saipan and Tinian, once those Japanese-held islands were secured.(19)

War duty aboard ship meant learning to perform work in blackout conditions. All openings to the outside had to be masked to keep light from revealing the ship’s location. The nurses regularly performed abandon ship drills with the crew and patients to assure ready evacuation in case the hospital ship was attacked. *Relief* came close to danger during the latter part of World War II when some Japanese pilots began approaching hospital ships rather closely.* Prior to that, *Relief* routinely moved close to the

*USS *Comfort* was hit by a kamikazi with great loss of life during the Okinawa campaign in the spring of 1945.

battle zone during the day and then at night moved away from shore with lights ablaze. With the increased danger, the ship put into port during the night and camouflaged with smoke (created by the U.S. smoke boats) when a raid was anticipated.(19)

On board, patient traffic flow became very organized. War victims were brought to the ship as soon as 30 minutes after injury. “On one occasion, hurried by a typhoon and a change in war activity, the USS *Relief* loaded 691 patients in an hour and 15 minutes, taking them up gangplanks, hoisting them by derricks, shooting them into wards for their wounds and into surgery when they needed it.”(20) Physicians triaged patients, designating the areas on the ship to which they would go and, if it was a ward, a specific tier bunk was assigned. Always responsible to the doctor(s) for the care of the patients, the nurses supervised the work of the corpsmen on the wards. At all times, but especially during the war, the Navy nurse needed to “be an instructor and administrator as

well as a skilled professional in the nursing arts.”(21) The arriving wounded had mainly fractures and chest, abdominal, and head injuries. Many were in shock. Burns were not uncommon. On the wards the patients’ clothing was removed and they were checked for hemorrhage, shock, and any other conditions not noted during initial evaluation. Those in shock were given intravenous plasma and dextrose. Wounds were debrided and dressed with sulfanilamide crystals after which vaseline gauze was applied. Patients with fractures had casts applied. Nurses often applied treatments such as insulin therapy, sodium amyral, metrozol, cold packs, and sedative tubs to the patients, when indicated.(21) Operating rooms were constantly turning over patients. The doctors depended on the nurses’ judgment in many of the emergency treatments.

The Okinawa invasion resulted in many burn victims.(19,21) Those patients were very challenging for the nurses, since they were the most uncomfortable. It was difficult to keep up burn patients’ morale. Many were dehydrated and/or in shock, so they needed plenty of plasma, a high protein intake, and rest. Many able-bodied patients were assigned a helpless shipmate to feed and they assisted in the task of providing routine care to the hundreds of other patients aboard ship. In each ward one patient was assigned as “water boy” with the duty to make rounds each hour providing water to patients and recording the amount taken when required.(21) Record keeping was often streamlined so that in most cases all records were kept on the temperature, pulse, and respiration (TPR) sheet placed on a clipboard hung at the bedside or in a chart in the chart rack.

Relief nurses were expected to appear clean and neatly groomed in [her] crisp white uniform,(6) yet in reality, nurses frequently donned the fatigue coveralls worn by those in the fleet in order to perform their work. (19) Often nurses performed the additional

duty of Red Cross workers with the ship chaplains, listening to the patients’ worries and helping to write letters. Terrill mentioned that nurses needed a good, untiring sense of humor to “match the wits of the lads—injured or not.”(21)

In 1943 LT Monteville, a nurse who served on *Relief*, remarked how difficult it was to witness the misery and suffering of the war in the Pacific.(22) She said that the soldiers’ strength, courage, and faith made the nurses want to do everything humanly possible to make them comfortable and well. What stands out in Monteville’s letter is the picture she portrays of everyone on board working to help one another, no matter what their job might have been. Everyone was driven to survive together.

Pioneers

The challenges of duty aboard a hospital ship have been and continue to be met successfully, because Navy nurses through the years have characteristically been those “of high calibre who are keenly alive to the activities of the present and future development of the nursing profession.”(18) In 1909 the first Superintendent of the newly formed Navy Nurse Corps, Esther Hasson remarked: “We nurses who come into the nursing service of the Navy during this first year of its existence are the pioneers, and it rests with us to make the traditions and to set the pace for those who are to follow, and so upon our shoulders rest a great responsibility.”(2) Evidently, the Navy nurses assigned to *Relief* during her service from 1920 to her decommissioning in 1946 carried on that pioneer tradition. Nurses aboard that unique vessel demonstrated, as do Navy nurses performing in various assignments today, to requisite “cheerful disposition that accepts the ups and downs incidental to changes of station; that adapts itself easily to new environments; that accepts the undesirable detail without complaint and confidently looks forward to the better luck that will surely come next time.”(2)

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Pacific Duty on the Troopship MS *Sommelsdijk*

CAPT Paul M. Ellwood, MC, USNR (Ret.)
Edited by Dean L. Mawdsley, M.D.

In the March-April issue of Navy Medicine, part II of Dr. Paul M. Ellwood's wartime memoir described the surprise attack on the troopship MS *Sommelsdijk* as that vessel's crew and its complement of Seabees celebrated Christmas 1944 anchored off the beach at Samar, the Philippines. A Japanese torpedo bomber, its engine dead, launched a single torpedo into the hull before it hit the water. Although its two crewmembers survived a hard water landing, Filipinos friendly to the Americans shot and then beheaded them before parading the heads around the ship the next day in a grisly sideshow to war.

The *Sommelsdijk* sustained about a 20 x 40 foot hole in the port side of hold #1. The keel was broken in that hold, and fire and blast had damaged the bulkhead between holds #1 and #2. Only after heroic efforts by personnel of the Australian frigate *Gascoyne*, was the fire brought under control and the stricken ship moved to shallow water.

Sommelsdijk's dead numbered six with many more hurt. With the sick bay a shambles, Dr. Ellwood rendered first aid to those he could. The Seabees and the seriously wounded were evacuated by *Gascoyne*. Once the acute situation was under control, the waiting began. With all the bustle of the Philippine invasion and battle there was little time for ship repair. *Sommelsdijk* had to wait. On 8 Jan 1945, the ship was shifted from Guinan to Tacloban, where it was turned over to the Army Corps of Engineers for repair.

In this last installment of his journal, Dr. Ellwood waxes poetic and observes a case of schistosomiasis.

We're the crew of a fightin' transport
We sail the bounding Main.
We're there, we're here, we're here, we're there
And then we're back again.
We do a job for the country
For the land that we love so.
We bring the men to the fightin' front
And we're always on the go.
We carry those gallant Seabees
And those snappy young Marines,
We stack them up just five men deep
And feed them Navy beans.
We tolerate their cussin'
And we try to keep them well.
We listen to their yearnings
And the stories that they tell.
We guard them in the gun tubs
And we drill them every day.
We inspect their "heads" and quarters
In a military way.
They gamble and grumble
And they wish for their release.
And this we have in common
A longing for the peace.
Oh we're the crew of a fightin' transport
And its subs that we do fear.
But we do a job for the country
And the things that we hold dear.

Aboard *Sommelsdijk*, 12-30-44

One of the most devilish of war inventions no doubt is the suicide combatant. According to reports, definite organizations are recruited particularly among boys of the teen ages. They are said to be given a very special funeral ritual (which, by the way, is supposed to include the companionship of a girl for the night) with white robes, salutes, honors, etc. This all precedes the suicide maneuver. These boys are also said to receive a minimum of training in taking off with a plane and less or none in landing.

Whatever the preliminaries their work has been nasty. There are several ships now awaiting repairs and a number have been sunk. At times they use little judgment, however, one PT boat is said to have shot down six in succession trying to dive bomb it. Fortunately, there are many more shot down than ever reach their marks, the proportions being variously estimated at 20 or 30 to 1. Apparently the divers are instructed to aim for the bridge of the ship attacked and consequently prominent officers have been killed and even the damage to battleships has been considerable.

One Liberty [ship] in the area was attacked by a twin-engined bomber at hatch #5; one of the bomber engines went straight through from one side of the ship to the other and the keel and propeller shaft were both badly damaged.

