

★ ALL HANDS ★

THE BUREAU OF NAVAL PERSONNEL CAREER PUBLICATION

An underwater photograph showing a diver in the foreground and a sea turtle swimming above. The diver is wearing a mask, regulator, and fins, and is holding a large white buoy. The sea turtle is swimming towards the right. The water is clear, and the sandy bottom is visible.

STUDENTS of the SEA

This magazine is intended
for 10 readers. All should
see it as soon as possible.
PASS THIS COPY ALONG

SEPTEMBER 1966





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SEPTEMBER, 1966

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NUMBER 596

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TABLE OF CONTENTS

Features

At Home in Hydrospace	2
Deep Submergence Vessels on the Way	4
Flip and Spar: Bottoms Up!	6
UNREP Today—It's Booming	8
Naval Support Facility, Chu Lai: Small But Busy	12
Close-Up: Vietnam Report	14
Time Off in Manila	17
Neptune Surveys the Situation	18
Ney Awards: Add a Dash of Salt	20

Departments

Letters to the Editor	24
Today's Navy	28
Book Reviews	34
Decorations and Citations	62

Bulletin Board

Absentee Ballots Mean Voting Booths in Every Ship	36
Changes in Travel Regs	37
NROTC Exams Again Offer Chance for Commission	38
Here's a Deal That Could Make You a STAR	40
Banana Belt in Alaska? Go North for Interesting Tour	42
Who's Heading for Shore in Seavey-C-66?	46
Directives in Brief	48

Special Supplement

Mission Accomplished: Task Force Sixty-Five	50
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Taffrail Talk

	64
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• FRONT COVER: MAKING LIKE A FISH—Students at Navy's diving school, Subic Bay, Philippines, swim a few feet below the surface of the water while receiving instructions in the use of Scuba diving gear.—Photo by William M. Powers, PH1, USN.

• AT LEFT: SUNSET AT SEA—Crewmember of guided missile cruiser *USS Providence* (CLG 6) watches the setting sun and task force team member during operations at sea.—Photo by Jerry Young, PH1, USN.

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AT HOME

MAN IN THE SEA project will extend ability to work below at greater depths for longer periods of time. Here an aquanaut works during Project Sealab II.

THE BOTTOM is a long way down. Dark, with crushing pressures and occasional examples of evolutionary dead ends. It's called hydro-space. It is that portion of the ocean which lies beyond the 150-fathom limit. Building the equipment to conquer it is the purview of the oceanographic engineer, an entirely new breed.

The oceanographic engineer may hold his degree in oceanography, but more likely it will be in engineering, chemistry, geology, biology or physics. He is concerned with the deep ocean as an area of accomplishment, not of pure study and observation. His job is deep-water salvage, rescue, maintenance, perhaps construction.

His field is represented by the DSV, the deep submergence vehicle. These craft, such as *Alvin*, are the deep-sea equivalent of an astronaut's space capsule. Far below the hard-hat diving limit, they keep the aquanaut alive and, by means of mechanical arms, enable him to do useful work. *Alvin*, sponsored and funded by the Office of Naval Research and operated under contract by the Woods Hole Oceanographic Institution, is the first of a family of deep oceanographic research submarines planned by the Office of Naval Research. These research vehicles will provide dramatic new tools for the exploration of inner

space. They are the mechanically sophisticated descendants of *Trieste*, which was purchased and brought to this country by the Office of Naval Research as part of its early pioneering efforts to increase man's knowledge of the deep ocean environment.

In 1960, there were only four

The Undersea Challenge

Navy Secretary Paul H. Nitze has restated that ocean exploration and exploitation offers a challenge as great as that posed by current exploration of outer space.

He said this will ultimately require a national effort and expenditure on a comparable scale.

Citing past undersea programs and achievements as "dramatic," he said the Navy will require improved capabilities in its undersea strategic forces, antisubmarine warfare forces, and undersea search and recovery.

These improvements, he said, depend largely on the national ability to discover and exploit new ocean science knowledge, and success in developing new and relevant ocean technology.

Secretary Nitze said "we must make certain" the United States, through both public and private enterprise, leads the world in working toward understanding and controlling the ocean depths.

such vehicles in existence, and only one (*Trieste I*) could penetrate beyond 1000 feet. Before this year is out, there will probably be more than 25. In the past six years oceanographic engineering and the exploration of hydrospace has assumed extreme national importance.

The history of oceanography is strewn with ambitious plans for deep sea engineering, but it has only been in the past few years that such plans have become at all feasible. Technological advancements following World War II, primarily in the fabrication of stronger materials, are basically responsible for the recent breakthroughs in deep sea engineering. These same advancements have made deep water operations an element to be considered in national security.

Until recently, for example, submarine collapse depths were relatively shallow. With recent advances, however, the limits of modern submarines have been constantly pushed downward. As a result, submarine rescue capabilities must also be increased.

The sinking of the submarine *USS Thresher* (SSN 593) 10 Apr 1963 in 8400 feet of water was the event which led to greater intensity in underwater engineering. Attempts at search and recovery were hampered by weather problems and lack of a deep water vehicle which was actually capable of working in extreme depths.

A few months after *Thresher's* loss, a group of Navy scientists and engineers met to study the situation and recommend a naval deep-sea engineering development program.

In June of 1964 the Special Projects Office was named to carry out the advisory group's recommendations and, as a result, the Deep Submergence Systems Project was established. The choice was a logical one. The Special Projects office had originally been established to develop the *Polaris* weapons system. Oceanographic engineering was to be a priority project.

The deep submergence program had four objectives. First of these was to devise the means to rescue men from submarines from any depth

IN HYDROSPACE

in which there existed a possibility of survivors. Second was the development of a vehicle to investigate the ocean's bottom, locate objects and retrieve objects of relatively small size. Third, a different vehicle was to be developed, along with methods of recovering large objects, including intact hulls as large as 1000 tons. The fourth, titled the Man in the Sea project, was to extend man's ability to work in the sea at greater depths for longer periods.

Although the *Thresher* tragedy was the incident which prompted the Navy to establish a specific program for the development and procurement of the hardware necessary to do useful work at great depths, it

was recognized that it might be many years—hopefully never—before a similar incident might occur. Therefore, they set about designing a vehicle which would be used as a research and salvage vessel, but with a submarine rescue capability.

THE CONCEPT presented problems. The combination rescue, engineering and salvage vehicle would have to be capable of operating on the continental shelf and the slope beyond. It would need a minimum endurance of 14 to 16 hours, permitting eight hours of effective work, four hours of reserve, and the rest for transit. A power supply was needed which could be exchanged

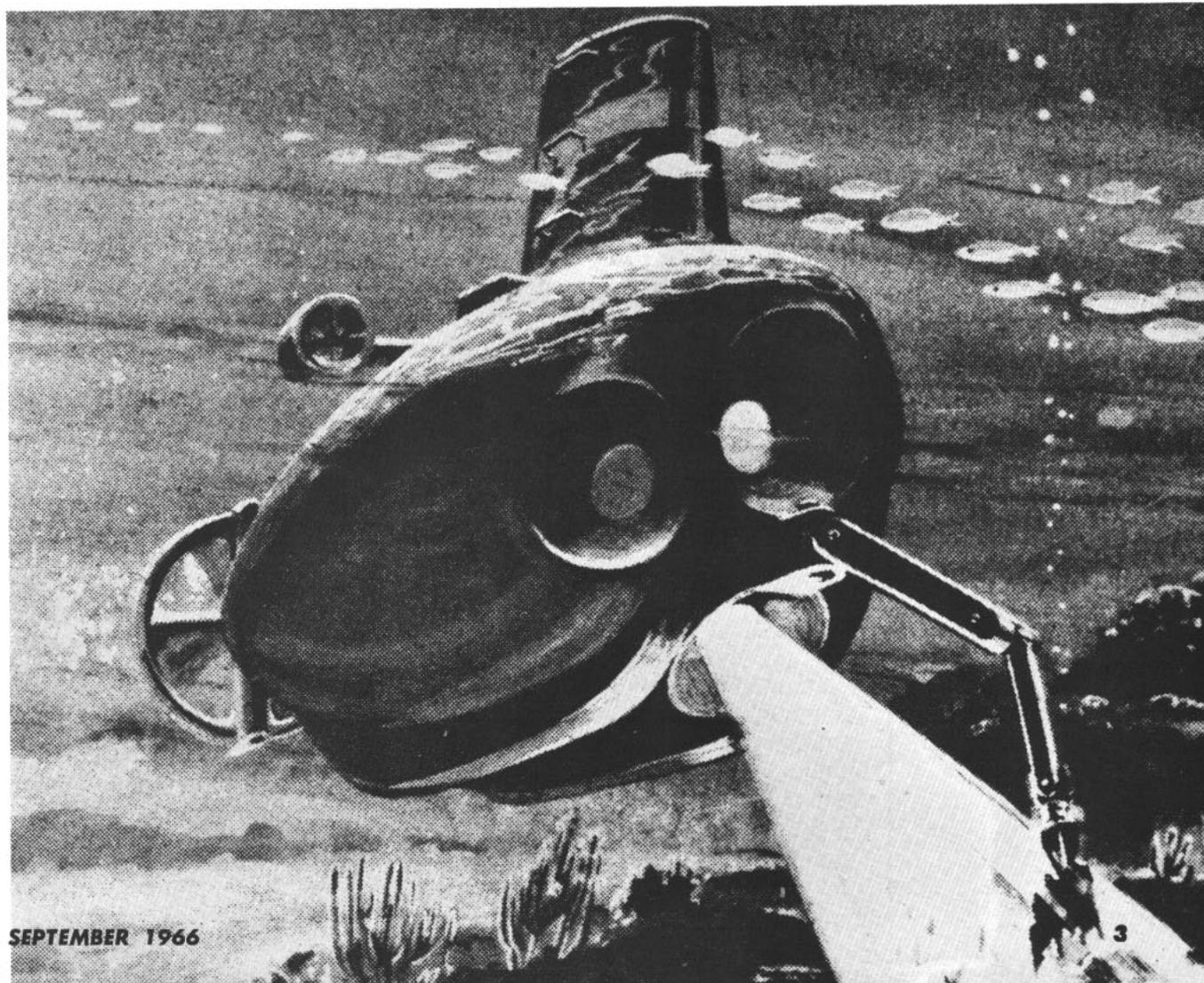
or recharged in a short time so that the vehicle, with crew and power replenished, could promptly resume its job.

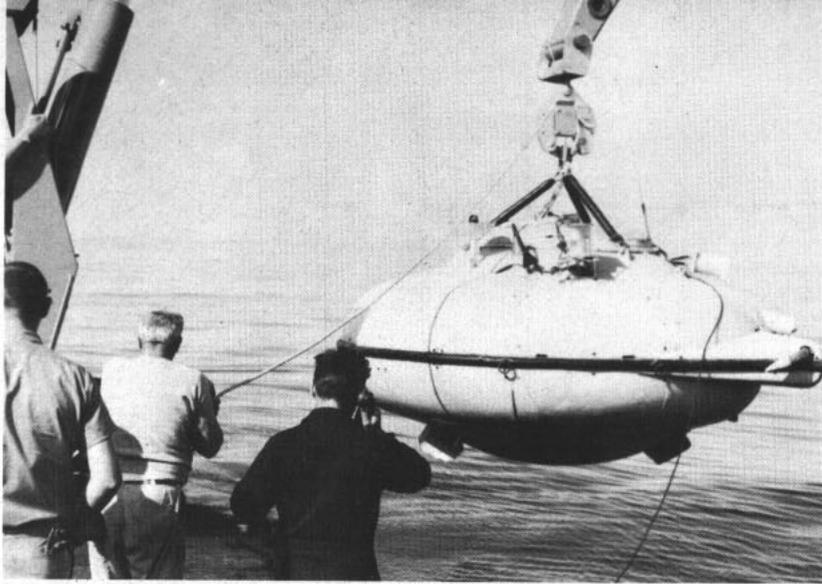
In addition, there must be enough room to rescue at least a dozen submariners on each trip, a requirement which compounds the problem of the pressure hull. And reliability must be absolute.

On 14 April, the designs were finished. The Navy now has a prototype of the combination vehicle on order.

The first, of a planned fleet of six vehicles, is scheduled for delivery in 1968, and will be capable of submerging to 3000 feet to clamp onto the escape hatch of a sunken sub-

DEEP DIVER—Artist's conception shows small sub exploring ocean bottom with mechanical arm to retrieve objects.





SEA SAUCERS TOO—Deep submergence men have "flying saucers" too. Here, Cousteau Diving Saucer goes to sea to participate in a Navy project.

marine. By making several trips it can remove the entire crew.

The rescue craft (unnamed as yet) will be 44 feet long, eight feet in diameter, and weigh 25 tons. It will be able to operate underwater for 12 hours traveling at six miles per hour, without resurfacing. It will be equipped with a mechanical arm which will be able to use several tools and will be able to lift a 50-pound weight. In a rescue situation the vehicle could operate from a surface ship or be carried on the deck of a nuclear submarine for use in any kind of weather or under ice.

It will be light enough to be transported quickly aboard a C-141 aircraft, and thus will be available in an emergency almost anywhere in the world in a matter of hours. While the DSV waits for an emergency which may never come, it will

be used for undersea research.

That segment of Deep Submergence which deals with the salvage of large and small objects from very deep depths borders on science fiction. Present specifications for such vehicles require that they be able to descend — safely — to 20,000 feet. This depth would cover about 98 percent of the ocean's floor.

Pressure increases with depth at the rate of 44 pounds per square inch for each hundred feet. At 20,000 feet, the engineering vehicle would be clamped by more than four tons of pressure for each square inch of its surface. Currents, though sluggish, are forceful — under the extremely high pressures a leisurely current can be as irresistible as winds of several hundred mph.

Problems of locating objects, hindered by the darkness of the

deep sea, are compounded by heavy sediment suspended in the water and reflecting spotlights back into the eyes of the underwater worker. Sonar, the X-ray eyes of the underwater sailor, may behave in strange ways under such conditions.

THE PROBLEMS of deep sea environment, though bizarre, are not by any means insoluble. *Trieste* has dived some 36,000 feet and, though this craft is of limited use for engineering projects, the fact that it survived such depths suggests that success in the deep submergence project is possible.

Several alloys capable of withstanding the pressures are now available, and there is a strong possibility that specially treated glass may one day be used as hull material (see ALL HANDS, February 1965).

Long before an engineering vehicle is available for large-scale work in the deepest areas, many of the problems involved in operations on the continental shelves will almost certainly have been solved. The Man in the Sea program will almost certainly extend the long arm of oceanographic engineering to the 150-fathom mark. Below that, to perhaps six to eight thousand feet, medium depth vehicles will take over.

Alvin is probably one of the best known vehicles of this type. This is the Navy's new oceanographic research submersible which is, in many ways, typical of the newer (since 1960) models of manned deep submergence vehicles.

Alvin is capable of diving to 6000 feet, which means that its crew must be protected from external pressures as great as 2600 pounds per square inch. The two-man crew is protected by a spherical cabin, made of high-strength steel over an inch thick. Encased in this 80-inch cabin, the crew peer at their work through small ports. It is powered by battery and designed for a top speed of three knots, although its cruising speed is 1.5. At its most efficient speed, 1.5 knots, its power supply will last for about eight hours.

Alvin's teardrop shaped outer hull is deceptive — merely thin fiber glass which serves to streamline the vehicle and to protect its delicate equipment from bumps. Vents allow the pressure inside the thin outer hull to equalize as the sub changes

Six Deep Submergence Vessels On the Way

The first of the six personnel rescue vessels ordered by the Navy is scheduled to be completed by early 1968. Information learned from the design and construction of the prototype will be applied to the later vessels.

This step marks the first phase of the development of an operational submarine location, escape and rescue system under the direction of the Deep Submergence Systems Project.

The prototype will be able to operate at depths of approximately 3000 feet, and will be capable of submerged operations for 12 hours at three knots. Maximum speed for

the vessel will be five knots.

The vehicle will be 44 feet long, eight feet in diameter and weigh approximately 25 tons. This size and weight will permit it to be carried, ready for operation, in a C-141 aircraft. A major design consideration of the vehicle is that it be capable of transportation by air to a submarine disaster anywhere.

In a rescue situation, the vehicle would be capable of operating from a surface ship or carried on the deck of a nuclear submarine, thus permitting it to operate in any kind of weather or under ice.

It is anticipated the six vehicles will be completed by 1970.

levels. Within this streamlined hull are various small spheres and pressure compensated containers which house its batteries, propulsion system and instrumentation.

AS IS ALWAYS the case in any deep submergence vehicle, a good deal of work went into safety devices and escape systems. Though rated for 6000-foot dives, the hulls protecting the occupants and equipment would not collapse until a considerable distance below that depth. Should all other systems fail, the crew may mechanically unfasten the sphere from the rest of the vehicle and stand by for a wild, fast ride to the surface. Should its mechanical arm become entangled *Alvin*, lobster-like, can leave it on the bottom.

While probing around the bottom, *Alvin* is maneuvered by means of its tail propeller and two smaller props amidships, all three of which may be tilted or tipped to direct their force. For search operations, the vehicle is equipped with a scanning sonar, television and, for close-up work, spotlights.

Other Navy deep ocean projects include the construction of *uss Dolphin* (AGSS 555), a large undersea vehicle which will be used to help evaluate new deep ocean ASW weapons and detection systems, as well as furnish knowledge toward the design of better, deeper diving submarines. Though much information on *Dolphin* is classified, the Navy has released information on its power plants, size and general design.

Dolphin's crew of 22 men will work in a cylinder (with hemispheric ends) constructed of HY-80 steel. It will be powered by two diesel electric generators and three silver-zinc batteries, and be controlled by water ballast, rudder and diving planes, and a means of hovering control.

Another Navy vehicle, the *Moray* (TV-1A) is designed for 6000-foot depths and features positively buoyant (without ballast) design. The vehicle bobs to the surface if its power is cut off, and is held down by the same principle that holds a helicopter up. This permits the *Moray* greater mobility and control than that normally attained in vehicles which use ballast.

Moray cruises at six knots, has a maximum speed of 15 knots, and

can operate for a maximum of 3.6 hours at six knots. Its crew of two is encased in an aluminum sphere, and another sphere is provided for instruments. The entire vehicle is surrounded by a ring-stiffened fiber glass hull 33 feet in length.

The NR-1 is another Navy submersible presently under construction and, when completed, will be the world's first nuclear-powered deep submergence research and ocean engineering vehicle. The NR-1, whose capabilities to perform oceanographic research and engineering will be of an order of magnitude greater than that of any other vehicle developed or planned to date due to the vastly increased endurance made possible by nuclear power, will be used for detailed studies and mapping of the ocean floor for scientific and engineering purposes.

Responsibility for the design and development of the nuclear propulsion plant for the NR-1, which is currently under construction under a Navy-industry contract at Groton, Conn., has been assigned to Vice Admiral H. G. Rickover, Director, Division of Naval Reactors, U. S. Atomic Energy Commission, and Deputy Commander for Nuclear Propulsion, Naval Ship Systems Command. Design and development of the NR-1's nuclear propulsion plant is being carried out by the Knolls Atomic Power Laboratory, Schenectady, N. Y., under the direc-

tion of and in technical cooperation with the Division of Naval Reactors

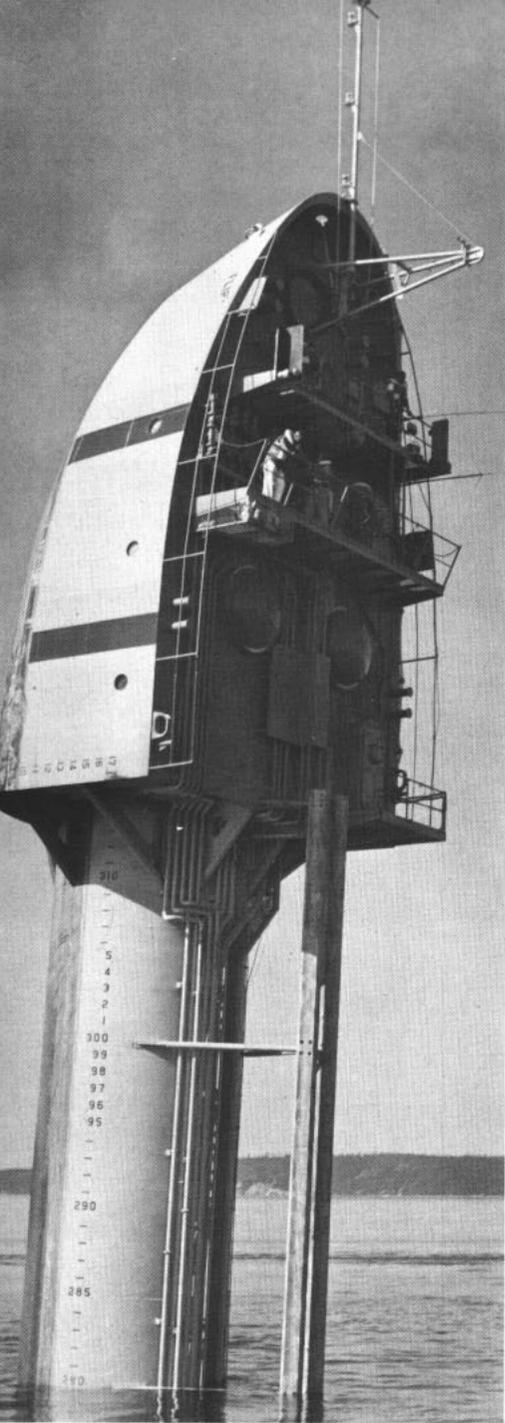
Commercially designed, manufactured or under construction deep-water vehicles, some of which have been contracted for by the Navy, include *Alvinaut* (designed to dive to 15,000 feet), the three *Cubmarines* (300 to 1500 feet), *Deep Jeep* (2000 feet), *Deep Quest* (6000 feet), two *Deep Stars* (2000 and 4000 feet), the *Diving Saucer* (1000 feet), the *Dowb* (6500 feet), *Pisces* (5000 feet), *Star I* (200 feet), *Star II* (600 feet) and *Star III* (2000 feet). And, of course, there is *Trieste II*, which reached 36,000 feet in its original configuration and is now rated for 20,000 feet.

—Jon Franklin, JO1, USN



TESTING BELOW—Civilian research submarine *Star I* lands on a simulated hatch during sub rescue tests off Bermuda. Above: View from top of *Trieste*.





FLIP UP—Floating Instrument Platform begins to take on vertical position.

Flip and Spar:

FROM A DISTANCE the Floating Instrument Platform looks uncomfortably like the vertical stern of a sinking freighter. Appearances are deceiving. Like many recent additions to the oceanographic fleet, *Flip* has two notable characteristics: extreme oddity and extreme usefulness.

Flip—and its sister ship (to use the term broadly) *Spar*—was designed to collect information on such phenomena as wave motion, underwater sound transmission, currents and internal waves. Such research leads directly to better ASW weapons and detection equipment, better submarines, and the successful operation of sophisticated oceanographic equipment.

Flip's unusual design is well-suited for its mission. In the first place, 300 feet of submerged hull allows oceanographers to position their instruments well below the often-mis-

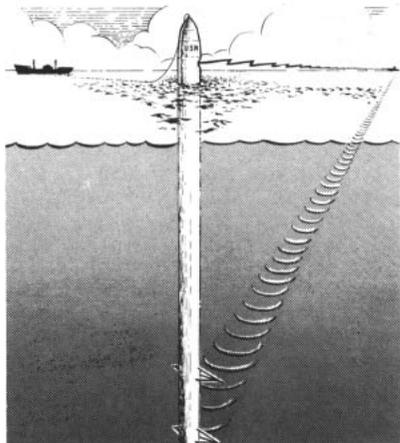
leading shallow water layer. Secondly, a deep draft combined with a relatively small displacement lends stability—as any observant seaman who has watched a vertical log floating steadily in a choppy sea will testify. The up-and-down motion of *Flip* and *Spar* seldom exceeds one foot per second, even when the seas are heavy.

Despite its stability *Flip* is not exactly God's Gift to Seasick Sailors. When the craft is horizontal the crew walks on the walls, while the decks and other equipment remain fastened to the "deck" . . . a situation which would probably nullify the positive advantage of vertical stability.

Of the two instrument platforms, *Flip* was the first to go to sea. It was tested out in Pacific waters in the fall of 1963 and what looked fine on paper worked just as well at sea.

FLIP SHIP—*Flip* is shown (above) in vertical position and (below) as the research ship is towed horizontally to site.





ARTIST'S drawing shows Spar sending info to ships. Rt: Spar on the way up.



Bottoms Up!

Flip is towed to the area of operation by a tending vessel, and once there is positioned vertically by flooding ballast tanks in the lower portion of the tube. It is usually allowed to float free, its crew operating the instruments which record and transmit the reading of the sensors in the craft's lower section.

Spar (Seagoing Platform for Acoustics Research) followed *Flip* to sea one year later. Unlike the first the second platform was designed for operation in the rough Atlantic and was completely automatic or remote controlled.

Spar, of course, lacks the working spaces in the upper end. The vessel is essentially a 350-foot compartmented steel tube about 16 feet in diameter and with a displacement roughly comparable to that of a World War II submarine. Ballast and free-flood tanks make up the

interior of its lower 300-foot section, while the upper buoyancy portion contains operating machinery, gyroscopic compasses, recording devices and a radio direction finder.

Hydrophones are attached along the lower 300 feet of the vessel's structure and on protruding outriggers beneath the surface. Other instruments measure water temperature and pressure and the salinity of the surrounding water.

Spar, like *Flip*, is towed to its area of operations by a tending ship. Once ballasted, only 50 feet is visible above the surface. Because it is designed to operate for months at a time in the frequently rough seas of the Atlantic, all of its operating instruments are either remotely controlled or fully automatic. Even its running lights are self-controlled, switching on at dusk in response to signals from an electric eye.

LOOK OUT BELOW—*Spar*, used in Atlantic for hydrographic studies, is towed horizontally but works vertically.



UNREP Today—It's

THE DESTROYER SWUNG away from her gunfire support station off the coast of Vietnam. Her ammunition expended, she headed for the Philippines to reload.

Fiction? Obviously, since under-way replenishment is the way it's done these days, and has been since well before World War II.

It's nothing new for our Fleet to operate for months at a time nearly a thousand miles from the closest naval base. But, like most areas of naval operations, the replenishment of our ships at sea has changed a good bit since the old days.

The ships being built to handle the logistics load are certainly different. In fact, they reflect a complete turnabout in replenishment concepts. Previously, when a ship was needed to provide fuel for the combatants, an oiler was built. Likewise, an ammunition or cargo ship. Not any more.

Now, like the modern housewife who gets all of her supplies in one trip to a huge supermarket, a combatant can slip alongside one of several new types of replenishment ships and get just about all the supplies she needs in one load. They're called one-stop replenishment ships. Some of these new resupply ships have been in the Fleet for several years, and lots more will be coming down the ways in the future.



ALREADY a part of the Fleet is a new type called Fast Combat Support Ship, designated AOE. The first, *uss Sacramento* (AOE 1) is now on station in the South China Sea, replenishing Seventh Fleet ships in that area. She is a combination of three ships—oiler, stores ship, and ammunition ship—all in one.

Sacramento's cargo and stores handling equipment enables her to deliver anything from toothbrushes

to 1000-pound bombs with equal ease and in minimum time. Where three replenishments were formerly necessary, *Sacramento* dishes out the same in one short replenishment.

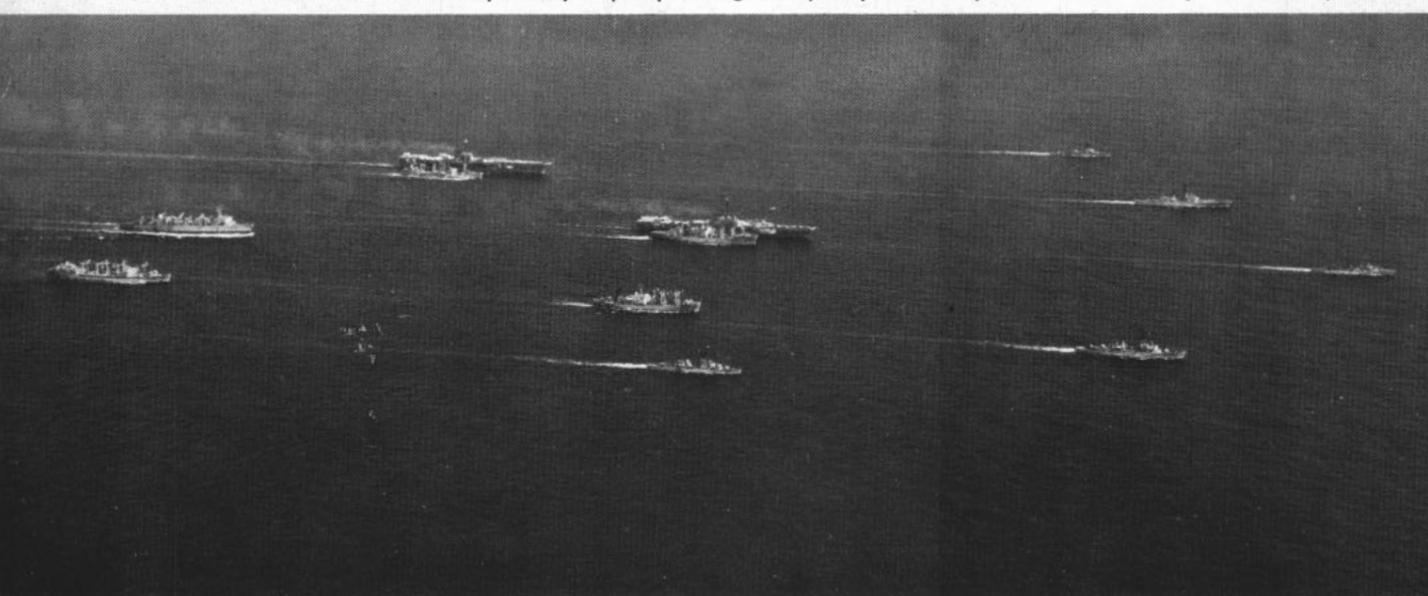
She's fast, too. With a sustained speed of 26 knots, she can keep up with a carrier task force, operating as an integral part, or steaming close by, waiting for the word to come running with the rations.

