A man with a mustache, wearing a yellow hard hat and a plaid shirt, is leaning over a large piece of machinery in a factory. The background is dark with some blurred lights. The title 'ALL HANDS' is printed in large, bold, white letters in the upper right corner.

# ALL HANDS

SEPTEMBER 1982

in this issue

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Norfolk Naval Shipyard -  
A Family Enterprise



## THE SECRETARY OF THE NAVY

WASHINGTON, D. C. 20350

Almost 200 years ago, the first Navy civilians caulked the hull and stepped the masts on "Old Ironsides," the frigate USS *Constitution*. Today, nearly 320,000 civilian employees serve the Navy and our country in a myriad of ways: shipbuilders and scientists, secretaries and administrators, all dedicated to making the U.S. Navy the strongest and best in the world. The civilian employees of the Navy comprise approximately one-third of the Navy's manpower. Without their efforts, there would be no Navy.

With this issue of All Hands, we formally recognize the contributions made by our loyal civilians. From now on, All Hands will carry news and information important to Navy civilians, as well as stories about civilians and how they support the fleet.

This new focus will show that Navy civilians and military personnel form one Navy. Their combined efforts are vital for the success of our mission.

As a fellow civilian, it is with great pride and respect that I salute the civilian employees of the Navy.

A handwritten signature in black ink, which appears to read "John F. Lehman Jr." The signature is fluid and cursive, with a large initial "J" and "L".

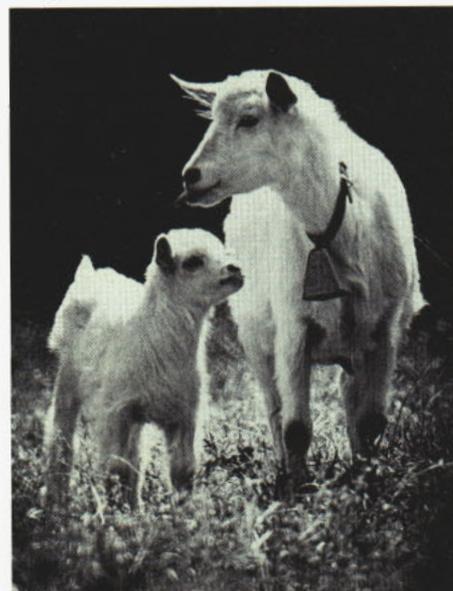
John F. Lehman Jr.



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MAGAZINE OF THE U.S. NAVY

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Back: USS *Preble* (DDG 46) is one of many ships committed to maintaining the Navy's vital presence in the Indian Ocean. Photo by PH1 Jim Preston.

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# Grace Hopper – A Living Legend

Grace Hopper isn't what you might expect.

Think of a computer specialist. A person hunched over an electronic calculator, spouting technical jargon immediately comes to mind. Think of Captain Grace Hopper and you'll recall some anecdotes she reels off like a seasoned entertainer delivering one liners.

At age 75, Hopper is anything but conventional.

Then again, Grace Hopper knows the technical side of computers, too, and well she should. She pioneered much of today's most widely accepted computer programming language, COBOL. Still, she admits it hasn't been easy.

On more than one occasion, she has experienced "that dreadful frustration of trying to push into the future" with her innovative ideas. She has weathered the criticisms of admirals and generals, budget directors and business executives—military and civilians—all resolutely united, as she puts it, by "a stubborn resistance to change."

Hopper forbids the phrase, "But we've always done it that way before." She likens such thinking to a clock hanging in her office, the hands of which go backward instead of forward.

On the final day of a recent Navywide microcomputer workshop in Virginia Beach, Va., Hopper captivated her audience of nearly 300 computer professionals. They sat at rapt attention as she proclaimed the future possibilities of the computer age, along with some of the problems.

Hopper began her talk by poking fun at herself, recounting the recent embarrass-

ment of being mistaken for an airport security guard. Since then, she makes sure she keeps her Navy hat on whenever she travels, but even that has had its drawbacks.

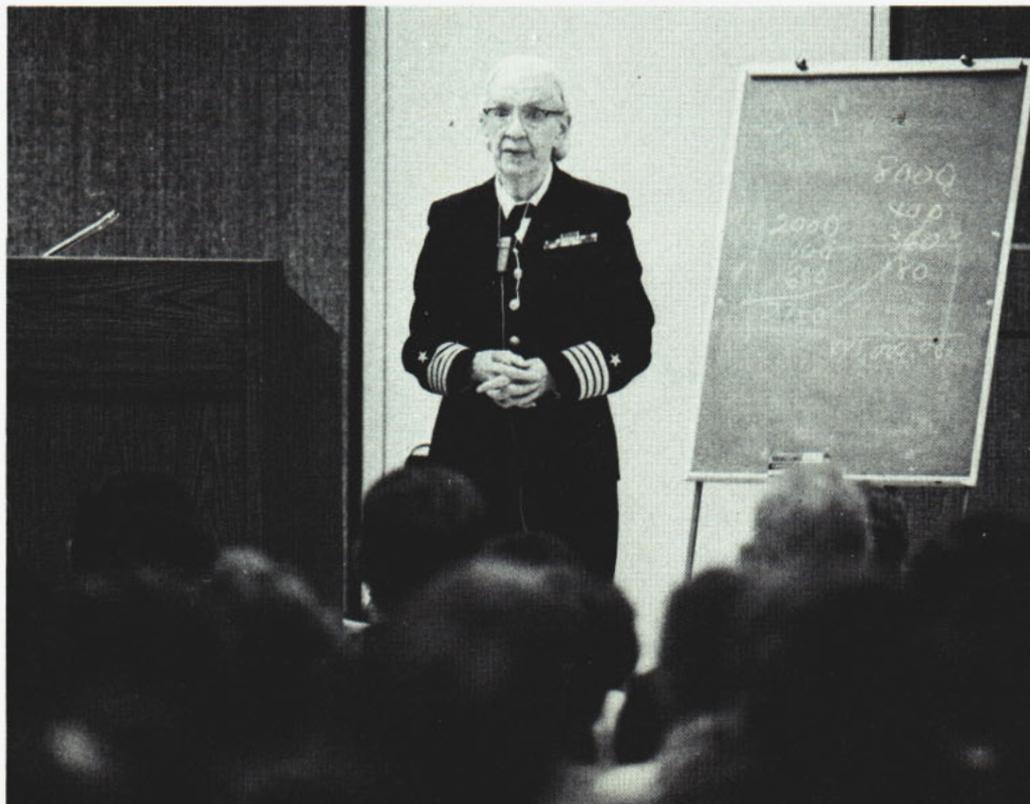
"I was moving through a baggage check point once when a man there asked me if I was in the Navy," she recalls. "I promptly answered 'Yes!' He looked me up and down for a long time without saying a word, then replied, 'You must be the oldest one they've got!'"

Actually, she *is* the oldest Navy person on active duty now that Admiral Hyman Rickover has left active duty. Hopper is to the automated data processing community a walking, talking, living legend.

Born on Dec. 9, 1906, in New York, Grace Hopper came into a world much different from today's. The automobile and the aeroplane were mechanical gadgets operated by daredevils; the Great White Fleet would sail from Hampton Roads in 1907; and she would turn 8 years old before Alexander Graham Bell could make the first transcontinental telephone call from New York to San Francisco.

She attended Vassar College in New Hampshire and was graduated Phi Beta Kappa in 1928. The fellowship she earned led her to Yale University, where she received a master's degree in 1930 and a Ph.D. in 1934, along with election to Sigma Xi and two Sterling Scholarships.

In 1931, Grace Hopper returned to Vas-



# Grace Hopper

sar as an assistant in the mathematics department, becoming successively instructor, assistant professor and associate professor. She then received a faculty fellowship and chose to study at New York University (1941-42).

With the world at war, Hopper entered the Naval Reserve in December 1943. She attended the Midshipman's School at Northhampton, Mass. Upon graduation, she was commissioned a lieutenant junior grade with orders to the Bureau of Ordnance's computation project at Harvard. It was there that she would become only the third person ever to program the first large-scale digital computer, Mark I.

Fifty-one feet long, 8 feet high and 8 feet deep, the glass-encased mountain of bulky relays and switches and glowing vacuum tubes marked the first infant step of the computer age. Mark I, which could

store 72 words and perform three additions every second, was heralded as a modern mechanical miracle, a functional testimonial to man's ingenuity.

In a few years, the Mark I was a museum piece; in its place stood UNIVAC I. "A thousand times faster," proclaimed Hopper. "Unless you saw those early computers, you can't really appreciate what today's microcomputer can do."

At that time, a myriad of computer languages were cropping up to be run on these new offspring of technology. The problem was that those diverse languages were incompatible—the Tower of Babel of the computer race age was on the verge of collapse.

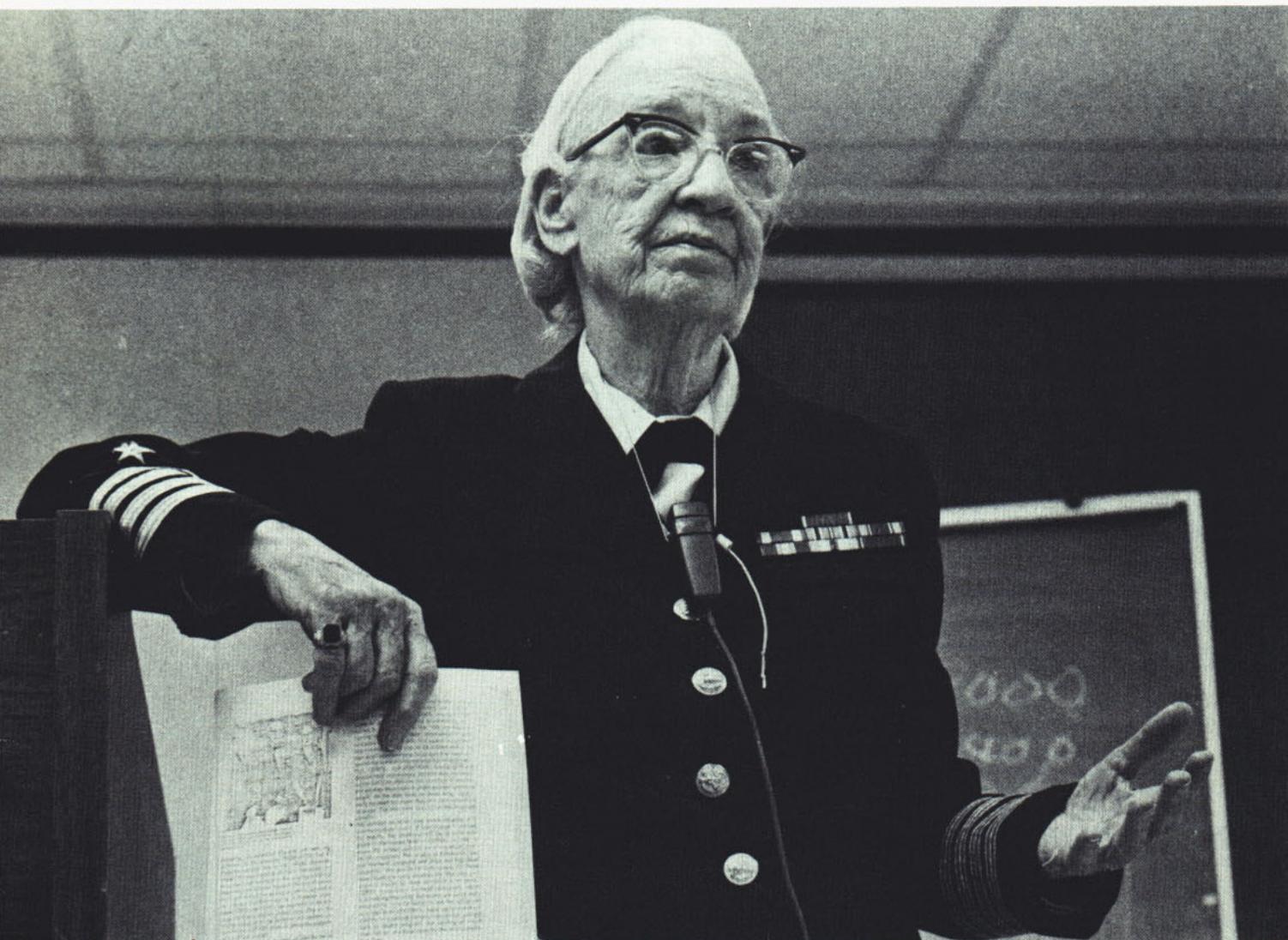
Hopper knew what was needed: a compiler, a sort of translator that would alter a source program into an object program capable of being run on a particular com-

puter. The naysayers grouched, "It can't be done." Hopper said, "It can so."

Back in 1946, she had resigned from Vassar and joined Harvard as a research fellow in engineering sciences and applied physics at the computation laboratory where work continued for the Navy on Mark II and Mark III computers. That year, she also received the Naval Ordnance Development Award.

Three years later, she joined the Eckert-Mauchly Computer Corp. in Philadelphia, then building UNIVAC I, the first commercial large-scale electronic computer. She remained with that company as a senior programmer when it was bought by Remington Rand (later to become Sperry Rand).

The world's first compiler, the A-O system, was developed by Hopper and her staff at Remington in 1952. Beginning in



1955, the earlier automatic coding systems (A-O and A-1) had given way to A-2, the first compiler to be used extensively.

Hopper recalls the skepticism she and her staff encountered during their compiler's development:

"If you do something once, people will call it an accident. If you do it twice, they'll call it a coincidence. But do it a third time and you've just proven a natural law!"

Her next project was to work on MATH-MATIC, originally known as AT-3. MATH-MATIC was designed for use on the UNIVAC I. Its objective was to reduce the time and effort needed to solve numerical scientific problems.

Another project, FORTRAN, appeared in early 1957; developed by IBM, it was not readily accepted at the time. A hard-sell campaign ensued pushing the advantages of the numerical scientific languages such as FORTRAN, and for the "English-language-like" business data processing languages by Remington Rand and, in particular, Hopper.

Two years before, she and her staff had preliminary specifications of a language suitable for doing business data processing on computers while remaining easy to use.

Early attempts to use abbreviations for functions like "gross pay" or "compute" proved to be unsuccessful. Then the idea of using abbreviations was dropped, and the concept of having a noun corresponding to a data description rather than a symbol (which required the computer programmer to look up its definition on a list) was put into use.

The resulting manual for running the system was dated July 1957; the first generally distributed version was available in 1958. A revised copy, "Flow-Matic Programming," contained the first complete list of commands, such as "add," "execute" and "stop."

But around 1958, a second generation of computers began using a new discovery called the "transistor" which offered the world faster, cheaper, more dependable machines. Nevertheless, Hopper's achievements would still allow these new computers to adapt to old programs.

Her appointment as staff scientist, systems programming, at Sperry Rand in 1964 just preceded the third, and current,



generation of computer hardware introduced in 1966—computers built around silicon chips, but still dependent on the compilers Hopper and her staff pioneered.

Throughout all of this, Grace Hopper maintained her close connection with the Naval Reserve and was subsequently promoted to commander. At the end of 1966, she was retired in that rank ("The saddest day of my life."). But in less than a year, she was recalled to active duty—by 1973, she was promoted to the rank of captain on the retired list of the Naval Reserve. Currently, she is serving on active duty with

the Naval Data Automation Command as NAVDAC-OOH.

On a spring day in 1982, nearly 40 years after this woman converted the Navy to the computer age, Captain Grace Hopper stands before her audience, extolling the virtues of the bigger and better computers to come, and the impact they will have on our world.

She predicts "tremendous changes on the horizon" in the way we process information.

"We must be looking at the whole flow

# Grace Hopper

of information," she said, adding we must look carefully at the value of that information. The captain also stresses attention to detail. "We rarely compute the cost of incorrect information," she stated. Incorrect information could be anything from errors in a supply system's accounting methods to mistaken entries in an employee's record.

"It's a very important area of data processing we've almost never paid attention to," she said.

To give credence to her call for new, more sophisticated computers, Hopper cited several seemingly unrelated instances where large systems of computers will be needed to head off worldwide crises.

"The population of the world is increasing, as is the need to increase the world's food supply," she said.

Long-range weather forecasts will help facilitate plans for planting crops, she explained. Water allocation will also prove to be a major computer effort.

"Bigger systems of computers are needed now," she said.

The captain expressed the dismay she felt long ago of not being able to comprehend milli-, micro- and nanoseconds. "I had never seen one," she told the delighted crowd. "How would I know when it was over?"

Attempting to illustrate such a concept, the captain stated: If, in the weightlessness of space, electricity travels through a wire at the speed of light (or 186,282.3976 miles per second), that's the equal of traveling just over 186 miles in one thousandth of a second. In other words, electricity can travel the distance between Virginia Beach and Washington, D.C., in just one millisecond.

In one microsecond (one-millionth of a second), she noted, electricity would travel just under 1,000 feet. Hopper held up a thick loop of electrical wire denoting a microsecond.

In one nanosecond (one-billionth of a second), she added, electricity would travel 11.38 inches.

"And here is our problem," the captain said. "We are pushing against the velocity of light, for no computer we have today operates in picoseconds (one-trillionth of a second). No computer we have can take two operations, compute them and put the answer back here (pointing to the wire)

before the nanosecond is past." Her thought silenced her audience.

Moving to other areas, Hopper brought up recent examples of computer crimes whereby one business snoops in a rival's computer files, thus gaining a competitive edge.

"Security is extremely important," she said, adding that many of these crimes were committed by adolescents who didn't know any better. "Young people must be taught it's not nice to snoop into other people's computers!"

"Young people are looking for positive leadership," she said. "That's something we forget about." She refuted those who strive to become "managers" by saying: "We manage things. We lead people."

"We've forgotten about loyalty up and loyalty down," Hopper complained. "It's important for the future of this nation," she said.

On that subject, Hopper listed her "three-point plan" for improving office efficiency:

"One—supervisors should listen to their juniors. Two—juniors should never quit after the first 'No.' And three—juniors should work to educate their superiors.

"We have to be a little slippery in educating our bosses," she remarked.

What's her tried and true secret?

No secret, she said. "Let the boss think it's all his idea."

She concluded, "I've spent many years in the busiest, best field, receiving every kind of award available.

"But the highest award I have received is serving proudly in the U.S. Navy."

Grace Hopper still gets standing ovations.

—Story by JO2 Steve Johnson

—Photos by JO1 Gary Miller

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## A Giving Nature

Grace Hopper, an extraordinary woman, seeks no honors or awards for her work. She prefers to give freely of her tremendous energy and talents. As of June 1982, for example, she had contributed more than \$34,000 to the Navy Relief Society from honorariums she had received for numerous speaking engagements over the years.

The honors, however, come unbidden. In May, she was awarded an honorary doctor of science degree from Marquette University. And the most recent in her long list of awards is a gold medal presented this past June by the Armed Forces Communications Electronics Association. She was chosen "...in recogni-

tion of your superior technical competence, extraordinary performance, and personal direction of major command, control, communications, and intelligent systems which are essential to the enhancement of national and free world security."

The 20-member AFCEA is a non-profit, non-political association dedicated to bridging the gap between industrial technology and military and government requirements. One of its primary objectives is to create a discussion forum for industry, military and government members.

John A. Hollansworth, chairman of the board of directors, presented the award to Captain Hopper.