Another Liberty caught a bomb directly amidships. All the officers were killed apparently instantly and the ensuing fire caused the remaining crew to abandon ship. When towed in the ship was called a "ghost ship" as there was no one on board except some 17 dead.

One most remarkable thing was the report of the extensive Jap air losses in the area from 24 Oct to 28 Nov—927 planes; some days as many as 50 or 60 and some days were one continuous raid. On 26 Oct there were 26 raids. Of course we had some severe losses too; our carrier losses and merchant ship and LST as well as other war ship losses have no doubt been much min-

Photos courtesy Dr. Dean Mawdsley



A port profile of *Sommelsdijk* showing some of the above waterline damage.

imized. One beachhead was obviously taken by expendables and they came well nigh being expanded. One boy in this outfit told me he saw 10 ships (USA) of all categories sunk in 1 day. Their forces ran out of ammunition, were without air protection and otherwise just had to take it.

The islands of Leyte, Samar, and Negros were taken by the Japs by peaceful occupation. This was possible because Gen [Tomoyuki] Yamashita said otherwise he would kill the 2,500 Americans taken on Corregidor. He reached an official agreement on the subject with Gen [Jonathan] Wainwright. When the occupation forces came to one of the larger towns all people had fled to the hills, only one

American officer and two aides remained to officially meet the Japs. The Japs in all their occupation took everything without recompense—if necessary trumping up charges against the owners and imprisoning or killing them. Trucks, rice, buildings, machinery were all taken—3,000,000 tons of cane sugar were taken on Negros. This sugar is said to be a big headache to the American Congress as the island can produce 5,000,000 tons a year and sell it delivered in the U.S. at 3/4 cent a pound (contrasted to the usual prices of 5-8 cents).

One of the local men in the employ of the U.S. Govt. told some interesting things about guerrillas. He stated that thousands of these had contact with

Southeast Asia



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the U.S. Army and Navy people by submarine many months before D-day. They were supplied with arms ammunition, etc. He estimated some 6,000 of these men in this area and

some 10 times this number in the areas to the north. He reported these men doing a large portion of mopping up work.

Col Henson (Knoxville, Tenn.) and

Maj Weinburg (Davenport, Iowa) at the 133rd Gen. Hosp. demonstrated their cases of schistosomiasis to me (after arriving in an ambulance furnished by Cdr Parkes (Lexington, Ky)



Samar, P.I., 1944: (Above) Street scene in Guian and (Right) Filipinos build a new home.

very kindly today. Although dysentery was not recognized as a symptom patients whom I talked to all had 2 or more days of this in the week or two preceding the febrile period. The outstanding symptom at onset is fatigue. In addition generalized soreness, abdominal (epigastric) discomfort, cough and headache may accompany the fever. Cough appears to be constant. The fever runs high in some cases 105 and may not be present in others. A plateau of fever (102-104) for a week followed by P.M. spiking normal to 103 or 104 for another week or so is apparently quite common.

The early skin manifestations varied from none to a mild eczema-like rash on the lower anterior surface of one lower leg to an area of erythema on another leg in a similar area. The history of exposure to water was usually



Sommelsdijk crewman sits by one of the ship's guns.



to small streams or rice paddies but was so irregular that no specific dates were usable for estimating incubation period. A period of 4 weeks is believed to be about correct. One of the later skin manifestations is urticaria.

The eggs of the parasite are found in the feces and appear about the size and shape of hookworm eggs, but have a smaller nucleus which has irregular thread-like interior with a tip resembling the end of a trichura egg. The eosinophile count runs high 40-70 percent and the WBC 12-30 thousand. A very small (2 mm) black snail gathered from the edges of nearby streams showed 25 to 30 percent infestation. The disease is frequently proven only after repeated stool examinations but may be diagnosed on clinical grounds.

Another important clinical sign is tenderness and enlargement of the liver. At first the latter may be indicated only by percussion but later by palpation. Occasionally the spleen is also felt. The dropsy or ascitic phases are believed to follow fibrosis in the liver resulting from the presence of the parasites. Just how large an infestation, how many attacks, the relation of

time and climate, all remain problematical in connection with this later manifestation.

Beyond harsh rales the findings in the lungs are negative, although the X-rays on two serious cases looked like the diffuse, snowstorm, appearance of military tbc. (On autopsy one of these lungs was actually studded by many tubercles larger than the usual tbc and on microscopic exam showed an ovum in each surrounded by an area of fibrosis and multiple eosinophiles.)

The mortality is not high but the extensive involvement and period of fever may require long convalescence.

The febrile period appears to last about 4 weeks and the treatment is apparently largely dependent on good symptomatic and nursing care. Fua-din, about 5 cc IM every other day for 10 or 15 doses, is used but without much apparent benefit. Tartar emetic given IV in saline may even be harmful.

One Filipino lab helper I saw working about shows schistosomiasis, hookworm, whipworm, and roundworm without much symptoms.

This was Dr. Ellwood's last journal entry. On 19 Jan 1945, the Army Corps of Engineers poured concrete along the keel in hold #1 to act as a splint. They also placed concrete ballast in the stern holds to enable the bow to ride higher. The bulkhead between holds #1 and #2 was made watertight, but there was no attempt to close the large rent in the hull.

On 23 Feb, Sommelsdijk set sail in a convoy of about 30 ships. The convoy encountered a storm and by late afternoon the vessel had to leave the convoy and return by itself to Leyte Gulf because of excessive vibrations and unseaworthiness.

Safely in an anchorage, a Navy repair crew tack welded steel plates over the large opening in the hull. This welding was done under water. A second temporary repair was completed on 25 April after which Sommelsdijk departed Leyte for New Guinea in a 65-ship convoy.

En route to Hollandia, New Guinea, Sommelsdijk had one more unfortunate incident when two of the Dutch crew entered a storage room and were overcome by toxic fumes. One man died. After a 12-day stay at Hollandia, the ship sailed to Finschhafen, where it took on fuel and supplies for the trans-Pacific crossing.

Near the Santa Cruz islands another accident struck when one of the ship's Navy crew fell through a hatch, fracturing his spine and causing paralysis from the neck down. The ship crossed the Pacific, stopping at Balboa in the Panama Canal Zone on 14 June. It arrived back in New York in late June 1945. □

Dr. Mawdsley, Dr. Ellwood's son-in-law, resides in Hillsborough, CA.



Navy Medicine

May-June 1942

Jennifer Mitchum

In the Battle of the Coral Sea from 4 to 8 May, U.S. naval forces halted what seemed to be an uninterrupted Japanese push southeastward in the Pacific threatening Australia and New Zealand. This victory no doubt was a decisive one and marked the first turning point of the Pacific war. Midway would be the second. In addition, it introduced a new kind of naval warfare as it became the first battle in naval history in which opposing warships never came within sight of one another; instead carrier aircraft inflicted all damage. Navy medical personnel serving aboard ships in the Coral Sea provided exceptional service as demonstrated aboard USS *Lexington* which went down on the last day of battle.

"The story of the medical service aboard USS *Lexington* is the story of a plan that worked,"(1) said CDR Arthur J. White who was the vessel's senior medical officer. "What made it

effective and enabled us to get all the injured off the carrier without losing one of the hundred or so patients was the perfect cooperation of every member of the medical department,"(2) concluded Dr. White.

The medical plan that contributed to a reported no loss of life during abandonment of the ship was one geared toward treating casualties promptly and "on the scene," if possible, to eliminate excessive movement during the battle. As part of this plan, hospital corpsmen with advanced training in first aid were "placed about the great ship wherever a number of men would be stationed during battle."(3) In addition, medical officers were assigned to several emergency dressing stations. Equipped with basic surgical equipment, medical officers performed minor surgery at these stations and sent only severely injured to the main operating room.

By the end of Coral Sea action,

"Lady Lex" herself was stable although badly wounded. Repair parties had shored up torpedo damage temporarily, fires had been put out, and she had been sailing toward port at about 25 knots when a series of internal explosions racked the ship. It was about 1300 or a little over an hour after the closing action when gasoline vapors, released by a torpedo hit, ignited below a running motor generator. Fires rapidly spread on the lower deck knocking out communication and lighting systems. Thus, dressing stations, sick bay, and operating room had to be lit by battery lights.