Sacramento has already made an impression on the ships of the Seventh Fleet. Since her arrival in WestPac, she has been averaging 100 replenishments per month, on a round-the-clock basis, to all types of ships, from the nuclear-powered carrier to the smallest boats patrolling the Vietnam coast. During one such replenishment, she teamed with *uss Enterprise* (CVAN 65) to set a Seventh Fleet record for delivering ammunition—654 tons in one day. The second AOE, *Camden*, is scheduled for commissioning.

Another single-stopper is the AFS, or Combat Store Ship, designed to provide refrigerated stores, dry provisions, technical spares, and general stores all at once. They carry over two-thirds of the cargo usually carried by general stores ships, refrigerated stores ships, and aviation supply ships.

uss Mars (AFS 1), and *Sylvania* (AFS 2) are in commission, with a

UNDERWAY REPLENISHMENT keeps Navy ships operating at capacity when they are needed to keep sea-lanes open.



Booming

third due to join the Fleet in December. *Mars* is currently operating with the Seventh Fleet in WestPac.

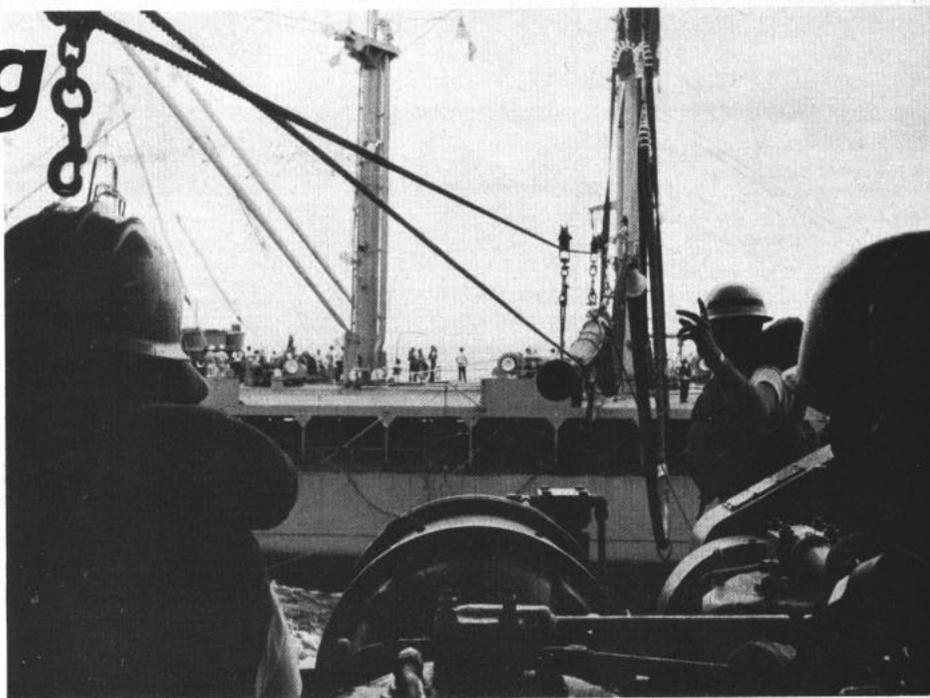
STILL BEING BUILT is the first AOR, a single-stop replenishment oiler. With a sustained speed of 20 knots, the AOR is meant to replace our older and slower oilers. But that's not all. In addition to its capability as an oiler, the AOR will carry a total of 750 tons of refrigerated and dry provisions, consumables and ammunition, including torpedoes and missiles. This will enable it to handle destroyers and other small ships in one replenishment. The first AOR is scheduled to be launched in July 1967.

When more of these new replenishment ships have joined the Fleet, a task force in the combat zone will be able to be resupplied in four hours, while steaming at speeds up to 20 knots. This speed will diminish the vulnerability inherent in all replenishment operations. The replenishment force itself can consist of one ship, if the task force is small, and will probably need no more than three types of UNREP ships for the largest replenishment.

Not only is there a new look in replenishment ships, but the mechanics of the UNREP job are also changing. All of these new supply ships employ one of the most significant advances in replenishment at sea, namely vertical replenishment, or as it's known in logistical circles, VERTREP. Helicopters are used to transfer netloads of supplies from the supply ships to the combatant in a matter of minutes. AOE's usually carry three helos, while the AFS carries two. Both have helicopter landing platforms, and built-in hangars. While the AORs will have a launching/landing platform, they will not be equipped with helos.

VERTREP is usually used to complement the transfer of material by conventional highline methods, but it isn't necessarily so. Helicopters can do the whole UNREP job, with one exception, of course—they can't transfer fuel.

VERTREP is only one of the developments in replenishment systems. There is FAST, or Fast Automatic Shuttle Transfer system, which



takes most of the lifting and shifting of supplies away from the cargo handling crew and lets machines do the work.

Ram-tension highlines are also a big advance in the UNREP business. Performing somewhat like a shock absorber, this highline system automatically compensates for movement of the two ships that are hooked up for replenishment.

Just approved for Fleet use is the Probe Fueling System, which allows faster hookup and breakaway times through the use of an automatic nozzle connection somewhat like those used in air-to-air refueling. Scheduled for installation in Seventh Fleet ships in January 1967, the

Probe system needs fewer people to handle the hoses, and will cut the time needed for hookup and breakaway by more than half.

There are many more new devices being used, of course, some with fanciful names such as bi-rail hoist, modular storage system, rammer cart and strongback.

WHILE THESE new systems, and the modern fleet of replenishment ships on which they operate, are drastically changing underway replenishment concepts, it should be remembered that the older service force ships are still doing most of the UNREP job in the Fleet. And they will for some time to come.

MORALE BUILDERS—Mailbags are packed in cargo net, highlined to DDs.





AIR MAIL—Helicopters from USS Mars (AFS 1) bring cargo to carrier. Rt: Pyro brings ammunition for Navy planes.

With this in mind, let's take a quick look at these venerable specialists, and the jobs they do so well.

More than any of the other supply ships, the Fleet oiler (AO) keeps the Fleet on the move. These floating filling stations each carry four to six million gallons of fuel, including NSFO, the fuel oil used by most Navy ships; JP-5 jet fuel; diesel fuel used by some ships; and AVgas for helicopters and prop aircraft. AOs also service the open-armed Fleet with such morale-boosters as mail and movies.

Refrigerated stores ships (AF), or reefers, are the seagoing supermarkets every calorie-conscious Navyman loves to see on the horizon. They stock more than 275 different foods, from meat and potatoes to

canned fruit and candy.

Ammunition ships (AE) are probably the most safety-conscious ships in the Fleet. And with good reason. They carry every type of ordnance required by ships and aircraft, from bullets and bombs to guided missiles.

Because of their lethal freight, ammo ship sailors have to get used to long rides in liberty boats, since their in-port habitat is normally the open sea several miles offshore. These sailors swear that most destroyers set their special sea details just after passing an ammo ship's anchorage.

These various types of ships are usually organized into complete replenishment groups to support a large task force of warships, but they can be assigned individually or in any combination to replenish ships

on patrol or special missions.

HERE'S THE WAY an underway replenishment of an aircraft carrier task force normally works.

It begins several days before the actual transfer of supplies. A list of requirements is collected from the ships in the task force and dispatched to the commander of the UNREP task force. The replenishment ships then steam at a course and speed that will place them at the rendezvous point shortly before the pre-arranged hour and position for the quickest possible replenishment.

The different types of supply ships usually are in formation one behind the other, so the receiving ships can get their fuel, then go straight ahead to the next ship for provisions, and

Mercury Lowered the Boom on Torpedo Plane

As a general rule, ships involved in the day-to-day job of replenishing ships at sea rarely become famous for actions during battle. The nature of their work dictates that they will go through their active life more familiar with high-lines than headlines.

There is one supply ship, however, who could hold her own in any boasting session, with anything from battleships to PT boats, if they started slinging the "firsts" and "onlys" around.

It happened during the Marianas campaign in World War II. It was there, just south of Saipan, on 26 Jun 1944, that USS *Mercury* (AKS 20) became the first, and only, U. S. ship to knock down an enemy

plane with a cargo boom.

The Japanese torpedo bomber didn't reckon on this unusual weapon when he dived at *Mercury* in an attempt to blow her out of the water, a project which came uncomfortably close to succeeding.

During a series of small air raids on the U. S. Fleet, which was protected by a heavy smoke screen, the Japanese bomber, flying at 90 feet, broke through the screen and loosed an aerial torpedo at *Mercury* from 200 yards away. Attempting to gain altitude, the plane avoided *Mercury's* stack, but smashed into the starboard cargo boom, spun off, and crashed into the water some 1000 yards away.

The torpedo, meanwhile, never

entered the water, but struck *Mercury* unarmed. It passed through compartments on the port side of the deckhouse, tearing open the warhead and air flask, and scattering TNT over the bridge and after section of the ship. The after body of the torpedo smashed into the deckhouse, killing a chief commissary steward. Many of the crew were covered with the explosive compound.

Mercury served with the active Fleet until 1959, when she joined the Texas Group, Atlantic Reserve Fleet, at Orange, Texas. But she left her mark on the Fleet. Sailors will remember for a long time the day when *Mercury* cleverly employed her antiaircraft cargo boom.

still further ahead to pick up general stores.

For normal daytime replenishment, crews of the logistics ships begin their day at 0200. Replenishment rigging is checked and moved into position; transfer nets are broken out; winches, booms and cranes are inspected; material that is to be transferred is arranged within the ship so that it can be issued to the right ship at the right time. Soon after the first light of day, with all arrangements complete, replenishment commences.

While the aircraft carrier is receiving fuel from one side of the Fleet oiler (usually the port side, because the carrier's island is on its starboard side) destroyers use the opposite side. Four destroyers can be topped off in turn while the carrier is taking on its larger load of fuel. The refueling operation, as with most underway replenishments, generally takes place while the ships are moving at 15 knots.

Elsewhere, other combatants are receiving slings of ammunition, food, and general supplies. As one ship completes its replenishment, another quickly moves in and takes its place.

When the replenishment has ended, the task force of primed and ready combatants goes on to accomplish its mission, while the replenishment force returns to its forward supply area to reload its depleted holds and await another call to resupply.

REPLENISHMENT at sea has been of prime concern to naval strategists ever since sails were replaced by steam-driven engines, with the resultant dependence on consumables such as coal to produce the steam.

In those days, of course, the predominant strategy employed by naval forces was still the blockade. But a blockade's effectiveness must certainly be reduced if the ships engaged in the blockade are compelled to leave their station to fill their coal bunkers. Thus the blockade of Charleston by the Federal Fleet in the Civil War was only about 75 per cent effective, since at all times one-quarter of the force was away loading coal.

It was the same story in 1898, when our Fleet blockaded the Spanish at Santiago de Cuba. A message from the commodore of the blockading squadron to Rear Admiral Sampson states, in part, ". . .



TRIPLE TREATMENT—Underway replenishment of USS *Kitty Hawk* (CVA 63) by Fleet oiler *Kawishiwi* shows simultaneous cargo, fuel and personnel transfers.

I shall proceed tomorrow, 25th, for Santiago, being embarrassed, however, by *Texas'* short coal supply, and our inability to coal in the open sea."

A year later the Fleet learned it could do something about this embarrassment when the collier *Marcellus* installed a marine cableway on her deck and, while being towed astern, transferred coal to *uss Massachusetts*. Underway replenishment had begun.

Fourteen years later the rate of coal delivery at sea had increased four times over that attained in the 1899 trial.

Then oil-burning ships became a part of the Fleet, along with the need to refuel them. In 1913 a test was conducted by *uss Arethusa*, an

early oiler, and *uss Warrington* (DD 30). During this test, the first in which fuel oil was transferred to an oil burner, the ships still used the astern method of refueling. In April 1917 *uss Maumee* (AO 2) refueled a ship at sea using the alongside method, one of the first such refuelings.

Underway replenishment has been refined considerably since its rather slow start at the turn of the century, then to the increased efficiency of World War II operations, to today's modern replenishment fleet still in the process of being put together. Today, the Service Fleet assures the task force commander that he will rarely, if ever, have to suffer the "embarrassment" of short supplies.

—Jim Teague, JO1, USN



SIGN OF THE TIMES—LSTs beaching at Cus Ho Ramp, Chu Lai, are greeted by the sign of the Naval Support Facility.

Small But Busier Than

V IETNAMESE VILLAGERS watched with interest as the large Navy ship steamed through the narrow opening of the Giang river. Most of them had never seen such a craft — a square-bowed LST — enter their river.

It was to be one of many such ships, for the U.S. Navy supply effort had come to Chu Lai. This was a little more than a year ago. The LST arrived without mishap, and was soon unloading from its lowered ramps. Since this first landing at the Gus Ho Ramp, the area has steadily grown in size. In September 1965, only one LST could be accommodated. In May 1966 four LSTs lay against the rocks and sand

of the beach to offload their cargo.

In February, one of the first contingents of the Naval Support Facility arrived at Chu Lai. The Naval Support Facility, Chu Lai, as a subsidiary of the U.S. Naval Support Activity, Da Nang, has the job of getting ammunition, food and other items to the Free World forces.

When the first group of Navymen arrived in Chu Lai, the river had to be sounded, buoys set up and lights rigged to guide the ships down the narrow river path by night. Although no equipment was available, Navy ingenuity got the job done.

Empty oil barrels were made into buoys. One of the barges was hauled out into the river with a generator

secured to it. A tower was erected and fitted with a range light capable of shining out to sea for a distance of seven miles. "Probably the best range light in all of Southeast Asia," is the claim.

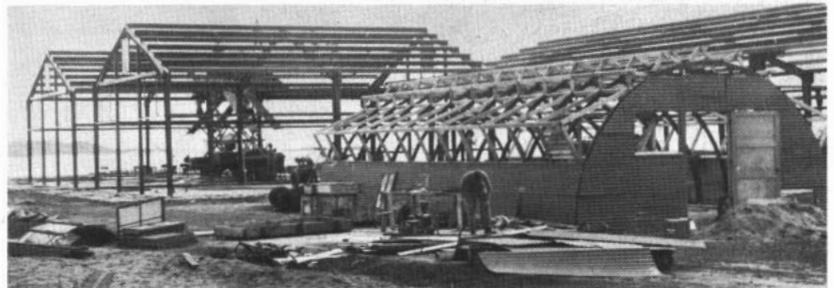
With the foundation laid, more men were shipped to the Naval Support Facility, Chu Lai in March to bring the total to seven officers and 180 enlisted men. Their job — to offload the LSTs that come from many ports in the Pacific. The longest offloading time is 30 hours. The length of time, of course, depends on the cargo. One LST was offloaded in less than 12 hours. Other types of ships are relieved of their cargo by LCUs.

BUSY SPOT—Steelworkers erect elephant hut on beach. *Rt*: Supplies are brought in for Seabees building facility.



Cargo handling is the major aspect of the facility's mission, but there are other jobs that go hand-in-hand to carry out this task. There are LCMs (Landing Craft, Medium) that have been converted to act as tugs to guide ships through the swift current to a resting place at the ramp. One LCM hauls supplies and vehicles across the river to Ky Hoa Beach. Two smaller boats patrol the port, on watch for suspicious looking craft. To keep vehicles moving the cargo, fuel is needed. Tanker ships offload via pipelines to large tanks located at Red Beach.

But there is still more to come. In July, there were 500 men added



FUEL FARMER—Navyman walks through area of entrenched fuel bladders. *Middle:* 1000-man galley is constructed. *Below:* LST offloads ordnance at Chu Lai.

Ever

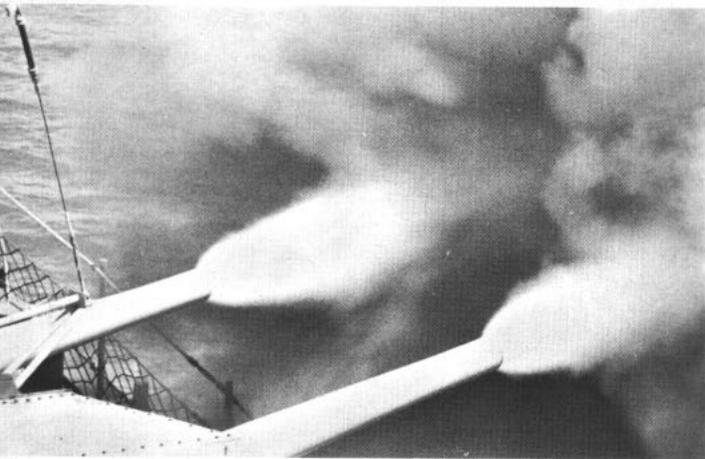
to the Naval Support Facility, Chu Lai. Waiting for them was a 1000-man galley, barracks, warehouses, offices, garages and refrigerated warehousing ready, waiting and, in some cases, already in use. The pier area is to be widened in order to increase the LST capacity to eight. The narrow passageway will be dredged to enable the ships to pass without the aid of tugs. The ramp area will be blacktopped due to the muddy conditions caused by monsoons.

This job of supply is not an easy one. It takes hard work, long hours and dedication to keep the armed forces in Vietnam supplied.

—George L. Eldridge, YN3, USN

LST unloads supplies on the beach.





ON TARGET—USS Rogers (DD 876) blasts VC. Rt: Fishermen watch one of three Navy refrigerator barges at Da Nang.

Close-Up: Vietnam

Here is the latest series of reports on various Navy activities which round out the headlines from Vietnam. ALL HANDS continues its coverage of the background story coming directly from ships and units on the scene.

Gun-running Trawler Stopped

A 120-foot trawler, attempting to smuggle arms and supplies to the Viet Cong in South Vietnam, was shelled by naval gunfire, mortared and bombed after being forced aground southwest of Saigon.

The trawler was detected by the Market Time Coast Guard cutter *Point Grey*, which reported her maneuvering at various courses and speeds. Shadowing, the cutter next reported the trawler dead in the water one mile from shore, near two bonfires on the beach.

Point Grey closed and illuminated the area with 81mm mortar flares, whereupon the unmarked trawler grounded while apparently attempting to escape.

The cutter moved in, but was driven off by heavy automatic weapons fire from the beach. Clearing the area, she sprayed the beach with .50-caliber machine gun fire and hit at the enemy positions with her 81mm mortar.

Shortly afterwards *uss Brister* (DER 327) arrived, followed by the coastal minesweeper *uss Vireo* (MSC 205).

Because of heavy opposition from shore batteries and approaching

darkness, the Market Time units were ordered to destroy the trawler rather than attempt to board. After several direct hits, a violent explosion ripped her apart.

Brister continued to fire illumination rounds and suppression fire at the beach throughout the night, while the junks of the Vietnamese Navy Coastal Group 41 fired harassing fire.

The following morning salvage crews began removing ammunition and equipment from the wreck. They were able to enter the forward half, recovering recoilless rifles, machine guns, burp guns, numerous small arms, a large quantity of ammunition and blasting caps.

The dock landing ship *uss Tortuga*



FIRST pilot of USS Hancock, CDR H. L. Marr, to make a confirmed kill of a MIG in Vietnam is congratulated by CAPT J. C. Donaldson, ship's CO.

(LSD 26), with a U. S. Navy salvage team aboard, eventually arrived on the scene to recover the trawler.

Rescued and Re-rescued

The uninjured bombardier navigator was sighted first and rescued by a helicopter from the carrier *uss Yorktown* (CVS 10). When the pilot was found about a mile away, the bombardier/navigator was lowered back into the sea to help his wounded crew mate into the helicopter rescue sling.

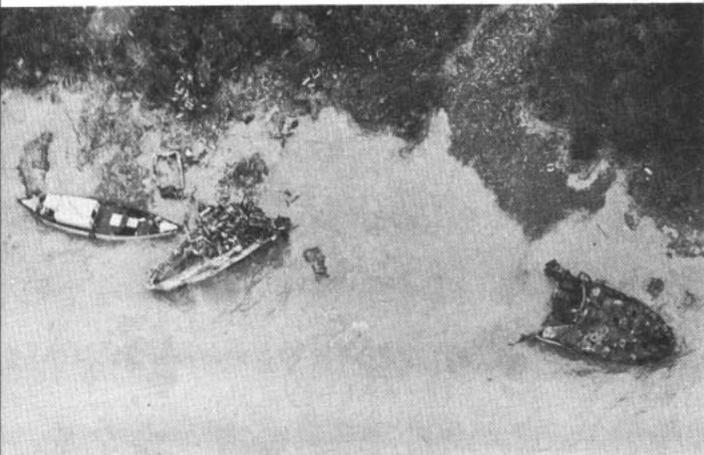
The *Yorktown* helo then proceeded to the cruiser *uss Topeka* (CLG 8), where medical attention was ready and waiting.

Moments later a helicopter from the carrier *uss Kitty Hawk* (CVA 63) rescued the bombardier/navigator for the second time and flew him to the deck of the cruiser.

Both aviators remarked as they landed on *Topeka's* helo deck that the cruiser was the most beautiful sight they had ever seen.

The following day *Topeka* assisted in the successful rescue of two more downed aviators off the coast of North Vietnam. Immediately after receiving word of a downed Navy aircraft, *Topeka* steamed rapidly to the area. The guided missile frigate *uss Coontz* (DLG 9) and the destroyer *Rogers* (DD 876) also participated in the recovery, as did an SH3 helicopter from *Kitty Hawk* and an Air Force HU16 amphibian.

Through the coordinated efforts of the sea-air rescue team (SAR), the



BLASTED—Gun-running trawler lies grounded and broken. *Rt:* Phantom is launched from USS Enterprise (CVAN 65).

Report

Kitty Hawk helo was able to locate and pick up the downed airmen quickly and deliver them aboard *Topeka*.

After a medical exam the flyers were returned to their carrier uninjured and in good spirits. *Viva SAR!*

Third Lant Carrier Goes West

The antisubmarine warfare carrier *uss Intrepid* (CVS 11) is the third Atlantic-based carrier and the second CVS to see action in Vietnam. She arrived in the South China Sea in early May and is currently operating on the line.

Before heading west, minor modifications were made to permit operations of light attack aircraft, temporarily relieving the 42,000-ton flattop of her primary mission of antisubmarine warfare.

During her first day of air attacks *Intrepid's* pilots flew 97 strike sorties against Viet Cong targets in South Vietnam.

Intrepid was commissioned in August 1943. In the early part of 1944 she entered the Pacific Theatre and conducted air strikes against the Marshall and Caroline Islands. Shortly after entering combat, she was forced out of action after being hit by an enemy torpedo.

Following repairs at Pearl Harbor, the "*Mighty I*" returned to battle. In later months, men and aircraft from

Intrepid supported the American re-entry into the Philippine Islands.

While operating off Vietnam, the carrier serves as a mobile air station for A1 *Skyraiders* and A4 *Skyhawks*. Upon completion of her tour *Intrepid* will once again embark her anti-submarine air group and return to her primary mission.

Vietnam Revisited

With the arrival of a 10th C-130 *Hercules* transport aircraft, Mobile Construction Battalion Three completed its movement to Chu Lai, Vietnam, to commence a second Southeast Asian deployment.

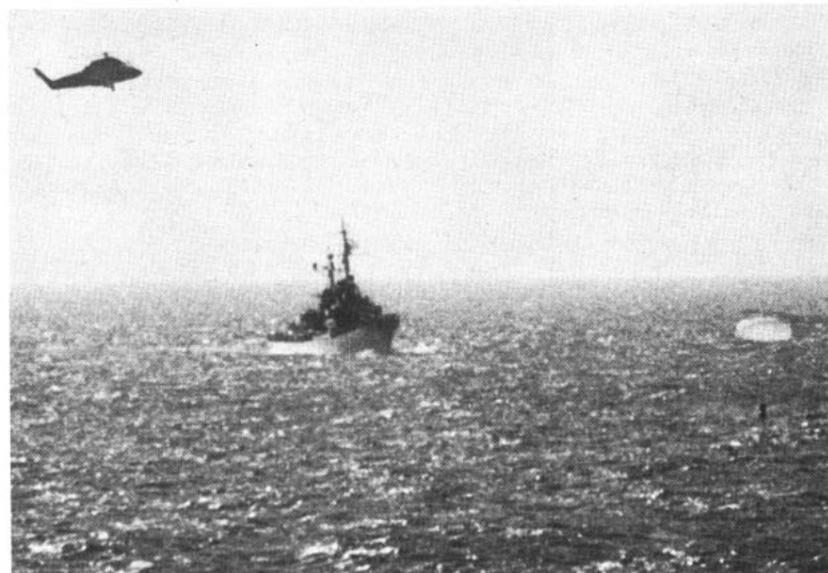
Conducted over a five-day period, the airlift moved nearly 500 men and 25 tons of infantry equipment and cargo.

MCB Three is the first construc-

tion battalion to return to Vietnam for a second deployment, having completed its first tour at Da Nang last September.

An advance party departed Port Hueneme in February this year and began construction on a Seabee camp at Chu Lai. By working 12 hours a day, seven days a week, the advance party was able to complete nearly half of the camp—enough to enable the main body to move into its berthing spaces and to eat in the new mess hall.

Then the Seabees began work on the massive construction project. The primary task is construction of logistics support facilities for the Naval Support Activity at Chu Lai. These facilities will make the base more self-sufficient as a combat center and less dependent on the com-



TO THE RESCUE—Copter from USS Hancock (CVA 19) and a destroyer move to rescue pilot parachuting into South China Sea. He was returned unhurt.



OFF TO WORK—Marines of USS Princeton load up for mission. Rt: MCB-Eleven erects building at Da Nang East.

plex at Da Nang for back-up support.

Ocean Travel by Helo

Two Navy pilots from Helicopter Antisubmarine Squadron Four (HS 4) have completed a 750-mile, one-stop trip from the Philippine Islands to the nuclear powered attack carrier *uss Enterprise* (CVAN 65), operating off the coast of Vietnam. They flew an SH3A *Sea King* helicopter.

The pilots flew the chopper from *uss Yorktown* (CVS 10), berthed at the Philippines, to the *Enterprise*, and assumed a search and rescue assignment.

The one en route stop was made aboard *uss Sacramento* (AOE 1), the largest refueling ship operating with the U. S. Seventh Fleet.

In two months, members of HS-4 succeeded in rescuing 10 airmen downed in Vietnam. Heavy resistance and hostile fire were encountered during all 10 missions.

The squadron, regularly operating from Seventh Fleet carriers, is home-based at the Naval Auxiliary Air Station Ream Field, Imperial Beach, Calif.

Ammo Transfer at a Fast Clip

uss Kitty Hawk (CVA 63) and *Pyro* (AE 24) have claimed a new record for transferring ammunition, surpassing the old record of 198 tons per hour set in 1965 by *uss Oriskany* (CVA 34) and a support ship.

Steadily improving their handling rate for transferring ammunition, *Kitty Hawk* and *Pyro* finally surpassed the old mark when crewmen

of the two ships transferred ordnance at the rate of 219 tons per hour. Two days later they broke their own record, transferring ordnance at the rate of 238 tons per hour.

More than setting records, efficient transfer of ammunition while underway at sea contributes to the success of strikes against the Viet Cong in both North and South Vietnam.

Air Heroics Cited

Two Distinguished Flying Crosses, 238 Air Medals and seven Navy Commendation Medals with combat distinguishing devices were presented to naval airmen in an awards ceremony aboard the attack aircraft carrier *uss Kitty Hawk* (CVA 63).

Receiving the awards were members of Attack Carrier Air Wing 11, *Kitty Hawk's* embarked air wing.

Ranking among the awards were the two Distinguished Flying Crosses. One was presented to Commander Henry M. Dibble, usN, CO of Attack Squadron 113, and the other was presented to Lieutenant Commander Gerald R. Tabrum, usN, of Attack Squadron 115.

CDR Dibble's award and citation were for "heroism and extraordinary achievement in aerial flight during operations against aggressor forces in Vietnam on 22 Dec 1965. He participated as air wing strike leader in the extensive and detailed planning and coordination of a strike against the extremely vital and heavily defended Uong Bi thermal plant northeast of Haiphong, North Vietnam.

"Preceding the flak suppression and bomber elements in the face of intense antiaircraft fire, he led

the first wave of 16 attack and fighter-bomber aircraft from *Kitty Hawk*. Despite adverse weather conditions and unfamiliar terrain, he directed the strike successfully.