# Get High On Yourself America

"Get High On Yourself, America" is a 90-minute musical produced not by the show-biz professionals of Broadway but by a dedicated group of Navy military and civilians at the Great Lakes Naval Training Center. It's their answer to people who tell themselves they must turn to drugs or alcohol for escape from boredom.

Featuring 25 performers, the show consists of biographical sketches and musical skits made famous by such people as Janis

Joplin, Marilyn Monroe, Hank Williams, the Supremes and Elvis Presley. The narration, by Seaman Joshua Conner, describes the problems as well as the successes of these show people and explains that, despite the fact that all had everything going for them, there was something basic in their lives they couldn't deal with.

Choreographed by Conner, who studied drama in New York, the musical was put together in about 12 weeks with a volun-

teer cast who spent evenings and weekends rehearsing. Most of the performers had not danced before, but that did not put any kinks in their enthusiasm or in the final, professional result.

*"Stop in the Name of Love," a Supremes golden hit, is sung by (l-r) SN Donna Pressley, Ensign Lynnrenne Cantrell and SA Theresa Garner.*



# Get High On Yourself America

Firm in their conviction that there are plenty of alternatives to drug and alcohol dependence, the performers and others involved in the show's production are living proof that there are too many productive things to do without wasting time on alcohol or drugs.

Fireman Bill Lord, who imitates Hank Williams Sr. and Elvis Presley in the show, agrees. "I would never use drugs," he said. "I saw a lot of good friends die as a result of drug abuse. I'm glad I don't feel that I need that sort of thing to cope with life."

Seaman Theresa A. Garner, who belts out a good imitation of Judy Garland's "Over the Rainbow" in the show, said, "Drugs are not my thing. I have a natural high."

Rear Admiral James H. Flatley III, commander of the Naval Training Center, Great Lakes, Ill., was supportive of the musical from the beginning. He said the idea came from a Service School Command student who wanted to show that not all young servicemen and women are in-

involved or want to be involved with drugs or alcohol. When the show played at Great Lakes, the admiral urged audiences to "get involved with the performance—and then go out and get involved in your commands and with your lives."

After a highly successful program at Great Lakes, Lieutenant Commander Cherie Davis, the center's public affairs officer, took the show on the road to training centers at Pensacola, Fla.; Memphis, Tenn.; Orlando, Fla.; and San Diego. The show also played Charleston, S.C., and New Orleans, La. Portions were televised locally in Chicago.

"Get High On Yourself, America" is a tribute to Navy people—military and civilian—who believe in themselves and in their ability to hold on to the good things in life. As Electronics Technician Third Class Dan Navarro, the show's technical director, said, "Life is so full of satisfaction that no artificial high is needed; everyone should be high on life!"

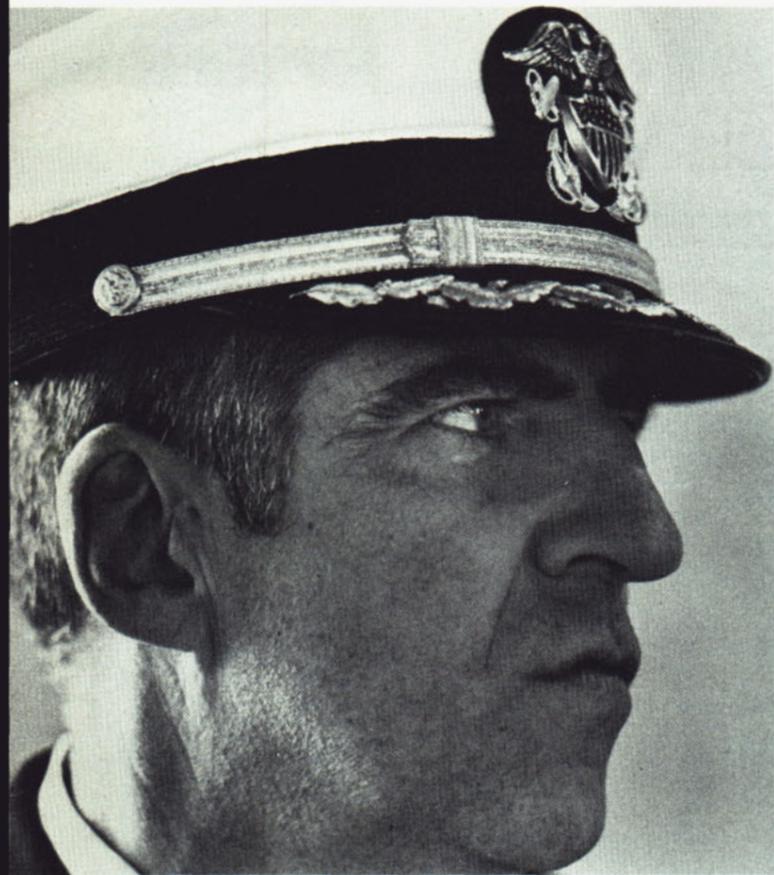
—Photos by JO1 Jim Bryant





*Playing the parts of great performers who have suffered and even died because of drug abuse, young Navy civilians and military (clockwise beginning below) show that drug dependence has no place in their lives: Marjorie Bender, MU2 Corey Swinderman (l) and MU2 Joseph Kielbasa, SA Theresa A. Garner, and FN Bill Lord.*





## Leadership

# Getting Things Done— Through People

Captain Dick Stratton is an anomaly in a time of much uncertainty. He shoots from the hip, knows what his convictions are and talks candidly about his beliefs and ideals.

He considers himself “24-hours-a-day Regular Navy” and says it with so much authority there is no way you could doubt his sincerity. His naval career has spanned nearly two decades. He’s had several commands, is a decorated veteran of one war and a major conflict. Today he holds the reins of the Naval Academy Preparatory School in Newport, R.I.

At NAPS, Stratton enjoys taking an active role in helping mold the Navy leaders of tomorrow. It’s a job he says is one of the most challenging assignments in his career to date.

Stratton brought a unique brand of leadership to the program. It’s a style of leadership molded during the course of his varied naval career, which includes six years as a POW in Vietnam. He doesn’t like to talk about that, but when he does recall those years, it is obvious they played a big part in making him the type of leader he is today.

When asked to characterize the leadership he practices, Stratton quickly replied “leadership by example.” All Hands photojournalist Lon Cabot talked with Stratton earlier this year about that philosophy and other aspects of leadership at NAPS and in the Navy today.

**Q.** *What is your definition of leadership, and how do you impress it upon the students here?*

**A.** Leadership is getting things done through people. Here that is applied daily in a number of ways. A youngster is taught in the classroom how to combine theory and practice and come up with some sort of defensible conclusion. If he can’t do that in his head, he’s not going to be able to do it from the bridge of a ship.

The role model is continuous here. Military or civilian, the staff is constantly aware that the students’ image of what a leader is will be set by what they see here. That type of example—how we think, how we make decisions and how we attempt to do things—is vital in developing the leadership qualities of these students or of any young person.

**Q.** *What are the qualities of an effective leader?*

**A.** Number one is self-discipline. If you can’t discipline yourself, obey regulations, budget your time, set priorities or accept the consequences of your own actions, you not only can’t lead, it’s immoral for you to try to lead.

Here we don’t train students in leadership, we educate them about it. Education, opposed to training, provides an environment where the student can make a mistake. The candidates here are monitored in how they lead so that when they make a mistake someone can come in and say, OK, now come back and try it again.

A good leader must also have a strong sense of integrity and fairness. One of the roles of a leader in an unfair world is to make it as fair as possible and make people realize that it is not fair out there. If candidates see what they perceive as a leader trying to

make that world a little fairer for them, then you're going to get through to them.

**Q.** *What would you consider the qualities of the ideal NAPS candidate?*

**A.** I wouldn't seek to have one average person or one person more ideal than another. I think diversity is our greatest strength. The only way we can survive—here or in the Navy as a whole—is as a team. Those who forget that, die. They either literally die or they wither on the vine and never succeed.

We try to get it through to our people that the way you succeed is by being a good shipmate. I'm a captain today because of people who helped make me a captain and I know that. When my plane gets launched off an aircraft carrier, it's because of thousands of people whose names I don't even know. Without the troopers, you're nothing.

In a program like NAPS, you need a tremendous amount of diversity. You need the serious person, the humorous person, the highly intellectual and the natural-born leader.

When I look at a NAPS candidate, I look for a person who is capable of maturing if not already mature. By mature I mean a person willing to accept the consequences of his own actions. I don't want the person who is going to make excuses. I want the person who is able to admit he screwed up. I want that kind of maturity and, certainly, integrity.

**Q.** *How would you compare the quality of the individuals coming into the Navy today with the people who joined 10 or 12 years ago?*

**A.** I think that in the early '70s, as a result of the backlash of Vietnam, we were not getting the quality individuals we were getting in the early '60s. Today, I see the economy driving people into us whose motivation is, "Well, I want to do something for my country as well as I want to eat and here's a place I can do both."

I think that it's very important for people to realize that over the years it's become unpopular for peer groups to talk about patriotism as a motivation. I saw it when I was in recruiting, I saw it at the Naval Academy, and I've seen it here.

A patriot is a person who is willing to put his country ahead of himself or his own conveniences. I see it in many young people today—in the Navy and especially here at NAPS. They want to do something for themselves in terms of education and employment, but they are also willing to serve.

I believe it's important to realize that the desire to serve—patriotism if you will—is a fundamental driving force for most people in the military.

**Q.** *What did your time as a POW do for you as far as developing you as a leader?*

**A.** I think it helped tremendously. I was a midgrade officer then, and I was in the communication linkup where I could watch all these people exercise their various forms of leadership. There was the non-leader—the person who copped out; the dynamic, colorful person—he's always got a catchy phrase to incite people; and the quiet gentleman leader—which I think is the most effective type of leader.

My role as a POW helped me reaffirm some things I believed about leadership and also helped me change some of the ideas I

had. As a POW, I saw leadership from a very basic level. It was very hard to look dignified when you were standing in your skivvies and you stunk like a billy goat. The real value of the POW experience was watching the different people exercise their leadership under those very trying circumstances.

**Q.** *If you could have one wish that would change the Navy today, what would that be?*

**A.** I would wish for the American public and Congress to love us as much in peace as in war. I think the president is doing a tremendous job, but I also think it's about time we had somebody who was dedicated to giving us the people and material we need to carry out the national responsibility we've been assigned.

I was sent off in a 25-year-old jet from a 35-year-old ship to fight in a supersonic war. The tendency is to forget in peacetime what we need in war. There's been a turnaround in that philosophy, and I'm grateful for that.

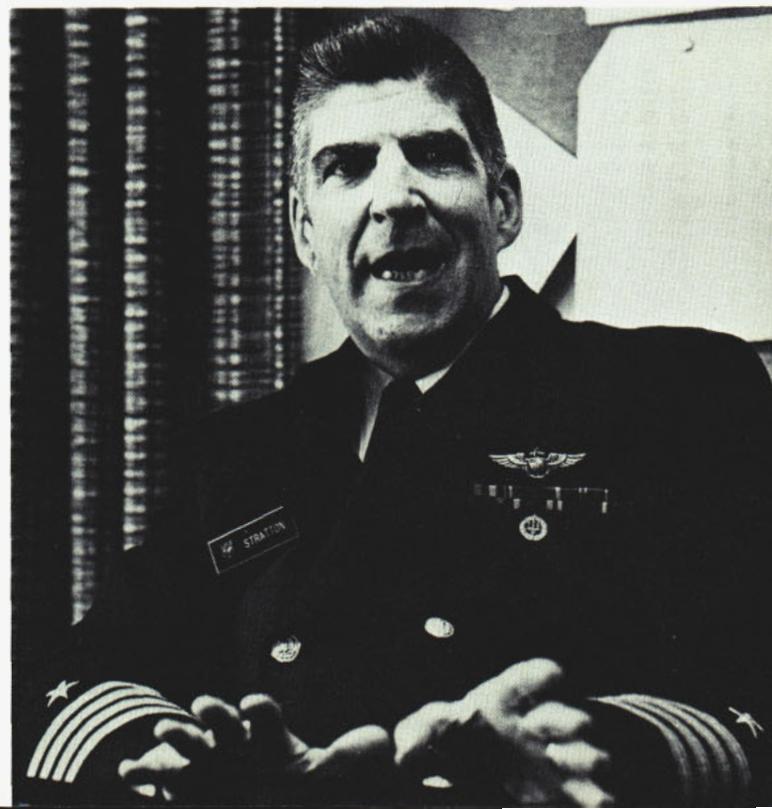
**Q.** *It's been said that a fighting force is only as good as its leaders. How would you compare the U.S. Navy with the navies of other superpowers?*

**A.** You're comparing apples and oranges. I think each country develops a leadership that suits its navy best. For example, I think we have a technically competent corps in our officers and senior petty officers.

I also think that after the first enlistment is over and that person stays on, we have a very dedicated person. That person is going to be willing to work hard not because he is going to have his rations cut or because he is going to be sent to Siberia but because he is dedicated to what he is doing.

**Q.** *How would you sum up what NAPS teaches an individual?*

**A.** I think what we are successfully teaching is pride based on competence. We're teaching the people here that leadership, doing the job, means more than just shining your shoes right.



# Is There a Metallic Sailor in Your Future?



“Petty Officer Artoo Detoo reporting aboard, Sir!”

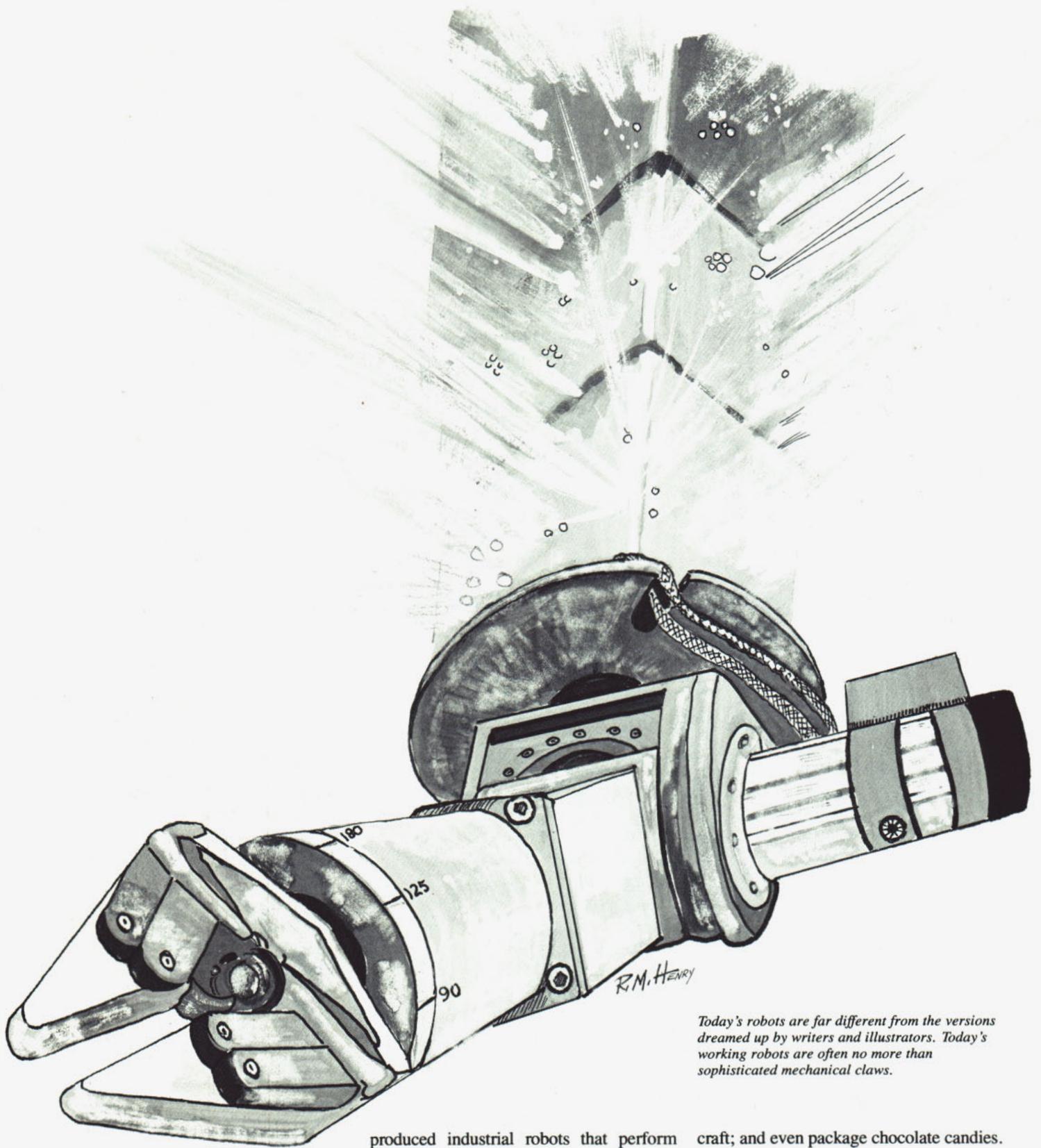
No, the Navy hasn't recruited one of the leading characters from “Star Wars.” Nevertheless, some day Navy OODs may greet a fleet of metallic sailors. And division chiefs may have seamen who won't talk back when ordered to chip paint.

Even those dogwatch sailors standing bridge watches or staring into green radar screens may vanish when robotic ships become commonplace.

Science fiction? Today, yes. In the distant future it may be reality.

Scientists and science fiction writers have long dreamed of a world where the robots would do the work so that people could spend time enjoying the pleasures of being human. Until recently, robots existed only in science fiction books and movies. Some were metal creatures carrying deadly ray guns. Others were zombie-like computers capable of spitting out statistics without the burdensome illogic of human emotion. But scientists today are building mock men of a sort—and not just for thrills.

Today, a robot revolution is sweeping the world. It's a revolution that began in this country but, according to economic



*Today's robots are far different from the versions dreamed up by writers and illustrators. Today's working robots are often no more than sophisticated mechanical claws.*

experts, it's one in which America trails.

It's also a revolution in which the Navy and other services are taking a greater interest.

Robotics was born in the United States and nurtured in Japan. The science has

produced industrial robots that perform tasks such as welding, painting, lifting, assembling and testing finished products. In U.S. factories, there are about 5,000 robots. These tin men weld auto and truck bodies, tractor seats, shopping carts and ship hulls; paint refrigerator and dishwasher liners; tend die-casting machines; route sheet-metal fuselage panels on air-

craft; and even package chocolate candies.

The Navy is interested in adding ship-building and underwater exploration to the robots' repertoire. The Army is exploring their use in reborning howitzers, refurbishing tank road tracks, loading howitzer ammunition and sand blasting armored personnel carriers. The Air Force is investigating robotic welding, riveting, drilling

# Robotics

and routing in the construction of airframes.

In shipbuilding, the Navy faces problems in applying assembly line robotic technology to a non-assembly line manufacturing process.

"Shipbuilding is basically a fixed point construction process which means you bring the men and equipment to the ship," said Bill Holden of Naval Material Command's Manufacturing Technology Program Office in Washington, D.C. "Thus, there is a correspondence between the characteristics of the shipbuilding business and the limitations of the current generation of robots. What we are looking for are robots that can be easily reprogrammed off-line, and have mobility, vision and other sensor systems which will make them capable of operating in a shipyard environment."