Upon the initial explosion, LTJG John F. Roach, the ship's junior medical officer, thought the blast was a delayed-action bomb going off as he worked on wounded at a dressing station near the ship's firerooms. Subsequently, he and a corpsman went up to the hangar deck to assist other medical personnel in treating a large number of

"Abandon Ship!" is ordered aboard the carrier USS *Lexington*. While a destroyer takes off the wounded, the rest of the officers and crew slide down lines into the water. Not a man was reported lost in this operation.

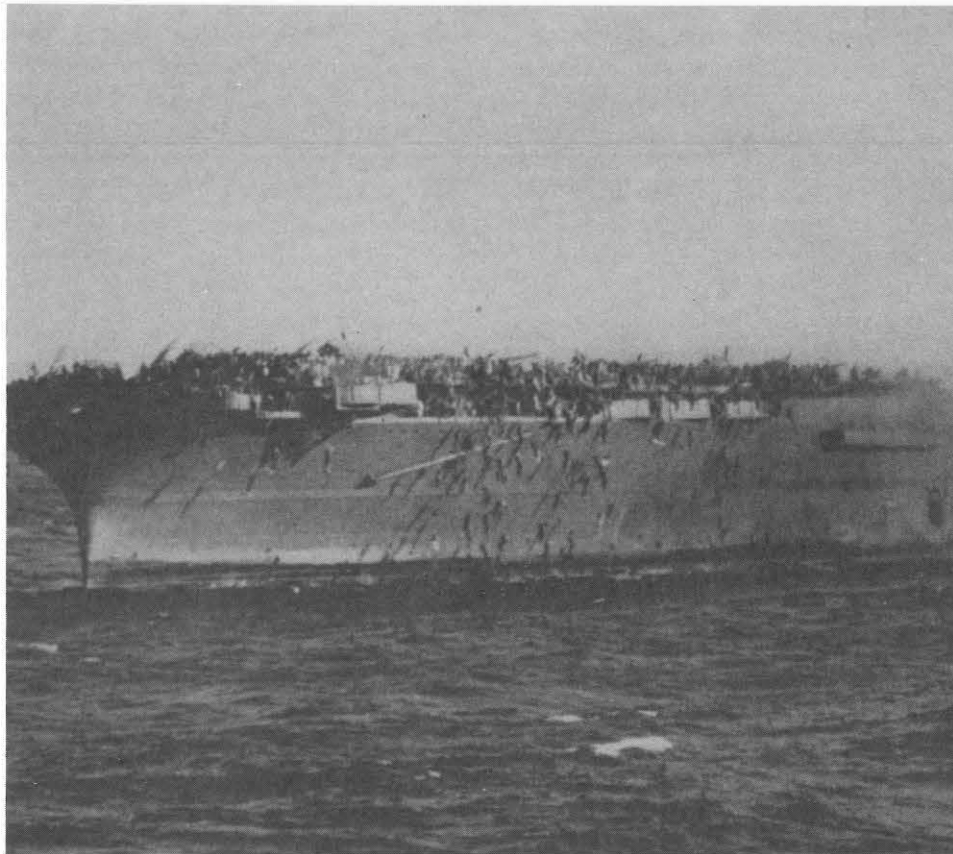
wounded that had been brought there from below. ". . . Arriving at the hangar deck, we found it to be in semi-darkness and filled with smoke,"(4) said Dr. Roach, adding, "Men were being brought out of Main Control up onto the hangar deck. Some of them had already died. Most of the injuries appeared to be burns complicated by the effects of noxious gases."(5) Carbon monoxide and other gases were problems for medical personnel as well. Although surgeons donned gas masks, working in the thick smoke was difficult.

Dr. White was in surgery when the explosions erupted. The first threw him about 20 feet down a passageway. He landed against a bulkhead breaking his right collarbone and spraining both ankles. Despite his injuries, CDR White managed to get back to the operating room and labored for over 3 hours. Dr. White said he didn't notice the damage to his shoulder until he tried to open the companionway ladder hatch and couldn't during the ship's evacuation.

By 1445 fire and engine room ventilation systems had been wrecked and the fires were out of control and spreading aft on the flight deck. Subsequently, CAPT Fredrick C. Sherman, the commanding officer, ordered medical personnel to evacuate wounded, which numbered about 150, into whaleboats. Medical personnel lowered patients in basket stretchers into the whaleboats, and destroyers took off the remaining survivors.

Corregidor Falls

While battles raged to the south and east, defenders of Corregidor were lining up in surrender. Word came that Allied forces on Corregidor were "throwing in the towel" 6 days before



the actual surrender on 6 May. A lucky few were to be evacuated to Australia. One Navy nurse was among the evacuees. "It was an eerie, moonless night and sounds of shelling from the attacking Japanese were closing in,"(6) recalled nurse Ann A. Bernatitus. "Silently we crept into small boats and after maneuvering them beyond the touchy mine fields, we saw it. The USS *Spearfish*, our means to freedom, cast a low, dark, yet inviting shadow upon the water."(7) Bernatitus, along with 11 Army nurses, a Navy wife, 6 to 8 Army and Navy officers, and 2 stowaways, boarded the submarine on 4 May for a 17-day voyage to Australia.

Others such as PhM2c Ernest J. Irvin did not escape. Irvin was working in a convalescent ward in the Malinta Tunnel hospital. There were approximately 125 (8) naval officers and men in the Navy tunnel when Japanese troops entered with bayonets and grenades some 3 hours after the island's surrender.(9) "We all knew it was a matter of time. We thought the Japs would either gas us in the tunnel or march us out and shoot us. They did neither,"(10) Irvin later recalled. Instead, the Japanese rounded up all forces except those assigned to the hospital and took them to what was

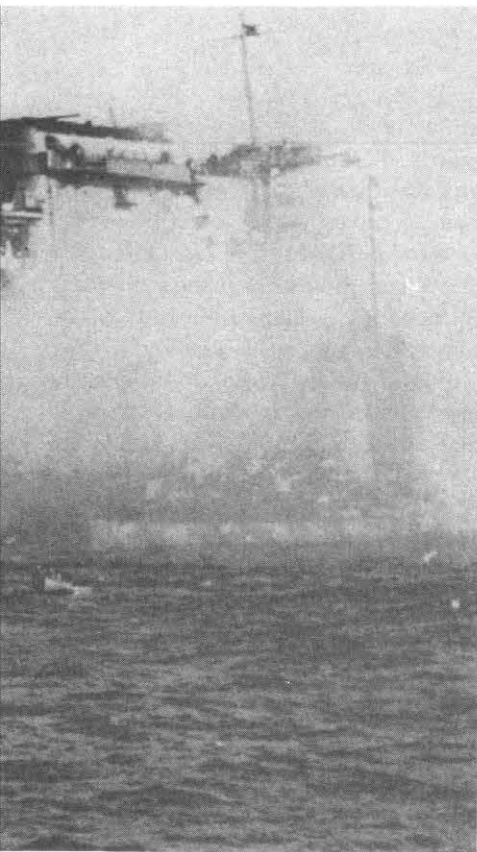
known as the 92nd Garage area. Ambulatory patients were forced to leave the hospital and join those being transferred to the "92nd Garage area." Hospital staffers cared for those remaining wounded first in the Malinta Tunnel hospital and later in what was known as the Middleside Barracks which became the hospital's new location.

The 92nd Garage Area

The 92nd Garage area, named for a nearby garage, was a level, paved concrete strip about 500 feet wide and 1,500 feet long. It was located between the beach and the cliffs inshore on the southern portion of Corregidor, facing Cavite province.