"Remaining in the area after striking the target, he coordinated the follow-up bombing attack which resulted in extensive bomb and missile damage to the main power plant, coal and petroleum storage areas and associated support buildings and equipment."

LCDR Tabrum received the Distinguished Flying Cross for heroism during combat operations on 14 Mar 1966, while engaged in the rescue of downed Air Force airmen in the Gulf of Tonkin off the shores of North Vietnam,

Under intense automatic weapons and antiaircraft fire, he made repeated successful strafing and rocket attacks on enemy shore batteries and threatening boats. These attacks resulted in suppressing the gunfire, sinking three boats and discouraging other boats from interfering with the rescue. Helicopters were then able to pick up the downed airmen successfully.

For aiding in the same rescue operation, seven Navy Commendation Medals were also presented to three pilots from VA-115, two from VA-113 and two from VF-213.

Seventy-four Air Medals, 163 gold stars in lieu of additional Air Medals and one silver star in lieu of a sixth gold star were presented to other airmen of Air Wing 11. Their awards and citations were for meritorious achievement in aerial flight during mission in support of combat operations in Southeast Asia.



FOR HOME—Navymen of four nations shop for souvenirs in Manila shop.

Time Off In Manila

WHEN NEARLY 40 SHIPS of the Australian, British, New Zealand, Philippine, and United States fleets gathered in Manila Bay this spring it meant the beginning of SEATO maritime training exercise Sea Imp.

But to some 10,000 crewmen of the multinational fleet it meant also a visit to Manila—the city where East meets West.

At Manila's SEATO landing, launches discharged their loads of Navymen to tour the Republic of the Philippines' 400-year old capital.

Many sailors of the different countries joined in groups to see the sights of Manila and some found Philippine Navymen to act as their guides.

One such group was made up of Australian Ordinary Seaman Stuart Debnam from *HMNAS Melbourne*; British Able Seaman Tommy Johnson, *HMS Devonshire*; New Zealand Ordinary Seaman Ross Norman, *HMNZS Otago*; and U. S. Communications Technician 3rd Class (SS) Curtis Burns, *uss Raton* (AGSS 270). Their guide was Philippine Seaman 1st Class Precioso Borja.

It was the first visit to Manila for the four visitors and Seaman Borja proudly showed them the contrasts of the old and the new, the blend of oriental and occidental cultures in

this historic capital city.

In the old Spanish walled city they saw worshipers entering centuries-old San Augustin Church—the first stone church built in the Philippines—while only a few blocks away late model automobiles sped past modern office buildings.

At the Rizal Monument Seaman Borja told the visitors how the Philippine national hero, Dr. Jose Rizal, was executed for sedition by the Spanish in 1896 and at Fort Santiago they saw the Rizal Museum containing exhibits about the famous man.

The men also stopped at Malacanang Palace, official residence of the Philippine president, where they walked around the grounds and were shown the official reception room. Amid the bustle of Manila's 3,000,000 residents the group relaxed in tranquil Luneta Park with its lush lawns, flower gardens and monuments to national heroes.

In souvenir shops they looked over Philippine handicrafts of wood carvings, decorated seashells and miniature native farmhouses.

For the Navymen of four visiting nations it was a pleasant way to start a serious exercise, and to the host Navy it was a chance to show off their capital city.—Photos and Story by Jim Falk, JOC, USN

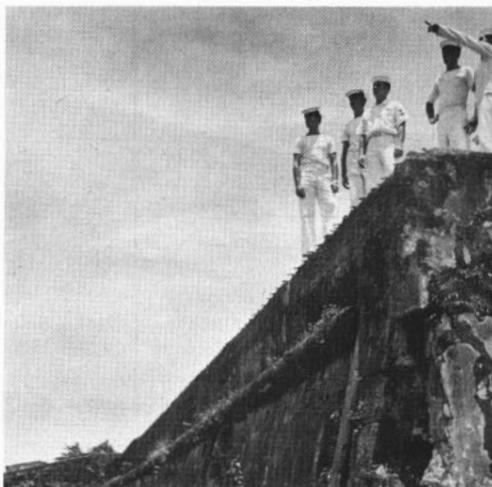
TIME OUT—Navy tourists relax on the lawn at Luneta Park during trip.



SEPTEMBER 1966



TOUR—Group visits Rizal monument.



ON TOP—Navymen at old city view site where Manila was founded. Below: Reception room at Palace.



Neptune

Soon the props begin to turn slowly, hesitate, then burst to life.

At 0845 the plane takes off to slightly cooler air, but heat from the electronic equipment in the aircraft prevents the temperature from dropping much.

REPORTING over Vung Tau, the plane commander radios that he is now on station to assume patrol duties, relieving the incoming patrol plane. Aerial surveillance is maintained around the clock by the patrol squadron.

A second call is made to the naval surface ship commander of patrol forces in the area. He will report any contacts requiring investigation by the aircraft. This procedure is repeated as the patrol crew enters the many designated patrol areas along the coast. Each of these areas contains surface units such as radar picket escort ships, minesweepers, Coast Guard cutters and the Navy's new 50-foot *Swift* boats.

The first leg of the flight is made southward along the coast, primarily in a search for Viet Cong junks.

At 1005 one of the Vietnamese Navy observers reports a suspicious group of junks to starboard. Investigation reveals that they are friendly.

The Vietnamese observer continually exchanges information by radio with his navy's surface units below.

At 1140 he reports VC junks at the mouth of a river seen in the



MARKET TIME—*Neptune* on patrol off Vietnam flies over surface patrol partner.

IT is early morning in Saigon, and another day is beginning almost like any other day for Coastal Surveillance Force aviators. Four Navy officers depart their military hotel in Saigon and climb into a waiting pickup truck. Ten minutes later they stand before 10-foot-high charts of the South Vietnamese coastline.

A briefing officer at the Coastal Surveillance Force headquarters ticks off special instructions.

"Two destroyers are firing support missions in this area. Stay well clear. Two VC junks were spotted at this point at 0230 this morning. Surface units of the Vietnamese Navy and U. S. Navy *Swifts* are in the area now." He continues.

When the briefing is completed, the officers head for Tan Son Nhut to join the aircrew already preflighting the bird, an SP2H *Neptune*—one of seven assigned to Market Time patrols off the coast of South Vietnam. Their mission: Detect attempts to infiltrate arms, men or equipment to the Viet Cong.

At the aircraft they join their crew and the two Vietnamese Navy observers who complete the team. Each wriggles into his mae west and parachute harness as the plane captain reports to the plane commander.

By now the morning sun is producing near-tropical heat, and the crew is ready to go. The plane commander briefs the crew on the flight.

LOOKING OUT—Trained eyes look for suspicious activity aboard junks. *Rt*: Radar operator reports contact to pilot.



Surveys the Situation

distance. He has just received a contact report. The pilot circles the area, noting that four VC junks are surrounded by a Vietnamese Navy junk group. A *Swift* is also speeding to the position which the copilot has radioed. When the plane commander is satisfied that everything is under control, he proceeds.

At 1155 the after station observer reports over the intercom that two F4 *Phantom* fighters are at four o'clock high, making bombing runs on the beach. A brilliant white flash is followed by a white puff of smoke.

At 1210 the aircraft turns short of the Vietnamese-Cambodian border and heads away from the coast to sea. The first leg was primarily a visual search for junks, but now the patrol plane will check for large cargo ships attempting to deliver war materials to the Viet Cong.

ON THIS second leg the aircraft flies several miles out to sea and commences a radar search. Silence on the intercom is broken at 1245, as Radar reports, "I have a contact bearing 220 degrees, 27 miles."

"Roger, coming to 220." The plane banks, then steadies on the new course. Soon the bow observer reports visual contact of the target.

The pilot gives assignments for the rigging run: "Bow, let's have up-right sequence and photos; Copilot, take the name, course and speed.

Radio, check the stack markings. All stations note any unusual cargo."

Then another report: "Coming up on starboard in 20 seconds."

The plane drops to 100 feet. Instruments—especially the altimeter—are monitored closely. The ship's name, identifying features, course, speed and position are logged and reported to the nearest coastal surveillance center. This particular contact turns out to be a communist bloc merchant.

Seven more shipping contacts are investigated. These are all friendly ships, most of which are heading for Saigon.

ONE SPECIAL feature of the daytime patrol is the "gold dust" drop to U. S. surface ships. Newspapers, magazines and paperback books are packed into empty .50-caliber ammunition boxes and dropped to the surface units. This is a welcome package after many days at sea.

The copilot asks the coastal minesweeper *uss Vireo* (MSC 205) if they would like some gold dust. "That is affirmative," comes the quick reply.

"Roger. Stand by for a drop off your port bow. After Station, make ready for a drop."

"Roger, standing by."

"Drop."

"Gold dust away."

The package hits the water just in

front of the ship—a perfect drop. The minesweeper maneuvers for recovery as the aircraft climbs.

Two more such drops are made to the U. S. naval patrol forces.

Six hours pass before the patrol plane is again over Vung Tau. Inbound for Tan Son Nhut, another squadron aircraft greets them on its way out to take up the continuous patrol. Weather information and special interest contacts are given to the sister plane, plus the familiar "Have a good flight."

By this time the crew is showing signs of weariness from the long, hot flight. The airfield is a welcome sight.

At 1530 the *Neptune* is in place on the squadron line. The enlisted crew immediately begins post-flight procedures on the aircraft while the officers complete a maintenance report and head back to Saigon for debriefing at the Coastal Surveillance Force headquarters.

It is now 1630 and the crewmembers are finished with their day's work. Another mission is completed in Operation Market Time.

Patrol Squadron One crews fly four of these flights each day. The squadron's seven-plane detachment is deployed at Tan Son Nhut, from where over 300 missions have been flown in three months.

The squadron is homebased at NAS Whibey Island, Wash. They've come a long way to do a tough job.

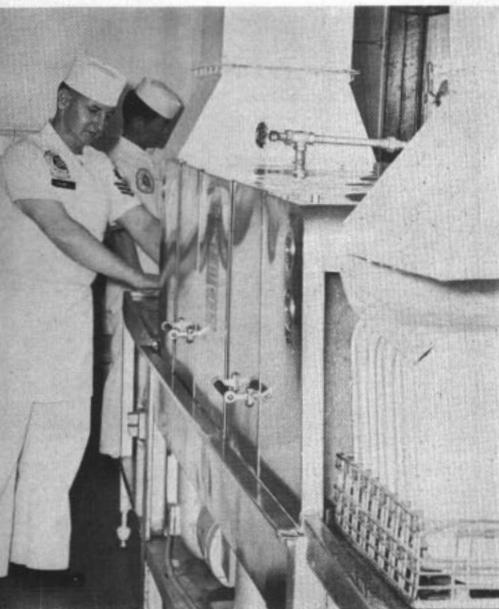
—Eldon G. Kaul, LTJG, USNR

GOLD DUSTING—Plane commander maneuvers *Neptune* for mail drop to DER. Rt: Forward observer checks on junk.





POT LUCK—Ney judge inspects cleanliness of cooking equipment. Rt: Full tables are indication of good food.



AUTOMATIC dishwashers keep trays, dishes and utensils ready to go. Rt: Mixer whips potatoes for meal. Below: Bakers shape bread dough into loaves.



'ADD

THE SUBMARINE service has a reputation for superb food, but the Air Navy obviously does not suffer. The general mess at NAS Miramar, Calif. has won the top Ney Award for the second time.

Only one other galley has won the Ney Award twice. That was the Bay Hill galley at Guantanamo Bay, Cuba, winner in 1958 and again in 1960.

In fact, all segments of the Navy have fared well, each with its share of winners.

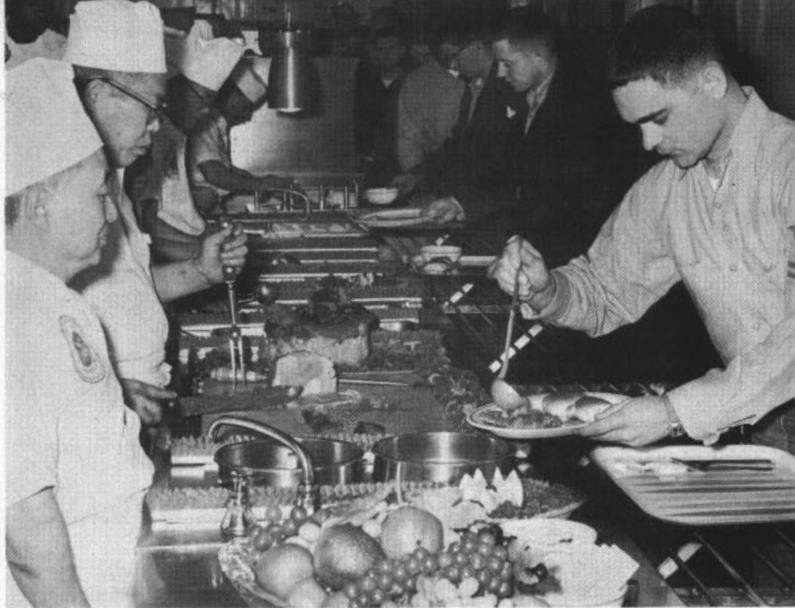
In the afloat categories this year the Navy's cruiser-destroyer force took the highest honors. Winner in the large afloat class was *uss Gridley* (DLG 21).

Top ship in the small class was *Semmes* (DDG 18).

During the past year *Semmes* has achieved a reputation as a good feeder. Aside from winning the top Ney prize in her first year of competition (unusual in itself), the volume of requests for recipes has led to the publication of *Dare to Excel in Cooking*, a book which features many of *Semmes'* most popular recipes (see page 22).

First runners-up this year were the Naval Communications Station, San Miguel, P. I.; *uss Howard W. Gilmore* (AS 16); and *Aggressive* (MSO 422). *Aggressive* is the first MSO to place in the top nine.

Second runners-up were the Naval Support Activity, Naples, Italy; *uss Proteus* (AS 19); and *Skagit* (AKA



MINESWEEPER SAILOR takes on a load of fuel in serving line. Rt: Lunchtime activity keeps commissarymen busy.

A DASH OF SALT'

105). In 1965 *Skagit* won first place in the small afloat category.

This year's winners got the nod over 37 other contenders. The final judging took place in June and the winners were chosen by the Ney Memorial Awards Committee. This committee consisted of naval officers and officials of the sponsoring organization.

This was the ninth Ney contest. The latest competition began last July as ships and stations contended to represent their respective type commanders or naval districts. By April of this year the preliminary selections were complete and Navy-wide judging began.

The seagoing enlisted messes chosen to represent type commands in the 1966 contest are listed below. Some type commands, such as COMCRUDESPEC, are represented by ships in both afloat categories.

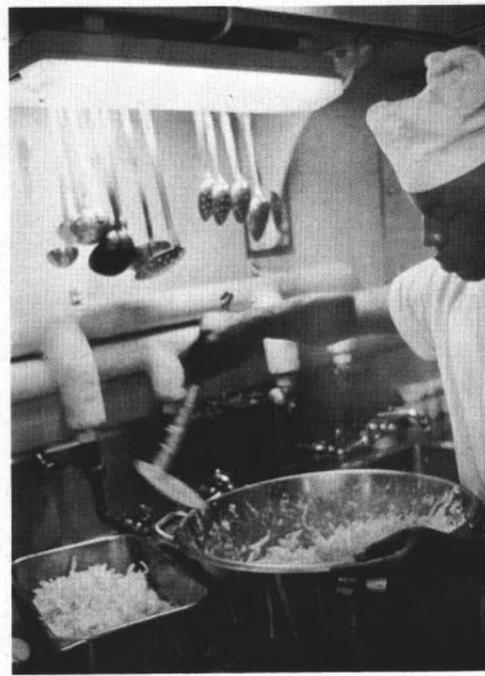
- Naval Air Force Atlantic: *Independence* (CVA 62)
- Cruiser-Destroyer Force Atlantic: *Wright* (CC 2) and *Semmes* (DDG 18)
- Service Force Atlantic: *Amphion* (AR 13) and *Georgetown* (AGTR 2)
- Amphibious Force Atlantic: *Guam* (LPH 9) and *Hermitage* (LSD 34)
- Submarine Force Atlantic: *Howard W. Gilmore* (AS 16) and *Hardhead* (SS 365)
- Mine Force Atlantic: *Aggressive* (MSO 422)
- Naval Air Force Pacific: *Oriskany* (CVA 34)
- Cruiser-Destroyer Force Pacific: *Gridley* (DLG 21) and *McMorris* (DE 1036)
- Service Force Pacific: *Klondike* (AR 22) and *Ponchatoula* (AO 148)
- Amphibious Force Pacific: *Iwo Jima* (LPH 2) and *Skagit* (AKA 105)

- Submarine Force Pacific: *Proteus* (AS 19) and *Pickrel* (SS 524)
- Mine Force Pacific: *Force* (MSO 485)
- Elected mens' messes chosen to represent the district commandants were:
 - First Naval District: Naval Air Station Quonset Point, R. I.
 - Third Naval District: Naval Station Brooklyn, N. Y.
 - Fourth Naval District: Naval Air Facility Johnsville, Pa.
 - Fifth Naval District: Cargo Handling Battalion One, Cheatham Annex, NSC, Williamsburg, Va.
 - Sixth Naval District: NavSta Mayport, Fla.

- Eighth Naval District: Naval Air Station Corpus Christi, Texas.
- Ninth Naval District: Naval Training Center Great Lakes, Ill.
- Tenth Naval District: Naval Radio Station Fort Allen, Puerto Rico.
- Eleventh Naval District: Naval Air Station Miramar, Calif.
- Twelfth Naval District: Naval Air Station Lemoore, Calif.
- Thirteenth Naval District: Naval Air Station Whidbey Island, Wash.
- Fourteenth Naval District: Naval Station Midway Island.
- Fifteenth Naval District: Naval Security Group

WHERE IS IT?—Ney judge checks stores for cleanliness, item accessibility.





BOOKWORMS—Part of Ney competition is financial management. *Right:* Salad is scooped into pan for serving line.

Activity Galeta Island, C.Z.

Seventeenth Naval District: Naval Station Kodiak, Alaska

Washington Naval District: Naval Weapons Laboratory Dahlgren, Va.

Naval Air Force Atlantic: Naval Station Argentia, Newfoundland

Naval Forces Marianas: Naval Station Guam, M. I.

Naval Forces Philippines: Naval Communications Station, P. I.

Naval Forces Japan: Naval Security Group, Kami Seya, Japan

Commander in Chief Naval Forces Europe: Naval Support Activity Naples, Italy

During April officers in charge of the Navy's Field Food Service Teams visited each of these 40 ships and shore installations to perform on-site evaluations. The pertinent information was forwarded to the Ney Awards Committee and used to determine the nine finalists.

In June members of the Ney Committee began an around-the-world tour, visiting each of the nine contenders. The team, which included Supply Corps officers, a Medical Service Corps officer and two civilian food service experts, logged a total of 26,000 miles during the course of the inspection tour.

The finalists were judged on all aspects of general mess management. The categories included food preparation and service, sanitation, administration, training, storage of bulk stock and its proper rotation.

Special attention is paid to detail. The nine finalists represent the Navy's very best so determining a

winner often depends upon a very thorough investigation.

The first place winners in each of the three categories will send one enlisted man and one officer to represent their command at the annual convention of the sponsoring association. While attending the conven-

tion, the representatives will receive bronze Ney Memorial plaques.

First runners-up receive plaques and are entitled to send a commissaryman each to the Culinary Institute of America for a two-week course in specialized cookery.

Jon Franklin, JO1, USN

Here It Is — A Sea-Going Cookbook

Any ship which has reached the finals in the Ney Memorial Award competition is bound to be a good feeder. Any Navyman with the good luck to be ordered to such a ship knows his chances for superior food are good even though the ship may not actually win the award.

uss *Semmes* (DDG 18) this year reached the finals in the Ney Memorial Award competition—then went on to win in her class—and she is rightly known throughout the Navy as being a ship in which a Navyman can find a good meal.

Semmes' food, in fact, has become so well known that she constantly receives requests for her recipes. To satisfy the demand, Lieutenant Darrell Miles of the Navy Supply Corps and Commissaryman First Class William Bigley, USN, gathered together what they considered to be *Semmes'* better recipes and published them in a book entitled *Dare to Excel in Cooking*.

The recipes have been pared down to 25-serving portions to be used by

small schools, churches, scout groups or by individuals or clubs planning big picnics. There is a conversion table in the rear of the book which will enable the reader to prepare more or fewer servings as the need arises.

Almost everyone, of course, has heard the saying attributed to Napoleon about an army marching on its stomach. So far, however, there is no equally well-known cliché which applies to the importance of food in the Navy.

It stands to reason, nevertheless, that the appearance, aroma and taste of food in the mess deck of a destroyer plowing through a rough sea would be of considerably more importance than that of the food served from one of Napoleon's field kitchens.

Add the appetites of several hundred young men who have been working hard in the salt air and you have a hunger which has to be satisfied—hopefully by a good meal.

In perusing *Semmes'* cook book, it

becomes obvious that there is nothing epicurian or unusual in her recipes. They are relatively simple formulas for good plain, nourishing food.

Semmes' captain maintains that the secret of his ship's culinary success is really no secret at all. *Semmes* has good food simply because her commissarymen care about the food they serve and do their best to make it the finest food in the Navy.

And This is Why

The *Semmes* cookbook guides its readers through a complete dinner from soup to after-dinner coffee (the nuts are omitted). There are recipes for soups, salads, salad dressings, chicken, meat and seafood (with their sauces), cheese and egg dishes, vegetables, pastries and cakes, together with several beverages (including coffee-making tips) and variations on a number of standard recipes.

Although all the recipes in the book are appetizing, there are several that seem particularly appealing. For example: Hamburgers Epicurean, Mexican Spareribs, Scallops Creole, Oysters Jambalaya, Baked Aludra Macaroni, Potato Omelet, and Golden Potato Balls.

With recipes like these, you can

see why *Semmes* has such a fine reputation as one of the Navy's top "good feeders."

Italian Style

Intrigued by the popularity of Italian cookery, three *uss Albany* (CG 10) commissarymen took advantage of their ship's visit to Naples to learn the secret.

The Navymen first found an expert—the chef in one of the city's better known restaurants. They then spent several hours observing the maestro at work and touring the kitchen area.

During this time, several differences in operating procedures turned up. The Italian chef, they learned, filed all his recipes in his head and prepared food for only 150 diners. *Albany's* galley, on the other hand, uses recipe cards and feeds about 900 Navymen.

Nevertheless, the three *Albany* men returned to their ship with some recipes from the chef's file which they intend to translate into CG 10 proportions. Best of all, from the commissarymen's standpoint, they were invited by their Italian host to have dinner on the house.

The *Albany* commissarymen learned much that would benefit them as Navy cooks, but found that there is



WHAT'S COOKING?—Commissaryman First Class T. Tompkins, USN, of *USS Albany*, asks an Italian chef how he does it while on liberty in Naples.

a big difference between the task of preparing food for the 150 customers daily at the hotel, and feeding 900 hungry sailors each meal from the cruiser's galley.

Origin of the Ney Awards

The Ney Memorial Awards program was established in 1958 by the Secretary of the Navy as a means of giving recognition and encouragement to the Navy's outstanding general messes. The program encourages competition among the Navy's enlisted messes and generally enhances the quality of both food and management.

Captain Edward F. Ney, SC, USN, for whom the competition is named, was the World War II director of the Subsistence Division, Bureau of Supplies and Accounts. For his contributions to the Navy's food service organization he was awarded the Legion of Merit for:

“... exceptionally meritorious conduct in the performance of outstanding services in the Government of the United States as officer in charge of the Subsistence Division, Bureau of Supplies and Accounts, from 30 Nov 1940 to 15 Oct 1945. Skillful in resolving the complexities of his task, CAPT

Ney ably handled the multiple problems incident to determining the requirements and supervising the procurement of food for the United States Navy, thereby contributing directly to the high standard of Navy rationing which resulted in increased morale, comfort and well-being of officers and men.”

In addition to the Legion of Merit, he earned the Mexican Service Medal; the Victory Medal (World War I); Yangtze Service Medal; American Defense Service Medal, Fleet clasp; American Campaign Medal; and the World War II Victory Medal. Captain Ney died in Oakland, Calif., on 8 Aug 1949.

During the first year of Ney competition the judges chose *uss Franklin D. Roosevelt* (CVA 42) in the afloat category and the Naval Station Guantanamo Bay, Cuba. Winners the following year were *uss Paul Revere* (APA 248) and the Naval Communications Facility at Kami Seya, Japan.

In 1960 Guantanamo Bay became the first mess to be a repeat winner, an achievement not repeated until this year when NAS Miramar took the top award for the second time. In 1960 Guantanamo Bay shared the limelight with *uss Saint Paul* (CA 73), first choice in the seagoing category. Winners in 1961 were NAS Patuxent River, Md., and *uss Courtney* (DE 1021).

NAS Miramar took her first win in 1962, along with the Fleet oiler *uss Kawishiwi* (AO 146). Top messes in 1963 were *uss Frank E. Evans* (DD 754) and the submarine base at Pearl Harbor.

In 1964 for the first time the afloat category was broken into large messes (serving more than 300 men) and small messes. The three winners that year were *uss Observation Island* (EAG 154), *Tracer* (AGR 15) and Naval Air Station Corpus Christi, Texas.

Last year's winners were *uss Oriskany* (CVA 34), *Skagit* (AKA 105) and NTC Great Lakes.

LETTERS TO THE EDITOR

Family Protection Plan

SIR: Perhaps you can answer two questions concerning the Retired Serviceman's Family Protection Plan.

In one case, a Navyman selects options three and four. Subsequently, his wife dies. Does the cost of the plan reduce to the cost of option two in such a case?

In the second case, a man selects options two and four. His children reach age 18 or die. Does he continue payments, or do the charges stop?—J. C. C., PNC, USN.

• In the first case, when options three and four are selected and the wife dies before the serviceman's retirement, the plan automatically changes to options two and four—providing the man does not remarry before retirement.

If, on the other hand, the wife dies after his retirement, the serviceman must continue to pay at the established rate for options three and four until there is no longer an eligible beneficiary.

In the second case, however, payments stop. Option four provides that no further deductions will be made when there is no longer a beneficiary to receive the annuity.

The complete story on the Retired Serviceman's Family Protection Plan, formerly known as the Contingency Option Act, may be found in the ALL HANDS Rights and Benefits issue, December 1963, page 80. This issue has since been reprinted as NavPers 15885-B.—Ed.

Extension Contract

SIR: How binding is an extension contract? Last December I signed an agreement to extend my enlistment for two years to be eligible for shore duty under the A segment of Seavey 1966. However, due to an oversight (error?) in the personnel office, my agreement was not entered in the ship's diary. As a result, I was placed in the "dead file" in BuPers.

I did not discover the error until earlier this month. The situation is under investigation, but from what I've been able to find out, my chances of receiving shore duty orders at any time during the 1966 Seavey are next to nil.

Since I did not go on the Seavey segment for which I extended, can I cancel my part of the agreement and settle for a normal discharge?

It is this kind of situation, I feel, that spoils the Navy's retention program.

This section is open to unofficial communications from within the naval service on matters of general interest. However, it is not intended to conflict in any way with Navy Regulations regarding the forwarding of official mail through channels, nor is it to substitute for the policy of obtaining information from local commands in all possible instances. Do not send postage or return envelopes. Sign full name and address. Address: letter to Editor, ALL HANDS, Room 1809, Bureau of Naval Personnel, Navy Dept., Washington, D.C. 20370.

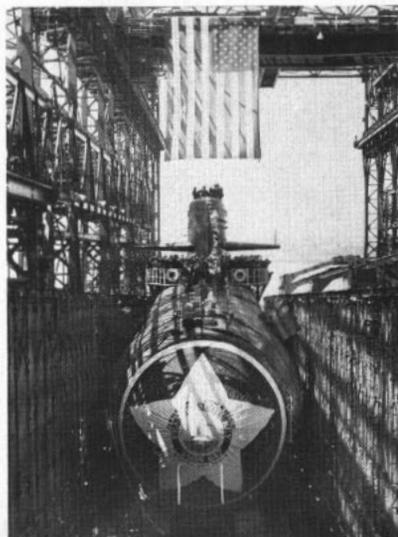
I'll soon be rounding out 14 years in the Navy, the last three of which have been spent aboard this ship. For the past six advancements exams I've been quoted.

Now, to top it off, because somebody in the personnel office fouled up, I'm expected to spend a third consecutive Far East cruise away from my family.—D. N. M., PHL, USN.

• Yes, you can cancel the extension agreement. The "BuPers Manual" states that you can cancel it on the day before it goes into effect if, through no fault of your own, you have not received any of the benefits for which you agreed to extend.

As for your discharge, why not think it over? Fourteen years is a lot of time to throw away. To use an old saw, mistakes do happen, even in personnel offices. You know, not long ago we met a young PH who confided to us (in a very low whisper) that he had once snapped three dozen pictures of an important event before discovering he had neglected to load his camera. His name escapes us at the moment. Perhaps you know him?—Ed.

LAUNCH TIME—Polaris submarine Francis Scott Key (SSBN 657) heads for water during launching in April.



Fringe Benefits? You Bet!