As shipbuilding moves further into modular construction and computer science advances toward giving robots senses, these limitations are vanishing.

"We are seeing shipyard work move more and more in an assembly line-like fashion," said Holden. "Work stations are developed where one job is done here and another job there. This was evident in many respects in the construction of the new class of guided missile frigate.

"So it's not difficult to imagine a track-mounted robot with limited mobility being able to deal with those kinds of work stations. Today, we have a convergence going on with respect to robotic and shipbuilding technology."

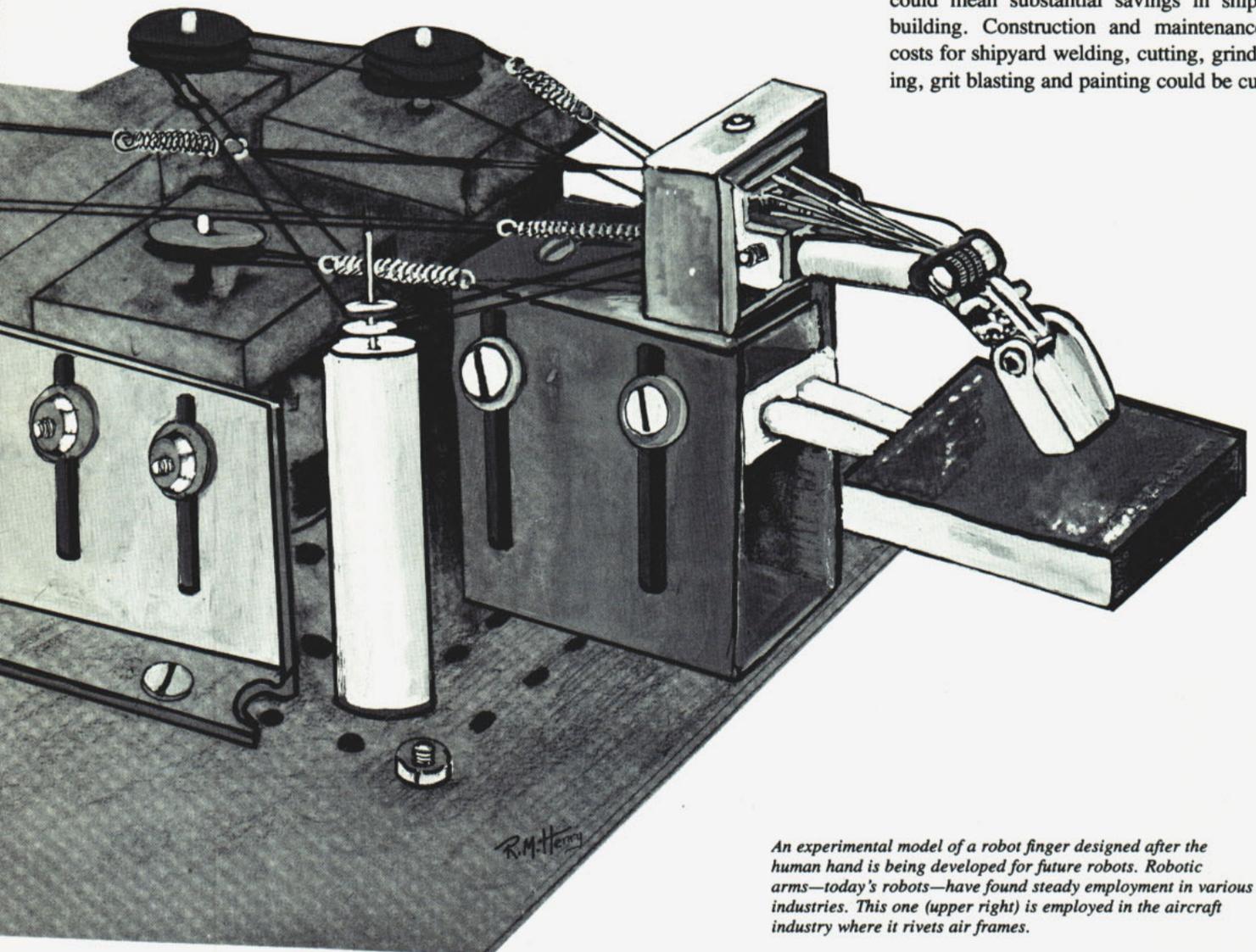
Until recently, a robot's brawn and predictability were more important than its brain. Now robots come in a variety of sizes, shapes and with various IQ levels.

Scientists and engineers are developing new generations of robots that can see, feel, hear and obey oral instructions.

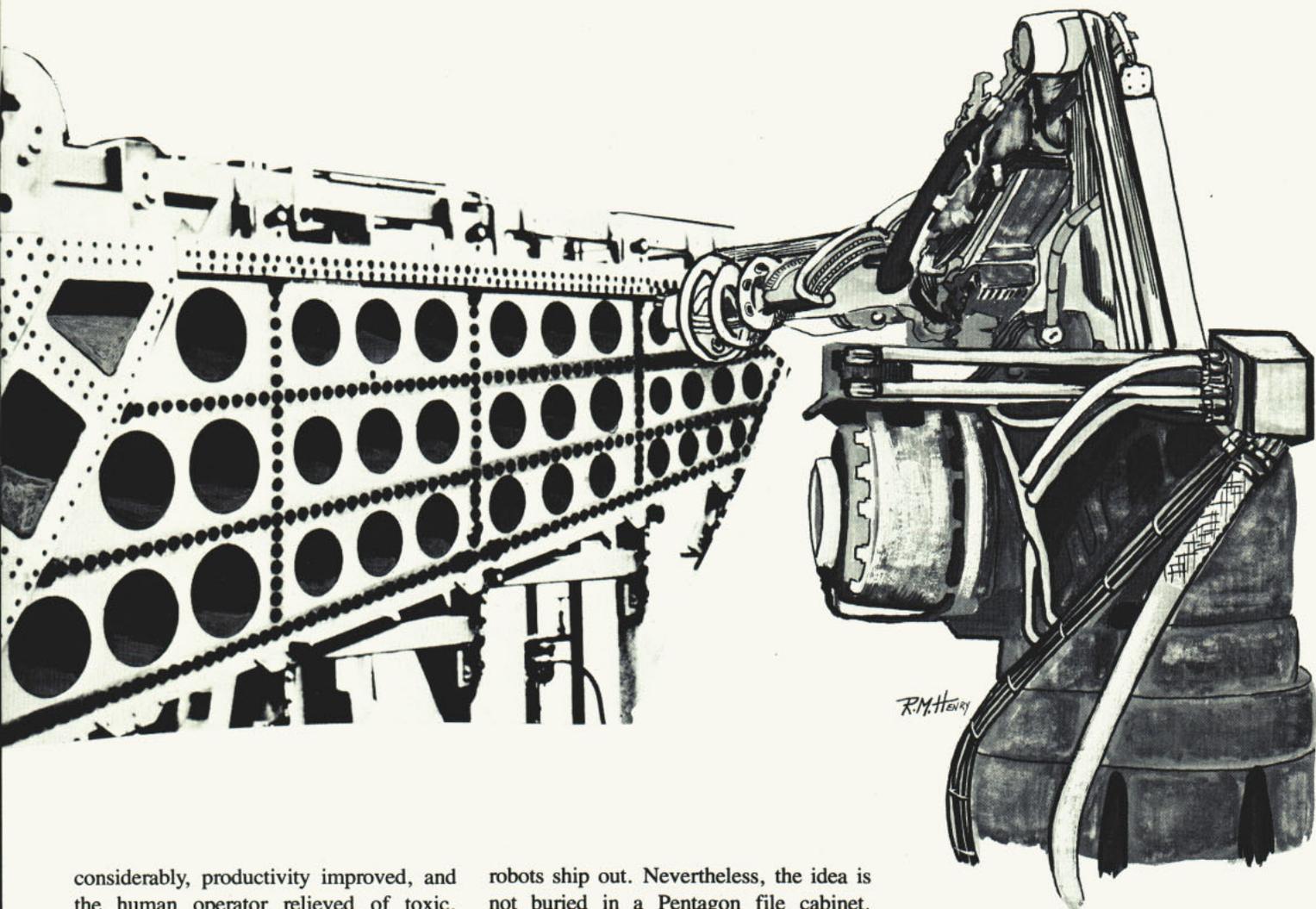
Scientists at the Massachusetts Institute of Technology, aided by funding from the Office of Naval Research, are developing robot skin. This is a patch of sensor material which sends an electronic pattern of what the robotic claw touches to its electronic brain. In addition, MIT is working on developing stereo vision and a robotic hand with a thumb and two fingers controlled by mechanized tendons.

This new generation of robots, even with limited abilities to see and touch, could adapt to changes in their working environment. Instead of simply welding whatever is in front of it, a robot could sift out incorrect or defective parts and adjust for poor fit.

For the Navy, this new breed of robot could mean substantial savings in shipbuilding. Construction and maintenance costs for shipyard welding, cutting, grinding, grit blasting and painting could be cut



*An experimental model of a robot finger designed after the human hand is being developed for future robots. Robotic arms—today's robots—have found steady employment in various industries. This one (upper right) is employed in the aircraft industry where it rivets air frames.*



considerably, productivity improved, and the human operator relieved of toxic, dangerous, dirty and fatiguing work.

Nor is this enough—the Navy also wants a mobile underwater robot to search out mineral deposits on the ocean floor. Such a robot would be launched from a shore station and proceed to its assigned destination autonomously. The sea robot would be capable of working in the ocean environment and performing simple tasks more economically than man.

“The biggest application in the Navy for such a robot would be operating under the difficult conditions at the ocean bottom or inside enemy territory,” said Dr. John Dixon, a computer scientist with the Navy Research Laboratory in Washington, D.C. “It’s hard to imagine all the things that a robot could do. Still the simplest thing a robot could do would be to retrieve geological samples from the ocean.

“A deep-ocean robotic vehicle could also be used in recovery operations. And a futuristic application would be to use such a vehicle on reconnaissance missions.”

For those sailors envisioning robotic shipmates, keep dreaming—both Holden and Dixon believe it will be years before

robots ship out. Nevertheless, the idea is not buried in a Pentagon file cabinet. Holden said, “Robots could be beneficial in loading ordnance on the flight deck, in refueling operations, in the repair shops of a tender and in handling cargo on supply ships.”

Dixon added, “Looking far into the future, the Navy might get some robotic replacements. One suggestion is to build a robot that could clean off barnacles underneath a ship while at sea. Another could manufacture spare parts. This would free funds tied up in shipboard inventories.”

Considered as still being in their childhood as a science, robots as toys are at least 200 years old. French and Austrian clockmakers and craftsmen of the 18th century built lifelike dolls which seemed to write letters, draw pictures and play musical instruments.

The word “robot” is only 60 years old and was derived from the Czech noun *robota*, which means forced labor. It was first coined by Czech playwright Karl Capek in a 1920’s play—“R.U.R.” (Rossum’s Universal Robots)—which depicts a race of humanoid mechanisms that destroy humanity.

The first industrial robot was built by a Connecticut manufacturer and employed by an American automaker to die cast parts. In the United States, these multipurpose reprogrammable machines, according to one prediction, will fill the jobs of 8-10 million American workers by the year 2020. Nevertheless, a dramatic increase in unemployment is unlikely—Labor Secretary Raymond Donovan predicts that by 1990 half of the workers in U.S. factories will be robotic service and repair specialists.

Though pioneered by American scientists in the early 1960s, these devices were put to their widest use in Japan. Japanese factories already employ 75,000 robots of varying sophistication. Last year, another 20,000 robots found steady jobs around the world.

In northern Japan, one factory draws 100,000 visitors annually who are awed by the view of some two dozen box-like robots calmly—tirelessly—producing other

industrial robots and machine tools. The procedure is not entirely without human presence, however, as the final assembly is too intricate for this generation of robots. Nevertheless, several "ghost shift" assembly lines do exist in Japanese factories where at least one shift operates with little or no human intervention.

The Japanese are also marshaling the research and development resources of their government, universities and industries to meet a 1984 deadline for an "unmanned" factory.

But even the most sophisticated breed of robots today are a far cry from the humanlike creatures depicted in "Star Wars." Factory robots are an elaborate series of linkages and joints—one-armed, computer-controlled claws that can be programmed to perform more than one task. The claws, built for specific environments, cannot comprehend the space they work in nor can they react to moment-by-moment changes.

What makes a robot different from any automated machine is its electronic brain—a microcomputer programmed to do an as-

signed task repeatedly at the same pace and accuracy with little or no human supervision.

Norman Capa of the National Science Foundation said, "Today's robots are industrial manipulators that are just mechanical, immobile arms employed mostly in repetitive jobs that require accuracy and endurance. These robots can work all day and all night with minimal human involvement. But we're looking for the development of intelligent robots that can make decisions in changing situations. Such a robot could be used in hazardous jobs as adjuncts to man."

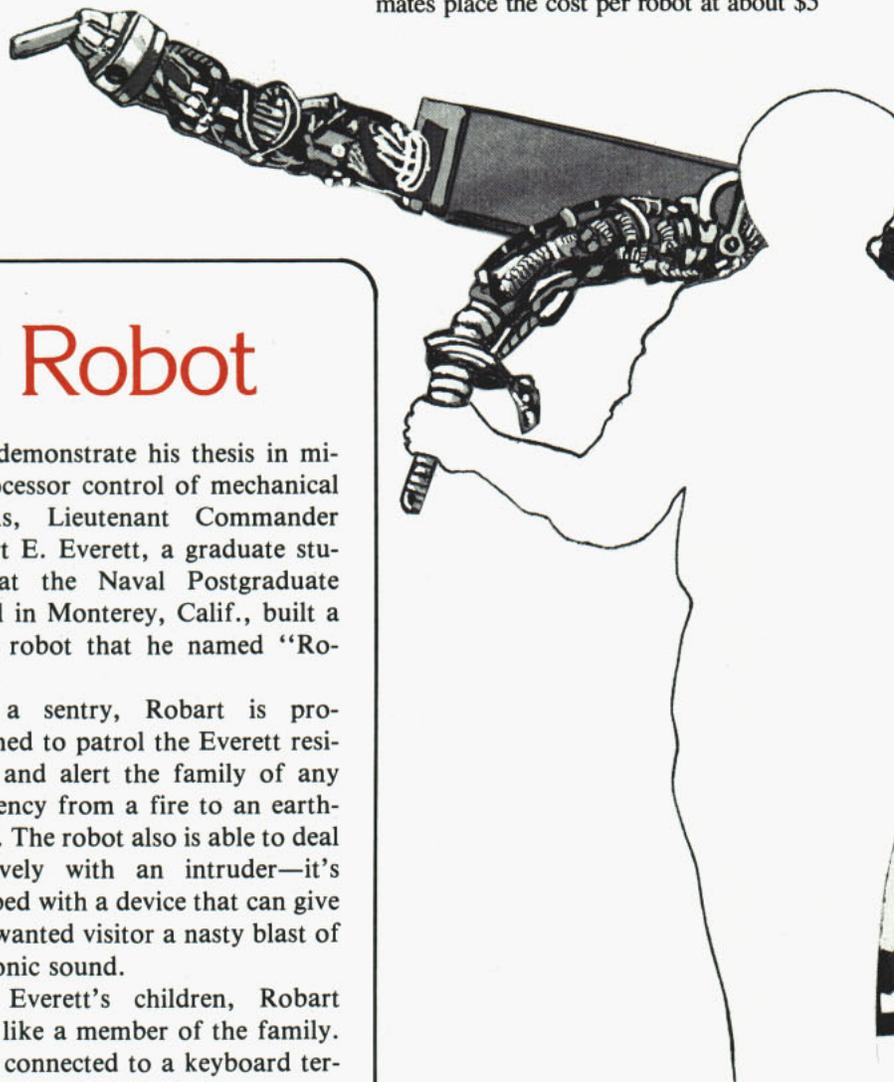
"You usually think of a robot being something that is autonomous in that it makes its own decision and controls its own action," said Dixon. "Today's auto-

nous robots are fairly crude.

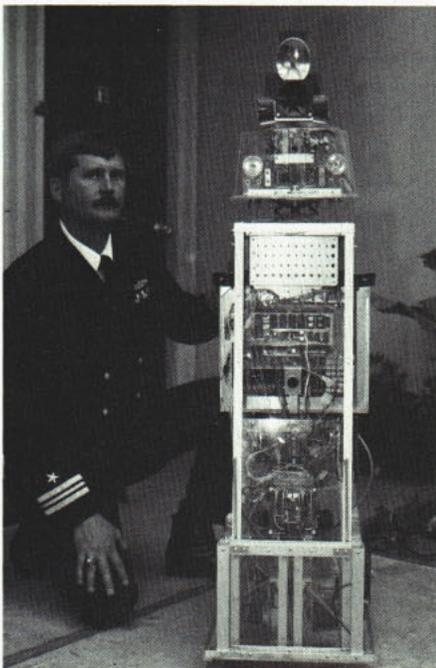
"The thousands of industrial robots in use do very limited things and are not very intelligent. They just go through the same exact motions that they are programmed for and do very little in the way of decision making."

Industry's love affair with robots stems from high labor costs and low productivity. Unlike humans, robots never go on vacations, take a break or ask for a raise. Robots do not err, get tired or get bored. Nor are robots subject to the industrial ills caused by dangerous working environments. They do work more consistently and more precisely than people can in hot, dirty and dangerous industrial jobs.

A robot offers employers a 24-hour workday with triple the output of an eight-hour-a-day blue collar worker. Some estimates place the cost per robot at about \$5



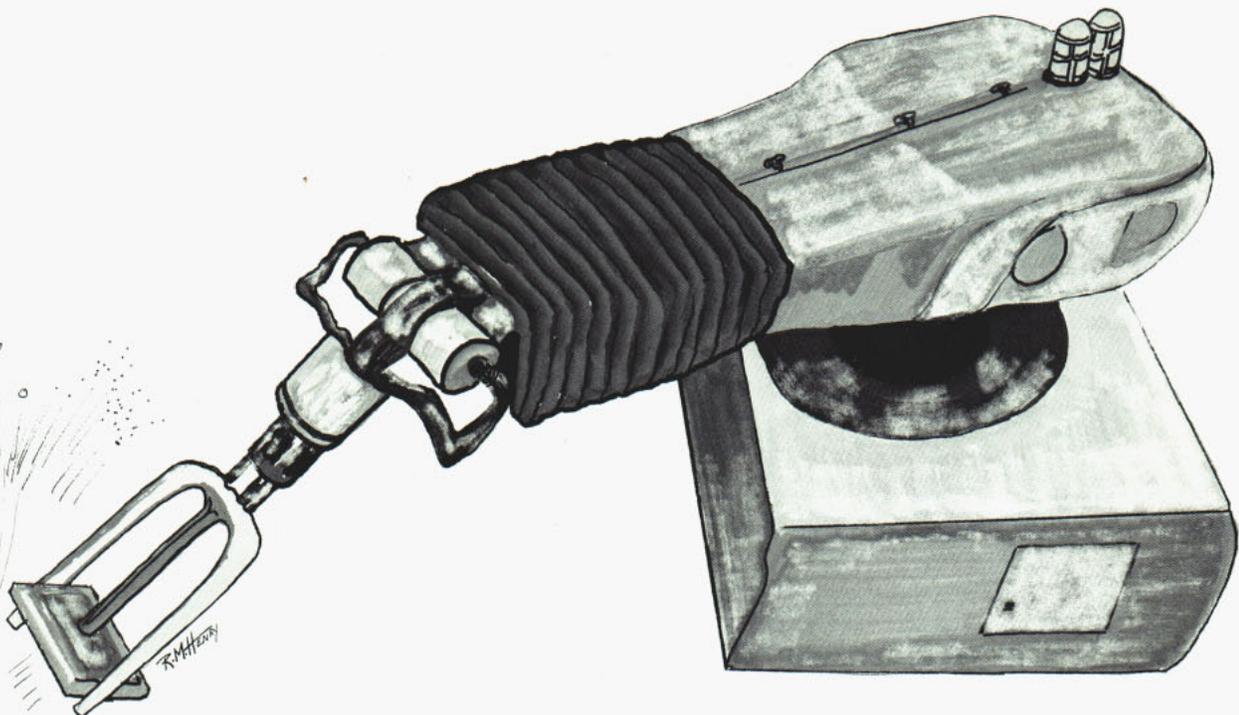
## Home Built Robot



To demonstrate his thesis in microprocessor control of mechanical systems, Lieutenant Commander Hobart E. Everett, a graduate student at the Naval Postgraduate School in Monterey, Calif., built a sentry robot that he named "Robart."