Prisoners arrived here on 8 May. Each prisoner was assigned a number which was painted on the back of his shirt. To protect against the scorching sun and tropical storms, internees built temporary shelters using shelter halves and other scrap materials. For the first 3 days, prisoners went without food and water. Subsequently, the Japanese issued rice occasionally supplemented by canned goods which the prisoners stole or salvaged while out on work detail.(11)

Navy medical personnel who had



feats"(12) as they treated those suffering from heat prostration, dysentery, malaria, and malnutrition. On the morning of 25 May, the internees were evacuated from Corregidor to Manila and were marched through the streets to Bilibid prison.

Medicine in Manila

Many medical personnel captured in January and interned at Santa Scholastica College were transferred to Pasay Elementary School, Pasay, Rizal, P.I., by 13 May. Hospital staffers at Pasay not only cared for inpatients but for large numbers of men enroute to Bilibid prison from Bataan and Corregidor and those assigned to work details. On 23 May, 300 men enroute to Tayabas, P.I., to do road construction stopped at Pasay.(13) ". . . [They] were in all respects the most pathetic aggregation of American service men that any of us had ever had the misfortune to see,"(14) said CAPT Lea B. Sartin, MC, USN, as he described the health

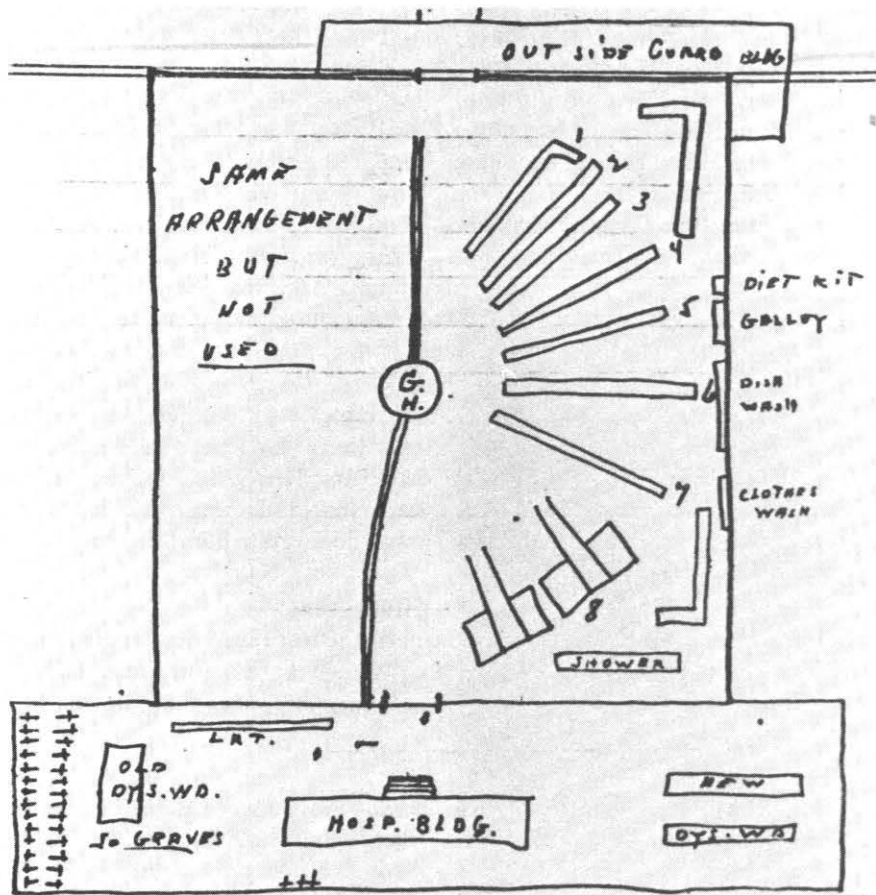
and condition of the road gang. He said that members of the gang told them they volunteered for the work detail to escape horrid conditions then prevailing at Camp O'Donnell, Tarlac, Luzon, P.I., where they said "hundreds of Filipinos and Americans were dying daily from the ravages of starvation and disease."(15) The overall health of the group was poor with 80 percent suffering from malaria, beri-beri, and forms of diarrhea.(16) Doctors examined and treated the men and separated those whose conditions were too severe to continue with the road gang. To take up the slack, prisoners in better condition took their place. "It was the opinion of all the medical officers that this group of men was in no wise fit for any kind of a work detail,"(17) concluded Dr. Sartin.

On 30 May, the entire medical unit was transferred to Bilibid.

Bilibid

Considered "unfit for human habitation,"(18) the old Bilibid prison built during Spanish rule, had previously been used to incarcerate common criminals when the Japanese appropriated it for an internment camp. About 620 feet long on its north and south axis and about 330 feet wide at its maximum width, the prison was situated on low-lying ground, about a kilometer north of the Pasig River and about 3 kilometers from the Manila port area in the inner city. During the tropical season the area flooded and 2-3 feet of water "often remained for several days."(19) The prisoners were confronted with terrible living conditions. "My recollection is to the effect that there were between two and three thousand prisoners there at that time,"(20) said Dr. Sartin. "The buildings were old and extremely dilapidated and in an extreme state of disrepair. Plumbing and lighting fixtures had been stripped from the build-

been accompanying Marine units set up a small dispensary and despite limited medicines and supplies were able to perform "almost impossible



LT George T. Ferguson, MC, USN, sketched Bilibid Prison's layout in a diary he kept while interned there.

ings. Sanitary conditions were extremely bad. Prisoners and patients were sleeping on concrete floors,"(21) he continued.

The majority of the compound was used for Filipino civilians including women and children. The Americans were confined to the west sector of the prison. Medical personnel inspected the camp and found 115 patients suffering from malaria, diarrhea, and malnutrition.(22) Medical staff set up a dispensary in the old hospital building.

Later, on 1 June, a U.S. naval hospital was established by the interned medical personnel. The main hospital building was south of the guardhouse in the center of the prison compound. For the most part, many of the unconnected buildings that seemed to be sprouting out from this guardhouse served as hospital wards. In addition to these buildings, an old chapel served as an isolation unit and a large two-story building near the prison entrance housed a medical library. Personnel began improving hospital facility areas immediately, cutting waste water ditches into sewers, installing wash racks, and flushing stools.

On 3 June, the Japanese transferred a small medical unit to their senior camp in Tarlac, P.I. Among those transferred was CAPT Robert G. Davis, former commanding officer of

USNH Canacao, P.I., and who more recently had been medical officer in charge at Pasay and would have assumed that position at Bilibid. Thus, Dr. Sartin assumed the role of medical officer at the prison. In charge and under Japanese orders, he submitted a list of equipment and supplies needed to operate the hospital. For the most part, items requested didn't materialize for the first month or so.

Food and supplies were almost nonexistent at Bilibid. LCDR Hjalmar A. Erickson, MC, USNR, said he received only two Red Cross food boxes over the 3-year period he was interned there and only one of the many boxes filled with personal items that his family had sent him. Meals consisted of rice and "whistle-weed," a type of grass with a strawlike toughness. "The rice was warehouse and wharf sweepings . . .,"(23) said Dr. Erickson, adding that occasionally meals were supplemented with "chunks of the commonest fish, and rarely, a piece of partly rotten carabao meat."(24) Because of diet and other prison conditions, malnutrition, bacillary dysentery, and beri-beri were major problems. However, hospital personnel sometimes managed to obtain more food by bribing Japanese soldiers with medicine.

"For a long time we gave a much-needed medical treatment to our

guards. Most of them were plagued with gonorrhea, so a number of our men contrived a simple plan to swap food for pills,"(25) recalled Dr. Erickson. "They took sulfathiazole powder, pounded it in a carabao horn to make tablets, the curative value of which the Jap soldiers well knew. Many [Japanese soldiers] soon fought for the privilege of stealing food to exchange for the pills. All went well until the sulfa powder was used up,"(26) he continued.