SIR: I read with interest, and a little astonishment, the letter from B.S.S., LT, USN, on page 28 of your January issue, concerning fringe benefits and their relative value. I don't have any fancy statistics to offer, but I can provide a couple of personal observations based on experience.

Things have improved a good bit since I enlisted in the Navy way back before World War I, especially with regard to fringe benefits. But even then it didn't take me long after enlisting to discover just how well the Navy takes care of its own.

First of all, we did not have to worry about waking up one morning to find we were out of a job, due to a strike or getting laid off. If we happened to become hospitalized, we did not have to increase our discomfort by lying there worrying about the pay we were losing, or which loan company we were going to have to put the touch on to pay the hospital and doctor bills.

In those days, of course, we did not receive any BAQ to help us establish a homestead, and we could expect to be away from our families anywhere from two weeks to two years at a time. However, we did have the commissary and ship's store, so we knew our families could buy anything they needed.

Then there was the outpatient treatment for our dependents. Sure, they often had to wait in line to see the doctor, but they could depend on good treatment when they did see him.

I was placed on the retired list for physical disability in 1945. Are retirement benefits worthwhile? You just bet your ditty bag they are. I live 18 miles from the nearest military establishment, but it's a trip I don't mind making to take advantage of my benefits.

As for medical care, I have never waited too long to see a doctor at the base, and each time I received the very best and courteous service I could ask for.

I trade at the commissary and exchange quite a bit, and I find that it takes less time to get checked out through the commissary than it does in my local market.

Educational benefits? Well, after my retirement I was able to attend college for four years under the GI Bill, and got my law degree.

There are very few things in this world that one can be sure of, but I have found at least one. I know my retirement check will be in my mail box

waiting for me each month. Perhaps that is the greatest fringe benefit of all. Or maybe it's second to the pride I have in the knowledge that I served my country through two World Wars.

I just thought you might like to hear from somebody who knows the value of fringe benefits because he's been there.—W. J. Swaney, MMLC, usn (Ret).

• *We were indeed glad to hear from you. It's refreshing to get away from statistics now and then, and substitute personal accounts.*—Ed.

Dixie Joins the Club

SIR: I have noted that you have established an Over-25 club for ships which have been on continuous active duty 25 years or more.

uss *Dixie* (AD 14) was commissioned on 25 Apr 1940. She has provided tender services for destroyers and other types of ships in the Pacific constantly ever since. She has also been deployed to WestPac 14 times during this time.

The officers and men of *Dixie* celebrated their ship's 26th anniversary at a gigantic birthday party at Subic Bay this past April at which Rear Admiral W. H. Baumberger, Commander Cruiser-Destroyer Force Pacific, was an honored guest.

While I am singing the praises of *Dixie*, I feel I must take issue with uss *Butternut* (AN 9) which claimed to be the third oldest ship in the Navy on continuous active duty. That distinction belongs to the ship I have the honor to command.

Dixie looks and acts as young as she ever did and apparently enjoys revisiting her old stomping grounds in WestPac. FRAM and other improvements have increased her efficiency.

For instance, uss *Porterfield* (DD 682) was recently re-gunned in one day.

We are proud of our ship and the spirited crew that keeps alive the will-do spirit for which *Dixie* has always been famous.—W. J. Coleman, CAPT, usn, Commanding Officer, uss *Dixie*.

• *ALL HANDS is always happy to welcome another ship to the Grand-Old-Lady-of-the-Fleet Club. Dixie made her entrance like the grande dame she is—dripping decorations.*

After Dixie was placed in commission in April 1940 and finished her sea trials, she steamed through the Panama Canal en route to Hawaii via San Diego.

Although she normally operated out of Pearl Harbor, Dixie was in San Diego on 7 Dec 1941. She wasted no time returning, however, and her war-time itinerary reads like a history book. She could always be found where the action was.

When Dixie came home from the war after nearly four years in the Pacific, she flew a homecoming pennant



IN THE MED—The Navy's newest attack carrier USS America (CVA 66) fires a salute with her guns while at anchor in port for a visit to Genoa, Italy.

1100 feet long made of heavy silk supported by 17 hydrogen-filled gunnery balloons.

Within a few months, Dixie was WestPac-bound again looking in on everything from atomic experiments at Bikini to the Korean conflict. As you said, Captain, she is as spry as ever and still hard at work.

The records of Butternut and Dixie would indicate that, as you say, Dixie has been in continuous service longer than Butternut. Butternut was placed in service in the Thirteenth Naval District on 3 Sep 1941. She was commissioned in May 1942—about 25 months later than Dixie.

Here is a belated tribute to AD 14 on her 26th birthday. It's an appropriate occasion for whistling "Dixie"—with spirit.—Ed.

Training for Divers

SIR: I believe that at one time a Diver First Class could qualify a Diver Second Class if he had the necessary equipment on board. Is this still allowed? If so, is written permission from the Chief of

Naval Personnel required?—G. A., SF1 (DV)

• *Until 1959, Divers Second Class could be trained, qualified, and designated in any command having the proper equipment and competent personnel for instruction.*

This policy resulted in a wide disparity in the diving ability of Divers Second Class trained by ships and those trained by formal shore-based diver training activities. Therefore, a policy was established which limited the number of activities authorized to train divers.

However, if there is an urgent need for training Divers Second Class, ships and stations may submit a request for permission to the Chief of Naval Personnel, via the chain of command. The request must indicate that time, equipment and competent diving supervisory personnel are available to conduct the training. It will be necessary, of course, to comply with the approved BuPers curriculum.—Ed.

Flying the Flag

SIR: Since I've been here in Antarctica, I have been asked on several occasions about the proper procedure for flying the National Ensign. As you know, we have a five-month-long day and an equally long night down here. During the day, the flag is flown around the clock, and, I am told, during the winter, the flag, simply is not flown.

There is of course, no specific mention of our plight in *Navy Regs*. Article 2164 states that the National Ensign shall be displayed from 0800 to sunset near the headquarters of every command ashore. But what if there is no sunrise? Or sunset? Is it proper to dis-

Seniority—Again

SIR: Aside from Navy tradition, can you explain why a system of seniority by rating as well as rate is in effect for first class and below?—D. R. G., YN1, usn.

• *As you imply, tradition is a definite factor. The tradition, however, evolved for good reason—some ratings are more able, by virtue of training and experience, to exercise command in a military situation. Because of this, such ratings have certain honorary status.*—Ed.



COLLEGIATE NAVY—Midshipmen First Class F. W. Conroy (left) and John Filose receive training aboard USS Lowry (DD 770) during cruise in the Med.

play the flag around the clock during the five-month summer, and then not display it at all during the long winter?

The only answer I have received is, "That's the way it is." What do you say?—L. V. H., YNI, USN.

• Admittedly, your situation is not exactly common. As you know, it is next to impossible to cover every situation by regulations, and this situation in Antarctica just happens to be one of these special cases.

Nevertheless, "U. S. Naval Flags and

Pennants" (DNC-27A) says, in effect, that there will be times when common sense will be the deciding factor. And Annex A of that publication states that the flag may be displayed at night upon special occasions when it is desired to produce a patriotic effect (for example, the flag may be flown at an evening sports event).

If you want to produce a patriotic effect for an evening sports event, therefore, you may do so. Generally, when there are no regs that seem to apply, the common-sense approach is recommended. We also refer you to your compatriot's answer: Be guided by local regulations, if any.—Ed.

Appointment Letters

SIR: Should the NavPers 2769 (temporary appointment to the grade of lieutenant (jg), pursuant to the provisions of Title 10, U. S. Code) be addressed from the commanding officer to LTJG John S. Doe or to ENS John S. Doe?

If to ENS Doe, should the first endorsement be from ENS or from LTJG Doe?

I have been unable to find any definite authority, so have come to the conclusion the matter is primarily a command determination.—D. L. C., YNCS, USN.

• The appointment letter should be addressed using the higher grade. In this case, the NavPers 2769 should be addressed to LTJG John S. Doe and the first endorsement should be from LTJG Doe.

There is, as you say, no reference on the subject. The rule stated above refers to the present Bureau of Naval Personnel policy.—Ed.

NavCad and AOC Applications

SIR: I understand the Naval Aviation Cadet (NavCad) program has been discontinued. Is this true? If so, what are the present paths to a commission as a naval aviator?—E. H. O.

• Though the NavCad program is still in existence, it is being phased out. No new NavCad applicants have been selected since December 1965. Pilot training classes convening in Pensacola are being filled exclusively with Aviation Officer Candidates (AOCs) and this is expected to continue so long as there are sufficient college graduates to fill the quotas.

NavCad applications are still being accepted, however, and those few who are tentatively recommended are being placed on a waiting list and will be ordered to Pensacola only at such time as the Navy is unable to fill classes with college graduates.

At present classes have been filled several months in advance and it is anticipated that NavCad applicants will not be used for the remainder of this year.

Another recent change which may be of interest is the disestablishment of the U. S. Naval School of Preflight. Last April it was replaced by the U. S. Naval Aviation Schools Command.

Since the change, prospective officers enter the Aviation Officer Candidate School (AOCS) for 11 weeks of extensive training specifically directed toward the mastery of the fundamental requirements for newly commissioned officers.

After successfully completing AOCS, those candidates with college degrees receive their commissions as ensigns in the U. S. Naval Reserve. The next phase of this new program is Flight Preparation School which provides four weeks of training in basic aerodynamics, theory, engineering, navigation, and swimming as well as physical conditioning.

Completion of this four-week program is normally followed by a two-week course at Survival Training School in land and sea survival techniques. The students are then transferred to the outlying fields where they commence the flight phase of training.—Ed.

Entertaining the Troops

SIR: Bob Hope has stated that there is a need for more entertainment for our servicemen. There's no denying the tremendous boost that Hollywood stars give our men overseas. However, professional troupes, on the infrequent occasions when they do tour military installations, can visit only a few locations.

It seems to me we could fill the gap with an internal Navy entertainment program, the participants being active



A STAR—Navy Boilerman Paul L. McCraw receives Bronze Star with Combat 'V' during ceremonies at Pearl Harbor. He won the decoration for 'consistently volunteering to render safe' VC explosive devices.

duty personnel who are in some way qualified as performers.

Not knowing if this has been considered previously, I'm not the one to judge the merit of this idea. However, I'm confident there would be plenty of interest.

What about it? Has this been considered or tried?—J. S. N., AC2, USN.

• Unfortunately, we are not qualified to judge the merit of your idea either. However, your suggestion did prompt us to inquire about the entertainment program now in existence.

There is a Department of Defense program which provides a year-round schedule of professional entertainment to our service personnel stationed at remote and isolated installations overseas. This program is administered by the U.S. Army.

Through it, various representative groups, ranging from salaried USO professionals to civic, college and celebrity units performing gratuitously, tour scheduled locations around the world. During the past year more than 100 such groups participated in the program.

Sometimes the DOD-sponsored performers are joined by additional civilian or military performers within a local area, when such an arrangement is considered desirable and approval is granted by the area commander.

Regulations also permit military personnel to tour U.S. installations, at the discretion of the major area commander, if they can be spared from their assigned duties and if the entertainment would contribute to higher morale. Both overseas and within the U.S., such performers normally tour only within the geographical area in which they are assigned.

The director of the Army-administer-

Ship Reunions

News of reunions of ships and organizations will be carried in this column from time to time. In planning a reunion, best results will be obtained by notifying the Editor, ALL HANDS Magazine, Room 1809, Bureau of Naval Personnel, Navy Department, Washington, D.C. 20370, four months in advance.

• *uss Saratoga (CV 3)*—The 15th annual reunion will be held at the El Cortez Hotel in San Diego, Calif., on 15 October. All former crew members are urged to contact Karl Vines, 1517 Granada St., San Diego.

• *uss LSM 266*—Will hold its first reunion in 1967. For details, write to G. E. Metcalf, 2015 Airfield Lane, Midland, Mich., 48640.

• *Seventh Battalion, USNR*—The Seventh Battalion, USNR (Jersey City, N. J.) will hold a reunion on 29 October. For details, contact Donald R. Rauenbuhler, 354 Webster Ave., Jersey City, N. J. 07307.

• *Retired Officers Association*—The 18th biennial convention of the National Retired Officers Association will be held 29 and 30 September at the Leamington Hotel, Minneapolis, Minn. For further information write to George M. Brown, 358 Cimarron Road, RFD No. 1, Rosemount, Minn.

• *12ND Intelligence Group*—A reunion dinner for officers, enlisted men, agents and civilian employees who served in the 12th Naval District Naval Intelligence Office from 1941 to 1946 will be held on 30 September at Marines Memorial Club, San Francisco, Calif. For details, write Peter Speros, Room 425, 681 Market St., San Francisco.

• *uss Saratoga (CV 3)*—The 15th annual reunion of *uss Saratoga (CV 3)* will be held at the El Cortez Hotel in San Diego on 15 October. All former crewmembers are urged to contact Karl Vines, 1517 Granada St., San Diego, Calif.

ed program informs us that there is no coordinated effort between the military services to sponsor groups of military performers.

It seems likely that, of the cross-section of people on active duty in the Navy today, there may be some who would be qualified to entertain in public. Just how many are stationed in a given local area at a given time, however, is quite another thing. Probably, to assemble a group of qualified entertainers, it would be necessary to administer a Navy-wide program—a monumental task, no doubt, since the

Navy is not in the entertainment business.

The closest approach to such an effort in the Navy thus far, although for somewhat different reasons, is the All-Navy Talent Contest. Participants in the contest do perform at local competitions but do not go on tour. The contest was last run in 1965, but it has not been run on an annual basis in recent years.

The Special Services Division of the Bureau of Naval Personnel (Pers-G1) administers the All-Navy Talent Contest.—Ed.



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"THING" GOES ASHORE—Marines head for landing at Phu Loc with Ontos. Ontos means recoilless rifle vehicle to Marines. To Greeks it means "thing."

PhibPac Reorganized

The Pacific Fleet Amphibious Force has been reorganized, and the number of squadrons increased from four to six.

Because of the buildup of U.S. forces in South Vietnam, the commitments for amphibious ships have steadily increased, keeping them in WestPac over half the time. During peak periods, 70 per cent of the amphibious force has been on the line.

The amphibious squadrons used to be rotated to the Far East one-in-four, with one-quarter of the force on station at all times. The reorganization will enable one-third of the ships to be kept on station,

rotating two squadrons in six.

The squadrons to be commissioned are Amphibious Squadrons Nine and Eleven. Squadron Nine will be homeported in San Diego, Eleven in Long Beach.

A minimum of home port changes were involved in the transition. The dock landing ships *uss Alamo* (LSD 33) and *Tortuga* (LSD 26) will move from San Diego to Long Beach, and the high speed transport *Diachenko* (APD 123) shifts from Long Beach to San Diego.

San Diego is also home port for two new ships, the amphibious transport dock *uss Duluth* (LPD 6), and the amphibious assault ship *Tripoli* (LPH 10).

New Construction

The fleet ballistic missile submarine *uss George Washington Carver* (SSBN 565) was commissioned recently at Newport News. Capable of firing the *Polaris A-3* missiles, she is the 37th SSBN in commission.

Recently launched was the nuclear attack submarine *Ray* (SSN 653), at Newport News.

The nuclear attack submarine *Haddock* (SSN 621) was also launched. *Haddock* displaces 4300 tons submerged, is 278 feet long, and 31 feet wide. Her armament consists of four 21-inch torpedo tubes amidships, and *Subroc*. The first *Haddock* (SS 231) participated in 13 war patrols during World War II. She was awarded four Presidential Unit Citations and 11 battle stars.

The keel has been laid for the replenishment fleet oiler *Wichita* (AOR 1). She will be built at Quincy, Mass. *Wichita* will be capable of providing one-stop replenishment for destroyers, including the transfer of fuel, refrigerated and dry provisions, food, and ammunition. She will be 659 feet long, 96 feet at the beam, and will displace 37,360 tons fully loaded.

In addition to the construction of new vessels, the Fleet is being enlarged to meet the current pace of operations by recommissioning ships that have spent time in mothballs.

The gasoline tanker *uss Patapsco* (AOG 1) was recommissioned at Portland, Ore. She is designed to provide petroleum replenishment to advanced or overseas bases or to ships. *Patapsco* is due to join the Service Force, U. S. Pacific Fleet, at Pearl Harbor.

The ammunition ship *uss Chara* (AE 31) was brought back into the Fleet at Portland, Ore. Formerly an attack cargo ship, *Chara* was converted in 1965. She is designed to transport and deliver ammunition, missiles or other ordnance to fleet or shore commands.

Four tank landing ships (LST) have been recommissioned from the Reserve Fleet at Long Beach. They are *uss Sedgwick County* (LST 1123), *Hampshire County* (LST 819), *Ire-dell County* (LST 839), and *Pitkin County* (LST 1082).

BUILDERS OF THE NAVY



Forty-nine years ago next month, the U. S. destroyer *Cassin* was patrolling off the Irish coast when Gunner's Mate Osmond K. Ingram sighted the torpedo of a German submarine racing toward his ship's stern. Ingram realized that, if the torpedo found its mark, it would strike his ship about where the depth charges were stowed. Instead of saving himself, Ingram deliberately rushed aft to throw the charges overboard. The torpedo struck home and Ingram was killed in the explosion. Although Ingram died in his attempt to save his ship, his selfless act served to save the lives of his fellow Navymen.

Markab Joins the Club

USS *Markab* (AR 23) has joined the over-25 club. The repair ship completed her quarter-century of naval service while in Yokosuka, Japan.

Markab was to have been the commercial SS *Mormacpenn* but was pressed into Navy service during the emergency which preceded the United States' entry into World War II.

The ship was commissioned on 15 Jun 1941, as an attack cargo ship. In 1942 she was converted to a destroyer tender and supported many invasions in the Pacific. In 1947 she was placed in mothballs.

Like much of the Reserve Fleet, *Markab* was reactivated during the Korean conflict. Joining the Fleet once more, she was assigned to the Atlantic destroyer force in 1952. In July 1956 she was again placed in mothballs.

In 1960 *Markab* made another comeback, this time as a repair ship. Her home port was changed to San Francisco, with berthing at Alameda.

During her present overseas deployment *Markab* has serviced ships in Manila Bay and Subic Bay, Philippines, and at the Naval Base in Yokosuka, Japan. Since leaving the U. S., *Markab* has completed some 6000 jobs on more than 120 ships.

Gadgets to Get Big Squeeze

A high pressure test and evaluation device capable of exerting pressures as great as 20,000 pounds per square inch (comparable to the pressure that would occur at a depth of about eight and one-half miles beneath the surface of the ocean) has been developed by the U. S. Naval Oceanographic Office.

Designed to test instruments in undersea work, the device can accept instruments up to eight feet in length. It can subject these instruments to pressures which would be encountered in the deepest known parts of any ocean. The testing device weighs 18 tons.

Officials of the Testing Division of the Naval Oceanographic Office, operators of the new device, said that tests have already caused a re-design of several underwater instruments. When subjected to pressure tests, some instruments, designed to operate at specific depths, failed to meet the claims made for them.

When possible, equipment will be depth-tested at locations such as the



CLAIM TO FAME for newly commissioned USS *Fox* (DLG 33) is ability to launch *Asroc* and *Terrier* from same system. She also has NTDS computers.

Navy Yard in Washington, D. C., rather than at sea. Time and money savings will be considerable.

Shuttle Run for Elkhorn

USS *Elkhorn* (AOG 7) has returned home to Pearl Harbor after an eight-month shuttle run off the coast of Vietnam.

The ship, serving with Naval Support Activity, Da Nang, helped supply the Da Nang and Chu Lai air-

fields with jet fuel and vehicle and aviation gasoline. *Elkhorn* was engaged in shuttle runs from deep-draft tankers at sea to the beaches, where her shallow (20-foot) draft allowed her to come in close and pump the fuel ashore through floating or submerged pipelines.

During the deployment in the combat zone, *Elkhorn* pumped close to 15 million gallons of fuel ashore in support of military operations.

NOSEY LADY—In her 21-year career, USS *St Paul* (CA 73) has had her nose (or bow), if you prefer, in WWII, Korean action and current Vietnam conflict.





LIGHTING UP—Crewman at McMurdo Station, Antarctica, lights fuel drum to help mark runway for emergency evacuation. Right: Injured sailor is put into ambulance at Christchurch, N. Z., after mercy flight from Antarctica.

Mercy Mission

The flickering torches illuminating the ice at McMurdo Sound weren't put out for an Antarctic luau. They were there to mark a landing field on the ice for a Navy *Hercules* LC-130F arriving from Quonset Point, R. I., via Washington, D. C., and Christchurch, New Zealand.

The purpose of the trip was extremely serious. A member of the wintering-over party was critically ill and had to be evacuated to Christchurch.

The ski-equipped LC-130, provided with an extra fuel tank, took off from Quonset Point and, after a quick stop at Washington, to pick up the Deep Freeze Staff flight surgeon, weather specialists and Deep Freeze chief, Rear Admiral Fred Bakutis, the *Hercules* was off on its 13,800-mile mercy mission.

Luckily, upon arrival at McMurdo, the wind was blowing at a comparatively gentle 15 knots. The *Hercules* made a satisfactory landing on the ice where it kept its engines running to prevent a freeze-up in the minus 14-degree cold.

The sick Navyman, shortly afterward, was on board and the plane was in the air again for the return trip to Christchurch and a hospital.

This was the third mercy mission flown to the Antarctic during the winter. In April 1961, an aircraft landed at Byrd Station and evacu-

ated a Soviet exchange scientist wintering over at that U. S. station. He was suffering abdominal pains which failed to respond to treatment. Although complete darkness had not descended on Byrd Station, the expedition was in its wintering-over phase.

The second took place in June 1964 when a critically injured man was safely evacuated, also in a Navy *Hercules*.

Swift Rescue

When the crew of a Navy *Swift* boat begins a patrol in South Vietnam, it can never be certain whether it will be called upon to impede the enemy or to help a friend.

The crew of one *Swift* on a routine patrol near Song Cau in central Vietnam, after sighting a junk, went in closer for a look-see. It saw a sinking boat badly overloaded with 157 frightened Vietnamese.

When the *Swift* came alongside, everyone from the junk frantically climbed aboard the Navy boat, intending to carry only its crew of six.

The patrol boat nevertheless took them all aboard and gingerly steered a course for *uss Vance* (DER 387) as the erstwhile passengers of the junk watched it succumb to the wind and heavy sea and disappear from sight.

The refugees, who were fleeing their home at Song Cau to escape

the Viet Cong in that area, were later turned over to Vietnamese authorities who took them to their destination.

Nice While It Lasted

Each year, some time in April, several Seventh Fleet ships receive special duty assignments: Go to Australia. Go to New Zealand.

The annual occasion is the anniversary of the Battle of the Coral Sea. In the engagement, which began 4 May 1942 and continued until 8 May, the Japanese drive south toward the two friendly nations was halted.

This year the chosen ships were *uss Benjamin Stoddert* (DDG 22), *uss Pine Island* (AV 12), *uss Berkeley* (DDG 15) and *uss Bugara* (SS 331). All four were due to return to CONUS after deployments to WestPac. Australia and New Zealand were their last foreign ports of call.

Bugara visited the western Australian cities of Perth, Fremantle and Geraldton. The other three ships visited Sydney, Brisbane, Adelaide, Melbourne and Hobart, Australia, and Auckland and Wellington, New Zealand. In each instance the reception was the same: Rather friendly.

The Australian-American Association, the Retired Servicemen's League and other organizations arranged an almost continuous round

of activities for both officers and enlisted men. Royal Australian Navy enlisted men's clubs were opened to U.S. Navy EMs during the visits.

As the stories are recounted, however, it is the individual hospitality which comes through most clearly. Sailors were invited to private homes for meals and for overnight and weekend visits. They were given sightseeing tours by enthusiastic citizens.

The Navy and the Navymen returned the hospitality by opening their gangways to public visiting. *Berkeley*, 437 feet from bullnose to taffrail, counted 10,725 visitors during five days at Adelaide.

There were things doing, constantly. Ships' bowling teams engaged in matches with Australian bowlers in several cities. A folk-singing group from *Benjamin Stoddert* appeared on television in Sydney and Melbourne and in Wellington, N. Z. Chaplains from the ships conducted Sunday services in Australian churches. The ships provided marching units for Coral Sea memorial services which were conducted in all the principal cities of both countries.

Having just come from the South China Sea, where they had supported operations in Vietnam, the sailors' sea stories were of great interest to both the Australians and New Zealanders. Bull sessions had large audiences and in many cases the Navymen were treated like conquering heroes home from the wars.

Guest of honor for the ceremonies was Vice Admiral Paul H. Ramsey, Deputy Chief of Naval Operations (Air). The choice was appropriate: In 1942 he had commanded the air group aboard *USS Lexington (CV 2)* during the Coral Sea battle.

With Admiral Ramsey came the



HOMEMADE—Helicopter picks up cargo from the portable fantail platform of the attack cargo ship *USS Muliphen (AKA 61)*. Platform was built by crew.

CINCPACFLT band and the drum and bugle corps from the Fleet Marine Force, Pacific. They were kept busy. In addition to official commemoration ceremonies and balls, the musical units had many opportunities to entertain everyone. Both groups played luncheon concerts in city parks and performed at orphanages, schools and veterans' hospitals.

In Sydney the bands combined for a half-hour television show. The CINCPACFLT band later recorded two radio shows in Wellington. The drum and bugle team probably played to the largest single audience, however, when they performed for 40,000 at half-time during an Australian rules football game at the Sydney Cricket Grounds.

The airdales were there too. Whether by accident or on purpose, a flight of four P3 *Orion* aircraft

checked in from Barber's Point, Hawaii, just in time for the festivities.

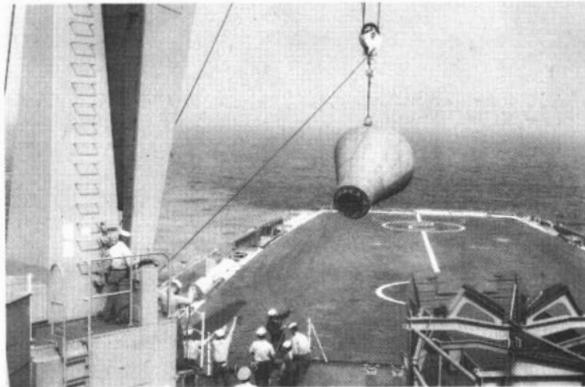
The air forces of both Australia and New Zealand had ordered the ASW *Orion*, and were awaiting delivery. In the meantime, Patrol Squadrons 22 and 42 from Hawaii had been given the assignment of demonstrating the aircraft.

The crews were soon deeply involved in celebrating the 24th anniversary of the Battle of the Coral Sea. The planes touched down at Sydney, Melbourne, Canberra and Adelaide, Australia, and at Auckland, New Zealand. The air force men were given a thorough demonstration. So were the local civilians.

When it was all over, the units headed home for their hard-earned leave and liberty period.

—G. P. Fuller, JO1, USN

USS LA SALLE (LPD 3) learns the ropes with dummy capsule as part of the U.S. space flight recovery team.



Saigon Unit Commended

You don't really need to be one in a million. One in about four thousand will do.

Four thousand is the approximate number of men who were awarded the Navy Unit Commendation for service with Headquarters Naval Support Activity in Saigon between 1 Jul 1962 and 15 Mar 1966.

Although HEDSUPACT reached a peak strength of slightly more than 1000 men before its functions were transferred to the Army in May, it was at one time supporting nearly 150,000 troops in the Republic of Vietnam with responsibilities in the fields of supply, security, housing, transportation, legal aid, medical care, food service, recreation, pay and a host of other functions.

The Secretary of the Navy cited the unit for its effectiveness in building up U. S. counterinsurgency forces despite relatively few personnel, a strange environment and long supply lines.