As a sentry, Robart is programmed to patrol the Everett residence and alert the family of any emergency from a fire to an earthquake. The robot also is able to deal effectively with an intruder—it's equipped with a device that can give an unwanted visitor a nasty blast of ultrasonic sound.

To Everett's children, Robart seems like a member of the family. When connected to a keyboard terminal, the robot "talks."



One of the more common types of robots used by industry may find itself recruited for Navy shipbuilding. Robotic spot welders like this one are used in American industries to help build products as diverse as automobiles and shopping carts. Nevertheless, even the latest generation of industrial robotic arms needs humans. Programming and maintenance still require human minds and hands.



per hour compared with triple that cost for some wage rates. Their repeatability is what the nearly 200 U.S. robot manufacturers use as a key selling point for tireless workers that cost anywhere from \$10,000 to \$120,000.

Said Holden, "A man tending a blast furnace can do it only for short periods of time. On the other hand, a robot can continuously tend the same furnace. You need to use human beings in jobs where intelligence, dexterity, flexibility and adaptability are important. A person makes a poor cog in a machine.

"It's a simple matter of getting people doing the jobs they are good at and getting robots doing the jobs they are good at for greater productivity. Robots are good at laborious, dirty, dangerous jobs. But the labor force imagines them with capabilities that are hundreds of years in advance of what they actually are."

Nevertheless, the drawing boards teem with dramatic plans. Blueprints call for robotic devices in underwater exploration for repairing structures, retrieving lost objects and gathering geological samples. In mining, the ultimate goal is a completely autonomous mining system.

Several kinds of medical applications are being researched as well. The most obvious is in prosthetics. In Japan, a Tokyo

university professor has developed an unmanned computerized machine that serves disabled or bedridden patients. Another Japanese professor has developed a robotic device with 25 finger-like palpaters for detecting breast cancer. And in the United States, medical students at a Florida university train with the use of a robot that simulates 40 cardiac disorders.

It's a fact, too, that today's robot welders could become tomorrow's space explorers. A major California aerospace laboratory is developing a self-propelled robot vehicle equipped with sensors and decision-making systems to reconnoiter Mars.

Even the NASA space shuttle is equipped with a 50-foot, triple-joint robotic manipulator for depositing and retrieving satellites in space. Other U.S. space projects call for robotic manipulators that repair satellites, build orbiting solar power stations and man celestial factories.

Even with these technological advances, the day of a division officer inspecting a formation of metallic seamen at morning quarters for short circuits and blown fuses, or a sailor having his shipmate ask for a recharge and a quart of oil are images still riding on the waves of man's imagination.

Or are they?

—Story by JOC James R. Giusti

—Illustrations by DMSN Robert M. Henry

# Bob Hope and the USO—

## Still Something Special



The weekend was cold, gray and rainy. Yet the 4,700 midshipmen and 15,000 Hope fans who filed into Navy and Marine Corps Stadium near the U.S. Naval Academy didn't seem to mind. From the sound of their enthusiastic applause, you would have thought the sun was shining all the time Bob Hope's "All Hands on Deck—All Star Birthday Party" TV special was being taped at Annapolis, Md.

Just one week before his 79th birthday, comedian entertainer Bob Hope walked on stage dressed in a Navy Parachute Team blue and gold jump suit. It was all part of a gag—he supposedly had parachuted into the stadium to open the show.

"Welcome ladies and gentlemen and plebes," Hope began, "I can't tell you how happy I am to be at Annapolis—the nation's only federally funded Yacht Club." From a stage at the center of the

stadium, Hope and a cast which included James Coburn, Bernadette Peters, Dolores Hope, Brooke Shields, Christie Brinkley and Roger Staubach entertained the audience for more than six hours. It takes

time, it seems, to put a special together.

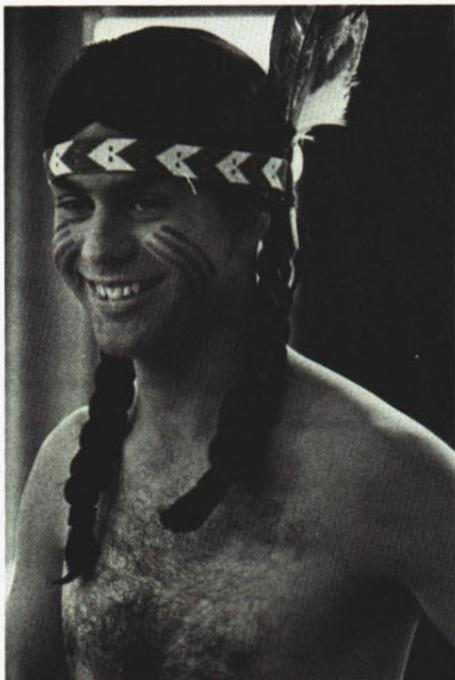
The TV special which aired on May 25 followed in the grand tradition of 41 years of USO shows. This was the fifth year that Hope's birthday resulted in a TV salute to





the USO. In 1978, the show was filmed at the Kennedy Center in Washington, D.C., and in subsequent years at the U.S. Air Force Academy, aboard the USS *Iwo Jima* (LPH 2) and at the U.S. Military Academy. Hope broadcast his first radio show entertaining GIs in 1941 at California's March Field.

There was no shortage of stagehands. About 80 midshipmen volunteered to help with the production. They put up scaffolding, painted props, built sets, set up the huge sound system—a few of them even took part in several skits. The bucket and



mop brigade was called on several times to dry down the stage, made wet by the misty rain. Several midshipmen assisted as costume advisers—ensuring that stars wore correct uniforms in the skits.

Hope today continues to capture the hearts of American service people with his crazy costumes and parodies of everyday military life. A hat fanatic, Hope donned a wide variety of Navy hats and ball caps during the Annapolis show.

After the Annapolis taping, Hope became Bob "Blue Angels" Hope when he flew with the Navy's precision formation flying squadron at nearby Andrews Air Force Base. After being dubbed an honorary Blue Angel, Hope, dressed in a Blue Angels' tailored flight suit, climbed into the rear cockpit of the squadron's two-seat TA-4J *Skyhawk*. "If people see this, they'll sell their savings bonds," he said.

As the cockpit canopy closed and the jet taxied toward the runway, Hope gave the Blue Angels pilots and crew a "thumbs up." Lieutenant Scott Anderson, pilot for the comedian's orientation flight, said, "He talked almost constantly, joking with the air traffic controllers who were monitoring us on radar."

At 79, Bob Hope continues to accept life with the same enthusiasm he uses to inspire millions of service members around the world.



Whether in front of an audience of thousands, with the elite Blue Angels or in the cockpit of a TA-4J *Skyhawk*, Bob Hope is always "on stage" with one-liners. Midshipman Tim Hunt (left) joined the USO show as an extra.

—Story by Lt. Morgan Smith  
—Photos by PH2 Paul O'Mara

# Families Keep it Going

*Norfolk Naval Shipyard has served the fleet under several flags, but it takes greatest pride in flying the Naval Material Command's award banner for performance.*

\* \* \*

The yard in Portsmouth, Va., received the prestigious Chief of Naval Material's Productivity Excellence Award for 1981—the first awarded a naval shipyard—on March 9, 1981. The yard later learned it also won the Naval Material Command's 1981 Equal Opportunity/Equal Employment Opportunity Annual Honorary Award for the best program among large Navy industrial facilities.

The story of this 215-year-old shipyard in Virginia's Tidewater region and its approximately 13,000 Navy civilian employees and about 150 military people is one of tradition, service, pride, professionalism and performance. There's hardly a Tidewater family without a relative working, or who has worked, at the yard. Many families have served in the yard for generations. Many retired military people also work there.

In 1981, Norfolk not only repaired and overhauled more ships but did more of them faster, on or ahead of schedule, than any of the Navy's seven other yards nationwide. It also led in productivity savings and cost avoidance and excelled in improving the quality of life in the shipyard.

Norfolk is the free world's largest

naval shipyard and the Navy's largest industrial facility. It boasts state-of-the-art technology to care for nuclear as well as conventional ships from tugs to aircraft carriers. There are about 400 cranes in the yard, including a 350-ton behemoth capable of lifting nine locomotives, and equipment of just about every size, shape and description. Still, the yard's strength is in its people.

Although wage scales are the lowest of all U.S. Navy shipyards because of area comparability studies, workers remain because they believe in its importance to fleet support and the nation's defense. They praise the four-year apprentice system and the safety program. They hail improvements to the quality of their work life and note the great strides made in hiring women, especially the assumption by women of supervisory roles. There are, as well, large numbers of minority people employed at all levels within the yard.

Shipyard men and women—from apprentices to senior managers and union leaders—give much of the credit for this outstanding record and performance to the present commander, Commodore David P. Donohue, who has been at the helm more than two years.

Donohue stresses that the yard's greatest responsibility is to deliver repaired and overhauled ships of the highest quality to the fleet on time within cost estimates and, above all, safely.

Last year, 26 ships were overhauled that required 3,000 or more work days. Thirteen ships were completed ahead of schedule and 10 were on schedule. Yard workers also completed 2,600 other availabilities. To do this, the tempo of work increased about 20 percent above its normal level. Special teams from the yard also worked aboard Navy ships deployed and in other shipyards.

On any given day, yard crews can be found on about 55 ships, one-ninth of the Navy's active fleet. As a team, workers managed to save taxpayers \$18.5 million last year by avoiding unnecessary expense and improving productivity. Because of this, Donohue was able in 1981 to give \$450,000 in incentive awards to about 2,000 employees—the largest amount in the nation—and other awards—medals—to nine naval officers on his staff.

Repair records were set along the way. A destroyer's sonar dome window was changed in only 16 days, and a submarine's sonar transducer was replaced in record time. It took less than nine months to overhaul the USS *Spruance* (DD 963) instead of the 11 scheduled, and the amphibious assault ship USS *Nassau* (LHA 4) was able to leave the yard a month ahead of schedule.

Donohue underscored the jobs the

*In a maze of power lines and scaffolding, shipyard workers cross the gangplank to the dry docked USS Claude V. Ricketts (DDG 5).*



# Norfolk Shipyard

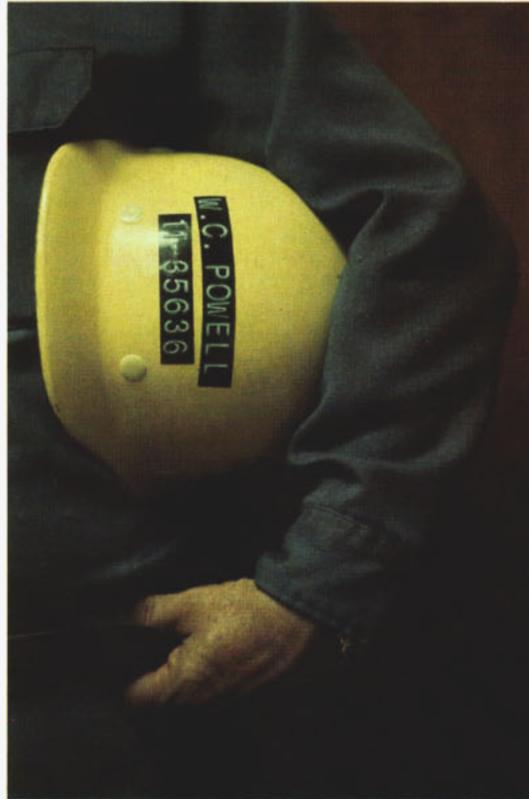
From the moment a ship enters dry dock (below), teamwork comes into play. With crane operators (right) working over USS Ricketts and mechanics (bottom) working below, the work gets done right and on time.



shipyard people do and the quality of the product they deliver to the fleet. "We are dealing with warships that must work so well that they will win when engaged in combat. After completing a restricted availability here that affected almost all of the ship's systems, everything worked right for USS *Nimitz* (CVN 68) when its aircraft engaged Libyan jets in August of last year over the Gulf of Sidra.

"Every civilian and military man and woman in the yard followed that engagement," he added, "and they were extremely proud of *Nimitz's* success."

Workers have pride in themselves, their product and their contribution to the nation. A visitor will find it



*Safety has high priority in the shipyard. Hard hats (left) and other safety regulations are obeyed from the time the workers enter the shipyard until they depart at the end of their shift (below).*

displayed in various ways, from posters to popular “yardbird” baseball caps. And nowhere is this pride more evident than among the yard’s family groups.

Among the Powell family, for example, there are machinists, pipe fitters, patternmakers—you name it—11 in all who work in the yard.

Willie C. Powell, 82, is a retired shipfitter and foreman who spent 45 years in shipbuilding and repair. Twenty-four of those years were at the Norfolk Naval Shipyard. “The yard always has been part of our lives,” he said. “There wasn’t any union when I began working in shop 11 (blacksmithing and forging) before World War II. Nor was there as much competition



among the work force as there is today.

“In those days, we did piece work, and a productive man could make some money. I never got to sit down. Once—when I was busted to helper—I found I had to work harder yet to earn a decent salary.”

During a recent visit to the yard, Powell said he “noticed many young

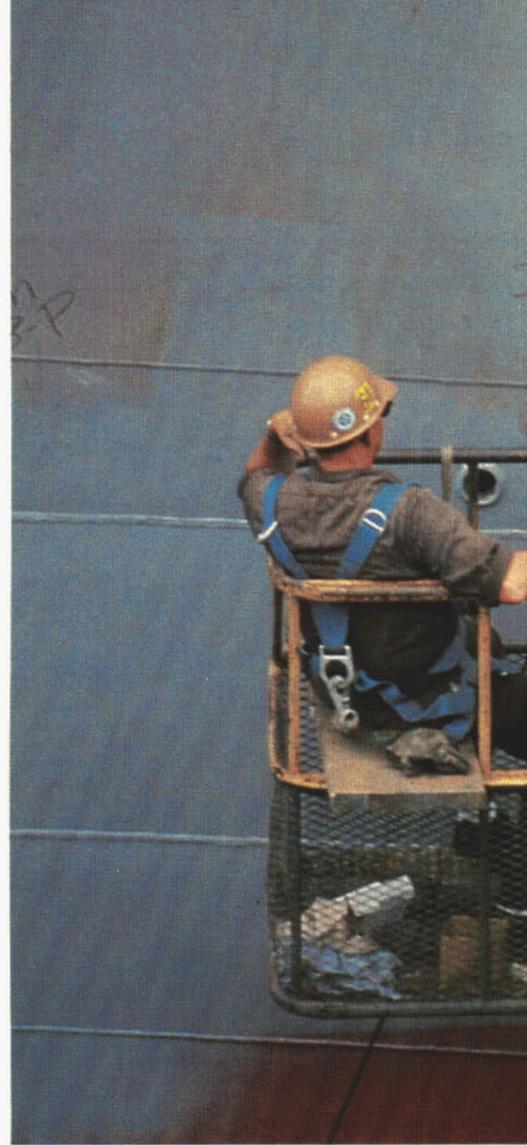
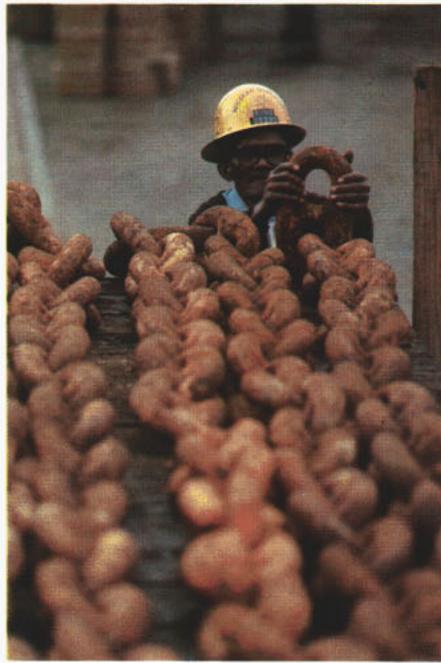
supervisors. That’s wonderful. It’s much better to have a supervisor with young ideas.”

The Powells over the years encouraged their relatives to work at the yard, guided them through apprentice programs and “helped them keep their noses clean.”

Kurtis Kight, a Powell, a 22-year-old

# Norfolk Shipyard

Norfolk Naval Shipyard employs people for all kinds of work. 64-year-old rigger Clarence A. King (right) works with heavy chains used for lifting. Chemist Wayne LeGrande (below) inspects different grades of crushed black walnut shells which are used to remove specific types of paints.



patternmaker and an honor graduate of the apprentice program, said the yard offers “a lot of opportunity for people who want to work and not sit around and moan and groan.”

Willie C. Powell II, 27, joined the work force as an apprentice after high school and worked his way up to supervisor in shop 11. He’s a foreman now and has earned awards for leadership and administration along the way. “We encourage each other. There is a lot of cooperation among the shops and ships’ crews. You aren’t burdened by a lot of paperwork, and you don’t have to wait for everything to go through channels to get a job done. If you can make it work, you do it,” he explained.

Another Powell, William C., 56, was accepted into the yard’s apprentice program about 10 years after retiring as a Navy chief aviation machinist’s mate. “It was tough to hit the books at my age and study things like math. It took a lot of hours. The family encouraged me; I would have quit if it hadn’t been for my wife, Ruth,” he said. She’s a personnel assistant and has worked at the yard for 22 years.

William Powell is now a blacksmith and forger. “Blacksmiths do a lot of fine tuning of propellers and fabricating of parts. We work with exotic metals and special steels. We do everything from working on anvils to working the new, more sophisticated heat treating and metal forges.”

Gary Allen Clark, 24, has been an apprentice pipe fitter for 18 months. His mother, Ann, has been a secretary in the yard about 10 years. Gary said he is impressed with new equipment he uses, including computers. “They employ tight controls and safety features in the new submarine building,” he said.

Other family members who have worked in private yards in Tidewater said that while the work may be easier in those years, Norfolk Naval Shipyard’s safety programs are better. They add, too, that people want to stay because there is more job security and the pension benefits are better.

Most said they were concerned about possible future cuts in federal employee pension benefits. Any decreased benefits could force some people out of the yard, they said.