There were 162 patients in the hospital as of 1 June.(27) By 7 June, the total had risen to about 201 and an overflow convalescent ward was established.(28) The hospital census continued to rise as men from work details and other activities came in for treatment. By the end of June, 760 patients were officially on the hospital's sick list.(29)

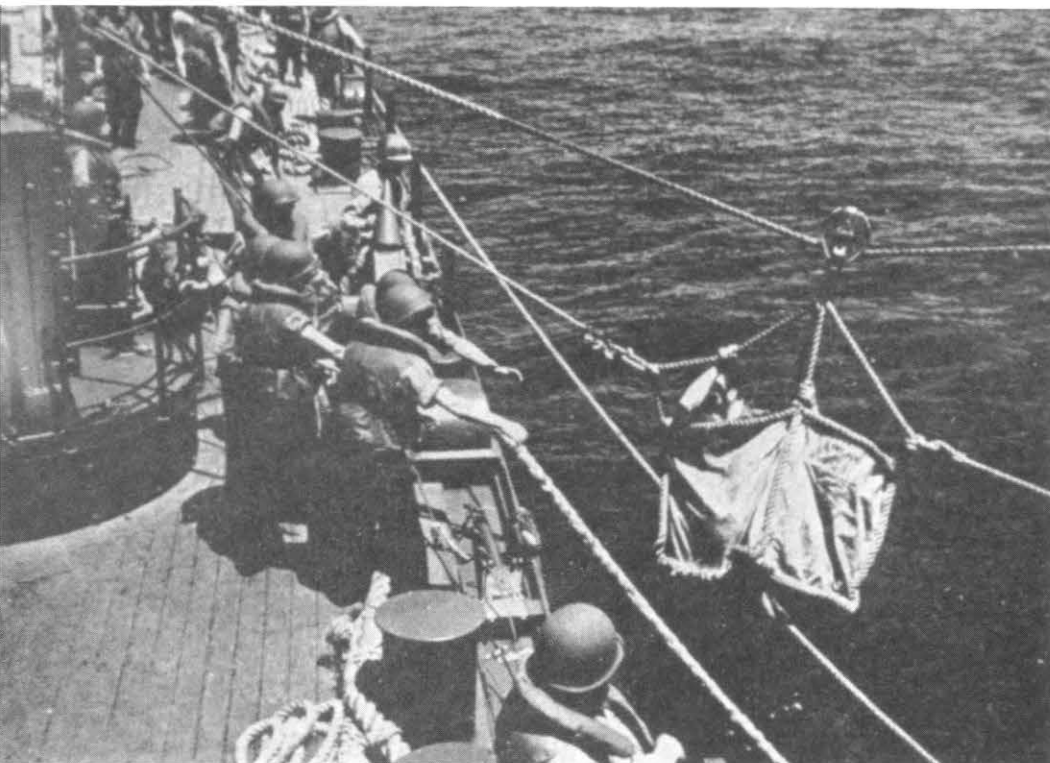
Midway

U.S. victory in the Battle of Midway from 4 to 6 June, broke the offensive power of the Japanese in the Pacific and shut down its eastward drive toward Hawaii, Alaska, and the United States. It was also the second great battle in which carrier aircraft rendered nearly all the hits, with help from submarines and some notable assistance. Navy medicine was present during Midway but the need was not as great. At the end of action, 307 Americans and 150 planes had been lost. On 7 June, USS *Yorktown* and USS *Hammann* went down. But, Japanese losses were much greater. Four carriers, a cruiser, and a destroyer had sunk; an oiler and a destroyer had been damaged; and more than 2,000 lives and 250 aircraft had been lost.

Elsewhere

As the war raged on, Navy medicine continued to expand both CONUS and abroad. Since the beginning of the

During the Battle of Midway, wounded were transferred from small craft to large ships that had more complete hospital or first-aid facilities.



Survivors of USS *Hammann* (DD-412) being brought ashore at Pearl Harbor from USS *Benham* (DD-397).

year, three continental hospitals—in Bethesda, MD, Charleston, SC, and Treasure Island, San Francisco, CA—had been commissioned. In addition, a base hospital had been established in Londonderry, Northern Ireland. In May, U.S. Naval Base Hospital No. 2 was established in Efate Island, New Hebrides, and U.S. Naval Mobile Hospital No. 3 was being set up in American Samoa at Tutuila.

KIA (killed in action)

May and June brought decisive victories for the Allies in the battles of Coral Sea and Midway. CDR Wadsworth C. Trojakowski, DC, and PhM2c Virgil L. Weeks gave their lives while treating others aboard USS *Lexington*. CDR Trojakowski, who had taken control of the emergency dressing station on the ship's main deck, was killed when a bomb wrecked the dressing station. A doctor and a corpsman were also killed in battle in the Coral Sea aboard both USS *Neosho* and USS *Sims*. Likewise, two corpsmen lost their lives aboard USS *Yorktown* during the Battle of Midway and one corpsman was killed in the Atlantic while aboard USS *Gannet*.

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Reminiscences of a Nurse POW



Dorothy Still Danner was 1 of 12 Navy nurses assigned to Canacao Naval Hospital in December 1941. With the fall of Manila in January 1942, 11 of them became prisoners of the Japanese, spending the next 3 years in captivity at Santo Tomas and Los Banos.* Navy Medicine interviewed Mrs. Danner in December 1991 at her home in Baton Rouge, LA, on the 50th anniversary of the outbreak of the Pacific war.

I never had any childhood dreams of being a nurse. I thought I wanted to be a dress designer, but along came the depression. I became a nurse because my mother liked nursing and the LA County General Hospital paid the nurses a little stipend. She took me there and the next thing I knew I was a student nurse. I really loved nursing

*Nurse Ann Bernatitus, who had been assigned to an Army unit during the Bataan defense, escaped to Corregidor and later was evacuated to Australia by submarine.

and found it a very satisfying profession. That was in 1932 and I was 18 years old.

After graduating from nursing school I worked in two hospitals before joining the Navy in 1937. At that time, there were only 400 nurses in the Navy. I really didn't expect to be hired so I was really surprised when I got my orders to go to the San Diego Naval Hospital for a physical. The next thing I knew I was in the Navy.

My first assignment was at Balboa Hospital in San Diego. Oh, it was beautiful! From the pink building sitting up on the hill, you could look down over the harbor and see all the Navy ships out there and feel very important as part of Uncle Sam's Navy. I spent 1938 and 1939 in San Diego.

In 1939 I was sent to the Canacao Naval Hospital in the Philippines. I traveled across the Pacific on the *Henderson*. It was a festive trip. We first stopped at Honolulu. I can still see the people on the dock there with

their lais and the hula dancers. Then we spent 2 or 3 days going around the islands.

Although the Philippines was not quite as spectacular as Hawaii I became very fond of the base there anyway. The Navy Yard was just across Manila Bay about a half mile away. It was a very active social life. There were always parties and, of course, the nurses got involved along with everybody else.

Our social concerns were put on the back burner when the dependents were sent home around the first of 1941. While we heard about the rape of Nanking, nobody thought the Japs would be silly enough to try and do anything to Uncle Sam.

War

Pearl Harbor shocked me as it did everyone else. I and the other nurses were awakened in the middle of the night and told that Pearl Harbor had been hit. We were sent to the hospital as soon as we got dressed. Since the hospital was right in the target zone, we sent all the ambulatory patients back to duty and the rest to Manila. Arrangements were made to admit the patients to what had been a dependents ward at the Sternberg Army Hospital.