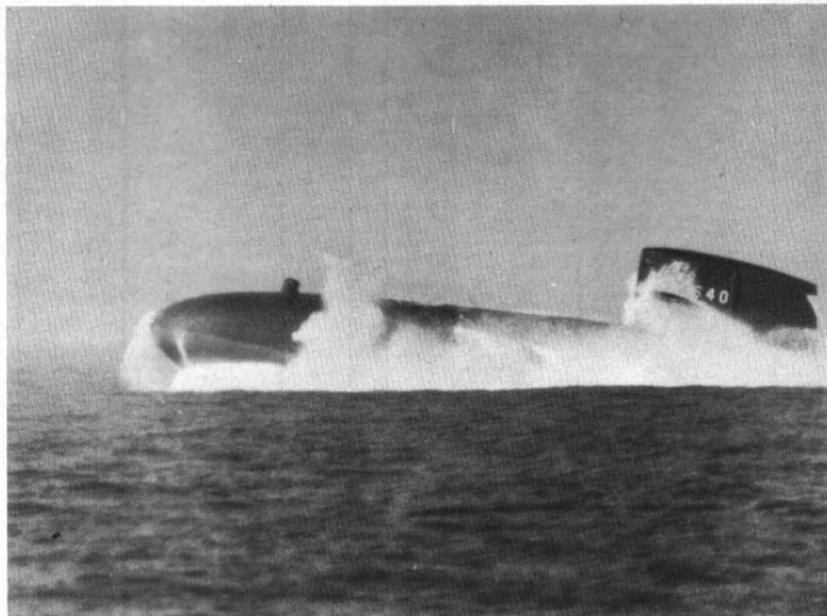
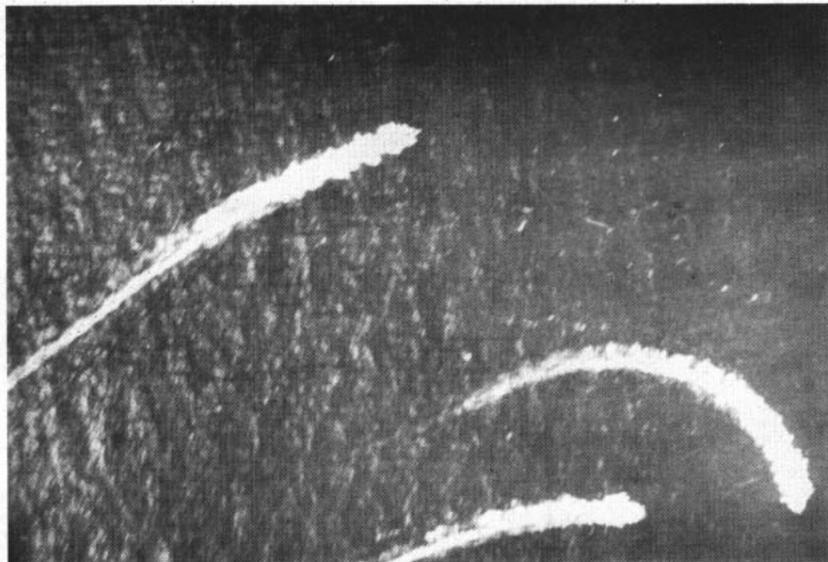
Navymen who served with the Naval Support Activity in Saigon during the eligibility period are entitled to wear the Navy Unit Commendation ribbon.

Sutter County Recommissioned

Sutter County is the third of 17 LSTs to be recommissioned to meet increasing demands in Vietnam.

uss *Sutter County* (LST 1150) was returned to active service in Portland, Ore., this spring after 20 years in the Reserve Fleet. She was first commissioned in June 1945. After

NO PLACE TO HIDE—North Vietnamese PT boats make maneuvers in Gulf of Tonkin while pursued by Navy aircraft and DDs. They were sunk by aircraft.



PEARL HARBOR BOUND—Fleet ballistic missile submarine *USS Benjamin Franklin* (SSBN 640) surfaces in Pacific as her Gold crew takes the sub to Pearl.

participating in the occupation of Japan, she was decommissioned in 1946 and berthed in the Bremerton Group of the Pacific Reserve Fleet.

Before her recommissioning, she received an extensive overhaul and modernization.

Survey Ships Transfer

Three Atlantic Fleet surveying ships have been switched to the Pacific Fleet and are now homeported in Pearl Harbor.

uss *Tanner* (AGS 15), *Sheldrake* (AGS 19), and *Towhee* (AGS 28)

have joined three other surveying ships, *Mauray* (AGS 16), *Serrano* (AGS 24), and *Rehoboth* (AGS 50), under the command of Commander Service Force, U. S. Pacific Fleet.

Tanner and *Sheldrake* were formerly homeported in New York City, while *Towhee* transferred from Norfolk.

The three ships carry modern electronic, navigational and surveying equipment for plotting the contours of the ocean floor, and charting the tides and currents. The information they gather is used to produce nautical charts and publications.

Amphibs Head for Pacific

The Atlantic Fleet Amphibious Force is fatter by two ships, with the extra tonnage provided by uss *Duluth* (LPD 6) and uss *Coconino County* (LST 603).

The two ships are undergoing amphibious training at Little Creek, before joining the Pacific Fleet.

Duluth, one of the new amphibious transport docks (LPD), is 570 feet long and displaces 17000 tons fully loaded.

The LPD combines the capabilities of troop transport and cargo carrying ships, enabling embarked Marines to travel to the assault area on the same ship with their heavy equipment.

Duluth has a crew of 30 officers and 460 enlisted men. She can carry

930 combat troops and 2000 tons of supplies and equipment.

The tank landing ship *Coconino County* was recommissioned at Philadelphia.

First commissioned in April 1944, she operated in the European Theater during World War II, supporting the Seventh Army and the Free French First Army in the initial landings in Southern France. She was decommissioned on 12 May 1955.

Amphibs Deliver Cannons

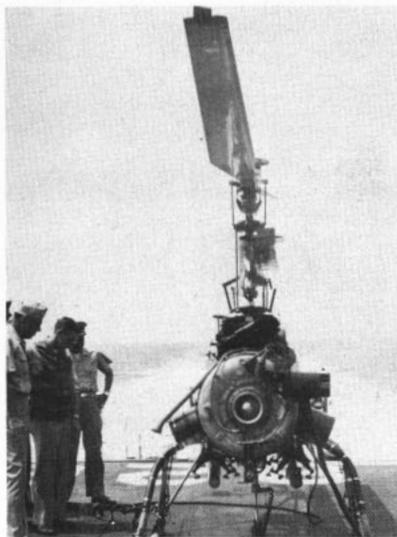
TWO SHIPS of the Atlantic Fleet Amphibious Force recently had a hand in delivering three ancient cannons to their final emplacement in the Naval Museum in the Navy Yard Washington, D. C.

Two of the old cannons were part of a battery which fired the first gun salute to the United States on 16 Nov 1776. The guns boomed a Gallows Bay welcome from Fort Oranje, on what was then the Dutch Island of St Eustatius, to the 14-gun American brig *Andrew Doria*.

This first salute to the flag of the new nation enraged the British, then fighting to suppress the American revolution.

About four years later the guns were piled outdoors, where they lay for 90 years. When an American schooner came looking for scrap in the 1870s, the cannon were thrown over a cliff to the shore. But the schooner could take only four. The

TAKING A LOOK—Officers look at *USS Agerholm's* Drone Antisubmarine Helicopter. DD recently celebrated 10 DASH landings, 50 flight hours.



HERE'S THE SCOOP—CB equipment operators move the earth to build additional runways at Chu Lai, Vietnam, as USAF C130 cargo transport is loaded.

rest lay on the shore, scoured by tide and sand, slowly disappearing under the sand and rock until history buffs teamed up to reclaim them.

Three of the guns were recovered. The Director of Naval History accepted the two largest. These six-foot, 1300-pound guns that fired six-pound balls, sailed to St Maartens by sloop, flew dangling from NAS Roosevelt Roads helicopters to Puerto Rico, and then were taken by LCU to St Thomas, V. I. The longest voyage on the way to the Naval Museum began there, when they were loaded on board the dock landing ship *uss Spiegel Grove* (LSD 32). They were taken to Little Creek, Va., to await transportation by truck to Washington.

The eight-foot cannon salvaged by *uss Traverse County* (LST 1160) came from the wreck of the steam barque of war *uss San Jacinto*, which was holed during the Civil War in 1865 on a reef off Abaco Island, in the Bahamas.

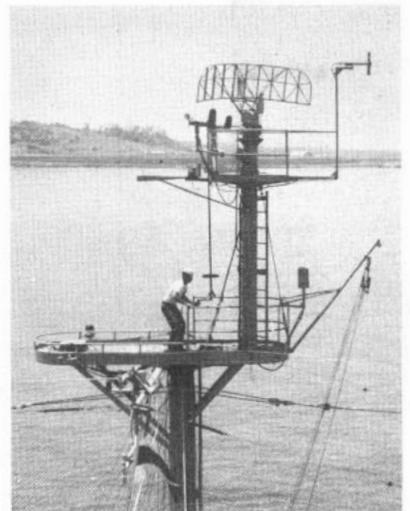
It was just such reefs that *Traverse County* had come to dispose of. When the Navy Seal team and 30 tons of high explosives had taken care of the reef that caused the wrecking of *San Jacinto*, the ship took the gun aboard.

It was one of three found lying in shoal waters where they had been dragged 67 years earlier by the

great-grandfather of Mr. Harold J. Lowe. Learning of the Navy's interest in the guns, he donated one to the Naval Museum and will erect the other two in a little park marking the ancient wreck.

A few hours of clever deck rigging and LCVP seamanship snatched the relic from its resting place and sent it beyond the reefs to *Traverse County* for a ride to Little Creek. Like the other two guns, it went to Washington by truck.

HAND CRANK served to turn radar antenna aboard *USS Cacapon* (AO 52) when drive motor failed to work.



BOOKS

SECNAV READING LIST OFFERS A WIDE RANGE OF SUBJECTS

THOSE BOOKS selected for the SecNav Reading List will be discussed this month.

As you may know, this list is compiled at intervals by an advisory committee of Navy officers and civilians appointed by the Secretary of the Navy. The committee tries to select the more significant current books which discuss national and international affairs, science, history, people and any other subject which will enable Navymen to broaden their understanding of today's events. A big order.

The inclusion of a book or article in this list does not imply official endorsement of the book or the views of its author, nor does it imply any obligation to read it. The list is intended solely as a guide to those who want to know what's going on in the world—particularly as it applies to the Navy.

Generally speaking, the books listed here and in any subsequent SecNav Reading List may be found in shipboard libraries and in the general libraries at shore bases. If your local ship or station library does

not have the title you want, it may be obtained by writing to the appropriate Navy Auxiliary Library Service Organization outlet listed on the following page.

Historical Perspective

Three books are suggested that will give a historical view of what's going on today:

Yankees and Samurai, by Foster Rhea Dulles. A lively and entertaining account of 19th century Japanese-American relations from 1791 to 1900, it shows America's role in the emergence of modern Japan.

The Proud Tower, by Barbara W. Tuchman. A world moving toward World War I is portrayed in personal, impressionistic and vivid historical detail—the aristocrats and the anarchists, the Dreyfus Affair and the Peace Conferences, Captain Mahan and Richard Strauss. Covers the period from 1890 to 1914. By the author of *Guns of August*.

The Liddell Hart Memoirs: 1895-1938, by Captain Basil Liddell Hart. Britain's distinguished military analyst and historian was an early advo-

cate of mechanized armored forces and air support. This first volume of his memoirs interweaves personal history with the development of his strategic theories and with shrewd impressions of military men and statesmen.

Background on Policy Making

The technological, economic, military and diplomatic elements in national strategy all have a bearing on national policy. Some books which express varied ideas and trends are:

The Crisis Game, by Brig Gen Sidney F. Giffin, USAF (Ret). This short book surveys the history of "war gaming," electronic means for games simulation and politico-military gaming techniques. Provides the players with valuable insights on the interrelation of politics and diplomacy to any military action, says the author.

The Missile Crisis, by Elie Abel. A report on the two-week Cuban crisis. Describes the hour-by-hour decision-making core of the U. S. diplomatic and defense system.

Decision-Making for Defense, by Charles J. Hitch. Discusses the basic ideas and management techniques of systems analysis developed in the Department of Defense. The



FLIGHT TIME CHAMP—RA-5C *Vigilante* serving aboard *Kitty Hawk* (CVA-63) claims flight time record for class by logging 351 hours of air time and 195 sorties in one month during carrier's combat operations in Southeast Asia.

Books by Mail

If your local Navy library doesn't have the SecNav Reading List book you want, it may be obtained by writing to the appropriate outlet listed below:

- If you are stationed in Northeast, European, or Middle East areas, submit your request to: Chief of Naval Personnel (G14), Department of the Navy, Washington, D. C. 20370.

- If you are stationed in Southeast, Mediterranean or Caribbean areas, submit your request to: Commanding Officer, U. S. Naval Station (Library-ALSC) Bldg C-9, Norfolk, Va. 23511.

- If you are stationed in Midwest, Southwest or Pacific Coast areas, submit your request to: Commanding Officer, U. S. Naval Station (Library-ALSC), San Diego, Calif. 92136.

- If you are stationed in the Pacific or Hawaiian areas, submit your request to: Commanding Officer, U. S. Naval Station (Library-ALSC), Box 20, FPO San Francisco 96610.

- If you are stationed in the Far East or Guam areas, submit your request to: Commanding Officer, U. S. Naval Station (Library-ALSC), Box 174, FPO San Francisco 96630.

and counterinsurgency.

Southeast Asia's Second Front, by Arnold C. Brackman. Describes the struggle for power in the Malay Archipelago.

Dimensions of Conflict in Southeast Asia, by Bernard K. Gordon. Concentrates on conditions in the Philippines, Cambodia, Indonesia and Malaysia which affect stability, and examines regional economic and political cooperation.

The Vietnam War: Why?, by M. Sivaram. An explanation of the struggle in Vietnam and a report on the military and political forces at work there.

Brain Washing, by Edward Hunter. A paperback reprint first published in 1956, this study provides useful background information for anyone interested in Asia.

China and the Peace of Asia, edited by Alastair Buchan. A series of essays which review China's policies, her impact on the rest of Asia and the responsibilities of external powers.

A Businessman Looks at Red China, by James S. Duncan. A Canadian's assessment of China today as based on travels in China in 1959 and 1964.

Long Live the Victory of People's War, by Lin Piao. A major Chinese policy statement on strategy for world communist domination.

Eye on Cuba, by Edwin Tetlow. Based on more than a dozen trips to Cuba between 1958 and 1965, this is an analysis of Castro, his revolution and the state of Cuba today.

author says that "the job of the systems analyst is to free the decision-maker from questions that can best be resolved through analysis, leaving to him those more difficult questions which can only be resolved on the basis of judgment." Gives the uniformed military planners more opportunity than ever to influence programs, he says.

Soviet Military Policy, by Raymond L. Garthoff. A historical analysis of the relationships of war, peace and revolution in Russian policy; the role of military power in Soviet society, ideology, internal and foreign policy and policy-making; and Sino-Soviet military relationships.

Obligations of Power, by Harlan Cleveland. Calls attention to the responsibilities of crisis diplomacy and gives the reader a glimpse beyond professional military problems into the questions of national interest, freedom and human rights.

Beyond the Cold War, by Marshall D. Shulman. Points up the sometimes distorted perceptions that may exist in the U.S.S.R. and in U.S. about conditions in the other country, and discusses various suggestions intended to encourage Russia to move toward international cooperation.

The Scientific Estate, by Don K. Price. Concerned with the relation of science to politics and society, and the scientific community's role in our constitutional system. The author hopes U. S. political creativity will develop a new system of checks and balances that will separate the responsibilities of the scientist from those of the administrator and politician in society's structure.

The Navy's Global Interests

For a look at some regional problems:

Naval Review, 1966, U. S. Naval Institute. The value of the Fleet as an instrument of U. S. foreign policy is the theme running through many of the essays in this fourth annual review of naval affairs.

The Naval Profession, by RADM James Calvert. Describes the opportunities for training, education and a commission. Describes what the Navy does, its traditions, future and rewards of naval service.

The Security of Southern Asia, by D. E. Kennedy. Takes a fresh look at area defense problems, the future of SEATO, Russian, Chinese and U. S. policies there, and subversion

Deep Reading

Polaris submariners have to know a lot about lots of things. Nuclear propulsion, missile systems, air manufacture, and much more. Now, they have begun learning to edit the news.

Pacific-based SSBNs are taking turns sending one of their Petty Officers on temporary duty to the COMSUBPAC Public Affairs Office in Pearl Harbor to gather the daily news and see that it gets to the *Polaris* submarines on patrol.

The fledgling news editors are, of course, from one of the off-duty crews. Their stint as copy editor usually lasts three weeks.

While on duty as editor, the submariner's job involves reading through all the wire service news copy that comes over the teletype each day. He selects an average of

40 articles a day, and cuts them down to as few words as possible to tell the story. The batch of news is then passed to the COMSUBPAC communications people, who transmit it, along with other traffic, to the deployed submarines.

The editor also saves up feature articles and humorous stories during the week for transmission over the weekend as a sort of Sunday supplement.

Often included as part of the package are the stock market reports, which, while interesting enough to the stockholders on board the submerged subs, could get a little frustrating. If a certain stock should soar, the deployed financier would have to wait as long as 60 days to make his killing on the market.

THE BULLETIN BOARD

Those Absentee Ballots Provide Voting Booths in Every Ship

BY THE TIME you read this you will, if stationed overseas, have been handed a Federal Post Card Application for Absentee Ballot; if stationed in the United States, you soon will receive one.

It will be a simple, routine ceremony—if that—but it is more important. It is a reaffirmation of your right to vote and it is this right, which is yours by birth, which is the cause of much of the strife in the world today.

By tradition and law, military men do not participate in political campaigns, but they do share with other citizens the privilege and responsibility of voting.

To make it easier for members of the armed forces to exercise their rights in this respect, the Federal Voting Assistance Act of 1955 recommended that state governments adopt simple and uniform absentee voting laws. Since then, all states have made it possible for military men (and their dependents) to cast their vote by means of absentee ballots in state and national elections.

Each state makes its own laws regarding qualifications that must be met before its citizens may vote. These vary from state to state. In general, qualifications cover citizenship, age, length of residence in the state and voting district, and registration. Briefly, requirements vary in:

- **Age**—The minimum age to vote is 21 in all states except Alaska, Georgia, Hawaii and Kentucky. In Georgia and Kentucky 18-year-olds may vote. Residents of Guam may also vote at age 18, but Guam does not participate in national elections. Alaska has fixed the minimum age for voting at 19; Hawaii, 20.

- **Residence**—Every state requires a minimum period of residency before you can vote. These requirements vary from state to state. The state, city or county (or township) in which you lived before entering military service is usually considered your legal residence for voting purposes, unless you have established a legal residence elsewhere.

Navy men who want to establish a new voting residence must meet the

state's legal requirements. They must have lived within the state for the required length of time; normally must not have resided exclusively on military property (Hawaii and California are exceptions here), and must intend to make the new state their permanent home when they retire from active duty or are released from active service.

The law usually holds that the voting residence of your wife is the same as yours.

- **Registration**—Nearly all states require some form of registration—that is, placing your name on the state's list of qualified voters. Procedures vary from state to state.

Many states permit registration by absentee process, and some will register a qualified voter at the same time they accept a Federal Post Card Application, or a voter absentee ballot.

In other states, you must be registered before applying for a ballot. This means that, in some cases, if you are not already registered, you won't be able to vote this fall. Your Voting Officer will be able to tell you the specific rules which apply to your state.

- **Character**—In addition to the qualifications concerning age, residence and registration, some states further require that you must be of good character, or must not have been convicted of a felony unless pardoned. This determination is a

problem of the proper official of the state in which you will vote. It is not the responsibility of your Voting Officer or any other Navy official to make this determination if the question should arise.

As you know, no person has the right to inquire as to your voting preference. The person or persons for whom you vote is your own business and no one else's. No Navy person is permitted to attempt to influence your vote.

The actual marking of your ballot—your vote—must be done in secrecy. This is the law.

One further point. The Navy is required to provide statistical data concerning absentee voting for inclusion in a report to the President and Congress. Thus, you may be asked after the election if you voted in the general election and, if so, if you voted by absentee ballot or in person.

This poll is in no way an attempt to invade your privacy or an attempt to determine for whom you voted. It is simply a statistical attempt to learn if the Federal Voting Assistance Program is working properly.

A Realistic Training Ship

Any Vietnam-bound sailor who has just finished his training, hopes it has been realistic enough to teach him the ropes when there's a real enemy shooting back.

The commanding officer of the U. S. Fleet Training Center at San Diego was concerned with training realism, too. He first considered using another dry-land ship like *uss Recruit* (TDE 1). What, however, could be more realistic than an honest-to-goodness destroyer? He now has one.

The destroyer is the former *uss Gregory* (DD 802), late of the Pacific Reserve Fleet. She has been rechristened *Indoctrinator*. After she is modified, she will be used to teach young Navymen gunnery, engineering, seamanship, damage control and fire fighting.

Indoctrinator can also be counted on from time to time to provide spare



“... Er... uh... got a cigarette, Boats?”

parts for Vietnam-bound destroyers who do not have time to obtain them through ordinary channels. Inasmuch as *Indoctrinator* is not actively engaged in hostilities, the CO figures she can defer to those that are. The equipment borrowed is returned in kind.

The 2050-ton destroyer was launched in May 1944 and saw action at both Iwo Jima and Okinawa. She was awarded two battle stars for her part in these actions. Among her battle scars are those inflicted by the direct hit of a Japanese kamikaze plane.

Joint Travel Regulations Changes Affect Details of Per Diem, POV Shipments

Change 162 to the *Joint Travel Regulations* became effective on 1 Jul 1966. The following is a summary of the major changes, which concern per diem rates and the shipment of privately owned buses and trucks.

- *Paragraph M 4204-3*: Provides that the scheduled departure and actual arrival time of the aircraft at the terminal will be used as the time of departure and arrival in computing per diem.

- *Paragraph M 4205-5*: Requires a deduction from enlisted men's per diem for each meal furnished from non-government sources on days of arrival at or departure from a temporary duty station.

- *Paragraph M 4205-6 and M 4256-6*: Prohibits payments of per diem allowances for occasional meals when the member does not use occasional meals from non-government sources where a flat daily charge for three meals is assessed unless his duty assignment prevented their use and the meals were procured from another source. The change also established a minimum per diem rate of \$1.00 for Navymen on temporary duty outside the U.S. when both government quarters and mess are available.

- *Paragraph M 4254-2*: Establishes a required deduction from enlisted men's per diem rate for each non-government meal furnished without charge on days of arrival at or departure from a temporary duty station.

- *Paragraph M 4303-2, 3*: Prescribes controls governing the pay-



"It's silly to vent one's displeasure on inanimate objects."

ment of temporary lodging allowance and sets forth the responsibilities of the overseas commander in minimizing the period of entitlement.

- *Paragraph M 11000-1*: Removes

WHAT'S IN A NAME

Submarine Schnorkel

By spring of 1945, Germany's Grand Admiral Doenitz must have been well aware that his decimated U-boat force could do little to halt the tide of men and material flowing eastward from the United States to supply allied forces in Europe.

In her last hours, however, Germany made use of what may have been one of the most significant innovations of the war—a schnorkel device which made it possible for submarines to operate their diesels thereby charging their batteries while submerged.

The schnorkel was Dutch in origin, although the Germans went on to develop and exploit it toward the end of WW II.

If the schnorkel submarine had been developed earlier in the war, it most certainly would have left a heavy mark on allied fortunes. Coming late in the war, as it did, it could only be counted upon to inflict relatively

¼-ton and 17.6 measurement tons limitation with regard to the shipment of trucks.

- *Paragraph M 11000-2*: Provides for collecting from Navymen the additional cost incurred in shipping pickup or panel trucks, or such trucks when converted to campers, weighing in excess of 20 measurement tons.

For further information, see the pertinent articles in the current *Joint Travel Regulations*, Volume I.

Correspondence Courses

A new officers' correspondence course and a revised enlisted correspondence course are now available. They are: OCC Mine Warfare, NavPers 10428 (Confidential), and ECC Disbursing Clerk, 3 & 2 NavPers 91436-3B which supersedes NavPers 91436-3A.

minor damage to American shipping and perhaps even hurl rockets into New York or Boston.

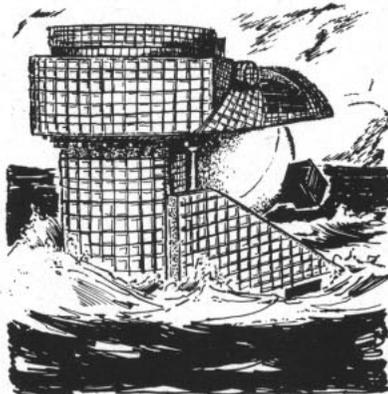
The United States was well informed concerning Germany's development of the schnorkel and, when intelligence reports indicated that a force of schnorkel submarines was en route across the Atlantic toward the United States, an antisubmarine task force consisting of four escort carriers plus about 50 destroyers and destroyer escorts was dispatched to mid-Atlantic to be ready when the first German super-sub passed by.

As events developed, only two or three passed by and kept going. The others were stopped dead in mid-Atlantic. Two or three escaped the mid-Atlantic antisubmarine force and torpedoed five ships just off the United States coast. They were destroyed by U.S. Naval forces, one of them off Newport Harbor.

A hunter-killer group composed of two destroyers and two destroyer escorts was operating off the Boston light when it made sound contact with the last of the group of German schnorkels.

One of the DEs opened fire with hedgehogs but missed the mark. On the second try, the men in the DE heard a heavy explosion but there was no upsurge of debris to confirm the possibility of a hit. There were successive hedgehog attacks but nothing else happened.

Later, the DE discovered a good-sized oil slick on the face of the Atlantic but it wasn't until after war's end that investigations proved that the schnorkel sank almost within range of the Boston light.



NROTC Exams Again Offer a Chance for Degree, Commission

FINAL PREPARATIONS are being made for the 21st annual competition to select those young men who will be enrolled as midshipmen in the Regular NROTC in 1967.

The program is available primarily to high school seniors or recent graduates, but active duty and Reserve enlisted personnel are also invited to apply. (Active duty personnel who wish to apply must make the same arrangements as civilian personnel, and must be available for medical examinations and interviews when they are scheduled early next year.)

Applicants for this program must be:

- A male citizen of the United States.
- At least 17, but not yet 21 years old as of 30 Jun 1967.
- Unmarried and never have been married.
- Physically qualified.
- A high school senior or graduate. (For the current program, selectees must enter college in September 1967).

The qualifying examination—the Navy College Aptitude Test—will be conducted on 10 Dec 1966. Applications must be received by the Naval Examining Section of Educational Testing Service, Princeton, N.J., by 18 November. Examination centers will be established at certain naval shore activities overseas as well as throughout the U. S.

Applicants receiving a qualifying score on the test will be scheduled for medical examinations and interviews between 17 January and 24 Feb 1967. About 2000 will be selected by special committees convened in each state and territory during March to attend college next fall.

The purpose of the Regular NROTC program is to educate and train well qualified young men for careers in the naval service. Selected applicants receive four years of government subsidized education at one of 52 colleges and universities throughout the country. In addition to tuition and other educational expenses, the Navy furnishes books, uniforms, and a \$50 per month subsistence allowance.

NROTC midshipmen have a wide choice in their major fields of study, but must complete 24 semester hours of naval science courses and partici-

pate in three summer training cruises. After receiving their baccalaureate degree, Regular NROTC students are commissioned in the Regular Navy or Marine Corps, with the same rank, promotional opportunities and choices of duty assignments as their Naval Academy contemporaries.

Regular NROTC graduates must

• **FIELD ADVANCEMENTS**—Vietnam-based Navy enlisted personnel can now receive field advancements in cases where, due to operating conditions, they are unable to prepare adequately for the Navy-wide competitive examinations.

Commanding officers and officers in charge of units in Vietnam can waive the exam for as many personnel as there are billets available in each rating and pay grade, as determined by the current BuPers 1080-14 (Enlisted Distribution and Verification Report). The 1080 current as of 1 July will be the guide for waiver of the August exams, and that of 1 January for the February exams.

If no billets exist for the next higher pay grade in a certain rating, commanding officers can still authorize one waiver. Personnel for whom no quota exists (beyond the one) will, of course, be allowed to take the Navy-wide competitive exams.

Commanders of the respective units will decide if men in their unit have had time to prepare adequately for the examinations.

To be eligible, personnel must have met all other advancement requirements, and be serving in Vietnam on the date of the examination. However, if a man is in Vietnam on the eligibility date (1 July or 1 January), but not on the exam date, his exam may be waived if he served in Vietnam for 30 consecutive days.

The program is applicable for advancement to pay grades E-4 through E-7, but in the case of advancement to E-7, the individual must have previously passed the examination.

Announcement of the advancements will be made in the normal manner, via a letter from the Naval Examining Center, and those gaining field advancements will have the same effective date of advancement as the rest of the Fleet.

serve on active duty for a minimum of four years. If they resign their commissions at a later date, they must agree to accept a commission in the Naval or Marine Corps Reserve and may not resign this commission before the sixth anniversary of their original commissioning date.

In addition to the Regular NROTC program, the Contract NROTC program is available at each of the 52 participating colleges and universities and at the Massachusetts Institute of Technology.

Contract students are selected by commanding officers of NROTC units from freshmen and sophomores currently attending an NROTC-participating college or university. Both a two- and a four-year Contract NROTC program are available.

Information bulletins containing more detailed information may be obtained from the Chief of Naval Personnel, Navy recruiting stations, and local high schools.

Reservists on Active Duty In These Rates Can Ask For Regular Billet

The Chief of Naval Personnel has issued a revised list of open rates in which active duty Reservists may enlist in the Regular Navy or continue on active duty in a Reserve status.

To be eligible, a man must have the recommendation of his commanding officer. The recommendation will be based upon background, performance, conduct and capability.

The applicant must also be serving on active duty. Temporary active duty or active duty for training does not qualify. He must be a citizen of the United States or an immigrant who can prove he intends to become a citizen.

The applicant must not be over 40 years old and be able to complete 20 years of active duty before reaching the age of 51 to qualify for enlistment in the Regular Navy.