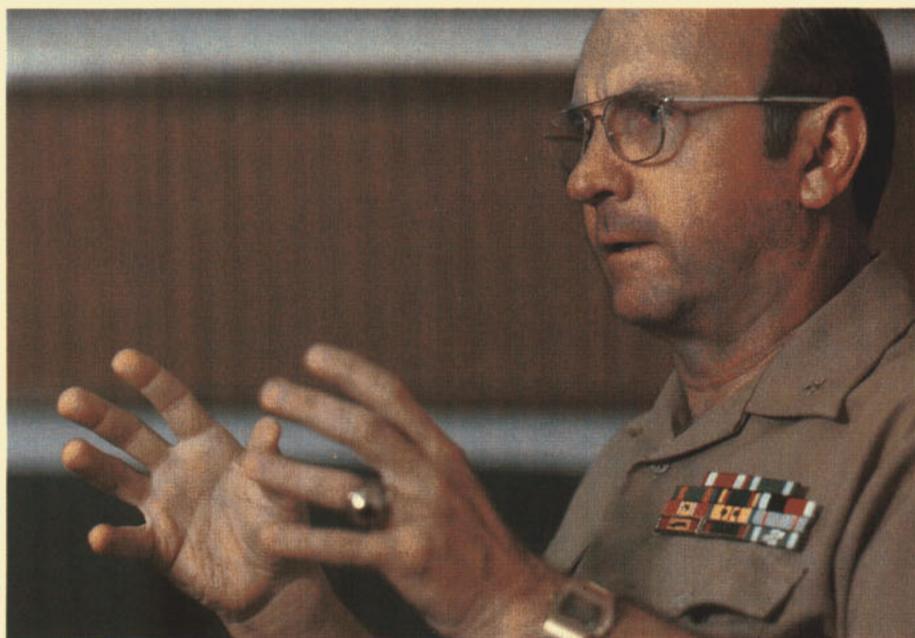
Rick Lake, 24, and his younger brother, Bobby, said they “cut their teeth on ships” during trips to the yard



with their mother when they were kids. Their dad, R.F. (Dick) Lake, 44, now is a general foreman and the coordinator of dry dock 8. All the Lakes work in the yard, Rick as a high voltage electrician, Bobby as a machinist and their mother, Betty, as a pipe fitter.

Years ago, with her boys grown and soon to leave home, Betty decided to go back to work. The yard seemed the natural place, since it already was a large part of her world, with family and friends working there. The Lake men said they "feel kind of good and proud" about Betty. She was the first female apprentice in shop 56 and, 39 at the time, she was older than most. "I was worried and a bit apprehensive about the physical effort that might be required. Now I'm treated as one of the crew and as an employee, rather than as a woman worker.

"We have to carry our share of the load and not seek to be pampered be-



*Como. David P. Donohue (above) stresses that no task in the shipyard is considered menial. From inspectors who ensure work is done right to welders who work on the hulls (top), all are crucial to the mission of the shipyard.*

# Norfolk Shipyard

cause we're women," she said.

Betty and her fellow craftsmen said they work on each ship as if their children were to sail on it. "Employees and sailors get along extremely well," she said, "and if there are any power struggles going on, they don't reach down to the working level."

Husband Dick said pride in the work accomplished and its quality have increased considerably. "People know what has to be done and they get busy."

"Some of the work has been extraordinary, like covering 50 openings in the USS *Claude V. Ricketts* (DDG 5) between a Friday and a Wednesday so it could be moved out of dry dock for another ship that required emergency repairs. None of the welds failed! That's almost unheard of," he added.

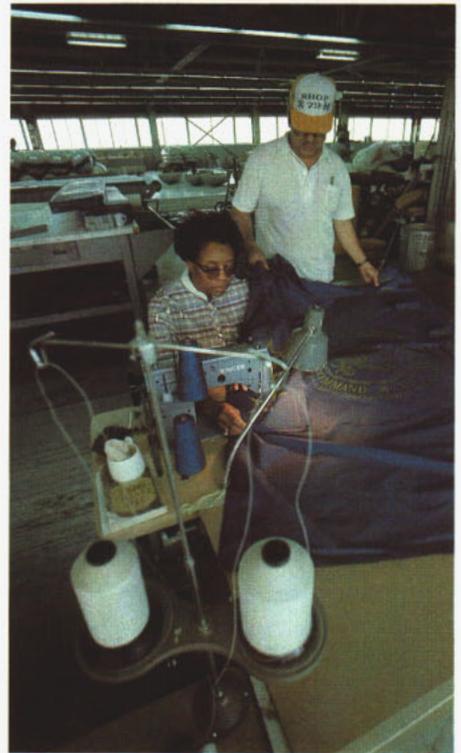
The senior Lake said mechanics had trouble talking with supervisors about their work when he came aboard 15 years ago. "Now there is good communication between workers and supervisors," he said.

He added that the yard's training program is outstanding. "It's one of the best places in the world for people

to get a good background. Federal employees get a bad name sometimes, but not here. There are good jobs and good pay for people who want to work. There's a lot of pressure to do a good job and carry your share of the load," he explained.

Rick is treasurer of Local 734, International Brotherhood of Electrical Workers and carries on a family union tradition. Betty is a member and recording secretary of Local 272, United Association of Plumbers and Pipe Fitters. Dick Lake served as president of the yard's Metal Trades Council until he moved into management—now, he's vice president of the yard's Federal Managers Association.

Another employee, Jim Parr, 34, is a Vietnam veteran who for eight years tried to eke out a living selling real estate. Now, as an apprentice rigger for two years, he credits his uncle, Frank Kelly, a 41-year yard veteran, with helping him find a more secure and rewarding life. The Kelly family has worked in the yard a long time. Frank's uncle, Harry C., retired in 1961 after nearly 50 years as a planner, estimator and shipfitter.



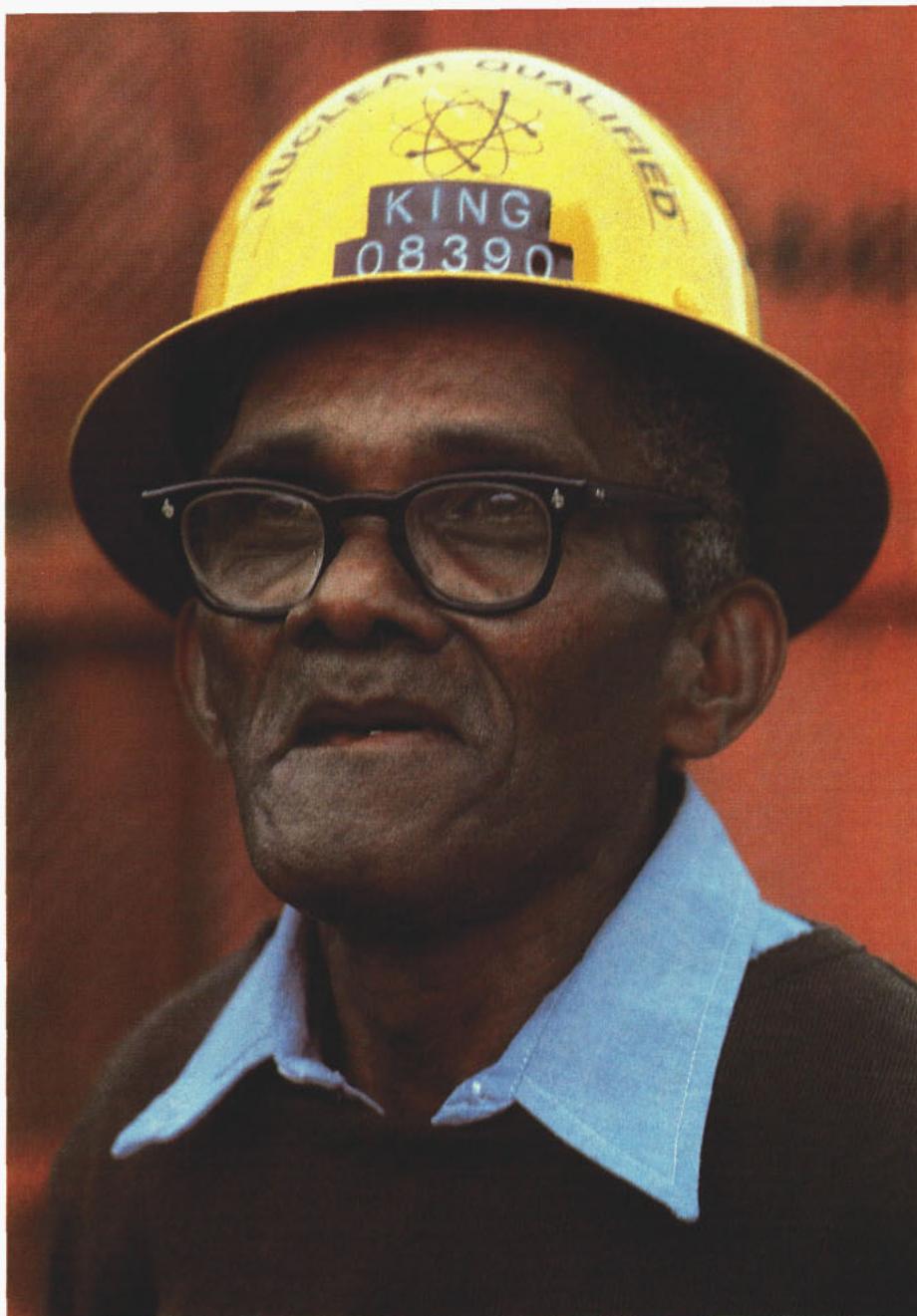
"Frank provided me with the incentive to come here. If it hadn't been for his patience and encouragement, it would have been impossible," Parr said.

"You can't beat it," he continued, "I have a steady job, benefits, security, and I can meet my bills. A lot of people on the outside just wish they had a job. There's a chance for advancement if you have enthusiasm and energy. If you perform well and consistently, you'll be recognized."

Jim Parr was surprised by what he found in the yard when he swapped his white collar for blue. "We worked in confined spaces aboard the USS *California* (CGN 36) under demanding conditions. It amazed me the way people of different backgrounds, skills and knowledge worked together. We all were determined to do the best job. The work had to get done and we did



*The Powell family boasts three generations of yard workers (l-r): Willie C. Powell, 82, retired shipfitter; Willie C. Powell II, 27, foreman in shop 11; Ruth Powell, 51, personnel assistant; William C. Powell, 56, blacksmith. The shipyard's spirit helped win the Chief of Naval Material's Productivity Excellence Award, symbolized in a flag being made (above) by Doris Johnson and Donald Quidgeon of the sail loft.*

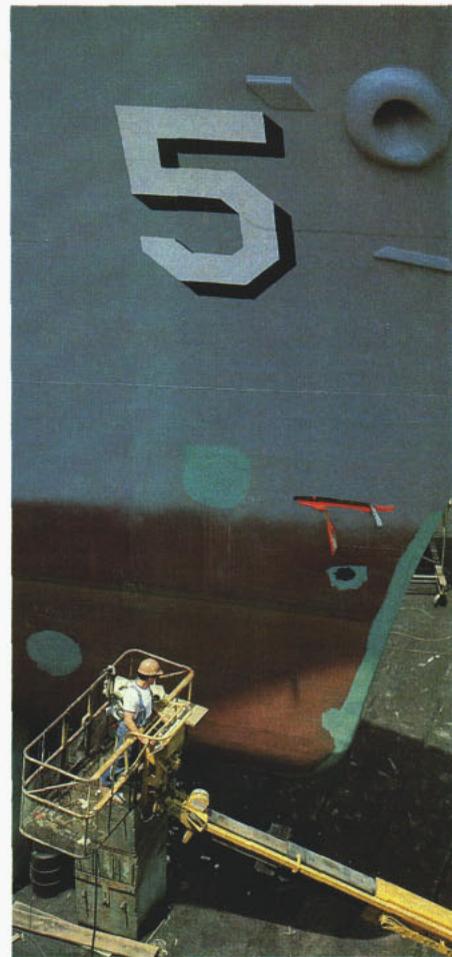


it—we saved 6,000 work hours on that job alone.

“Aboard the USS *Iwo Jima* (LPH 2) the ‘black shoe’ Navy gave us some help by passing tools down to us when we were working in the bilges. This cooperation also existed between trades and it’s true, too, in other parts of the yard,” said Parr.

Parr has received an incentive performance award for one job and a letter of appreciation for another during his two years at Norfolk Naval Shipyard.

Frank Kelly, now 58 and head of the sheet metal shop’s non-destructive test department, encourages others as well. His daughter Gail E. Buga, 20, has been an apprentice electronics mechan-



Top left: Clarence A. King, known to his fellow workers as *Mighty Mouse*, has been working at the shipyard since the days when they used mules to haul equipment. Left: Linda Sifford takes time out at lunch. Above: A shipyard worker touches up paint on USS *Ricketts*.



# Norfolk Shipyard

ic for about eight months. Her cousins, Clyde E. Kelly Jr., 27, and Frank J. Parr, 23, also work in the yard. Kelly Jr. has been a pipe fitter for three years and Parr a mechanic for 16 months.

Gail praised opportunities in the yard. "It's hard to find work on the outside without experience. The work here can be tremendously physical, and I was concerned about my strength, but I haven't had problems so far.

"There are times when women have to put up with a lot of unwanted attention, but you just tell a guy to bug off or you ignore him," she explained.

Christine Hume, a former naval officer, is the yard's Federal Women's Program coordinator. She said there has been only one sexual harassment case on record since she's been in the yard and that was resolved at the pre-complaint level. Her program's success had much to do with earning the yard's recent Equal Opportunity/Equal Employment Opportunity Award. The

*Left: P.J. Kelley, a shop 38 machine repairman, removes bolts from one of Ricketts' screw propellers.*

steadily increasing percentage of minority group members in the work force also helped the yard earn the award.

John L. Ashby, the yard's deputy equal employment opportunity officer, who also has been a Baptist minister for 18 years, explained that 31 percent of the workers are minority group members compared with only 27 percent minority membership in the metropolitan area population.

There are 339 women working in the yard in categories considered non-traditional for women. Women are employed as riggers, ship and pipe fitters, boilermakers, machinists, insulators, welders, electricians, fabric workers and electronic, sheet metal and equipment mechanics. Others are locksmiths and sail makers.

Almost 650 women work in the Norfolk Naval Shipyard, about 13 percent of the work force. Two years ago, they comprised only 9 percent of the work force. Most important, Hume notes, is the increased percentage of women in the apprentice programs, 14.3 percent

this year, compared to 10.8 percent in 1980.

Frank Kelly said, "There's nothing new about women in the shipyard. There were a lot of women here in World War II." Frank, whose relatives call him the "Casey Jones of model trains," attributes much of the yard's success to close cooperation between military and civilian workers. "We're fortunate to have a group of officers who establish good relationships between both groups."

They call themselves "yardbirds," these 13,000 Navy civilian employees who overhaul warships better, faster and at less cost than anyone else. "Service to the fleet" is their motto.

"The only thing we can't fix is a broken heart," said Ron E. Ault, 36, president of the 6,000-member Tidewater Federal Employees Metal Trades Council, AFL-CIO.

"Yardbirds" maybe—but in Portsmouth anyone will tell you, "Yardbirds do it with pride."

—Story by Kenneth J. Rabben  
—Photos by PH2 Robert K. Hamilton

## The Overhaul Process

Overhauling a ship is dirty, potentially hazardous work. It goes on in freezing cold and blazing heat made hotter yet by flaming equipment. It is a traumatic experience for both captain and crew. The ship whose quirks they've come to know and, perhaps, love arrives in dry dock. Its systems are secured and a slew of umbilical cords and hoses carrying power, air, fuel and water are snaked aboard and made fast.

While the ship is in the yard, most of the crew is supplied with berthing, messing, recreational and other facilities ashore; others go on leave or to Navy schools.

On board come the shipyard workers in their hard hats, protective goggles and steel-toed boots, carrying hammers, tongs, acetylene torches, picks, shovels, brooms and tool boxes. Heavy

Before the Ship Arrives	
Action	Days Ahead
Receive advance planning funds from type commander	600
Issue preliminary alteration work requirements	360
Receive ship alteration authorization letter from NavSea	360
Issue ship alteration advance materials requirements	330
Issue preliminary ship alteration and repair package	325
Order identified ship alteration long lead time material	270
Complete repair estimates	260
Conduct work definition conference	230
Receive authorized repair package from type desk	200
Ship check repair package and late ship alterations	200
Issue "scope sheets" (cost estimates broken down by shops and key operations), used to set up production schedules	180
Issue drawings of NavSea-funded alterations	120
Issue type commander-funded drawings of repair and alterations	120
Complete ordering of materials from original package	90
Issue job orders from original package (work authorized by the work definition conference)	90

# Norfolk Shipyard

equipment dangles from enormous overhead cranes.

Workers disembowel the ship, tearing out hatches, decks, bulkheads and anything else required to get old equipment out and new material in, or to prepare for updating the spaces.

Augmented by the ship's officers, chiefs, petty officers and other sailors, civilian employees do the cleaning, make the repairs and install new equipment, following plans prepared as much as five years in advance of the yard period.

Months later, the ship is put back together, equipment and systems tests are conducted, and the boilers are lit off. The ship is returned to its captain and crew; it sets a course down the Elizabeth River to begin exhaustive sea trials. A better ship is returned to the fleet—a much better one than when it arrived in the yard.

Most Navy ships are overhauled every three to five years. Ships also are brought into the yard for special repairs, upgrading of equipment and installation of new systems. Emergency repairs are made as soon as a stricken vessel arrives.

Self-contained and independently operating yard crews, known as tiger teams, work worldwide at four or five locations. This concept has saved the Navy thousands of work hours and millions of dollars.

One standard advance planning list for an aircraft carrier overhaul schedules 104 separate actions. Key events in the advance planning process for a regular ship overhaul requiring about 12 months are shown in the chart on page 29.

According to yard experts, there are key events in a regular ship overhaul. They are general, not all pertain to all ships, and they do not necessarily occur in the order listed:

Ship arrives for availability\*

Start repairs and alterations

*Welding plays an important part in the overall process. During an overhaul, workers make thousands of welds. Photo by JO1 Pete Sundberg.*

Crew moved to barracks or barge

Docking in dry dock

Undocking

Complete galley

Complete air conditioning system

Aircraft and weapons elevators (applies to landing platform of helicopter carrying ships and also carriers)

Complete weapons storage

Complete habitability (living areas, mess decks)

Complete sewage collecting/holding/transfer system

Crew moves aboard

Electronics light off (electronics, such as radar and computers ready to be checked, tested)

Missile system light off

Complete emergency diesel generators

Complete tanks for fuel oil, feed water for steam boilers, drinking water, ballast

Space turnover (checking to see that all compartments are completed)

Light off exam and propulsion examining board

Dock trials (run main equipment one piece at a time)

Fast cruise drill (with all equipment working together)

Post repair trial (ship taken out for trial run)

End availability\*

\*"availability" is a catch-all word meaning the time period a ship actually is made available for the overhaul and repair.



# A Place to Stay in Washington

If your coming trip to Washington, D.C., gives you the willies when you think about exorbitant hotel rates, put your mind at ease. The building on L Street will make your stay in the capital city an inexpensive experience.