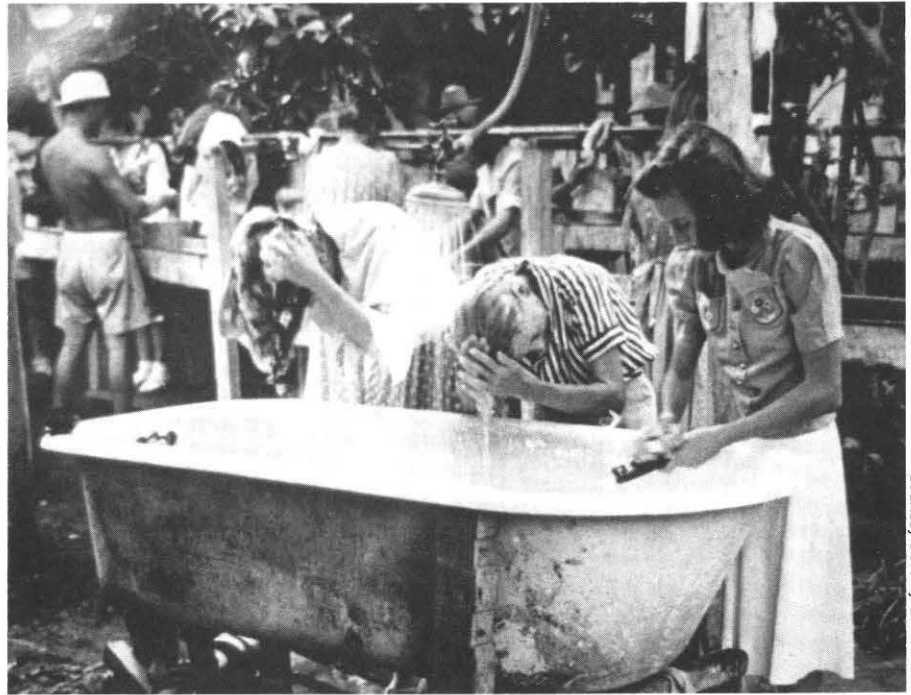
Courtesy Dorothy Still Danner

On Wednesday the 10th, the Navy Yard was bombed. It was wiped out. This raid lasted about an hour. After the raid, we rushed to the hospital, and patients were all over the place. There were Filipino women, children, and men and our own people from the Navy Yard. It was really a shocking scene. The power to the hospital was knocked out. It was a pretty hectic afternoon. Triage was impossible. You just tried to find out which were the worst ones to go to surgery and so on.

Sternberg Hospital too was quickly swamped. The only place that was available was Estado Mayor, an old Army base; we used the barracks as a temporary hospital. In the meantime, they decided to set up joint surgical teams (with Army and Navy Medical Corps) throughout the city. I was with the group assigned to the Jai Alai Club. Our purpose was to care for anyone that was hit—civilian or military—that would come into these emergency centers. We set up a little receiving station near the front of the building, but didn't get any patients.

After spending a few weeks there, we were told to move to the Santa Scholastica school, also in Manila. The Army had already converted it into a hospital. Actually, we had more hospital personnel than patients. On

Navy nurse Margaret Nash attends a patient in Santo Tomas. She related to the Editor that a Japanese guard followed her around the camp for several days before taking this photo. The snapshot was found on a Japanese prisoner during the invasion of Leyte. *Below:* Santo Tomas internees wash their hair at a makeshift shower.



Courtesy Dorothy Still Danner

December 31, the Army evacuated all the Army patients on a hospital ship and took them to Australia.

Meanwhile, the Army was retreating toward Bataan to make a stand there. The military declared Manila an open city and retreated, but the medical personnel remained.

On 2 January, the Japanese came into Manila, but didn't come to Santa Scholastica until a few days later. At first the Japanese were not hostile and mostly left us alone. But then they started taking quinine from us. Then they took our beds and mattresses. They also began to slap around and beat up the men. But they ignored us—the nurses.

Internment

When the Japanese came they rounded up all the Allied civilians and sent them to the University of Santo Tomas. Although there were some 66 classrooms in the main building, there were still too many people. It was just a mess. The toilet facilities were over-

whelmed and sickness began almost overnight. With Japanese permission, the civilians formed an administration committee and appointed a leader. Soon the civilians set up a school for the children, entertainment, and a newsletter, among other things. Santo Tomas was used as a model by the Japanese. They allowed the Swiss delegates to see Santo Tomas, not the POW camps or the other civilian camps.

I was sent to Santo Tomas on March 8, 1942. However, the medical facilities there were still lacking. There was a little hospital set up in what had been a mechanical engineering building. The doctors brought in medicine from their offices. A lot of lab technicians and pharmacists apparently had their own means of bringing drugs in then through Red Cross funds. By the time we got there, they had revamped the rest rooms and had put in showers.

Soon Santo Tomas became too crowded as the Japanese kept bringing people in. They decided to move part



BUMED Archives

Navy nurses and their civilian comrades, who also were interned, pose with VADM Kinkaid shortly after their rescue. They are still wearing uniforms made from salvaged denim during their captivity.

of the camp out of Manila. Therefore, they selected a site near the town of Los Banos to house some of the overflow.

"The Country Club"

In May 1943, the Japanese sent 800 men to Los Banos to set up the camp. Two doctors who were going asked our chief nurse if we would go down and help them set up the little hospital. Los Banos was about 60 or 70 kilometers south of Manila. We weren't needed at Santo Tomas anymore due to the influx of Army nurses after the fall of Corregidor.

We went to the agricultural college outside Los Banos which had been a part of the University of the Philippines. The Japanese took a plot of about 55 or 60 acres and put a barbed wire fence around it. Our hospital was a small 25-bed unit. The nurses lived in

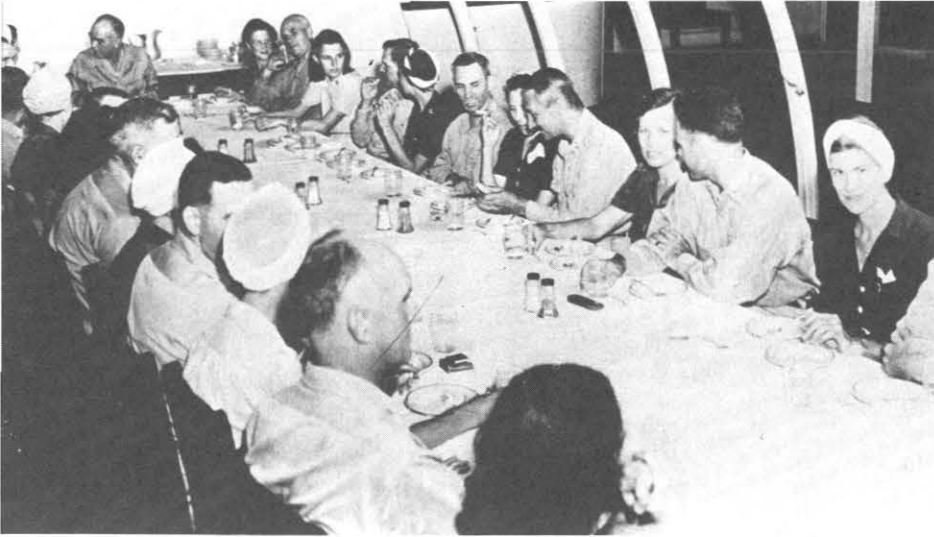
a dormitory that had plenty of space—two or three nurses in a room.

At Los Banos our first order of business was to get our 25-bed hospital functioning. We initially had two American civilian doctors, but they were repatriated in August 1943. In their place we got another American doctor, Dr. Dana Nance. He was a young fellow, one of those charismatic characters who got out there with the baseball teams and was very concerned about his patients. He was a surgeon and brought his own instruments. Patients who had been sent back to Manila for surgery were now handled in our hospital. We also had a dentist.

Initially, there were only the men and nurses at Los Banos. The dependents were supposed to come in July, but did not arrive until December. When they did, they changed the

whole outlook of the camp. They brought touches of civilization with them—tablecloths and salt and pepper shakers, etc. Life itself was not that bad. People had the opportunity to exercise, to go out and cut wood, and do chores that needed to be done to keep the community going. People had recordings they played at the bandstand. And they had baseball games. It was really country club living compared to the other camps.

While food was not plentiful, at least at this time, starvation was not a problem. Since we lived in an old agricultural college we had limited access to meat. We had carabao mainly, and some pigs. We also had a garden in which we grew mostly eggplants and camotes, a sort of sweet potato. Of course, there was rice as usual and mungo beans. Duck eggs were occasionally available.



Navy nurses dine with VADM Kinkaid and his staff.