The revised list, which was issued as Change 1 to BuPers Inst. 1130.41, includes the following rates:

	BM1	BM2	BM3
	QM1	QM2	QM3
		RD2	RD3
		SM2	SM3
STC	ST1	ST2	ST3*
			MN3
			GMG3

FTC	FT1	FT2	FT3*
ETC	ET1	ET2	ET3*
DSC	DS1	DS2	DS3
		OM2	OM3
		RM2	RM3
CTC	CT1	CT2	CT3**
		YN2	YN3
			CYN3
MAC	MA1	MA2	MA3
	SK1	SK2	SK3
		CS2	CS3
JOC	JO1	JO2	JO3
		MU2	MU3
		MM2	MM3
	EN1	EN2	EN3
	BT1	BT2	BT3
		EM2	EM3
		IC2	IC3
	SF1	SF2	SF3*
	DC1	DC2	DC
EAC	EA1	EA2	EA3*
CEC	CE1	CE2	CE3*
EOC	EO1	EO2	EO3*
CMC	CM1	CM2	CM3*
BUC	BU1	BU2	BU3*
SWC	SW1	SW2	SW3*
UTC	UT1	UT2	UT3*
		ADJ3	
		AT2	AT3*
			AO3
		AC3***	
		AE3	
		AG3	
		ABE3	
	AQ1	AQ2	AQ3*
			PH3
PTC	PT1	PT2	PT3
	AX1	AX2	AX3
HMC	HM1	HM2	HM3
	SN	SA	SR
	FN	FA	FR
	CN	CA	CR
	AN	AA	AR
	TN	TA	TR

*Includes service ratings

**Excludes A & O Branches at 7-E level only

*** Must possess FAA Form 578A

Award for Yorktown

When a naval installation tries to improve itself, it is usually concerned with the sea, or the ships that sail it. There is at least one command, however, that is equally at home with land-based projects.

The Naval Weapons Station at Yorktown, Va., has won the Department of Defense Conservation Award for the most outstanding military conservation program during 1965. This is the first time the annual award has been won by a Navy installation.

The Yorktown facility, with about 2000 civilian employees and 800 military personnel, occupies approximately 10,000 acres of land and lake



"The exec is considering your special request chit right now."

area on the York River in southern Virginia.

In 1965 the station provided outdoor recreation for over 50,000 people—civilian community included—with picnicking, fishing, boating, hunting, and golf the most popular activities.

During the year the station sold

over 39,000 dollars worth of timber products as part of its Land Management Program. At the same time, 76,000 fingerlings were planted in the station's six lakes and ponds, 95 acres of land were planted with food and cover crops for erosion control, 77 acres of fishing water were added or improved, and an old pier extending into the York River was rebuilt and opened for fishing.

Runners-up for the Conservation Award for 1965 were Wright-Patterson Air Force Base, Ohio, and Naval Weapons Station, Charleston, S. C.

The Conservation Award was established by the Secretary of Defense in 1962 to stimulate and give added incentive for improvement, and recognition of efforts, by the Armed Forces in the conservation and management of their natural resources.

NOW HERE'S THIS

This Project Gathered Dust for Days

On a Sunday afternoon this spring a P-3A last stop on a 19-day around-the-world flight.

The aircraft belonged to Air Development Squadron One, which is a part of the Operational Test and Development Force (see ALL HANDS, May 1966). This particular flight was a little offbeat even for OpTevFor men, who normally get more than their share of weirdies. They had been busy gathering dust.

The dust in this case was collected at high altitudes as a part of the attempt to determine the causes and effects of the enormous dust bowl which covers northwestern India.

The crew was accompanied by a meteorological research mission of six scientists from the University of Wisconsin's Center for Climatic Research under the sponsorship of the Office

of Naval Research. In the course of their travels, they took airborne dust samples from the eastern Mediterranean to Tokyo, made a series of flights above the Indian desert to sample dust and measure heat radiation, and made a nonstop flight from Delhi to Bombay to Madras and back to Delhi to determine the geographic extent of the dust.

The flights are intended to help determine the relationship between dust and lack of rainfall on the presumption that the dust bowl may be self-perpetuating. According to one hypothesis, the presence of the dust upsets the balance of heat radiation which, in turn, affects the vertical movement of air and thus suppresses rainfall.

If the dust is of local origin, which appears likely, the job of eliminating it would be formidable but not impossible. However, before attempting to eliminate the dust, the precise effect of such action on the weather pattern of all Southeast Asia must be determined.

A computer study of what weather would be like in that part of the world without the Indian dust blanket must be made to insure that tinkering with rainfall in northwestern India will not adversely affect agriculture in adjacent areas.

In addition to the eight days spent in Delhi, the aircraft made stops at Madrid, Beirut, Hong Kong, Tokyo, Honolulu and Madison, Wis.

In all the ports of call, the crew and scientific group assumed the roles of tourists and shoppers and brought home souvenirs, sea stories and photographs by the dozen.



Here's a Deal on a Navy Career That Could Make You a STAR

WOULD YOU BELIEVE that not all stars are in the movies? The Navy has them. If you are not one, but are now serving your first hitch, the Navy is perfectly willing to make you a STAR, too.

The whole idea behind the STAR (for Selective Training And Retention) program is to persuade Navy-men who want to make a career in the Navy to step forward early in the game and be recognized.

Although the STAR program is designed to encourage electronics-oriented ratings to reenlist, the program is available to any enlisted man in any rating who is eligible.

To put some sugar in the pot, there are a number of benefits offered to Navy STARS who have between one and three years of active naval service and are sufficiently certain they want a Navy career to sign up for six years at the end of their first enlistment. They should not have served more than 42 months on active duty if they are in pay grade E-5 and they must have permission from BuPers before getting into the program.

For Navymen in pay grade E-3, the STAR program offers a reenlistment bonus and a guaranteed assignment to Class A school with automatic advancement to pay grade E-4 for those who are eligible upon graduation. Also, if they are eligible, STARS receive proficiency pay and a variable reenlistment bonus.

Navymen who are advanced to pay grade E-4 as a result of an exam

before their STAR reenlistment, may request Class B school. The applicants who can handle the school's advanced courses will probably become students. In any event, their request for Class B school will be honored after they have served in pay grade E-4 for 12 to 24 months.

Those reenlisting in pay grade E-4 can request assignment to a Class A school instead of the more advanced Class B school if they haven't previously had Class A training in their rating.

Class B, C or an equivalent B school is guaranteed those who reenlist in the STAR Program in pay grade E-4 or E-5.

School entrance requirements will be waived for career designated men in pay grade E-4 except for hospital corpsmen and dental technicians. These categories are guaranteed a Class C school.

Class A school graduates must be in the top 50 percentile of their class (and the percentile is based upon a quarterly computation) to be eligible for automatic advancement. Men who aren't petty officers and who fall into the lower half of the computation will be designated strikers for the rating in which they trained and compete for advancement in the usual way.

Navymen in pay grade E-4 will be advanced to E-5 when they graduate from a Class B or equivalent Class B school. However, those who have already attended Class B school will not be permitted to at-

tend again. Those who successfully complete a Class C school will not be automatically advanced unless it is designated a B school equivalent.

Those in pay grade E-5 receive a reenlistment bonus and guaranteed assignment to a Class B, Class C or an equivalent Class B school if they are eligible; proficiency pay, if authorized, and variable reenlistment bonus are also paid.

If you request Class A school, the test score you made when you took the basic test battery in boot camp will be examined. That portion of the test which applies to your rating must meet the minimum prescribed by the *BuPers Formal Schools Catalog* unless a five- or 10-point waiver is obtained.

Navymen who enter the nuclear power or *Polaris* Training Program must have completed two years of active naval service, and men in pay grade E-3 or E-4 may not have over three years of active duty. The limit on active military service for E-5s is 42 months.

If you have obligated yourself for the Nuclear Power, *Polaris* Training or one of the Six-Year Obligor Programs and then reenlist in the STAR Program, you need serve only two years before you are eligible for transfer to a Class B, C or equivalent B school.

The following is a list of equivalent B schools after which automatic advancement to pay grade E-5 will be made for those who qualify in other respects.

Functional FBM—SSBN Training

Rating	Course	Length (in weeks)
ET	SINS Technician	29
ET	Navigational data technician	29
ET	Navigational aids technician	29
FT	MK-80 FCS Technician	33
FT	MK-84 FCS Technician	39
MT	Polaris MT C-1	33
MT	Polaris MT C-2	33
MT	Polaris MT C-3	33
TM	Polaris Ordnance and Launch (must complete or have completed Basic Underseas Weapons Circuitry to qualify for automatic advancement).	8-11
TM	MK-16/MK-37/MK-45 Torpedo (must have completed TMA school or basic underseas weapons circuitry to qualify for automatic advancement.)	8-11
FT	MK-112/113 FC System	20-32

RM	Special Radio Courses (RMs to qualify must have completed at least 10 weeks of special training necessary for them to perform their duties on board an SSBN. Examples: WRT4, BRR3, UR32, CRF, TT Repair.)	10
MM/EN	Special Engineering Courses (Non-nuclear trained MN/ENs, who must complete at least 12 weeks of training in order to qualify them for duty on board an SSBN. Examples: lithium bromide, air-conditioning, CO ₂ scrubbers, O ₂ scrubbers, O ₂ generator, atmosphere analyzer.)	10
QM	SSBN System Navigation	6

These courses cannot be guaranteed under the STAR Program. They may be obtained through the *Polaris* Program.

Equivalent B Schools for FTs and GMs

Rating	NEC	Course	Length (in weeks)
FTM	1163	AN/SP6 49B Talos Radar	24
FTM	1161	AN/SPW 2B Talos Radar	20
FTM	1186	MK 111-1 Talos Computer	20
FTM	1119	Talos WDS MK 6	20
FTM	1143	Talos Missile and Test Equipment	23
FTM	1164	AN-SPG 51 B Tartar Radar	24
FTM	1184	MK 118 Tartar Computer	20
FTM	1113	Tartar WDS MK 4	20
FTM	1144	Tartar/Terrier Missile and Test Equipment	23
FTM	1165	AN/SPG 55 A or 55 B Terrier Radar	30
FTM	1162	AN/SPQ 5 A Terrier Radar	24
FTM	1182	MK 100-2 Terrier Computer	20
FTM	1185	MK 119-03/4 Terrier Computer	20
FTM	1118	Terrier WDS MK 7	20

FTM	1133/	AN/SPS 39/39A Radar	20
	1135		
FTM	1169	AN/SPS 48 Radar	31
FTM	1137	AN/SPS 52 Radar	28
FTG	1128	GFC5 MK 68	20
FTG	1123/	GFC5 MK 37/TDS MK 5	23
	1117		
FTG	1126/	MK 56 GFC5/TDS MK 5	20
	1117		
GMM	0998	Talos GMLS MK 12	24
GMM	0987	Tartar GMLS MK 11	23
GMM	0988	Tartar GMLS MK 13	24
GMM	0986	Terrier GMLS MK 10	24
GMG	0891	Asroc MK 16	15
GMG	0873	RFGM 5"/54	19

Minor changes may be made in the lengths of the courses listed above as training curricula are varied.

B School Equivalents for STs

Rating	NEC	Course	Length (in weeks)
STG	0407	AN/SQS-23 Operation and Maintenance	12
STG	0417	AN/SQS-26 BX Operation and Maintenance	24
STG	0418	AN/SQS-26 AX Operation and Maintenance	24
STG	0471	MK-111 (Asroc) UWFC5	20
STG	0474	MK-114 (Asroc) UWFC5	14
STG	0479	MK-105 (MOD 11-23)	16
STG	0419	AN/SQS CX Operation and Maintenance	24

B School Equivalents for ETs

Any combination of courses totaling not less than 19 weeks will be required. The assignments must be in accordance with BuPers training requirements and located in the same geographical area.

NEC	Course	Length (in weeks)
1505	AN/SPS 29 C	7
1506	AN/SPA 62	8
1507	AN/SPA 63	12
1508	AN/SPA 34	3
1509	AN/SPA 43	6
1511	AN/SPS-T3	3
1513	AN/SPS 32/33 (SPS 32 Radar) (SPS 33 Computer/Tracker)	8
		15
		30
1514	AN/SPS 40	8
1517	AN/SPS T2A	4
1518	AN/SPS 43	8
1519	AN/SPS 30	8
1523	AN/SPN 35	7
1524	AN/SPN 6/12	5
1526	AN/SPN 10	15
1531	AN/FRT 24A	4
1532	AN/WRT 2/WRR 2	4
1533	AN/UCC 1	2
1536	AN/SRC 20/21	2
1537	AN/GRC 27A	3
1539	TSEC/KW37R,K/KW 7	14
1541	TSEC/KY 8	10
1542	TSEC/KG14/37R	16
1543	TSEC/KW 26	13
1548	TSEC/KG 13	13

1549	TSEC/KW 37T/KW 37R	9
1552		
1553		
1577	AN/CPN4A or MPN 5	19
1578	AN/SRN6/URN3/GRN 9	7
1579	AN/URN 20	4
1593	AN/WLR 1/ULQ 5/6	6
1598	AIR 32430-1	19

B School Equivalents for DSs

Any combination of courses totaling 24 weeks will be required. The assignments must be in accordance with BuPers training requirements and located in the same geographical area.

NEC	Course	Length (in weeks)
1616	NTDS Display	20
1617	NTDS Data Transmission	28
1618	NTDS Computer/Peripheral	20
1618	NTDS Key Set Control	4
	WDS MK XI (System)	5
1621	WDS MK X1	5
1622	NTDS (IDAC)	2
1622	NTDS Video	3
	USC-2	5
	SYA VID SIM	2
	Terrier Interface	6
	SPS-48 A2/HT Console	2
	SRC-16	9
1636	OPCONCENTER SODS/SOCCS	12
1666	STD Navy Maintenance (3M)	
	UNIVAC 1500	12
1651	IOIC EDP	18
1652	IOIC IDS/SR	15
1631	OPCONCENTER FYK-1(v)	32

List of New Motion Pictures Available to Ships and Overseas Bases

The list of recently released 16-mm feature movies available from the Navy Motion Picture Service is published here for the convenience of ships and overseas bases.

Movies in color are designated by (C) and those in wide-screen processes by (WS).

Blindfold: (C) (WS); Suspense Drama; Rock Hudson, Claudia Cardinale.

The Triumph of Michel Strogoff (C): Drama; Curt Jurgens, Capucine.

That Darn Cat: Comedy; Hayley Mills, Dean Jones.

The Bedford Incident: Drama; Richard Widmark, Sidney Poitier.

Made in Paris (C): Musical Comedy; Ann-Margret, Louis Jourdan.

A Man Could Get Killed (C) (WS): Comedy Melodrama; James Garner, Melina Mercouri.

A Big Hand for the Little Lady:

Comedy Drama; Henry Fonda, Joanne Woodward.

Morituri: Drama; Marlon Brando, Yul Brynner.

The Heroes of Telemark (C): Drama; Kirk Douglas, Richard Harris.



"Now we know why your feet hurt so badly. You're wearing your shoes on the wrong feet."

The Reward (C): Drama; Max Von Sydow, Yvette Mimieux.

Promise Her Anything: Comedy; Warren Beatty, Leslie Caron.

Harum Scarum: Musical Comedy; Elvis Presley, Mary Ann Mobley.

Our Man Flint (C): Comedy Melodrama; James Coburn, Lee J. Cobb.

The Night of the Grizzly (C) (WS): Melodrama; Clint Walker, Martha Hyer.

Zorba The Greek: Drama; Anthony Quinn, Alan Bates.

Agent For H.A.R.M.: Melodrama; Mark Richman, Wendell Corey.

Francis Scott Key Launched

The Navy's 40th Polaris submarine *Francis Scott Key* (SSBN 657) was launched at Groton, Conn., in April.

When *Will Rogers* (SSBN 659) is launched this month, the planned fleet of 41 *Polaris* submarines will become an accomplished fact.

Francis Scott Key is named for the lawyer who composed the words of the national anthem.

A Banana Belt in Alaska? Go North for an Interesting Tour

DESPITE what residents of Fairbanks or Anchorage may say, Kodiak insists that it is the banana belt of Alaska. All due to the Japanese current, they claim. They draw invidious comparisons with the winters in Illinois and grow rhapsodic about the short, but beautiful summers. They will admit to a certain amount of wind and rain. But it's good for you.

If you draw orders to Kodiak there's no need to anticipate that you'll be sitting on an ice floe for your tour. The city of Kodiak itself, about seven miles from the naval station, is a respectable-sized town of about 4000. It has several restaurants, two department stores, dress shops, beauty parlors, a catalog sales office, a furniture store, two theatres, a hotel, two motels, garages and bars. Considering the distance from state-side, prices are reasonable.

Hunting is good, if you like that sort of thing, and fishing is spectacular. There aren't many duty stations where you can catch 200- to 300-pound fish (halibut) in your front yard, so to speak. Five varieties of salmon return to Kodiak by the thousands to spawn each year. This is also the home of the king crab, considered by many to be far superior in flavor to the Maine lobster. They literally swarm in nearby waters and are caught in great numbers by the local fishermen. If you don't want to catch your own, they may be bought for something in the neighborhood of \$.50 a pound, ready to shell and eat.

Average winter temperature is 34° and the summer high is 52°. The most difficult feature is not the temperature but the occasional storms with high winds (these are the "williwaws" you may have heard of). From November to April rain, snow and fog are plentiful, but during the four-month summer when the air is crisp, the hills are green and flowers are bursting out all over, all is forgiven.

Now that you have a little background, here are the facts:

Overseas tour length when accompanied by dependents is 24 months; 12 months when unaccompanied.

Entry approval and concurrent travel of dependents is controlled by the Commandant, 17th Naval Dis-

trict. Entry approval and dependent travel is not authorized until government quarters on the naval station or approved housing in Kodiak is available. Submit your request via speedletter to the Commandant, 17th Naval District, Box 14, FPO Seattle, Wash. 98790, or official Navy message to COM 17. In addition to your name, rank or rate, file or service number, be sure to give your authority for transfer; duty station to which ordered; number of dependents and sex and age of your children; number of bedrooms needed; estimated date of arrival at Seattle, which is the port of embarkation; request for permission to ship household effects; and request for government housing. If this is not available, state whether or not you agree to accept housing in the Aleutian Homes Project. (More on this below).

If you are assigned on-base housing a circular describing the type of housing assigned you will be forwarded via air mail after entry approval message is sent. From this circular, you can determine what household effects to ship and what to put in stateside storage.

Adequate government furniture is available, and it is recommended that you store your large pieces if you can see your way clear to do so.

Because of the high living costs in Seattle, it is recommended that your family plan not to arrive there until

CruDesLant Sailor of the Year

A former Naval Reservist who enlisted while still in high school has been named Sailor of the Year for the Cruiser-Destroyer Force, Atlantic Fleet.

Now a radioman first class, the selection of Wayne H. McBain, usn, for the honor was based largely on his outstanding work while his ship, *uss Samuel B. Roberts* (DD 823), took part in the operations off the coast of Vietnam.

While in the Western Pacific, the ship was a unit of the first nuclear-powered task group to take part in combat operations in Vietnam.

Petty Officer McBain has been recommended for the Navy Commendation Medal for his work in keeping the high state of readiness required of the ship.

you are notified that entry into the 17th Naval District is authorized. As you know, if you don't want to bring your family with you, you are entitled to move them, and household effects, to a place designated by you in accordance with Article 7005, *Joint Travel Regulations*.

Of all the duty stations available to Navymen, Alaska is somewhat unusual in that, if you wish, you can drive there and still make an adventure of it. The Commandant is very careful neither to encourage nor discourage such a trip, but he does give the details as to how it can be done and, at the same time, has something to say about Alaska being the nation's last frontier. Use your own judgment. It seems highly improbable that you will save money by driving, but it could be fun if you and, probably more important, your wife, think of yourselves as pioneer types.

The Alaskan Highway is primarily an all-weather, gravel road running from Dawson Creek, British Columbia, to Fairbanks, Alaska. Its condition at any one time depends primarily on the weather. Although the highway is open the year around, travel is best from June through September, although this is the dusty season. Temperatures at this time range from 35° to 70° with warm days and cool nights. Freezing nights usually start in late September, and snow and severe cold may be expected before the end of October. Spring thaws in April and early May will leave long stretches of the highway in poor condition. Anyone driving in winter must be prepared for extremely cold weather.

The highway itself cuts through unsettled wilderness areas, formerly inaccessible except by dog sled (we said you were getting up in wilderness country), plane or river travel in summer. Small settlements and trading posts are located along the highway. Here you can find food and gasoline at prices considerably higher than usual because of the cost of transportation. Motels and hotels are usually only found near the larger towns.

Your car should be in good mechanical condition. If you have one with a four-wheel drive, you'll feel right at home. It is recommended that you bring the following as a

children, bunk beds are recommended.

The Aleutian Homes in Kodiak are furnished with stoves, driers and refrigerators. The stoves and driers run on propane gas. The homes have two or three bedrooms, so if you have more bedroom furniture than you will need, it should be placed in storage. They have linoleum tile on all floors, so rugs will be appreciated on cold winter mornings.

Furnished or unfurnished private rentals are available in the city of Kodiak.

House Trailers—Contact the Households Goods Section of the Supply Department of the nearest naval activity for information regarding shipment of house trailers. Before shipment, you will have to receive approval from the Commandant, 17th Naval District. The routine for application is much the same as for that of dependents. As house trailer sites are not readily available, normally you will have to make your own arrangements for a site before entry approval for your family and house trailer will be granted.

Housing—All married officers, married enlisted men in pay grade E-4 with more than four years' service and all personnel in higher pay grades are eligible for government quarters. However, government quarters are available for only about 40 per cent of those eligible.

Government quarters are apportioned to each tenant activity on a billet basis, with the actual assignment controlled by each commanding officer or officer in charge. Some of the types of government housing on the station are described here:

BOQ/WOQ—Bachelor quarters for 53 men and 10 women officers are available in the main BOQ. An annex is usually filled to capacity by Fleet personnel. The Officers' Mess is located nearby.

Four-plex Public Quarters—These are two-story buildings. Some are occupied by officers, others by enlisted personnel. They are located in different areas on the station but each is within walking distance of most facilities. They are completely furnished with electric range, water heater and refrigerator. All are equipped with a full basement and plenty of storage space. Government washers and driers are available.

Duplex Public Quarters—Some are occupied by officers, others by en-

listed personnel, and are located on the station within walking distance of most facilities. They are completely furnished with electric water heater and refrigerator. Government washers and driers are available.

Lake Louise Public Quarters—These are single-story; occupied by officers only. They are located on the station about three and one-half miles from the Admin building. They, too, are completely furnished with electric range, water heater and refrigerator. Government washers and driers are available.

Low Cost Defense Rental Housing (Lake Louise)—These are single story, duplex type houses. They are for officers and are located on the station about three and one-half miles from the Admin building. If you have been assigned this, or inadequate public quarters, it is suggested that you bring enough of your own furniture, as there is a high rental rate on furniture for these houses. The example at the bottom of the page applies to Lake Louise and Government Hill.

Washers and driers are not furnished at either Lake Louise low cost housing nor at Government Hill.

Low Cost Defense Rental Housing (Government Hill)—This group is similar to those at Lake Louise low cost housing but is assigned to enlisted personnel. It, too, is located on the station but is within walking distance of most facilities. The units are single story, of the duplex type.

Inadequate Quarters—These are public quarters that have been declared inadequate and are being retained for an indefinite period. They are available both to officers and enlisted personnel at a reduced BAQ. They are furnished with electric stove and refrigerator. No washers and driers.

Aleutian Homes Project—In Kodiak itself, there is a 342-unit housing project (Aleutian Homes). The units consist of two bedrooms without garage, unfurnished except for refrigerator and stove for \$110 monthly; two bedrooms with garage, unfurnished except for refrigerator, stove and drier, at \$130; three bed-

rooms with garage, unfurnished except for stove, refrigerator, semi-automatic washer and clothes drier for \$150. A \$50 deposit is required with the first month's rent. This is refunded when you leave if the apartment is clean and undamaged.

These homes are not wired for electric stoves or driers. The floors are brown marbled asphalt tile. (Cold in winter, so bring rugs). Heat is thermostatically controlled. No showers. Picture windows but no shades, so you'll probably want some kind of drapes or curtains. Traverse rods are furnished.

One point to bear in mind: Although the Aleutian Homes are available without too much waiting, you will need considerable cash on hand if you decide to take them. The initial occupancy charges, in addition to your first month's rent, will run something like this:

Propane gas—This gas is available in 100-pound bottles at \$18.36 per bottle. It is used for cooking, hot water heaters and clothes driers.

Electricity—A \$20 fee is required to join the local electric association. This is also refunded when you move out.

Fuel Oil—Fuel tanks are filled when you move in. Tank capacities are usually about 280 gallons which will cost you about \$56. The price of the fuel remaining in the tank when you move is refunded.

Water, Sewage and Garbage Disposal—These little items will cost you about \$9 a month.

Utilities—Average cost is about \$85 a month.

In other words, you had better have about \$300 in your pocket to pay the first month's rent and deposits.

However, because of the ready availability of the Aleutian Homes, the Commandant, 17th Naval District, is able to authorize shipment of household effects and concurrent travel of dependents if you decide to try the project.

There are also a limited number of privately owned homes in Kodiak available for rent. There is no official discussion available as to their

	Rent	Furnishings	Utilities	Total with furnishings	Total without furnishings
3-bedroom	\$41.70	\$30.00	\$57.00	\$128.70	\$98.70
2-bedroom	37.20	24.90	51.30	113.40	88.50
1-bedroom	28.00	20.00	41.40	89.40	69.40

quality and price level.

Clothing—As we have suggested, Kodiak is not by any means a perennial icebox and the clothes you now own, with some additions, should be enough.

The over-all emphasis should be on fall clothing because the summer is rarely hot and the winter is not severely cold.

However, a warm overcoat is a must, as are heavy-soled shoes, raincoat and galoshes. Heavy clothing is not needed for daily, routine living, but sessions at the Ski Chalet or overnight camping trips make it advisable to bring woolen suits, sweaters, woolen slacks, warm gloves, woolen scarfs and earmuffs. For a child a ski suit is ideal.

Since much of the recreation includes outdoor excursions, shoe packs with rubber bottoms, hip boots and chest-high waders for fishing trips are recommended. Down or alpaca lined three-quarter length parkas are excellent as protection against the cold winds.

Although these items may be bought locally, it is advisable to bring them since the selection of sizes and styles in available stock is limited. Some items are available at the Navy Exchange, but special orders from Outside take approximately a month for delivery, and you can get right cold in a month.

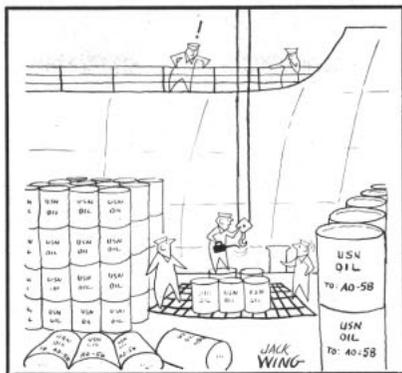
Local prices, except for the Navy Exchange, are approximately 25 per cent higher than Outside.

Generally speaking, the accent is on informal wear. For women, sweaters, slacks and skirts will serve during the winter months. However, don't forget cottons. They are worn during the summer and some days it is even warm enough to wear shorts or a bathing suit.

Shoes present a problem. Although the Navy Exchange has a shoe department and there are two stores in town which sell them, styles are rather limited and the stock is soon depleted. If anyone in your family wears an unusual size it is wise either to buy ahead or make arrangements with a stateside shoe store.

Men usually wear jackets and sport shirts.

Schools—Grade school children (kindergarten through eighth grade) living on the station go to the station school, while those in Kodiak attend the city school. An average of 300 students attend the station school.



"We're out of oil."

High school students go to Kodiak High School with free bus service provided by the naval station. The high school is fully accredited, is equipped with facilities for chemistry and physics, and has a program acceptable to colleges throughout the country.

To be admitted to kindergarten, a child must be five years old on or before November 1; for first grade, six years old by the same date. School usually begins the day after Labor Day and is recessed for the summer vacation in the latter part of May. Girls in first through sixth grade may wear slacks to school.

There is also a Catholic parochial school in Kodiak.

Churches—Protestant and Catholic chaplains conduct a full program of services and religious education on the station and arrange regular services for Lutheran, Latter Day Saints and other groups. Churches in Kodiak include a Community Baptist Church, Roman Catholic Church, Church of God, Assembly of God, Church of Christ, Berean Baptist Church, United Pentecostal Church, Kodiak Bible Chapel and Russian Orthodox Church.

Commissary and Exchange—Each carries adequate stocks and is conveniently located. The Commissary stocks a full line of meats, canned goods (including baby food), dairy products, staples and frozen foods as well as fresh fruits and vegetables when obtainable.

In addition to the merchandise normally found in a Navy Exchange in the continental U. S., the Exchange at Kodiak carries such additional items as heavy appliances, televisions, stereos and a complete line of men's, women's and children's clothing.

Medical Care—The naval station has a well equipped hospital which furnishes medical care to military personnel and their dependents. Illnesses or injuries which require care beyond the capabilities of the hospital are transferred to the U. S. Air Force Hospital, Elmendorf AFB, at Anchorage, or to one of the larger naval hospitals, usually on the West Coast.

Complete dental treatment is provided for military personnel and limited dental care is provided on a space available basis for dependents. Orthodontic treatment is not available. Be sure your family has all necessary dental care completed before they arrive.