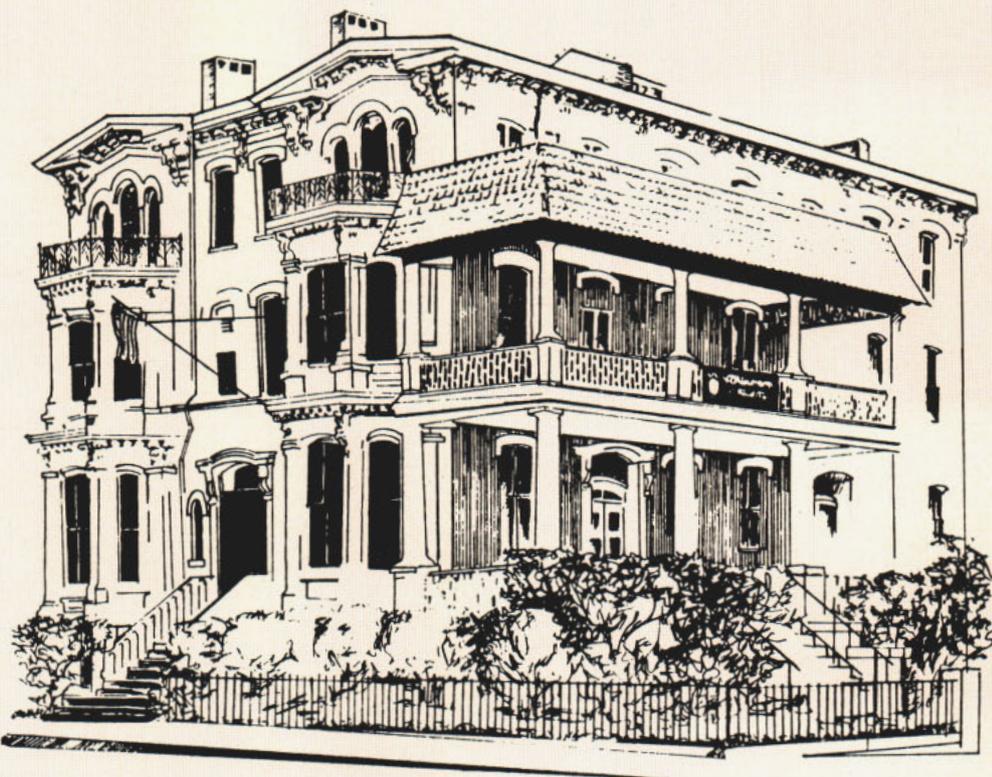
Known as the SSMA Club, the L Street address has been helping take care of the nation's soldiers, sailors, marines and airmen for more than 100 years. It provides a "home away from home" at affordable prices for transient active duty enlisted men and women as well as for midshipmen and cadets of service academies and ROTC units.

"It is neat, clean, orderly, convenient and inexpensive," said Ron McClennan, manager of the club, "and it is in a great location for those who are coming to town just to sightsee."

With room for 80 men and 18 women, the SSMA Club is located just a few blocks from the main downtown bus stations and only four blocks from the Metro Center—hub of the subway system that can get you anywhere in the central D.C. area in a matter of minutes. National Airport and the Pentagon are just a few miles away on the other side of the Potomac River.

The idea for the SSMA Club was conceived back in 1872 by Mrs. E. Throop Martin of Albany, N.Y. She first formed the Ladies Union School Association—a group of women devoted to the "spiritual and temporal welfare of American men in arms."

Mrs. Martin moved to Washington five years later and, in 1899, formed the Army and Navy Auxiliary—a group that set up the original Soldiers, Sailors and Marines'



Club. They acquired a building on I Street and then let it be known that servicemen needing temporary lodging or good food were more than welcome.

The organization moved to a larger house at 317 C St.; it was there in 1906 that President Theodore Roosevelt dined. In 1923, a house at 1015 L St. was purchased, later to be combined with the one next door at No. 1013. It is a noted example of Victorian architecture.

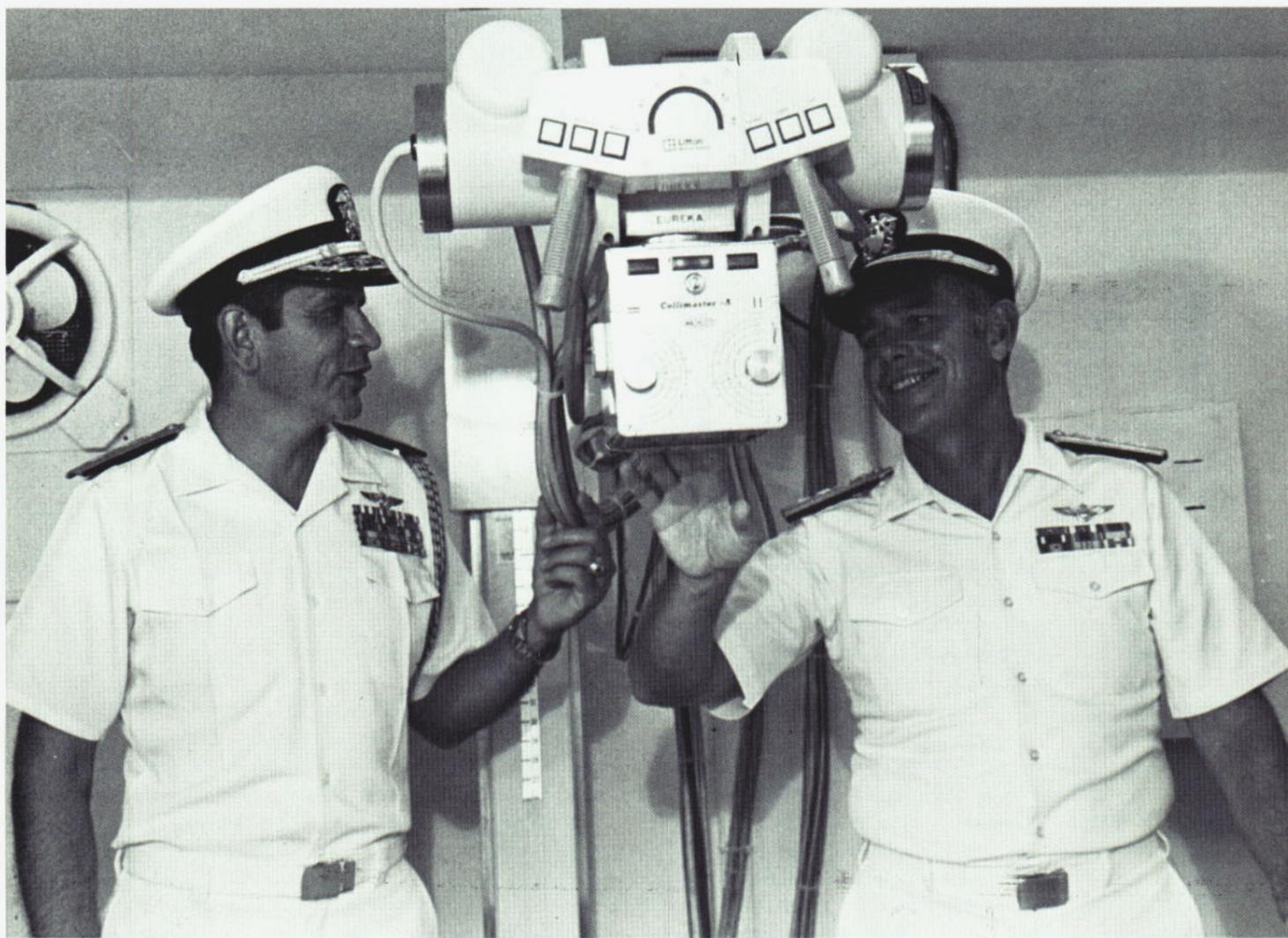
The SSMA Club formally encompassed the Air Force in 1950 and officially adopted the name "Soldiers, Sailors,

Marines and Airmen's Club" in 1955. Women members of the armed forces became eligible for lodging in 1972.

From its beginning, the SSMA Club, now owned and operated by the Armed Services YMCA, was kept open and operating through contributions from officers and NCO's wives clubs. Many well-known people from presidents' wives to admirals and generals also have helped keep the club in operation.

Current rates vary from \$10 to \$15 a night for an individual to \$20 for a family. Call (202) 289-1120 for reservations.

# Helping Hand for Vieques



*Como. Diego E. Hernandez, chief of staff Naval Air Force Atlantic, and Rear Adm. Ralph Hedges, Commander Naval Forces Caribbean (above l-r); Vieques Mayor Carlos Castano (at right in upper right photo); Capt. Richard E. Young (right), who headed the Navy's special study team for the Caribbean project; and a lot of other people were happily involved in the presentation of an X-ray machine to the Vieques Memorial Hospital.*



It was handshakes and smiles all around when Navy officials made a special visit to the Puerto Rican island of Vieques. The Navy delegation was there to present X-ray equipment valued at \$250,000 to the Vieques Memorial Hospital. The presentation was part of a continuing Navy program to upgrade the island's hospital which serves 8,000 residents.

Vieques is a 33,000-acre island 12 miles east of Puerto Rico. The U.S. Navy owns approximately 70 percent of the island and uses portions of it for a target range. The training facilities on Vieques are part of Roosevelt Roads (Puerto Rico) Naval Station.

The special visit and presentation of the X-ray machine were the direct result of an earlier Vieques visit. A study team of Naval Reserve officers headed by Captain Richard E. Young, a reservist with Naval Air Force Atlantic Fleet, visited the island in 1981 to determine what projects would benefit both the island's residents and the Navy. Vieques Mayor Carlos Castano suggested that they visit the hospital.

"It was in pitiful shape," Young said. "They didn't even have a typewriter that worked, and the patients waited, sometimes for hours, on hard wooden benches." The study team immediately went into action and began tracking down medical supplies.

A reserve unit in Roanoke, Va., col-

lected 12,000 pounds of medical supplies from special Project Handclasp resources and the local community. Specialized equipment was donated by a Roanoke medical supply firm for shipment to Vieques. Donations and supplies came from other sources as well, and, since December 1981, 20,000 pounds of medical supplies valued at about \$350,000 have been delivered to Vieques by the Navy.

The new X-ray machine was the latest arrival, and, once again, the reservists played a large part in its delivery. The Manassas, Va., branch of a large computer corporation donated the machine, thanks to the efforts of a Naval Reserve officer employed by the firm. Another naval reservist obtained the support of a Des Plaines, Ill., corporation to modify the machine before it was shipped, along with two technicians to install and to calibrate the equipment—spare parts and manpower alone worth \$21,000.

Commodore Diego E. Hernandez, chief of staff for Naval Air Force Atlantic Fleet and the senior ranking Hispanic-American in the Navy, was present at the ceremonies. "As a native Puerto Rican, I'm delighted to be here today on my native soil," he said. "I hope you will accept the machine with our best wishes, not only as something tangible and physical to the hospital, but as a symbol of our friendship and cooperation with the people of



Vieques."

Mayor Castano said, "Because of the X-ray machine, medicines and materials donated by the Navy, within a year this hospital will be comparable to hospitals on the mainland (Puerto Rico)."

"This is just one of a number of projects that we have ongoing to demonstrate the cooperation that does exist between the people of Vieques and the United States Navy," added Rear Admiral Ralph R. Hedges, Commander U.S. Naval Forces, Caribbean.

—Story and photos by JO1 Glenna Houston

# Currents

## *Benefits for civilians overseas*

Navy civilian employees who are reporting to most overseas duty stations are now authorized a single lump-sum pay advance of up to six pay periods net base pay. The advance may be authorized from three weeks before the estimated date of departure until two months after arrival. Employees must agree to repay the advance in payroll deductions over a maximum of 13 pay periods, beginning with the first period after the advance is paid. They must also sign a written agreement to repay in full any outstanding advance balance if employment is terminated. Contact your local civilian personnel office for information concerning eligible locations.

Dependents of service members or federal civilian employees, who have been employed by the government at overseas locations, may be eligible

for non-competitive appointments to stateside federal government jobs. This opportunity is open only to family members hired while accompanying a uniformed services member or a federal civilian employee overseas.

Basic eligibility rules require that individuals be U.S. citizens, appointed to overseas positions or given "local hire" appointments while residing overseas. They must have completed 24 months of creditable service in appropriated fund positions after Jan. 1, 1980, within a 10-year period from the date of initial appointment. A performance rating of satisfactory or better must have been received for the overseas service.

Additional details of the executive order and eligibility requirements can be obtained from local civilian personnel offices.

## *Limited Duty Officer (Aviator) Program*

The LDO (Aviator) Program was established in 1980 to assist with the pilot shortage, provide stability in the training command, fill selected shipboard billets and provide further upward mobility for outstanding enlisted personnel. This program provides eligible enlisted people with the opportunity to gain a commission as an LDO and pursue a career as a naval aviator.

COMNAVMILPERSCOM Notice 1120 of June 3, 1982, provides the eligibility requirements and application procedures for the next LDO (Aviator) board which convenes on Nov. 29, 1982. Applications are due not later than Oct. 12, 1982.

Candidates for the program must meet the following eligibility criteria:

- Be a citizen of the United States.
- Have completed at least four years of active duty as of July 1, 1982.
- Be serving as a petty officer second class, petty officer first class or chief petty officer (paygrades E-5 through E-7) on July 1, 1982. There is no time-in-grade requirement.

- Be under 30 years of age as of July 1, 1982.
- Have successfully completed at least 60 semester hours or 90 quarter hours at an accredited college or university, or possess a service-accepted equivalent.
- Have a minimum academic qualification test/flight aptitude rating (AQT/FAR) score of 3.5.
- Meet the physical standards for candidates for flight training (student naval aviator).

Individuals selected for the program attend Aviation Officer Candidate School in Pensacola, Fla., and undergo their flight training in Corpus Christi, Texas. After receiving their commission and wings, LDO aviators are assigned to the training command in Corpus Christi or Pensacola for a three-year tour. Upon completion of this initial shore tour, individuals are assigned to an aircraft carrier to fill selected billets.

All eligible enlisted men and women are encouraged to look into this outstanding upward mobility program.

## *Training for new CPOs*

Newly appointed chief petty officers selected as of August 1982 will be required to attend a 19-hour indoctrination course to help facilitate the transition to chief petty officer. The purpose of the training is to instill knowledge and new skills which will help generate confidence on the part of the new E-7s.

The new training is not a prerequisite for advancement; however, CPO selectees may not be

frocked until this requirement is met.

Developed by the Chief of Naval Education and Training, the course addresses these major areas: authority and responsibilities, leadership and management, communication skills, Navy programs, uniform regulations, standing watches, CPO messing and billeting, CPO career incentives, military and social etiquette, and CPO image and fraternal relationships.

## *Need money for college?*

Guaranteed student loans up to \$2,500 for active duty Navy and Marine Corps personnel who have been accepted by certain college training programs are available from the Navy Relief Society.

To qualify for a low-interest loan, a student

must satisfy a "needs test" administered by the school's financial aid officers.

Loan applications are available from the Chief of Naval Education and Training, Code N-1214, Autovon 922-4132 or from Headquarters Marine Corps, Code TRE, Autovon 224-2068.

## *Worth mentioning...*

**A listing of Navy lodges worldwide**, along with locations, daily rates and guest services, has been published by Navy Resale and Services Support Office. Copies may be obtained by sending a stamped, self-addressed, legal-sized envelope to NAVRESSO, Code SOD3, Building 210, Fort Wadsworth, Staten Island, N.Y. 10305.

**A series of drug briefings for senior Navy civilians** will be held in 13 major cities and will be conducted by legal and personnel staff members of the Civilian Personnel Policy Division. The 5- to 6-hour long workshops, intended to implement Navy civilian drug abuse policy, are intended for commanding officers, executive officers and other senior managers, as well as those responsible for preparing employee adverse action forms or representing management to third parties. CNO message 111927Z Jun 82 contains dates and locations of briefings and guidance on who may attend.

**Privately owned live ammunition**, including explosive components of ammunition such as primer or propellant powder, will not be allowed—after Oct. 1, 1982—to be included for shipment as part of household goods or accompanied baggage. This change to the Joint Travel Regulations does not include empty brass casings, shells or souvenirs used for decorative purposes.

**Diving pay increased.** The Navy, with the approval of Congress, has increased its rates of special pay for diving duty as of July 1. New rates range from \$110 to \$200 per month for officers and \$100 to \$300 per month for enlisted. Congress also has authorized simultaneous payment of hazardous duty incentive pay and diving pay to people ordered to perform hazardous duty (parachute jumping or demolition, for example) as a primary duty in addition to diving duty.

# Children Win Seabees' Hearts

"This is so great, I'm always going to remember this day!" said one grinning Seabee as he playfully pulled his Seabee hat down over the eyes of the little girl. She giggled.

One hundred fifty children had descended on Camp Shields, Okinawa, de-

ployment home of Naval Mobile Construction Battalion Three. It was the first-ever Children's Day Carnival for the Amerasian children helped by the Pearl S. Buck Foundation on Okinawa.

For the Seabees, it was a day away from their heavy work schedule, a day to enter-

tain and play with deserving children.

Amerasian children are the offspring of American servicemen and Asian mothers. The children helped by the Pearl S. Buck Foundation have been deserted, in some cases, by both parents. In Japan, strong family pride offers some hope for the





children even though they tend to grow up in homes already overflowing with children.

"These children," said Betty Hoffman, resident director of the Okinawa Field Office of the Buck Foundation, "do not experience the same kinds of problems as Amerasian children in other Asian countries; their poverty level is not so acute. The Japanese government is trying to do something." In spite of governmental financial aid, however, there is the problem of discrimination against fatherless (and thus low status) children and those of obviously mixed racial backgrounds.

For many of the men, so far from their Port Hueneme, Calif., home port and their own families, it was a chance to romp with kids again. One Seabee said, "For a little while there, I had my own little girl. It was so neat. She was so cute and shy." Said another, "One kid?! I had three of the cutest little girls, sisters. I've been missing my own children so much lately; at first it was kind of depressing, but then we got to walking around and doing things . . . we ended up having a ball!"

The Seabees weren't the only ones who



felt the children enjoyed themselves. Said one guardian, "I have never seen the children so happy. It is so wonderful."

The Amerasian children had been bussed from all over the island to attend the carnival in their honor on the traditional Kodomo No Hi, Children's Day. They were shy and quiet when they first arrived, but a parade of heavy equipment, bilingual welcomes and 300 smiling Seabees melted their reserve.

Soon, children were everywhere, Seabees firmly in tow: flying kites, throwing darts for donated prizes, getting wild, bouncing rides on a 5-foot diameter ball, eating, smiling, laughing, riding around the base on a whimsical, clanging, large-scale wooden train.

Everywhere were scenes of happy sharing: here, a tall lanky Seabee hand-in-hand with a tiny tot; there, a group of Seabees playing keep-away with a group of running, laughing older children; over there, a couple of men hiking along, kids on their shoulders, trailing helium balloons or stuffed animals.

Before presenting Hoffman with a plaque honoring her work and proclaiming her an honorary Seabee, Commander James M. Dougherty, commanding officer, NMCB 3, observed, "It's hard to decide who're the real winners today, the little kids or the big ones in the green suits."

Finally, it was time for the children to head for home. As they boarded the buses, several of the men talked with Hoffman

about staying in contact with "their" kids and the possibility of sponsoring them.

As the last bus pulled away, one young Seabee said, "That was fantastic! When do we get to do it again?" Several others chimed in with, "How 'bout next week?" and "Why not every week?" Others smiled.