A Change in Lifestyle

Life began to change in late 1943, when the Japanese military took over the camps. Before, the camps had been run by Japanese civilian administrators. But now there was a supply officer, LT [Sakaadi] Konishi, who had made life miserable for the internees in Santo Tomas—he apparently wanted to starve the internees. He came to Los Banos in 1944 to make life miserable for us too. Moreover, our lifestyle worsened appreciably in early 1944 because the Japanese brought many more civilians into Los Banos. Many of the new civilians—the sick and the elderly—had previously been allowed to stay in their homes in Manila. There were few able-bodied men to take care

of this load. Life had really become hard in Santo Tomas.

By March 1944, the whole spirit at Los Banos changed. There was no more country club living. The camp just kind of fell apart and the food situation began to deteriorate. The nurses were moved into a much smaller apartment in tight quarters. However, Eldene Paige and I moved into the barracks across the street from the hospital which gave a little more space.

Living conditions for the others also worsened. The Japanese cut off the south end of the camp and crowded the internees into the remaining portion. By this time, the Americans had invaded the Philippines, so as life got worse for the Japanese, they made life worse for us. We were only getting two meals a day, skimpy meals at that. We mainly had rice, diluted to a pasty lugao. There was practically no meat in the stew; it was very watery. And, of course, we used to have coconut milk, but the coconuts had gotten so expensive they were no longer available. We began to lose weight.

It looked like Christmas 1944 would be very gloomy, but a songfest by the priests and sisters livened things up. On Christmas Eve they had a midnight mass and practically the whole camp turned out. It was the most spectacular mass I've ever seen. There were no gifts involved on Christmas Day, just a spirit of friendliness between people. It had more meaning than ever before. It was a beautiful Christmas!

Camp Freedom

On January 9, 1945, American troops landed at Lingayen Gulf. The Japanese awakened us in the middle of the night and told us they were leaving. They turned the camp over to the administrative committee and advised us not to go outside.

The administrative committee then called us to attention: "Today at this time we're announcing you are free. This is Camp Freedom." An American flag was sent up the flagpole and we sang the national anthem. Tears were running down everyone's face. It was a very emotional moment.

Unfortunately, our freedom only lasted a week. Then the Japanese came back. However, MacArthur's troops came down toward Manila and on February 3rd liberated Santo Tomas. After learning about Los Banos, MacArthur assigned the 11th Airborne Division to rescue the internees.*

Liberation

The rescue plan was complicated because it was out of the ordinary. Thus far, the Americans had only liberated prisoners in their line of advance. But a Los Banos rescue meant going far behind enemy lines to rescue a little over 3,000 people. Paratroopers themselves were to be dropped over Los Banos and attack in conjunction with infantry who would come ashore in amtracs (amphibious vehicles) from a nearby lake. These amtracs would then evacuate many of the civilians. The raiders already had a map of what the camp was like given to them by an escapee, Pete Miles. Miles and the Filipino guerrillas would act as scouts and guides for the troops. The plan was to sneak up behind all the guard houses in the camp and at the specific moment everything would happen at once.

*MacArthur had good evidence the Japanese would soon execute the Los Banos prisoners.



Home again after almost 38 months in captivity, LT Still poses in her new uniform.



Sitting atop a U.S. Army amtrac, Dorothy Still (left) and Eldene Paige comfort an internee who has just fainted from the heat. This photo was taken by *Time-Life* photographer Carl Mydans during the escape from Los Banos.

We didn't know the rescue was going to happen, so we were all feeling pretty low. I was on duty that night. There was a newborn baby and I was trying to feed her with what little powdered milk was left. The mother could hardly nurse the baby. She hadn't had enough nourishment herself. It was just about 7 in the morning [23 Feb 1945]. I had the baby in my arms when I noticed smoke signals going up. Nobody paid any attention to them. Then, all of a sudden we saw a formation of aircraft coming over. As the paratroopers started jumping out, the guerrillas and soldiers around the guard houses began killing the Japanese there. Then the amtracs came in, crashing through the swali-covered fence near the front gate.

I was holding the baby and covering her ears so that the noise wouldn't affect her. An amtrac pulled up in front of the hospital and the American troops jumped out. Oh, we never saw anything so handsome in our lives. These fellows were in camouflage uniforms wearing a new kind of helmet, not those little tin pan things we were used to seeing. And they looked so healthy and so lively.

They were to take the internees out and any that could walk were to go back with troops in the trucks that came overland with the diversionary force. The internees were not military-minded and they just went in all directions. They didn't want to leave

anything. The firing was mostly over in about 15 minutes but it took awhile to evacuate the internees. In fact, the American troops actually had to set fire to the barracks to get the internees moving.

Eventually, the troops were able to get about 1,500 people on the amtracs and the rest overland. I left on an amtrac in the second wave. Remarkably, I think there were only two soldiers killed and one internee injured. This whole thing went off with just the most amazing precision that you could imagine.*

*In retaliation for the raid, the Japanese murdered 1,500 inhabitants of the nearby town of Los Banos. For this and other crimes, LT Konishi was later tried as a war criminal and executed.

Photo by the Editor



Dorothy Still Danner today.

Homecoming

After being liberated from Los Banos, we were flown to Leyte. We were taken to Admiral Kinkaid's [VADM Thomas C. Kinkaid was Commander, 7th Fleet and Southwest Pacific Force] headquarters, where we ate dinner with the Admiral. They served us beautiful steaks, which of course we couldn't eat because our stomachs had shrunk so much.

It was surprising to see how much publicity we got. On Leyte we began to see the flashbulbs going off and then as we got closer to home, more flashbulbs. When we landed in Oakland there was quite a reception for us, including a lot of photographers and media. Then they gave dinners for us. It was quite an affair.

We also had a very thorough examination in Oakland and went on 90-day recuperative leave. My health had been good, but while I was in Los Banos I developed the dry type of beriberi, as had many others. It was very uncomfortable because I ached all over and my knees buckled. There was nothing I could do for it because it was caused by malnutrition. Our diet was not very good, especially during the last few months before our rescue. But I quickly recovered once I was able to eat good food again.

Postscript

Following her recuperation, LT Still was temporarily assigned to the Treasury Department on behalf of several bond drives. She also traveled in support of Navy public relations activities. Toward the close of 1945 she was transferred to Panama. Upon returning to the United States in 1946, she left the Navy and married. Mrs. Danner has four children and three grandchildren. —JKH

Naval Medical Research and Development Command Highlights

Bethesda, MD

- **A New Class of *E. Coli***

Globally deployed troops are naturally exposed to local agents of disease, and during wartime military units may be subjected to biological warfare attack with toxin-producing microorganisms. Identifying new agents of infectious disease, along with their epidemiology and mechanisms of pathogenesis, is critically important to the Navy. Researchers in the Enteric Diseases Program, Naval Medical Research Institute, Bethesda, MD, are investigating the disease-causing potential of a newly recognized group of intestinal microorganisms, the enteroaggregative *Escherichia coli*. The investigators have successfully identified and cloned two genes from these organisms which are suspected to be the genetic basis of the microbe's disease-causing ability. One, termed the *astA* gene, is responsible for the elaboration of a novel toxin, EAST-1. The other, the *aggA* gene, allows the bacteria to adhere to cells lining the intestine. These genes are being incorporated into DNA probes, which will be used as a rapid and sensitive detection method to determine the role of enteroaggregative *E. coli* in causing traveler's diarrhea worldwide.

* * *

- **Disease Threat Assessment of Japanese Encephalitis**

Japanese encephalitis, a viral infection of the brain with a very high rate of morbidity and mortality, is found throughout the Far East. Military personnel, their dependents, and civilians living and working in Japan, China, the Philippines, Southeast Asia, and parts of Indonesia are at risk of getting the disease. Researchers from the U.S. Naval Medical Research Unit No. 2 in Jakarta, Indonesia, are working with investigators from the Navy Environmental Health Center and the Navy Environmental and Preventive Medicine Unit No. 6 to assist U.S. Naval Hospital Okinawa in an ongoing effort to obtain approval and licensure from the FDA for a vaccine developed and produced in Japan. In the largest controlled study of a

vaccine undertaken by the Navy, hospital personnel are collecting mosquitoes and counting vectors in training and housing areas, and estimating the risk to people in areas scattered around the central part of Okinawa. All active duty members, dependents, and civilians who are at risk can elect to be vaccinated under a research protocol approved by FDA and CDC. Data obtained in this study will contribute to the approval process by FDA and provide a scientific basis for policy decisions made by the Navy, Marine Corps, Army, and Air Force on the use of the vaccine for DOD personnel and dependents assigned to bases in the Far East.