Recreation—Facilities include: leather working shop; hobby shop resale outlet; gymnasium; health room and steam bath; two bowling alleys; ceramics shop, woodworking shop; recreational gear issue, including guns, rods and reels, and camping equipment; ski chalet; Afognak recreation camp; hobby shop garage; deep-sea fishing trips in summer; ice-skating; softball, basketball and volleyball leagues; archery club; skeet range; beach house and picnic area; and indoor pistol range.

The Kodiak Conservation Club is a sportsmen's club dedicated to conservation measures such as planting fish in local lakes and streams. It also conducts organized fishing and hunting trips. The naval station has a rifle and pistol club with both indoor and outdoor ranges. There are well organized Boy Scout troops both on the station and in town.

AUTEC Is Underway

Construction for the AUTEC project began in April. When completed, the Atlantic Undersea Test and Evaluation Center in the Bahamas will provide the Navy with a multi-purpose laboratory for oceanographic research and for the testing of anti-submarine weapons.

AUTEC will include the Tongue of the Ocean, an underwater canyon about 120 miles long, 20 miles wide and more than a mile deep. The canyon is located about 125 miles east of Miami, Fla.

The initial construction program included dredging of a channel for the main base and the outlying sites; a pier at the main base; tracking stations and navigation aid stations.

Check This to See Who's Heading for Shore in Seavey C-66

WHAT WITH VIETNAM and the trend of converting some enlisted billets ashore to civilian billets, the people in Seavey-Shorvey admit they have their problems administering their program to the satisfaction of everyone. Nevertheless, they feel reasonably pleased with a portion of their labors, the results of which may be found in Seavey C-66.

As they point out, the planning has been done on an individual rating and pay grade basis. Most of the converted shore billets were normally filled by ratings which had enjoyed a relatively good sea/shore ratio or by non-petty officers. Extreme care has been taken not to convert billets that are filled from ratings which do not now have sufficient shore billets.

Additional programs are under consideration to increase the billets ashore for men of ratings with more than a sea/shore ratio for four years at sea for every two years ashore.

As you no doubt are aware, effective with the B-66 Seavey, all preferred billets in areas published in Chapter III of the *Enlisted Transfer Manual* are to be filled by those individuals eligible for Seavey. This situation still holds true, and the advantage of serving a 36 to 48-month preferred overseas shore tour as compared to the shorter 24-to 30-month average CONUS tour, is obvious. Seavey-eligible Navy men will not be assigned to an overseas activity where dependents are not authorized or where adequate family accommodations are not available.

If you do not want preferred overseas shore duty assignment, say so in Block 11 of your Rotation Data Card. Having done so, you will not as a general practice be assigned overseas; however, after every effort has been made to assign you to one of your CONUS duty preferences, you may receive a 14-month sea extension when sufficient CONUS billets are not available. To give the assignment officer as great a latitude as possible, you are urged—again—to indicate both CONUS and preferred overseas areas.

You are reminded that once you have orders to shore duty, a request for cancellation will do you little or no good.

Here are the eligibility require-

ments for Seavey C-66:

- You must be in an onboard "for duty" status.
- You must have commenced continuous tour of sea duty in or before the month and year specified below for your rate and rating.
- You must have an active duty obligation to January 1969 or later.
- If on overseas shore duty or toured sea duty (sea duty for rotation), you must also have a tour completion date which falls within the transfer months of that Seavey (i.e., Seavey C-66 tour completion date must be February-March 1967).
- If you are serving on a sea tour extension, you are ineligible unless the sea tour extension expires during the transfer months of this Seavey segment.
- Change in rate or rating after the SDCD has been announced by BuPers Notice 1306 does not change eligibility since the effective date of the Notice is the determining factor. However, if you are reduced in rating to a pay grade which is ineligible for Seavey, you will be considered ineligible as of the date of reduction.
- If you are assigned to a preferred overseas shore activity and

No Physical Exam for Senior Chief Petty Officers

• **ADVANCEMENT**—Chief petty officers being advanced to pay grades E-8 and E-9 are no longer required to receive a physical examination before advancement.

This and two other changes have been promulgated as Change 8 to BuPers Inst 1430.7D.

The new policy also provides for waiver of the active service obligation for certain personnel in a medical status. Under this proviso, a man in a medical status can be advanced even though he doesn't meet the physical requirements to reenlist or extend his enlistment. He must, however, fulfill his service obligation when he is released from a medical status.

Broken service reenlistees also benefit. They can now participate in the first advancement examination for which they are eligible, without waiting to reestablish the time in rate requirements.

meet the sea duty cut-off dates of Seavey A-66 and if your tour completion date falls within the transfer months of Seavey C-66, you will have a Rotation Data Card prepared and forwarded by PAMI if you are not currently recorded in Seavey. It is up to you to make sure that your duty preferences are current.

If all the above requirements are not met, don't bother to return your Rotation Data Card to PAMI or BuPers. It will just be a waste of your time and that of Seavey.

Men holding a conversion PNEC (XX99) will be considered as serving in the rating to which converting for the purpose of determining Seavey eligibility.

To fill certain billets which require special qualifications, and to meet emergency requirements, as determined by the Chief of Naval Personnel, or when sufficient personnel are not available to fill preferred overseas requirements, it may become necessary to order personnel ashore outside normal procedures. This will only be done when there are not enough individuals recorded in Seavey who possess the necessary qualifications. In general, don't worry about it. Such a situation arises rarely.

As a result of the buildup in Vietnam, it was necessary to short-tour a number of individuals who were serving a tour of shore duty earned through Seavey. In order not to penalize these men with respect to future shore duty eligibility, the computation of sea duty commencement dates has been established on the following basis:

• For those who served 18 or more months of such a tour of shore duty, no change in current sea duty commencement date. This will be considered a full tour ashore.

• For those who served less than 18 months of such a tour of shore duty: A constructive sea duty commencement date will be established by the Chief of Naval Personnel, adding the months served ashore to the original sea duty commencement date under which you had been previously ordered to shore duty.

Are all the rules clear now? If not, details may be found in BuPers Notice 1306, of 30 June. Meanwhile, here's the list.

Rate	Date	Rate	Date	Rate	Date	Rate	Date	Rate	Date	Rate	Date	Rate	Date
BMC	Apr 62	ETN2	Aug 63	LI2	Oct 63	PM2	Jan 61	BUR2	Jan 63	ABF2	Mar 63		
BM1	Mar 59	ETN3	Jun 64	LI3	Oct 64	PM3	Jan 61	BUR3	Oct 62	ABF3	Jan 64		
BM2	Feb 59	ETN5N	Jun 64	LI5N	Oct 64	PMFN	Jan 61	BURCN	Oct 62	ABFAN	Jan 64		
BM3	Jan 61	ETR2	Aug 63	DMC	Nov 64	MLC	Aug 61	SWC	Oct 60	ABHC	Aug 64		
BMSN	Jan 61	ETR3	Jun 64	DM1	Nov 64	ML1	Oct 60	SW1	Jan 60	ABH1	Dec 63		
QMC	Aug 61	ETRSN	Jun 64	DM2	Nov 64	ML2	Jan 59	SWE2	Jan 60	ABH2	Oct 63		
QM1	Jan 60	DSC	Feb 65	DM3	Nov 64	ML3	Mar 61	SWE3	Nov 62	ABH3	Oct 64		
QM2	Jan 61	DS1	Feb 65	DMSN	Nov 64	MLFN	Mar 61	SWECN	Nov 62	ABHAN	Oct 64		
QM3	Jun 62	DS2	Oct 64	MMC	Dec 59	EAC	Sep 64	SWF2	Jan 60	AEC	Jan 64		
QMSN	Jun 62	DS3	Oct 64	MM1	Sep 58	EA1	Sep 64	SWF3	Nov 62	AE1	Oct 64		
SMC	Mar 62	DSSN	Oct 64	MM2	Apr 59	EAD2	Sep 64	SWFCN	Nov 62	AE2	Oct 64		
SM1	Sep 58	IMC	Mar 62	MM3	Dec 61	EAD3	Sep 64	UTC	Nov 62	AE3	Oct 64		
SM2	Aug 58	IM1	Mar 62	MMFN	Dec 61	EADCN	Sep 64	UT1	Jun 62	AEAN	Oct 64		
SM3	Jul 58	IM2	Feb 62	ENC	Sep 60	EAS2	Sep 64	UTA2	Jun 62	AMSC	Oct 64		
SMSN	Jul 58	IM3	Jul 61	EN1	Mar 59	EAS3	Sep 64	UTA3	Jun 62	AM51	Oct 64		
RDC	Dec 61	IM5N	Jul 61	EN2	Mar 59	EASCN	Sep 64	UTACN	Jun 62	AM52	Oct 64		
RD1	Jun 60	OMC	Mar 62	EN3	Jun 63	CEC	Jul 64	UTB2	Jun 62	AM53	Oct 64		
RD2	Dec 60	OM1	Mar 61	ENFN	Jun 63	CE1	Sep 63	UTB3	Oct 62	AMSAN	Oct 64		
RD3	Jan 63	OM2	Mar 61	MRC	May 62	CEP2	Sep 63	UTBCN	Oct 62	AMHC	Feb 63		
RDSN	Jan 63	OM3	Jan 63	MR1	Oct 61	CEP3	Sep 63	UTP2	Jun 62	AMH1	Jul 64		
STC	Feb 62	OMSN	Jan 63	MR2	Oct 61	CEPCN	Sep 63	UTP3	Jun 62	AMH2	Oct 64		
ST1	Feb 62	RMC	Sep 63	MR3	Jul 62	CESE2	Sep 63	UTPCN	Jun 62	AMH3	Oct 64		
STG2	Mar 62	RM1	Jan 63	MRFN	Jul 62	CE52	Sep 63	UTW2	Jun 62	AMHAN	Oct 64		
STG3	Mar 62	RM2	Dec 63	BTC	Jun 60	CE53	Jan 64	UTW3	Mar 63	AMEC	Feb 65		
STGSN	Mar 62	RM3	Dec 63	BT1	Jan 59	CESCEN	Sep 63	UTWCN	Mar 63	AME1	Feb 65		
ST52	Mar 62	RMSN	Dec 63	BT2	Jan 59	CET2	Sep 63	ADRC	Feb 65	AME2	Oct 64		
ST53	Mar 62	YNC	Oct 64	BT3	Nov 60	CET3	Sep 63	ADRI	Feb 65	AME3	Oct 64		
ST55N	Mar 62	YN1	Oct 64	BTFN	Nov 60	CETCN	Sep 63	ADR2	Feb 65	AMEAN	Oct 64		
TMC	Mar 62	YN2	Oct 64	BRC	May 59	CEW2	Feb 64	ADR3	Oct 64	PRC	Feb 65		
TM1	Sep 61	YN3	Feb 65	BR1	Apr 59	CEW3	Nov 63	ADRAN	Oct 64	PR1	Feb 65		
TM2	Sep 61	YNSN	Feb 65	EMC	Sep 61	CEWCN	Nov 63	ADJC	Oct 64	PR2	Feb 65		
TM3	Jun 63	CYN3	Jul 64	EM1	Sep 59	EOC	Aug 62	ADJ1	Oct 64	PR3	Oct 64		
TMSN	Jun 63	CYNSN	Jul 64	EM2	Dec 60	EO1	May 63	ADJ2	Oct 64	PRAN	Oct 64		
GMMC	Oct 61	PNC	Feb 65	EM3	Feb 63	EOH2	Sep 63	ADJ3	Oct 64	AKC	Feb 65		
GMM1	Jun 61	PNI	Feb 65	EMFN	Feb 63	EOH3	Jun 64	ADJAN	Oct 64	AK1	Feb 65		
GMM2	Jan 60	PN1	Feb 65	ICC	Mar 62	EOHCN	Jun 64	ATC	Oct 64	AK2	Feb 65		
GMM3	Jun 60	PN2	Feb 65	IC1	Jul 60	EON2	Mar 64	AT1	Oct 64	AK3	Feb 65		
GMM5N	Jun 60	PN3	Feb 65	IC2	Apr 60	EON3	Mar 64	ATR2	Oct 64	AKAN	Feb 65		
GMTC	Feb 65	PNSN	Feb 65	IC3	Oct 62	EONCN	Mar 64	ATR3	Oct 64	AZC	Feb 65		
GMT1	Feb 65	SKC	Apr 62	ICFN	Nov 62	CMC	Sep 63	ATRAN	Oct 64	AZ1	Feb 65		
GMT2	Feb 65	SK1	Jan 62	SFC	Oct 59	CM1	Jul 63	ATN2	Oct 64	AZ2	Oct 64		
GMT3	Feb 65	SK2	Jan 62	SF1	Sep 58	CMA2	Jul 63	ATN3	Oct 64	AZ3	Oct 64		
GMT5N	Feb 65	SK3	Feb 65	SFM2	Dec 59	CMA3	Mar 64	ATNAN	Oct 64	AZAN	Oct 64		
GMGC	Nov 61	SKSN	Feb 65	SFM3	Feb 62	CMACN	Mar 64	AXC	Dec 63	PHC	Feb 65		
GMG1	Jan 59	DKC	Feb 63	SFNFN	Feb 62	CMH2	Jul 63	AX1	Jun 63	PH1	Jan 65		
GMG2	Dec 58	DK1	May 62	SFP2	Dec 59	CMH3	Apr 64	AX2	Sep 63	PH2	Oct 64		
GMG3	Dec 59	DK2	Jan 64	SFP3	Jul 61	CMHCN	Oct 63	AX3	Sep 63	PH3	Oct 64		
GMGSN	Dec 59	DK3	Oct 64	SFPFN	Jul 61	BUC	Jan 63	AXAN	Sep 63	PHAN	Oct 64		
FTC	Apr 62	DKSN	Oct 64	DCC	Jan 62	BU1	Jan 63	AOC	Nov 63	PTC	Jul 64		
FTG1	Jan 62	CSC	Apr 63	DC1	Jan 60	BUL2	Jan 63	AO1	Jul 63	PT1	Jul 64		
FTG2	Jan 62	CS1	Feb 63	DC2	Mar 61	BUL3	Feb 63	AO2	Jan 64	PT2	Oct 64		
FTG3	Dec 60	CS2	May 63	DC3	Jun 63	BULCN	Feb 63	AO3	Oct 64	PT3	Oct 64		
FTG5N	Dec 60	CS3	Feb 65	DCFN	Jun 63	BUH2	Jan 63	AOAN	Oct 64	PTAN	Oct 64		
FTM1	Jun 61	CSSN	Feb 65	PMC	Jul 61	BUH3	Feb 64	AQC	Oct 64	HMC	Jun 64		
FTM2	Dec 61	SHC	Nov 64	PM1	Jan 61	BUHCN	Feb 64	AQ1	Oct 64	HM1	Jun 64		
FTM3	Dec 61	SH1	Aug 60					AQ2	Oct 64	HM2	Jun 64		
FTMSN	Dec 61	SH2	Nov 58					AQ3	Oct 64	HM3	Jun 64		
NEC 1143	May 64	SH3	Aug 59					AQBAN	Oct 64	HN	Jun 64		
NEC 1144	May 64	SH5N	Aug 59					AQF2	Oct 64	DTC	Jun 64		
MTC	Sep 64	JOC	Nov 64					AQF3	Oct 64	DT1	Jun 64		
MT1	Sep 64	JO1	Nov 64					AQFAN	Oct 64	DT2	Jun 64		
MT2	Apr 63	JO2	Nov 64					ABEC	Jul 63	DT3	Jun 64		
MT3	Apr 63	JO3	Feb 65					ABE1	Apr 62	DN	Jun 64		
MT5N	Jul 64	JOSN	Feb 65					ABE2	Oct 62	SDC	Sep 64		
MNC	Nov 64	PCC	Sep 63					ABE3	Mar 63	SD1	Jun 62		
MN1	Nov 64	PC1	Aug 63					ABEAN	Mar 63	SD2	Jun 62		
MN2	Nov 64	PC2	Aug 63					ABFC	May 64	SD3	Jul 60		
MN3	Nov 64	PC3	Oct 64					ABF1	May 64	TN	*		
MNSN	Nov 64	PCSN	Oct 64										
ETC	Oct 64	LIC	Sep 62										
ET1	Oct 64	L11	Aug 62										

● REDUCED SCHOOL QUOTAS

The pressing requirements of operations in Southeast Asia will cause a delay in service college and post-graduate studies for some Navy officers. Because of the increased number of officers required to serve at sea, quotas for PG School and service colleges will be reduced temporarily to the extent necessary.

Every effort will be made to provide future opportunity for higher education to such officers.

*No new Rotation Data Cards to be submitted for this Seavey.

DIRECTIVES IN BRIEF

This listing is intended to serve only for general information and as an index of current Alnavs as well as current BuPers Instructions and BuPers Notices that apply to most ships and stations. Many instructions and notices are not of general interest and hence will not be carried in this section. Since BuPers Notices are arranged according to their group number and have no consecutive number within the group, their date of issue is included also for identification purposes. Personnel interested in specific directives should consult Alnavs, Instructions and Notices for complete details before taking action.

Alnavs

No. 38—Requested information concerning complaints against certain firms which take orders for automobiles from personnel overseas.

No. 39—Announced a change in

rates, effective 1 July, of maintenance clothing monetary allowance.

No. 40—Directed that, pending clarification, personnel concerned with the administration of military justice should consider the advisability in each case of introducing pretrial statements of the accused into evidence.

No. 41—Discussed details of revision of travel reimbursement.

No. 42—Announced designation by the Secretary of Defense of the week July 11 through July 15 as Defense Cost Reduction Week.

No. 43—Announced the convening of fiscal year 1967 selection boards to recommend active duty line officers (except TARs) for promotion to the grades of captain and commander.

Instructions

No. 1540.40A—Describes qualification requirements and assignment policies of personnel ordered to duty in connection with naval nuclear propulsion plants. The Instruction reaffirms previously published personnel aspects of the program, as well as stating personnel policies and practices of the Chief of Naval Personnel in this area.

No. 1820.3D—Provides information concerning the granting of retirement credit to USNR officers and enlisted personnel for the satisfactory completion of correspondence courses.

No. 5400.1M—Announced the tables of organization for the Naval Reserve for fiscal year 1967.

Notices

No. 1001 (2 June)—Outlined eligibility requirements and established procedures whereby Reserve officers may apply and be selected for duty in connection with the training and administration of the Naval Reserve.

No. 1321 (2 June)—Announced the inclusion of unrestricted line officer subspecialty designations in permanent change of station orders.

No. 1560 (6 June)—Provided information to commanding officers and individuals on matters related to the Veterans Administration program of educational benefits.

No. 1742 (6 June)—Provided information concerning the Navy's voting program and directed attention to the citizenship and voting responsibilities of Navy personnel in the 1966 elections.

No. 1221 (13 June)—Announced changes to the *Manual of Enlisted Classification* (NavPers 15105J) which will be incorporated in NavPers 15105K, scheduled for distribution in September.

No. 1741 (15 June)—Reiterated the provisions of OpNav Inst P3710-7C governing the flight requirements of Category II and III naval aviators, and discussed the possible consequences arising from the cancellation of premiums.

No. 1000 (21 June)—Discussed the policy concerning forms of address of U.S. Navy enlisted personnel.

No. 1306 (21 June)—Directed attention to the areas of discrepancies in the development, reporting

HOW DID IT START

Test Chamber for Nuclear Blast

Knowing what happens in a nuclear blast is, as you can imagine, a piece of useful information. Unfortunately, such knowledge has not been easy to come by unless an atomic device was actually exploded.

The Navy Facilities Engineering Command, however, is putting the finishing touches on an unusual testing device at Dahlgren, Va., which will test nuclear blast effects on model ships, jet engines, shelters, electronic equipment, tanks, trucks and waterfront structures without using fissionable materials.

The principle involved in the test installation is relatively simple. A small explosive charge is fired in the apex of a cone. The resulting blast wave represents the spherical shock wave from a much larger charge fired in the open.

Although the principle is simple, the actual construction of the test facility presented some problems. One of the largest was finding a device which would fire a sufficiently large charge without blowing to bits.

This particular difficulty was whipped by welding four 16-inch naval guns together end-to-end into one big detonation chamber. One thousand pounds of TNT will then be divided into smaller charges, placed in a line in each of the four gun barrels and exploded.

The blast from the explosion will enter a 2400-foot long tube which is 16 inches in diameter at the detonation chamber end and 24 feet in diameter at the open end.

Inside this conical chamber, the impact of the 1000 pounds of TNT reaches a shock wave intensity which equals 20,000 tons of TNT—the equivalent of a WWII atom bomb.

Test stations will be established at the

tube's 10-, 15- and 22-foot diameter sections and test objects, such as tanks, and trucks, can be driven in to about the halfway point.

As might be expected, the kick produced by the big bang in the four 16-inch naval guns is considerable. At its peak force, the recoil thrust will reach two and one-half million pounds. However, it will be transmitted to a 1900-ton stationary concrete block.

There was also the problem of loading the 264-foot long detonation chamber which terminates in the 16-inch end of the blast chamber. This was solved by half-filling the chamber with water, floating the TNT into position on plastic foam rafts, then draining the water.

There was another difficulty involved in the construction too—how to transport the massive rolled plate steel tubing to the test site. This wasn't an easy matter to overcome, inasmuch as the largest tube section is 95 feet long and weighs 149 tons.

The problem was solved by towing the sections on barges up the Potomac River, using a huge gantry crane to unload them, then transporting them to the building site on a flat car over a newly constructed rail line.

Conshot, as the installation is called, is scheduled for completion in October. Despite safety precautions which have been taken to keep the explosive charge under control, those observing the effects of the blast will take no chances.

When the big boom rolls out over the Virginia countryside, the monitors will be safely inside a thick concrete blockhouse watching the results with electronic eyes, and the problem of how to observe an atomic blast without using fissionable material will have been solved.

Fast Airlift

If someone aboard *uss Sacramento* (AOE 1) were writing a television commercial advertising his ship's services, he might promise *fast FAST FAST* replenishment and cite a recent transfer of supplies to *uss Hancock* (CVA 19) and *Enterprise* (CVAN 65) as examples of how it is done.

Using her UH-46A *Sea Knight* helicopters, *Sacramento*, while in the South China Sea, airlifted 27.8 tons of provisions to *Hancock* in 15 minutes, and supplied ordnance items to *Enterprise* at the rate of 96.7 tons per hour.

and use of Customer Identification Codes.

No. 1421 (23 June)—Issued authority for effecting promotions to the grades of commander, lieutenant commander and lieutenant.

No. 1306 (30 June)—Announced the sea duty commencement cut-off dates which establish the eligibility of enlisted men for Seavey C-66.

No. 1070 (1 July)—Issued an advance change to *BuPers Manual* to provide instructions concerning the Record of Emergency Data (NavPers 601-2).

• **FT RATING CHANGES**—Several changes have been made in the fire control technician rating. Changes were approved by SECNAV on 13 June 1966 and official implementation will be forthcoming shortly.

• A new service rating—Fleet Ballistic Missile Fire Control (FTB)

—has been established at pay grade E-4 and extends through pay grade E-7.

• The FTM service rating has been renamed—instead of being called Missile Fire Control, it is now Surface Missile Fire Control.

• The FTM and FTG service ratings have been extended from pay grade E-6 to E-7.

• All three service ratings (FTB, FTM and FTG) will merge at E-8 and extend to E-9.

Honored Visitor

The honored guest aboard the antisubmarine carrier *uss Bennington* (CVS 20) had lots of stories to tell about the old days aboard *Bennington*. Not the 45,000-ton carrier *Bennington*, but the 1700-ton, three-masted gunboat *Bennington*.

Mr. C. Van Epen, 82, a former boastwain's mate in the original *Bennington*, recently joined nearly 2000 friends and relatives of the ship's crew for a dependents' cruise.

Van Epen, who now lives in Sacramento, Calif., is one of the survivors of the explosion aboard *Bennington* on 21 Jul 1905 which claimed 60 lives.

He enlisted in the Navy in 1902, at the age of 17. During his four years as a Navyman he served aboard three square-rigged ships in addition to duty aboard *Bennington*.

After an extensive tour of the carrier, Van Epen took a seat on the Admiral's bridge and watched flight operations. In between launches of S2E *Trackers* and A4D *Skyhawks*, he entertained guest cruisers and young sailors alike with stories of the old Navy. To illustrate his stories he had with him an extensive picture collection showing Havana as it used to be, wooden square-riggers, and of course, the old gunboat *Bennington*.

He told them about sailing a square-rigger around the Horn and through the Strait of Magellan, and of eating hardtack and sow belly, and how he used to be rocked to sleep in a swaying hammock.

During the cruise *Bennington's* commanding officer presented Van Epen with a hand-painted and engraved ship's plaque to commemorate the visit and a number of photos of the *Bennington* in action to add to his collection. The present *Bennington*, that is.



"Have you seen a tramp steamer tied up around here anywhere?"

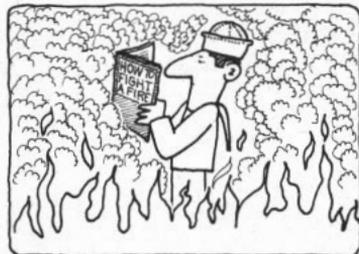
Fire is a constant potential hazard on board ship. All possible measures must be taken to prevent fires, and to bring them quickly under control and extinguish them when they do occur. A fire emergency is everyone's concern, and the ability to act swiftly and effectively comes only with knowledge. Test yourself on these few points. If you don't do well, a review of fire fighting techniques is in order.

1. Smothering a class A fire with foam is not completely effective because:

- (a) The fire might occur in a closed compartment;
- (b) It takes too long to make foam;
- (c) Embers are not cooled sufficiently;
- (d) Electrical apparatus will be ruined by foam.

2. The first step in extinguishing a class C fire is to:

- (a) Secure the firemain system;
- (b) Secure power to the circuit;
- (c) Secure the ventilation system;
- (d) Don oxygen breathing apparatus.



3. Which of the following is not recommended when fire threatens incendiary bombs:

- (a) Throw them overboard;
- (b) Use high-velocity fog to cool them;
- (c) Use sand to protect them;
- (d) Use foam to cool them.

4. A firefighter in a smoke-filled compartment should wear a safety line which is tended by someone outside. Two tugs on the line by the wearer mean:

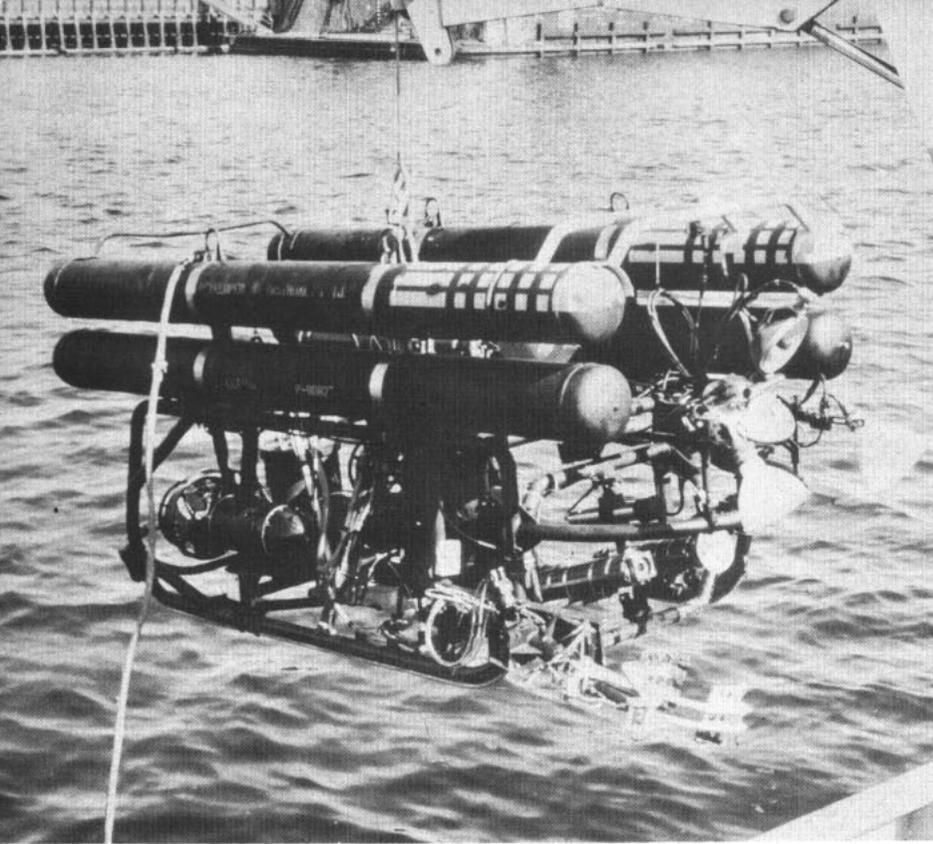
- (a) Keep slack out of line;
- (b) Send help;
- (c) I am going ahead;
- (d) I am all right.

5. Why must you NOT spray water on a man wearing an asbestos suit:

- (a) You might blur his vision;
- (b) Steam generated within the suit might scald the man;
- (c) The material will become waterlogged;
- (d) The force of the water might push him into the fire.

Answer to Quiz Aweigh can be found on page 64.

TASK



TEAM MATES—Navy's CURV, designed to retrieve torpedoes, secured lines to H-bomb that was located by the deep-diving sub *Alvin* (below).