—Story by JO3 Russ Humphrey  
—Photos by PH2 M.D. Mitchell  
and JO3 Humphrey



# Bearings

## Psalms from the Sea

Since the days when men ventured upon the ocean in frail crafts of bark and stretched skins, there has been a close relationship between the mariner and God.

What could be more natural than books of prayers for the sailor? Such a book has just been written by Captain A. Morgan Parker Jr., staff chaplain for the Chief of Naval Technical Training at the Naval Air Station Memphis, Tenn.

Chaplain Parker's *Psalms from the Sea* is a collection of psalms, prayers and thoughts that pertain to his experiences at sea—specifically, those he experienced while aboard the aircraft carrier USS *Midway* (CV 41) during the Vietnam War.

"We were in combat operations almost around the clock," he said. "We had our Divine Services at all hours. Men would

come in exhausted, and they were very emotionally involved . . . our planes would come back and they'd be all shot up. Many of the men's friends would be casualties. There was a lot of pent-up anxiety; they were really on the edge.

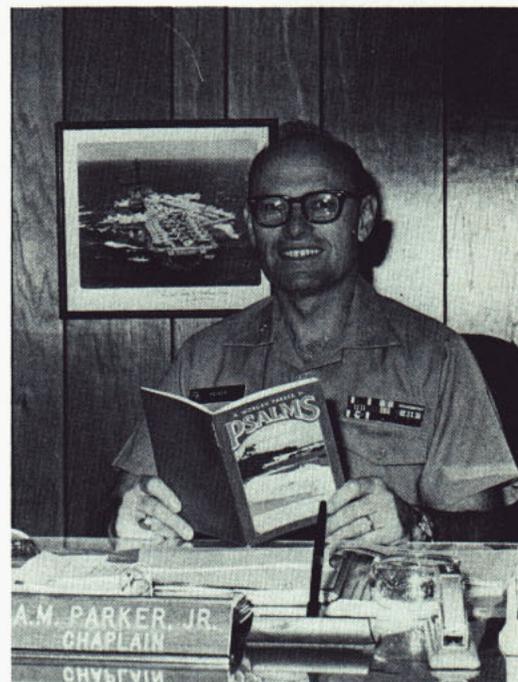
"Every day we read the psalms, and we began to see how relevant they were. They could have been written just for us."

So Parker began to select and compile the psalms and prayers. His book also contains words of meditation and guidance written by the chaplain in seafaring terms.

Parker's 54-page *Psalms from the Sea* can be ordered directly from Beacon Hill Press, PO Box 527, Kansas City, Mo. 64141. Price is \$1.95

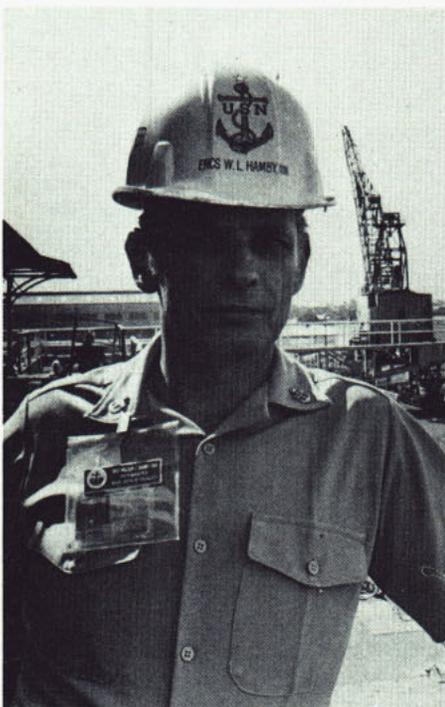
—By JO1 Melanie Morrell

*Chaplain A. Morgan Parker Jr. with one of the first copies of Psalms from the Sea. Behind him is a photograph of USS Midway (CV 41), the ship on which the book was written.*



## Navy Ships Get A Lift

Senior Chief Petty Officer William L. Hamby and his crew are literally in the business of picking up Navy ships. They serve aboard Auxiliary Floating Dry Dock Medium Five (AFDM-5) at the Naval



Ship Repair Facility, Subic Bay, Republic of the Philippines.

In service since 1943, the AFDM-5 is capable of lifting ships that displace up to 18,000 tons. The dry dock consists of a main deck, 552 feet long and 96 feet wide, with two side walls 40 feet high. It can be deployed anywhere in the Western Pacific within 30 days.

Below the deck is an open tank that when filled with water causes the dock to ballast down. When the dock is at the proper depth to take a ship on board, control valves are closed.

A ship is guided between the two walls of the dry dock and as water is discharged overboard, the dock rises with the ship resting firmly on support blocks positioned along the dock's main deck.

Maintaining the dry dock is the primary job of First Class Petty Officer Thomas R. Bernardo and his 10-man crew. They're responsible for renovation, pipe fitting, welding and machinery repair of the starboard side of the dry dock.

"A dockworker can be classified as a jack-of-all-trades because he learns to do many jobs," Bernardo said. "He learns to operate and repair engines, switch power, weld, build and becomes highly qualified



in seamanship.

"You develop pride in being a docker. When you see a ship lifted high and dry out of the water, you know that you are playing an important role in getting that ship back into service."

—By JO2 Ruby Morse

## Firefighters Respond

Quick thinking and good fire party training recently helped two USS *Nimitz* (CVN 68) sailors save three children and two adults from a fire at an apartment complex in Virginia Beach, Va.

Electrician's Mates Second Class Michael Kines and Chris Huls were having lunch with a friend at the complex when they heard screaming. Rushing outside, they found a woman yelling what they later learned was in Arabic. A neighbor quickly translated the cries as pleas for help because of a fire.

Kines and Huls checked the building's entrance. When they opened the door, a thick, black smoke poured out and they withdrew.

Scrambling to the side of the building, they found a woman and two children on the second floor balcony. Huls climbed atop Kines' shoulders and brought the children down to safety. Then he climbed to the balcony on a ladder brought by a maintenance man and helped the woman down. Meanwhile, another woman in an adjacent apartment lowered her child into Kines' arms before climbing down herself.

As Kines administered first aid for burns to the first woman, Huls manned the fire hoses with the responding fire department personnel. He later said, "My fire-party training from *Nimitz* really came in handy."

The two women and a child were taken to a nearby hospital for treatment of burns and smoke inhalation.

—by JOSN Steven H. Kimball

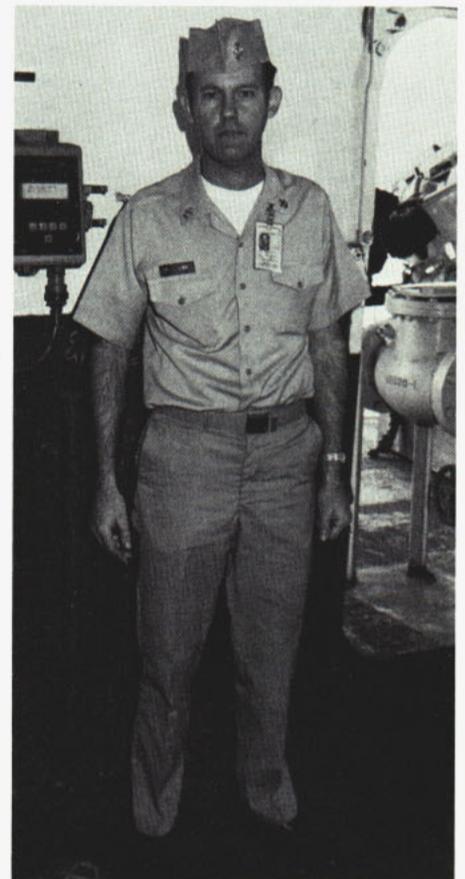


**Junior Officer of the Year.** "I'm speechless," said Lieutenant Commander Phillip C. Kazanjian upon hearing of his selection as "Outstanding Junior Officer of the Year" by the Reserve Officers Association. It was an unusual reaction from a Naval Reserve officer who has made more than 400 presentations for the Navy Sea Power Team. Kazanjian (right), receiving the distinguished award from Secretary of the Navy John F. Lehman, a commander in the Naval Reserve, was selected from among 26,000 Naval Reserve officers. The award recognizes outstanding junior officers in the Naval Reserve. Kazanjian, president of a Los Angeles public relations consulting firm and a partner in a law firm, received the award during the association's midwinter conference.

## A \$300 Idea

Senior Chief Interior Communications Electrician Stanley Link has lived up to his name. He "linked" up with \$300 when the Navy adopted his suggestion for improving the integrated voice communications system on LHA 1 ships.

Link is currently serving aboard the USS *Samuel Gompers* (AD 37), where he is assistant electrical repair officer.



IVCS net terminals access up to four audio circuits, and each circuit now has its own select button and light. Under the old system, several buttons could be illuminated at the same time, resulting in confusion on trying to determine which audio circuit was actually in use. Link designed and tested a logic circuit which allowed only individual select button illumination; he was awarded \$300 for his beneficial suggestion.

—Story by SN Wendy Arledge  
—Photo by PH2 Willie Thomas

# Bearings

## Ultralight Man

With little more than common household tools, string and a tape measure, Commander Dave Martin built an airplane to whisk him through the skies of Southern California. He built it from a do-it-yourself kit.

Resembling a giant, gossamer-winged dragonfly, the ultralight aircraft is one of about 30 such types now on the market. Evolving from powered hang gliders, the 180-pound plane enables even novice pilots to glide in silence with the birds or to venture—under engine power—into isolated valleys and lakes on skis, floats or wheels.

Martin, flag administrative officer at the Pacific Missile Test Center at Point Mugu, Calif., said the ultralight's maiden flight turned out quite well. "Passed all the objectives outlined in the three-flight test program I'd developed," he said.

No stranger to flight, the commander is an F-4 *Phantom* radar intercept officer. Now president of the Point Mugu Flying Club, he first flew an ultralight at the 1982 Experimental Aircraft Association's Convention and Fly-in at Oshkosh, Wis.

"It looked so interesting I was brazen enough to ask its designer, Dale Kramer, if



**Chandler's Honor Guard.** Before the commissioning of USS *Chandler* (DDG 996), Sen John C. Stennis of Mississippi and *Chandler's* commanding officer, Commander Henry Strickland, review the ship's honor guard. Built and commissioned in Pascagoula, Miss., the newest in the *Kidd* class of advanced guided missile destroyers, *Chandler* can operate offensively and defensively in simultaneous air, surface and subsurface attacks. The multimission warship is to be home ported in San Diego. *Litton Industries photo.*

he would let me fly it. I told him I could write and sell an article on it," said Martin.

Sure enough, several months later his

story showed up in *Ultralight Aircraft* and said Martin, "I wrote so glowingly about the thing that I decided to buy the kit and build one for myself."

Shortly thereafter, the kit arrived at Martin's house in a 20 feet by 20 inches crate. "It was extremely complete and cleverly designed with very simple parts." He and a friend assembled the airplane in less than 200 hours, though, according to Martin, the construction of the aircraft became somewhat of a community project. Friends who stopped by for a peek at the winged wonder in Martin's garage were often put to work.

Powered by two nine-horsepower engines, the craft can reach a top speed of 50 mph. It is covered with Mylar, a thin plastic which is extremely strong, light, smooth and easy to apply.

—By Judy Cole

*Cmdr. Dave Martin (front) and Lt. Cmdr. John Johnson install wing struts while Mike Schroeder tries out the seat.*



## Fire Truck for Salerno

The fire engine donated to the townspeople of Salerno, Italy, by USS *Suribachi* (AE 21) was a gesture of good will—from ally to ally, from crew to town, from one people to another.

The story began in 1981 when Commander Jerome T. Murphy, *Suribachi*'s commanding officer, suggested to his crew a Project Handclasp effort using either a fire truck or ambulance. *Suribachi*'s sailors opted for a 1968 fire truck, and the project was in full swing.

After what one crewman estimated was more than 8,000 man-hours of off-duty work, the fire truck was ready to roll. *Suribachi*'s crew had overhauled the engine, changed the voltage regulator, rebuilt the brake system and done some rewiring. The truck was also refurbished with hoses, clamps, sprayers, water-protection gear, helmets and other fire-fighting gear which was donated by fire departments all over the United States.

Shortly thereafter, *Suribachi* left its home port of Earle, N.J., for a five-month Med cruise with the truck tied down and covered as deck cargo. In February, the ammunition supply ship pulled into Augusta Bay, Italy, to offload its shining cargo.



As the pier crane grappled with the weight of the 8-ton fire truck, the ship's boatswain's mate of the watch piped his call, struck the bell twice and announced, "Fire truck, departing."

At turnover ceremonies in the Salerno City Hall, the governor of the Province of Salerno, Nestore Fasano, stressed the importance of the gesture on the part of *Suribachi*'s crew: "This is the very essence and meaning of the NATO alliance," he

said. "People from one free nation of the world working together with other free people as allies for the common good of both."

"I think that is what most of the men had on their minds, doing something to help other people," said Interior Communications Electrician Second Class Craig Gustafson. "After all, isn't that what Project Handclasp is all about?"

—Story and photo by JO1 Ken Duff

## Saipan Marks Another Milestone

"All departments make readiness reports for getting under way to the officer of the deck on the bridge."

When that announcement came over the public address system of the Norfolk-based amphibious assault ship, USS *Saipan* (LHA 2), another nautical milestone was marked.

As the 40,000-ton combatant got under way on Feb. 23 from Morehead City, N.C., all the ship's control stations were manned by qualified enlisted surface warfare specialists. Officer of the deck, Fire Control Technician First Class J.F. McDonnell; junior officer of the deck, Senior Chief Data Processing Technician R.E.

Moore; and junior officer of the watch, Chief Yeoman F.S. Reid provided the directions for getting *Saipan* under way to the ESWS watch team.

As the ship picked up speed, *Saipan* became the largest U.S. warship to get under way wholly manned by an enlisted surface warfare specialist watch team. Assisting the ESWS officer of the deck in this were Chief Electronics Warfare Technician R.L. Vogel, piloting officer; Master Chief Ocean Systems Technician D.L. O'Dell, shipping officer; Chief Machinist's Mate M.J. Riley, engineering officer of the watch; and Boatswain's Mate First Class C.L. Poore, forecabin officer.

FT1 Jim McDonnell, officer of the deck.

—By IS3 Ric Nicholas

# No Slowing Down

Citing the Senate's 63-32 vote last spring not to defer construction of two new nuclear aircraft carriers, Secretary of the Navy John F. Lehman Jr. said there is "no slowing down" in the determination of Congress to see the Navy reach its goal of 600 ships and 15 aircraft carriers.

The secretary made his remarks during a two-day visit to the USS *John F. Kennedy* (CV 67) battle group in the Indian Ocean.

Lehman arrived aboard the world's largest conventionally powered aircraft carrier in May. He was greeted by commanding officer Captain D. Bruce Cargill and Rear Admiral Edward H. Martin, Commander Carrier Group Four.

Speaking to the crew during a mass reenlistment ceremony on the ship's hangar deck, Lehman said that "even at a time of great economic trouble—budget deficits

looming, high unemployment and calls for austerity and deferring expenses in defense—the Senate resoundingly voted against two amendments to slow or defer even one of those two carriers."

Lehman, who said the controversial two-carrier appropriation issue was "probably the most threatened symbol of our naval recovery program," added that Congress is "continuing to keep compensation and recognition of our Navy men and women at an all-time high."

During the ceremony, which was held in commemoration of the 15th anniversary of the ship's May 27, 1967, christening, the secretary presented Cargill with a letter of commendation citing *Kennedy's* "sustained superior performance as the single carrier in a dual carrier environment," during its 1980-81 Mediterranean deployment.

The captain then presented the Navy secretary with a check to the Navy Relief Society for \$105,360.57 donated by the ship, air wing and carrier group staff. The donation, which represented one-tenth of the total dollar goal for the entire Hampton Roads, Va., area, is believed to be the largest sum ever donated by an aircraft carrier.

Lehman then administered the oath of enlistment to 82 re-enlistees, using the occasion to point out that the Navy has recently experienced "the most dramatic turnaround in retention" in its history.

"Fourteen months ago, we put forward a very ambitious program: a 30 percent increase in the size of the Navy-Marine Corps team, and a major expansion of the fleet from 470 ships and 12 aircraft carriers to 600 ships and 15 aircraft carriers. And of course, at the time, the skeptics were saying, 'How can you even talk about expanding the Navy when we can't man the fleet we have?'"

"In the space of 14 months, we've proven all those skeptics wrong," he said.

"Today we have the highest retention of career people in the history of the Navy. And it's not just numbers, because at the same time, we've tightened up standards."

While aboard the carrier, the secretary received a situation briefing by the battle group commander, toured engineering spaces, and spoke to officers and chief petty officers in their respective messes.



The secretary, a naval flight officer and commander in the Naval Reserve, also flew a routine mission in an A-6 *Intruder* aircraft assigned to Attack Squadron 75 and visited the battle group guided missile cruiser USS *Josephus Daniels* (CG 27) and frigate USS *Marvin Shields* (FF 1066).

He told the crew of *Kennedy* that their sacrifice is not forgotten and that "the future looks exciting for naval personnel. It is evident and reaffirmed day after day that the American people, the Congress and the president know what you are doing on your mission, know that it's right, and know that there's nothing more important for the future of peace in our country and the world than the role you're performing in such a professional way.

"I thoroughly enjoyed my time in 'Super K,'" the secretary later messaged to Cargill, "JFK certainly lives up to her slogan, 'The Best in the Fleet.'"

—By Lt. j.g. John F. Brindley

*Left: SecNav John F. Lehman Jr. with Rear Adm. Edward H. Martin (left), Commander Carrier Group Four, and Capt. D. Bruce Cargill (right), Kennedy's CO, and the 82 crew members the SecNav re-enlisted during his visit to USS John F. Kennedy (CV 67) in the Indian Ocean. The SecNav toured the carrier, including the engineering spaces (upper right), and took a routine training flight aboard an A-6.*





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# Oceana's Living Lawn Mowers

He has a 7-foot shepherd's staff and claims he's heard every goat joke ever told. His name tag says, "AOC Phelps. Head Goat-Herder."

Last November, Chief Aviation Ordnanceman Norman A. Phelps, leading chief of the Weapons Department at the Naval Air Station Oceana, Va., was given the responsibility of caring for one billy and 24 nanny goats, brought to Oceana as "living lawn mowers." Since then, the herd has more than doubled in size.

The 6-foot-2 chief slowly shook his head and smiled behind his full mous-

tache. "I figured the jokes would wear off, but they didn't. I'd walk into the club and someone would say, 'B-a-a-a-zel, B-a-a-a-zel,' and any joke with an animal as the subject has long since been modified to include a goat."

When the goats first arrived, the local papers picked up the story and the chief found himself in the limelight. Phelps recalls getting requests for interviews from as far away as California. "I run into perfect strangers and they point and say, 'Oh, I know you. You're the goat-herder.'"

Last Christmas, Phelps received a card

from friends aboard the USS *Nimitz* (CVN 68). It had a caricature of Phelps holding a shepherd's staff in one hand and a bomb in the other. The 26-year Navy veteran sat at his desk and described the card in detail and with pride.

"My wife still can't believe my job. She wants me to bring her to the station to see the goats."

How much care do the goats require?