* * *

- **Automated Alertness Monitoring System**

Sonar, radar, and air traffic control operators, pilots, and long-haul drivers, often need to remain alert during long periods in which little or no new information is received. Many studies have shown that under these circumstances operator vigilance tends to decline after only a few minutes on the job. Researchers in the Department of Cognitive Performance and Psychophysiology, Naval Health Research Center (NHRC), San Diego, CA, have demonstrated that this decline is actually made up of wide-ranging fluctuations in alertness over seconds and minutes, which could result in delayed or absent responses to important events. New studies have shown that fluctuations in alertness can be detected by computer analysis of brain electroencephalogram (EEG) patterns. NHRC scientists have developed an Alertness Monitoring System which will be demonstrated for the first time during the spring of 1992. The demonstration will include the use of individualized neural net software to deliver real time feedback to the operator when alertness levels drop. Once implemented, the system could improve both operator and total system performance and save operating costs by reducing the need for redundant staffing. Potential applications include sonar, radar, and air traffic control, air and land vehicle operation, and plant engineering.

For additional information on these or other medical R&D projects, contact NMRDC Code 04 at Commercial (301) 295-0883 or Autovon 295-0883.

Gas Mask Phobia

Self-Regulation Techniques in the Treatment of Gas Mask Phobia and Hyperventilation Symptoms During Submarine Operations

LCDR Larry C. James, MSC, USNR-R

Too often, many U.S. service-members have been medically discharged due to severe types of phobias such as fears associated with closed and/or tight working spaces. Most frequent examples have included submarines, fear of being under water, and being in small



Figure 1. Black hood used in desensitization.

cramped spaces, tanks, or airplanes. Adler discussed applications of biofeedback and self-regulation principles as a treatment for astronauts who were afflicted with chronic emesis at the National Aeronautics and Space Administration (NASA).⁽¹⁾ Sixty-five percent of the astronauts experienced a reduction in symptoms. An additional 20 percent of the astronauts' symptoms significantly dissipated.

The research efforts by psychologists at NASA grew out of biofeedback and self-regulation research over the past decades, such as biofeedback training to reduce heart rate,⁽²⁾ self-regulation training for hypertension,⁽³⁾ diaphragmatic breathing training for the treatment of hyperventilation symptoms,^(4,5) and autogenic feedback training for migraine headaches.⁽⁶⁾

The present study applied the principles of biofeedback and self-regulation to the treatment of a severe gas mask phobia and hyperventilation symptoms.

Case Presentation

Jim was a 39-year-old white male. An impeccable 17-year naval career was disrupted due to severe phobic

symptoms. Thirteen years ago, Jim was designated the "victim" during submarine fire drill maneuvers. While strapped in a stretcher, a gas mask was donned during a smoke fire simulation. The gas mask malfunctioned and Jim began to "choke to death" while strapped in a stretcher. This prohibited the removal of the gas mask. Medical records disclosed blue facial pigmentation, "lightheadedness," and a fear of doom. Fortunately, personnel noticed the condition and administered appropriate medical attention. A similar situation occurred respectively 3 and 5 years later.

Most recently, Jim was required to participate in similar training exercises. Perceptions on the subject's part were of being overwhelmed, "feared for my life," and the end of a 17-year military career if a gas mask was required as part of Jim's duties. Numerous attempts "to suffer through this thing" were unsuccessful. The thought or sight of a gas mask generated hyperventilation symptoms, chest palpitations, increased respiration, lightheadedness, and profuse sweating. This prompted a medical evaluation, which was within the normal limits. The subject was referred to



Figure 2. HM2 Grant demonstrates beginning of the desensitization process by placing black hood on knee and then shoulder.

Mental Health and motivated for treatment.

Desensitization

Jim was "scared to death" of an oxygen mask. Simply recounting the chain of events that led to the phobia illicited an increase in temperature, profuse sweating, anxiety, chest palpitations, and a fear of doom. My concerns were twofold: First, I pondered how I could even get him near a submarine again; and second, how I would be able to find something similar to a gas mask, yet safe/comfortable for Jim and be able to begin systematic desensitization?

A "black hood" was incorporated as a tool that would enable desensitization (Figure 1). This hood was safe for the patient yet a challenge.

Through successive approximation with the black hood and feedback from Jim, an anxiety threshold was developed. Wolpe's systematic desensitization intervention was used. (7,8) For example, the black hood was placed near Jim on the third session. On the fourth session, it was placed upon his knee and on the shoulder

during the fifth session (Figure 2). Throughout each session, Jim practiced progressive relaxation, which created a calming effect. By the sixth session, Jim was able to wear the hood (Figure 3).

During each session this activity was practiced. Upon the 12th session, Jim's presenting symptoms were well under control. At that time we began to move

toward the actual gas mask itself.

Due to the significant amount of work thus far (12 sessions) as well as daily home practice, this transition was nevertheless somewhat difficult. Jim continued to practice with the black hood at home daily. At the 17th session we scheduled to move our work to the submarine. Cognitive interventions were used to cope with



Figure 3. Patient was able to wear hood after six sessions and gradually worked up to wearing the gas mask for 40 minutes.



Figure 4. GSR biofeedback used for stress control.

irrational thoughts in regard to the submarine. Thereafter, treatment occurred at the submarine in increasing intervals until the patient worked up to 2 minutes on the 19th session. Gradually, Jim was able to wear the gas mask up to 40 minutes.

Diaphragmatic Breathing

Fried(4,5,9) and Loehr and Migdow (10) outlined the effects diaphragmatic breathing has upon reducing hyperventilation and stress symptoms. Jim was taught Fried's technique.(4) Initially, a brief discussion of the physiology of this technique was offered. The technique was practiced by lying on his back, flat on the floor. He was instructed to inhale and at the same time asked to allow the stomach region to expand.

Diaphragmatic breathing was practiced twice each day before work in the morning and during the evening hours. Most helpful in this process was Jim's spouse. The spouse's participation ensured his daily practice as well as a supportive environment at home.

Biofeedback

Concurrently, Jim was taught Galvanic (GSR) and temperature biofeedback applications for symptom control. Very basic equipment and techniques were used due to many restrictions on the submarine.

GSR and temperature training began in the early aspect of treatment. During each weekly outpatient session, GSR and temperature training

were conducted. A small thermometer was attached to the dominant hand. Hand temperature was initially assessed at 88° F, and with the aid of autogenic phrases increased to 93° F. Jim practiced GSR and temperature training daily at home. At the same time Jim used the GSR monitor (Figure 4) while on board the submarine.

Results

Many of the symptoms gradually dissipated by the 18th session through using the autogenic phrases and diaphragmatic breathing. Moreover, even though the symptoms decreased, Jim was required to use daily all the techniques discussed thus far. Please note that Jim was placed on medical limited duty and relieved of military duties. As a result he had the time and motivation for treatment.

Through observation while donning the gas mask, minimal symptoms were observed at the 12th session on the submarine. Jim performed usual military duties at the time. Breathing rate, respiration, and his subjective sense of control were within normal limits.

Discussion

The results suggested that phobic conditions could be treated in a military setting. Even though the submarine environment has many temperature and environmental artifacts, a multifaceted approach can either offset or control these practical problems. For example, temperatures and GSR biofeedback treatment

needed to be flexible due to the temperature on board. In other words, on some days room temperature was too high for temperature training and Jim used GSR. This was later followed by diaphragmatic breathing.

These techniques served to either reduce symptomatology or prevent the manifestation of phobic symptoms. Most importantly, the military career of a dedicated servicemember was saved.

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Navy Medicine 1945



ENS Jane Kendeigh, USNR, the first Navy flight nurse to set foot on any active World War II battlefield, bends over a wounded marine on an Iwo Jima airstrip.

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