*AOC Norman Phelps with one of his "kids" (left) and with part of the flock (below).*





*Army veterinarian Capt. Wade B. Lawrence (left) checks one of the newcomers before allowing it to join the flock busy at work on one of the magazine mounds. Chief Phelps' shepherd's staff was made from the trunk of a gnarled cherry tree.*

Phelps shrugged. "Just let them go and do their thing."

He opened a desk drawer and pulled out a brown folder. "I have my 'official' goat folder here."

Phelps explained the idea of using goats as "living lawn mowers." The Navy says the grass on and around the magazine mounds should not exceed 18 inches in height. For mowing purposes, "we're talking four or five people working eight hours a day, all summer long."

It is hoped, Phelps said, that the use of goats eventually will save the government more than \$20,000 a year. "It hasn't had a chance to work yet, because of the small number of goats on board."

Studies by experts from Virginia Tech



and the Farm Bureau indicate nearly 700 goats may be needed to take care of the magazines' 240-acre area. Phelps thinks the herd will wind up being between 300 and 400. An optimal number will require the least amount of care and provide the most savings.

The idea of using livestock to reduce grass-cutting costs came from the station's commanding officer, Captain R.W. Jewell. "One day I said, 'Have we ever tried livestock?' Everybody got a chuckle out of that but about two weeks later, I asked what was being done about it and they all said, 'Gee Boss, were you serious?'"

Before long, 25 goats, at \$35 each, arrived at the enclosed weapons department compound. Jewell pointed out that the project is experimental. "We're going slow and very carefully to evaluate the situation. We're quite confident it is going to eliminate, to some degree, the time and manpower needed to cut grass."

Captain Wade B. Lawrence is one of two Army veterinarians who looks after

the health care of the herd. He explained that their natural hardiness and independence make them ideal for the purpose. "The only call we've had was for a goat with an abscessed foot and 'pink eye'—a common eye infection."

When new goats are added to the herd, they are first quarantined and given a checkup to make certain they are free of disease. Lawrence said that although he could not find a study showing the effectiveness of such an experiment, he thought that the station's plan was feasible.

"Not long ago," Phelps said, "a man wanted to trade us a billy for two nannies." The chief said the station has had several invitations to buy goats, but that because the herd is reproducing so rapidly, it has been decided to hold off on purchasing more. A mature nanny, Phelps said, normally has twins and a goat's gestation period is about six months.

The chief said the current size of the herd is really unknown. "They'll have a young one and then take it and hide it. The

baby stays hidden until it's big enough to join the herd. You don't know from one day to the next how many you really have on hand."

Asked if the goats have caused any problems, Phelps thought a minute and chuckled, "The Seabees built them a shed, but they seem to like to go into places they shouldn't. And they'll chew anything—telephone wire, paint off the woodshed—almost anything. We can't leave things lying around."

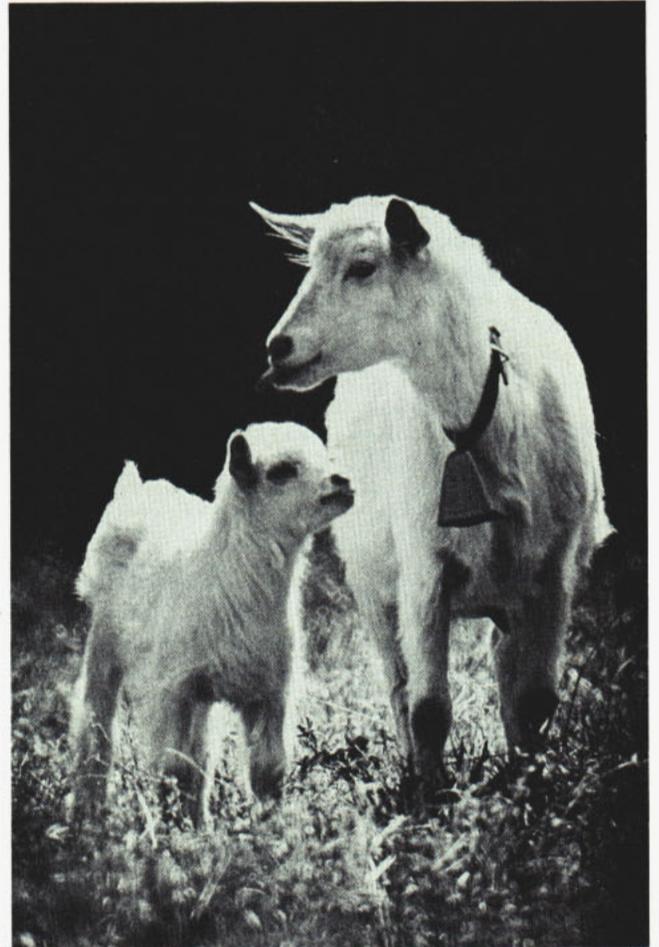
The chief looked out the window, nodded and smiled. "They're fun to watch. Especially the little ones. All they do is play."

"I imagine if this project works, other people will be doing it."

And how does he feel about being known as "Chief Phelps—Navy goat-herder?" He tugged at his moustache—his forehead creased. With an easy laugh he said, "It's been fun."

—Story by J02 Wes Pederson

—Photos by PHC Chet King



# Mail Buoy

## An HMSN?

SIR: Would you be so kind to explain what an HMSN is? On page 4 of the April 1982 issue of All Hands magazine, there appeared a picture of a young sailor wearing a hard hat decorated with the traditional red cross. The caption explained this gentleman to be an HMSN alert for medical emergencies.—HMCS (SS) A.B. Dial

• *The cutline obviously involved a typographical error. The man in the photo should have been referred to as an HN.*—ED.

## FDR's Bathtub

SIR: We take many official visitors aboard *Iowa*, and they are always impressed with the ship's role in the Teheran Conference. Your fine article (May 1982) provides much background information.

One small point, however, warrants clarification. As *Iowa* undergoes preactivation work at the Navy Yard in Philadelphia, she still boasts FDR's bathtub, which was installed at his family's expense.—Lt. Cmdr. Paul Hanson

## Not the Same

SIR: I am presently assigned to an Air Force Training Detachment at Great Lakes Naval Training Center. I read All Hands each month and I find it very interesting, informative and quite similar to my own service's monthly magazine, *Airman*.

I am writing in regard to the article "Delivering the Goods" which appeared in the April issue. This article went into great detail describing the increased range, payload and the in-flight refueling capabilities of the C-141B Starlifter. I am very happy to see an article concerning the Air Force in your publication, but unfortunately, the picture that accompanies the article is of a C-141A, not the "B" model.—SrA Robert B. Frost, USAF

• *Thanks for cutting us in. We obviously didn't know the difference between the "A" and "B" models of the C-141 Starlifter.*—ED.

### NOTICE

Please check our current address, in the front of the book, when sending releases and other material.

## Choice Assignment

SIR: Before coming to Diego Garcia, I read a great deal about the island. Friends told me that there was nothing on the island except rocks and that after two months I would beg to return to the United States.

I am now on the island of Diego Garcia, and after two months, I have found what my friends said not to be true.

On Diego Garcia, the weather is very hot and dry, but there are many things to do. If one enjoys swimming, the lagoon is just the place. There is also a pool for those who do not want to take chances being eaten by the sharks. The recreation program offers racquetball, tennis, handball, basketball and other physical sports.

On Diego Garcia, the air is fresh and clean, the sandy beaches are inviting, and the tropical plants help keep it a place of beauty. I think it's a good place to be.—YN3 Nathan Smith

## Reunions

• **Naval School Explosive Ordnance Disposal**—Annual EOD Ball for all graduates Oct. 2, 1982, at the Naval Ordnance Station, Indian Head, Md. Contact CW02 Redmon, NavScolEOD, Indian Head, Md. 20640; telephone (301) 743-4555.

• **USS Aludra (AF 55)**—Reunion Oct. 9-10, 1982, at NAS Moffett Field, Calif. Contact Leonard Smith, 806 North 11, Norfolk, Neb. 68701; telephone (402) 371-7567; or Jerry Delaney, 6972 Chiala, San Jose, Calif. 95129; telephone (408) 253-5129.

• **C.A.S.U. 3**—Reunion in October in Hot Springs, Ark. Contact J. Murray Johns, 12922 S. 123rd E. Ave., Broken Arrow, Okla. 74012; telephone (918) 369-5467.

• **USS South Dakota (BB 57)**—Reunion Oct. 8-10, 1982, in Tucson, Ariz. Contact Nicholas Zima, 5830 E. 19th St., Tucson, Ariz. 85711.

• **USS Briareus (AR 12)**—11th reunion Oct. 15-17, 1982, in Virginia Beach, Va. Contact Jim Clark, PO Box 1894, Wayne, N.J. 07470; telephone (201) 694-6184.

• **USS Mississippi (BB 41)**—Reunion Oct. 8-9, 1982, in Long Beach, Calif. Contact J.C. Ferrell, 9229 Single Oak Drive, Lakeside, Calif. 92040.

• **USS Osterhaus (DE 164)**—Reunion Oct.

28-31, 1982, in Mesa, Ariz. Contact Joe Mowery, 1631 E. 3rd Ave., Mesa, Ariz. 85204.

• **USS Hugh W. Hadley (DD 774) and LSM-R 193**—Reunion Oct. 8-10, 1982, in Omaha, Neb. Contact Hunter S. Robbins Jr., 35 Templar Place, Oakland, Calif. 94618.

• **USS Coral Sea (CVA 43)**—Fourth annual reunion for all naval and Marine personnel Oct. 8-10, 1982, in Lancaster, Pa. Contact John F. Wilkes Jr, Route 3, Box 321, Johns Island, S.C. 29455; or Sal Avellino, 45-11 Arcadia Lane, Great Neck, N.Y. 11020.

• **USS Plunkett (DD 431)**—Reunion Oct. 5-7, 1982, in Charleston, S.C. Contact George A. Schweis, 18 Spruce Drive, Marshallton, RD 4, West Chester, Pa. 19380.

• **USS Converse (DD 509)**—Reunion Oct. 8-9, 1982, in Long Beach, Calif. Contact Bill Degischer, 18101 Tarzana St., Tarzana, Calif. 91356; telephone (213) 342-0344.

• **Silver Eagles Association**—18th annual reunion Oct. 7-9, 1982, in Arlington, Va. All former enlisted naval aviation pilots of the Navy, Marine Corps and Coast Guard and their wives are invited. Contact John Beaton, Box 9, California, Md. 20619; telephone (301) 863-6135.

• **USS Henrico (APA 45)**—Reunion Oct. 7-9, 1982, in Alton, Ill. Contact Ralph Schmidt, 1306 Sir Galahad Lane, Godfrey, Ill. 62035.

• **River Patrol Force (Task Force 116)**—Reunion Oct. 23, 1982, in Mission Hills, Calif. Contact YNCS John C. Williams, PO Box 5523, Virginia Beach, Va. 23455.

• **Mine Division 81, USS Assurance (MSO 521), USS Venture (MSO 496), USS Vital (MSO 474), USS Vigor (MSO 473), USS Valor (MSO 472)**—Crew members who served from 1960 to 1972 who are interested in a reunion in September 1983 contact H.E. Crews, 1602 Calhoun Ave., Panama City, Fla. 32405.

• **USS Massey (DD 778)**—Former crew members from January 1948 to January 1952 interested in a reunion contact E.C. Brezinski, Breeze Photo, 119 S. Main St., Old Forge, Pa. 18518.

• **22nd Division, USS Gwin (DD 433), USS Meredith (DD 434), USS Grayson (DD 435), USS Monssen (DD 436)**—World War II crew members interested in a reunion tentatively planned for 1984 please contact John S. Kozma, 80 Dick St., Clifton, N.J. 07013; telephone (201) 473-6490.

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# Introducing Our Civilian Community

My first contact with the Navy's civilian personnel took place at Pearl Harbor, Hawaii, about three months before the Japanese attack in 1941. At the time, I was standing watch as junior officer of the deck aboard the battleship USS *Nevada* (BB 36) in dry dock. Looking over the side one day, I saw three side painters at work—well, one was at work and the other two weren't.

Somewhat impressed with myself and my position, I called the three aboard and then—foolishly—told the two "slow" painters that they were fired. It wasn't long before the local base commander informed me that I was the one in the wrong, not the workers. I had no business "firing" anyone, let alone violating work contracts.

Looking back over all those years, I have to admit that I was a slow learner indeed. Four days after that dressing down from the admiral, I was back in front of him. Again I had tried to "fire" a worker—this time a welder. Upshot of the whole affair was that the admiral "fired" me from standing any more watches while *Nevada* was in dry dock.

Some eight years later, I returned to Pearl Harbor as the administrative aide to the base commander. With the outbreak of the Korean War, I found myself more involved with the local civilian employees. Fact is, my involvement was in-depth and covered all functions of the base. During that time, I learned a lot about the other side of the Navy, the countless professionals in civilian clothes whose job is to support the operating forces. I learned a lot, too, about teamwork and leadership. Above all, I learned that there is really only one Navy, not a Navy made up of just the military, but one made up of military people *and* civilian employees working together to fulfill a common mission.

That's why I'm so pleased now to see All Hands magazine expand its coverage of civilian employees. It's something that has been needed for years—not only to give recognition to this vital part of the Navy but, more importantly, to help both the military and the civilians understand each other better. By so doing, all are educated in the importance of teamwork and the One-Navy concept. If this approach had been followed back in 1941, neither I nor any other novice would have committed the boner of a junior officer trying to fire shipyard workers.

We are a team, and, over the decades, we civilians have kept the ships repaired, maintained, and logistically and administratively supported. Those on the military side of the picture know as well that those on the civilian side do their utmost to support the operating forces.

This team concept has been recognized in various degrees.

It has done well despite shortcomings. But it was not until 1978 that the service took a giant step forward and transferred administrative control from the Office of the Secretary of the Navy to the Chief of Naval Personnel. While this change of organization had little effect at the field activity level, it provided a means of consolidating all the Navy's people under a single leader. We can now show that organizationally we have a total manpower concept in place, all working for the Chief of Naval Operations.

Now we will have a periodical by which we can help close some other gaps. In the expanded All Hands, civilian employees will be able to read about their product—the operating Navy. In turn the operating Navy will be able to read about the people who support them, whose job it is to keep 'em operating.

We're all pretty good people. While some misunderstanding may persist between the "blue suiters" and civilians, there is a lot of oil available to overcome this situation if each understands the other's problems.

Actually we are far more than just pretty good people. We Americans are the *best*—as anyone who travels the world knows. We have a high standard of living; those willing to work hard can raise their own levels.

We also have pride in performance going for us. All we have to do to make this an unquestioned principle is to do our best and insist that those who work with us also share that pride.

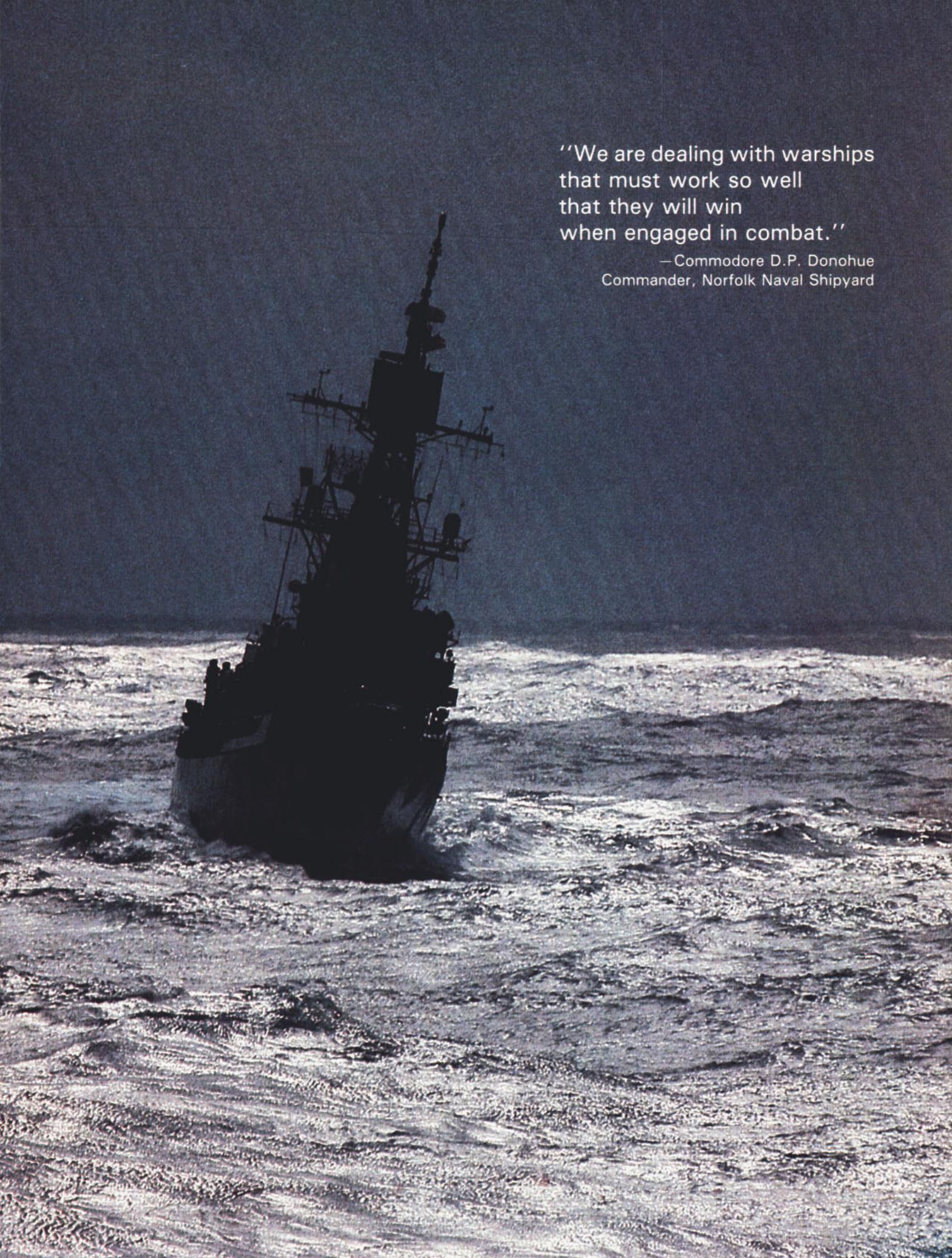
Of course, we are not perfect. But, so long as we try to achieve our best, a few shortcomings are tolerable. It is when we do not try to do our best, and blame everyone else, that we fail. Today, we are building a 600-ship fleet. The Navy, after years of decline, is coming back—and we—you and I, in uniform or in civilian clothes—are the *only* ones who can build it. Much depends on us and our performance.

Read All Hands and pass it along. We'll all learn a lot, and we'll learn what our whole team is doing, ashore, afloat, in the air and under the seas.

—Joseph K. Taussig Jr.

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Mr. Taussig was appointed Deputy Assistant Secretary of the Navy (Civilian Personnel Policy/Equal Employment Opportunity) on July 13, 1981. He entered the Naval Academy in 1937 and was retired for physical disability with the rank of captain in 1954. In 1962, he established Taussig-Tomb and Associates, a consulting firm in Washington, D.C., from which he retired in 1980.



“We are dealing with warships  
that must work so well  
that they will win  
when engaged in combat.”

— Commodore D.P. Donohue  
Commander, Norfolk Naval Shipyard