The following narrative portrays the Navy's role in the operation earlier this year off Palomares on the Mediterranean coast of Spain. The report is concerned with the numerous Navy activities working under the direction of the Commander, Task Force Sixty-Five.

The over-all task, ashore and afloat, included elements of the U. S. Air Force and the U. S. Embassy, in addition to representatives of industry who offered their services in the assignment. It is appropriate here to pay tribute to the extensive cooperation of Spanish officials and the work of many civilians; indeed, teamwork was the keynote culminating in successful achievement of this mission in the face of many hardships.

CONTACT NUMBER 261, resting in wooden chocks on the fantail of *uss Petrel* (ASR 14), was still partially shrouded by its gray cargo parachute. On its perch the large, cigar-shaped bomb presented a rather unspectacular appearance, considering that for previous weeks it had been the object of a search involving more than 3000 men in 23 ships.

As the submarine rescue ship moved slowly along the starboard side of *uss Albany* (CG 10), then reversed and backed closer to the cruiser, the thermonuclear bomb came into close camera range for news photographers on board the Task Force 65 flagship.

This was the first public exhibit of a thermonuclear weapon. The bomb picture was flashed around the world by news media as evidence of its successful recovery.

The event marked the culmination of an 80-day drama in which man's fortitude and ingenuity defied the formidable forces of Nature in two dimensions, above and below the sea, in the most exacting U.S. Navy deep sea search and recovery operation ever conducted.

PRECIPITATING this all-out U. S. effort, a B-52 jet bomber crashed after colliding with its KC-135 refueling tanker over southern Spain

ALL HANDS

FORCE SIXTY-FIVE

on 17 January. The four hydrogen bombs carried aboard the B-52 fell to earth from about 30,000 feet, but there was no nuclear explosion because the bombs were unarmed.

Three of the bombs were recovered in the farm country near Palomares, but an extensive search of the area failed to turn up the fourth.

Six days after the crash, TF 65 was formed to prosecute a sea search for the missing bomb and to locate aircraft wreckage which had fallen into the sea.

There are few meaningful analog situations that might be concocted to describe the challenge which faced Task Force personnel. It's not enough to say they were looking for the proverbial needle in the haystack because there were so many complicating factors.

Like the land area in the vicinity of Palomares, the adjacent sea bottom is mountainous and falls off to great depths. Add to that the tremendous pressures and darkness encountered below 500 feet, the difficulties of navigating precise search patterns to insure that the entire area is scanned (even with arc lights, visibility ranges from 20 feet to zero, depending on the state of the sea), and many other difficulties, and the magnitude of the task becomes difficult to calculate.

Nevertheless, Rear Admiral William S. Guest, USN, arriving as on-scene commander from his post as Deputy Commander, Allied Forces Southern Europe in Naples, Italy, had a job to do. Although the unarmed bomb did not present any danger, the United States was determined to locate and recover it.

The Navy spared no effort to provide the best talent and equipment available for the search of the seaward areas. Some of the best qualified oceanographers and scientists in the U. S. joined Admiral Guest's staff, as well as experienced submarine officers—several of whom participated in the deep sea searches for *uss Thresher* (SSN 593) in 1963 and 1964.

At the outset, 15 ships were assigned to TF 65, including submarine rescue ships, fleet tugs, minesweepers, combatants and some sup-

port types. As the search progressed, some of these rotated and others were added.

Additionally, the force eventually included about 100 of the Navy's best frogmen and deep sea divers, as well as the latest equipment available—some proven in naval operations and some experimental and fresh off the drawing boards. Some of the equipment was provided by civilian contractors who are specialists in underwater operations.

Meeting with the press after several fruitless weeks of searching, Admiral Guest emphasized the fact that, although the sea is the Navy's medium, many difficulties were inherent in the task at hand.

FIRST, the exact geographic point at which the aircraft collided was not known. Officers skilled in operational analysis were assigned to the TF 65 staff from Washington. Based on several calculations, they helped establish the search areas of highest probability. The rugged underwater terrain in these areas greatly complicated the use of electronic and acoustic search equipment.

Such being the case, it was necessary to resort to purely visual search in these areas, using deep submer-

CONTACT NUMBER 261 looked like this in underwater TV photos taken by naval research submarine *Alvin*.



gence craft. Under such conditions, when visibility averages about 10 feet, this requires patience and painstaking, time-consuming effort.

On the subject of contamination or radiation, Admiral Guest explained that daily tests of sea water, collected from various depths, confirmed that there was no radiation present. Coring samples of mud, taken from the bottom in widespread locations, were likewise negative. He assured the press that there was no hazard to health or safety in the area.

He concluded by stating that he did not expect a short, quick operation; that it might take TF 65 a considerable period to accomplish its mission.

Six days later, shortly before noon on 15 March, *Alvin*—the Navy's smallest manned deep submergence research craft—located an object with an attached grayish parachute at latitude 37-11.3 north, longitude 01-41.1 west, on a 70-degree slope at a depth of 2550 feet. The location was about five miles offshore.

Alvin, barely two years old, was one result of the Navy's efforts to increase its knowledge and capabilities in the area of deep submergence and was produced under Navy contract. Its normal job was to perform scientific assignments, under Office of Naval Research contract, by the Woods Hole Oceanographic Institution.

The Search

LEADING UP TO THE NAVY'S unique task—and memorable accomplishment—is a chronology of events which reflect, in the words of Secretary of Defense Robert S. McNamara, the "determination, dedication and professionalism" of all hands concerned with the recovery.

The day following the crash, *uss Kiowa* (ATF 72) arrived in the area to offer any possible assistance. On 21 January, two minesweepers—*uss Pinnacle* (MSO 462) and *Sagacity* (MSO 469) arrived with an explosive ordnance disposal (EOD) team and commenced a search of shallow waters off the coast of Palomares, where three Air Force aviators had been picked up by Spanish fishermen. The Navy, by

this time, had been asked to prosecute an area search within the 100 fathom curve, and the decision was made for an all-out Navy effort in the recovery operation.

On 22 January, Rear Admiral Leroy V. Swanson, usn, Director of Fleet Operations Division in the office of the Chief of Naval Operations, was designated as the CONUS coordinator for the search. His post was CNO flag plot. The following day, Task Force 65 was organized by the Commander Sixth Fleet in the Mediterranean.

Immediately, stock was taken on all available people, ships and equipment, in the Navy and in civilian industry, that could be brought to bear on the problem.

Meanwhile, it was necessary to establish high probability search areas. Fishermen who had rescued downed aviators were taken to sea on board *Pinnacle* to relocate the pick-up areas. One spot where a lone aviator was recovered was over five miles off shore from Palomares; another spot, where two aviators were picked up, was closer to shore but somewhat west of the coastal town. Even closer to shore was a large semicircular area where wreckage debris was being recovered by Navy units.

ANOTHER pertinent clue was obtained when investigating officers checked into a story that yet another Spanish fisherman had observed what he described as a "half man" in a parachute land in the sea. This fisherman told his story to the investigating team, then relocated the approximate area where he believed he had seen the object land.

All these factors strengthened the Task Force's belief, based on other calculations, that the bomb was in the sea.

It was not until 21 February that precise calculations were completed and the Task Force promulgated a chart of the high probability areas. However, the areas which were eventually designated as being of highest probability, had been considered as such from the beginning. The early search had been concentrated in those areas to the greatest extent possible with the equipment available.

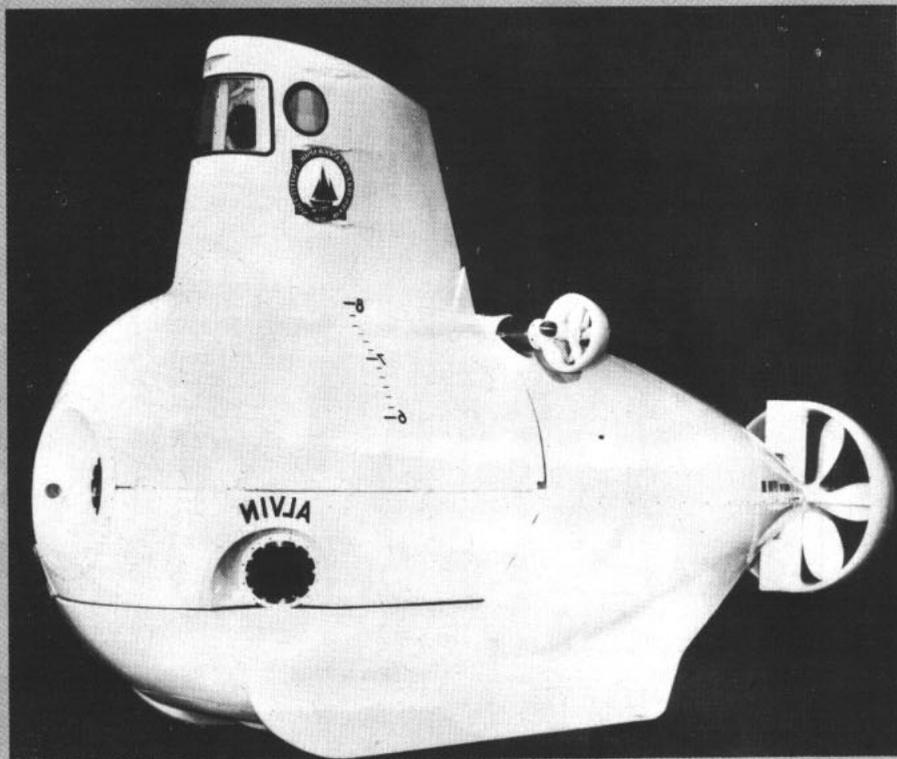
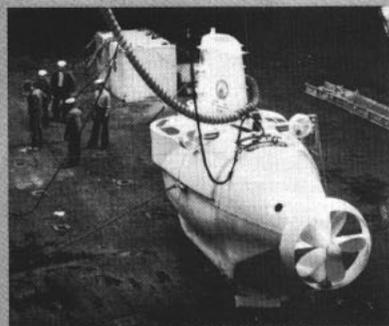
The boundary lines of the initial search area, when drawn on a map, formed a long triangle, the base of which extended along the shore area where wreckage debris was found, with the apex being the point where one aviator was recovered furthest from shore. The final search areas

were largely contained within the initial triangle. These were subdivided and designated, in order of highest probability, areas A1, A2, B and C.

THE FIRST DAYS of TF 65's existence were primarily devoted to organizing and planning the search, although shallow water operations were already underway. All available resources were ordered in or contracted for. Stage one involved divers and small vessels; stage two included the arrival of large ships and deep submersibles.

The task force eventually had ships capable of providing necessary communication and command facilities, repairs and refueling.

Between 24 and 30 January, uss *MacDonough* (DLG 8) spent a few days as TF 65 flagship, being relieved by uss *Boston* (CAG 1) on 30 January; the remaining elements of Mine Division 84—uss *Skill* (MSO 471) and *Nimble* (MSO 459) arrived. (These were relieved on 21 February by MinDiv 85, including uss *Rival* (MSO 468), *Salute* (MSO 470), *Notable* (MSO 460) and *Ability* (MSO 519). uss *Ft. Snelling* (LSD 30) arrived with additional frogmen on board; the



gasoline tanker *uss Nespelen* (AOG 55) was on the scene; and *usns Dutton* (T-AGS 22) chopped to TF 65 to perform a hydrographic role.

Navy Scuba divers were covering areas within the 80 foot curve. MSOs covered deeper areas, using sonar gear, as their capability permitted. *Pinnacle* arrived at Cartagena, Spain for installation of ocean bottom scanning sonar (OBSS)—a recent development provided by a civilian contractor.

Information on the sea bottom in the search area was almost non-existent when TF 65 set up operations. Answers were needed to such questions as "Would the bomb sink in mud or muck on the sea bottom." *Dutton* commenced a bottom contour survey, from which charts were produced which described the bottom topography in detail.

LACK OF ADEQUATE survey information in the beginning also necessitated the establishment of an accurate navigation system as a point of departure to sweep the search area precisely. The answer to this problem was three Decca high fix navigation stations, along with Navy Lorac team support, with which optimum



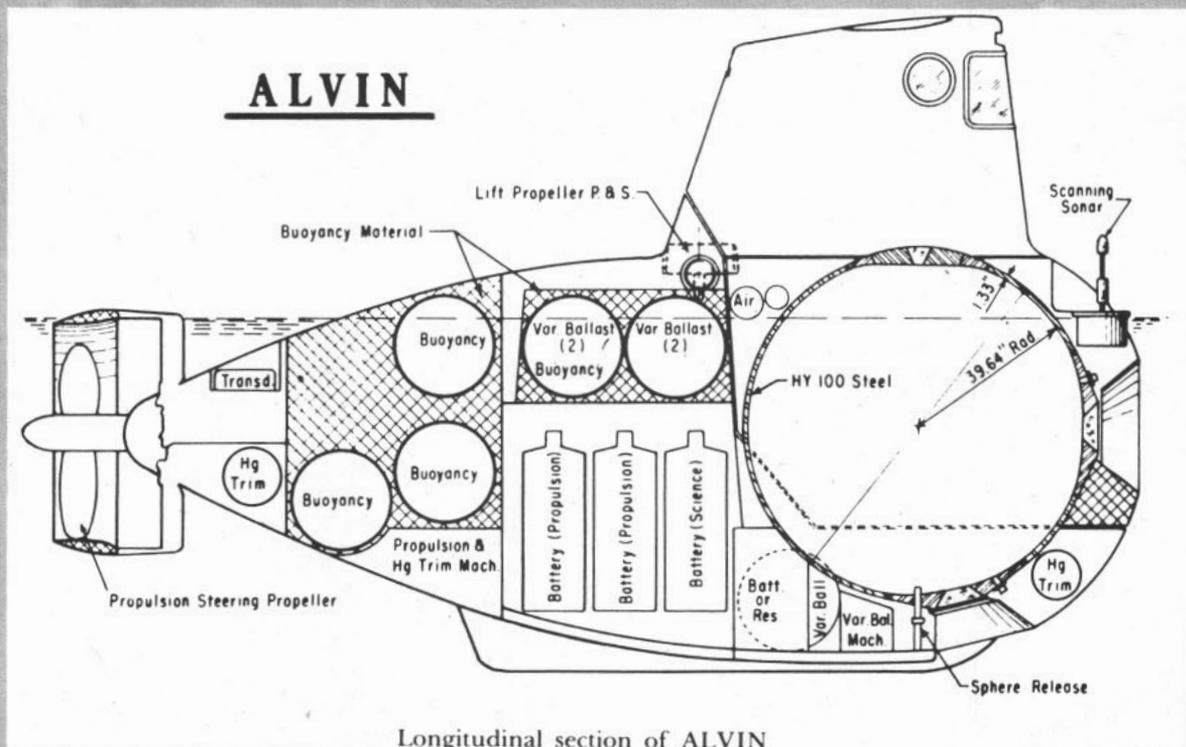
THE WORD—RADM William S. Guest, USN, talks with press on board an LCM.

navigation error was reduced to about 15 feet.

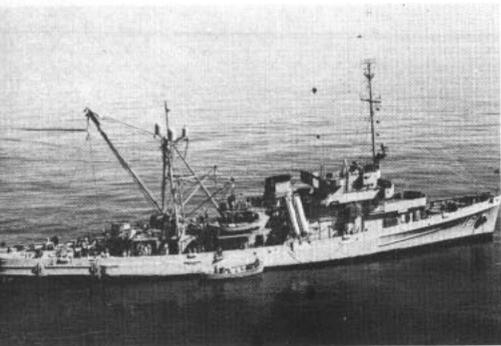
Other equipment arriving at this time included an underwater television system and a vehicle called Deep Jeep, from the Naval Ordnance Test Stations at China Lake and Pasadena Calif. The TV system was the

same one used in the Sealab II experiment in underwater living last year.

Also, a stalwart in ensuing operations, the submarine rescue ship *uss Petrel* (ASR 14), arrived on 2 February, giving the task force a deep diving capability with its hard hat divers. A flight brought additional



Longitudinal section of ALVIN



USS Tringa (ASR 16)



USS Petrel (ASR 14)



USS Salute (MSO 470)



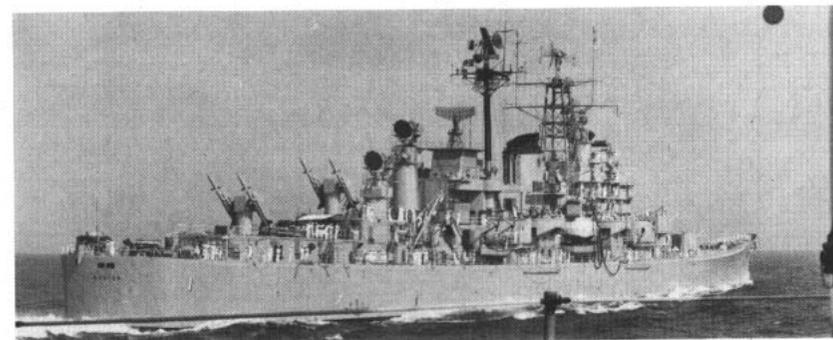
USS Sagacity (MSO 469)



USS Charles R. Ware (DD 865)



USS Kiowa (ATF 72)



USS Boston (CAG 1)



USNS Mizar (T-AGOR 11)

divers, including Navy aquanauts who had participated in Sealab.

During the second week of February the search operations began to jell. Until that time they were hampered by the lack of precise navigation facilities and deep submergence craft. On 12 February the *Decca/Lorac* installation was completed. Two days earlier *Alvin* and *Aluminant* had arrived, the latter a civilian industry-owned deep submergence aluminum submarine.

Cubmarine, another civilian-owned vehicle, capable of operating at moderate depths, arrived with its support crew, including Jon Lindbergh, son of the famous aviator. The following ships also joined the task force: *uss Cascade* (AD 16); *Luiseno* (ATF 156); *Charles R. Ware* (DD 865) —later relieved by *Wallace L. Lind* (DD 703); *Tringa* (ASR 16); and *Hoist* (ARS 40). A Spanish mine-

sweeper joined the force to restrict fishermen from the search area, and was very helpful in this role.

Finally, when *USNS Mizar* (T-AGOR 11) arrived on 19 February, she rounded out the force's capabilities with her underwater photography sled and sounding equipment.

Mizar went to the Med direct from the Philadelphia Naval Shipyard, where she had just undergone outfitting of the special equipment. On board were a group of Naval Research Laboratory technicians who, until the special assignment, were scheduled to shake down the new equipment in southern waters.

Participating Navy Ships not pictured:
 USS Pinnacle (MSO 462); USS Notable (MSO 460); USS Nimble (MSO 459);
 USNS Dutton (T-AGS 22); USS Wallace L. Lind (DD 703)



USS MacDonough (DLG 8)



USS Luiseno (ATF 156)



USS Nespelem (AOG 55)



USS Albany (CG 10)



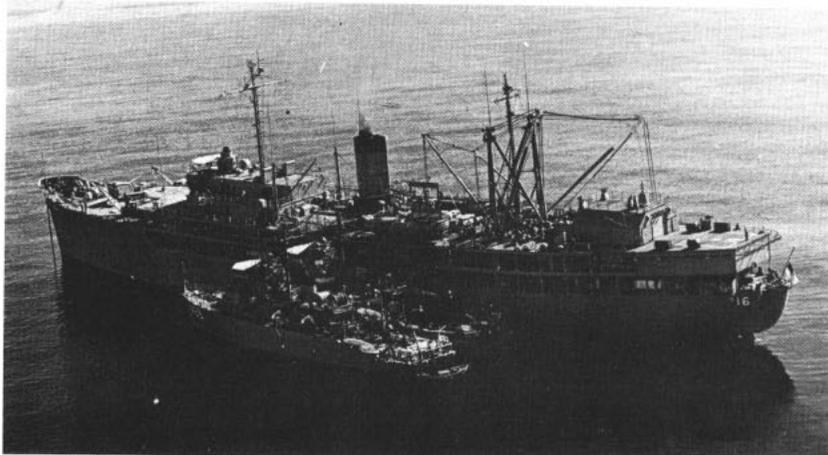
USS Rival (MSO 468)



USS Fort Snelling (LSD 30)



USS Skill (MSO 471)



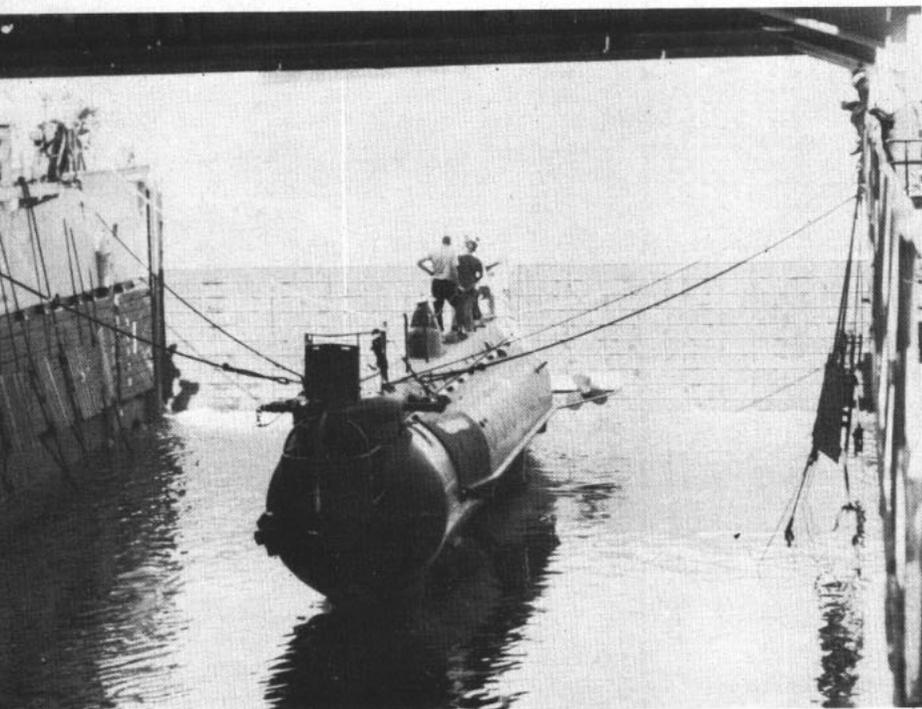
USS Cascade (AD 16)



USS Hoist (ARS 40)

USS Ability (MSO 519)





HELPING HUNT—DSV *Aluminaut* rests in LSD between dives in search of bomb.

Instead, they were to put it to a more practical test.

WITH VARIOUS capabilities now dovetailing, it was possible to launch a full-scale, precise search.

MSOs established several sonar contacts which were followed up by either Scuba diver (up to 80-foot depths), hard hat diver (up to 200

feet), *Cubmarine* (up to 600 feet), *Alvin* or *Aluminaut* identification. Each object was given a number, and over 300 were checked out before the search was completed. The OBSS sled towed by *Pinnacle* also established several contacts. At one point early in the search, OBSS equipment located an object, evaluated as being about 10 feet long and

TOP SIDE—Dock landing ship *USS Fort Snelling* (LSD 30) and other Navy ships participate in the big hunt for the thermonuclear weapon in Spanish waters.



two feet in diameter, on the sea floor in deep water. Hopes that the bomb was at last found were high, but the object, when photographed by *Mizar*, turned out to be a 10-foot length of pipe.

Mizar continued photographing large areas of the sea bottom. *Alvin* and *Aluminaut* were operated from the LSDs, with *Aluminaut* also supported by its mother ship, *Privateer*. *Alvin's* three civilian pilots from Woods Hole Oceanographic Institution in Massachusetts, which operates the vessel for the Office of Naval Research, were all ex-Navy men. They maintained a rigorous schedule, pushing *Alvin* to its utmost limits of endurance.

By the first week of March, TF 65 had pulled about 175 pieces of aircraft and classified equipment from the sea. Some of these were major sections of aircraft wings, plus one wing tank. Others weighed as little as a few ounces and were only a few square inches in size, indicating the thoroughness of the search.

Primary efforts were directed toward the concurrent search in Areas A1 and A2, until the search in the latter area was considered complete at the end of February. Area C had also been scrubbed by this time, after a more accurate fix was made on the reported location of one of the rescued aviators.

On 27 February *Aluminaut* identified two pieces of wreckage about two and one-half miles from shore in Area A1. This was the first discovery of debris in this area.

The Recovery Efforts

BUT THE FIRST REAL BREAK occurred on 1 March at 2400 feet in Area A1.

Alvin was engaged in what is termed a contour search. That is, the two-man craft would comb a specified area, as recorded on a grid chart in the Task Force operations center, maintaining a specified depth (in this case, 2400 feet). The bottom along the course at this predesignated depth was visually examined for possible evidence of the missing bomb.

The complicated technique of knowing what areas had and had not been searched was tied to the sophisticated navigation systems ashore, as well as the grid charts.

The job was tiring, dangerous and difficult. Even with *Alvin's* bright arc

lamps, visibility was a maximum of 20 feet from either port. When currents or other disturbances stirred up the eight-to-ten inch layer of sediment on the bottom (which looked like gray cement), visibility could grind down to zero and remain that way for up to 14 hours.

ALVIN was thus chugging along at about two and one-half knots on 1 March when its pilot sighted a track on a slope in the sea bottom which looked as though a torpedo had skidded through the mud. The *Alvin* pilot tried to follow, but lost the track.

Evidence pointing to area A1 as the most probable area was increasing.

The diligent *Alvin* crew finally hit pay dirt on 15 March, on a slope at 2550 feet in area A1. Cautious optimism gave way to joy as information relayed to the surface more or less revealed that the bomb had been found. However, task force members could not say so with any assurance until positive identification could be made on the surface.

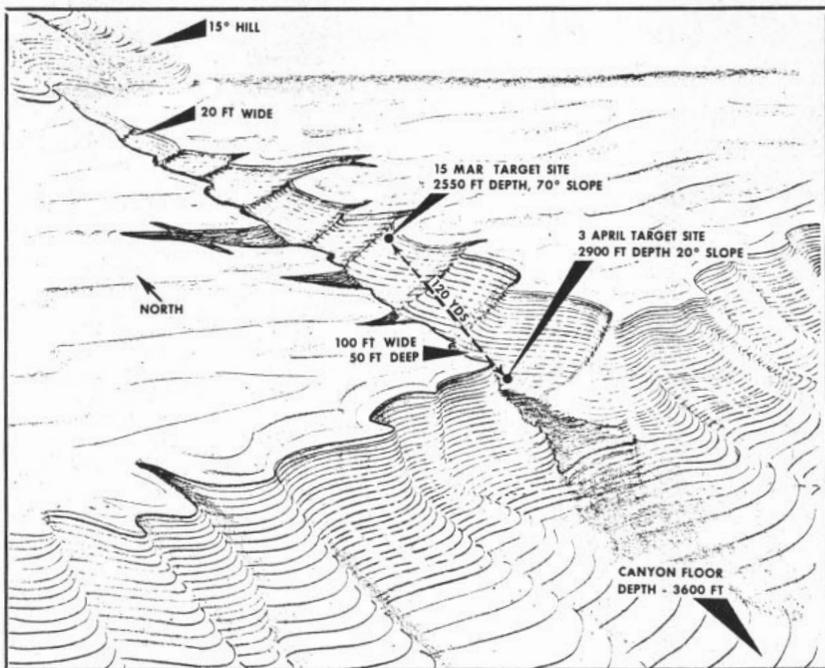
Unable to recover the bomb at the time, *Alvin* simply maintained station until *Aluminaut* arrived. *Alvin's* batteries were in need of a recharge by this time. The change of watch became the first deep inner space rendezvous of two vehicles.

Aluminaut, carrying an external transponder, pushed its nose into the mud and remained in the area for the next 22 hours. During this period the task force staff members were pooling their collective knowledge and ideas on how to go about recovering the bomb. The transponder enabled *Mizar* to establish a refined fix on the bomb's location.

On 16 March *Alvin* returned to the underwater location, carrying a long stake in its mechanical arm. Attached to the stake was a light line, buoyed at the bitter end. *Alvin* stuck the stake in the mud near the bomb, and a line to the surface marked the spot.

THE INTENTION was to use the light line as a messenger for a heavier line, which would in turn be secured to the bomb. After a day of high winds and heavy seas, the attempt failed on 18 March when the stake pulled out of the bottom.

On 19 March another scheme was frustrated by high winds which continued for the next three days.



SEA STORY—Chart shows the rugged sea bottom where H-bomb was found.

Meanwhile, the staff worked out another scheme and fabricated a device they called *Poodle*. It was designed to attach lines to the parachute by means of grapples. Misfortune spoiled this operation.

HARD-HAT HUNTER—Navy diver inspects piece of wreckage found while searching at 200 to 400 ft. underseas.



Alvin had planted a strobe light and two pingers near the site, which helped the deep submergence craft to navigate near the parachute-covered object. On 24 March, *Alvin* succeeded in attaching one of three lines to the parachute.

Since the bomb lay precariously on a 70-degree slope, it was decided that the first step must be to drag it to more level ground before attempting to secure it further. The danger of disturbing it, and sending it plunging down a ravine 3600 feet deep and out of reach, was too great to take chances.

Unfortunately, when the attempt was made, the line parted, and either in rubbing across the fluke of an anchor which was part of the recovery rig, or as it came up over the granite cliff in the area, the bomb slid out of sight. It was lost again.

Navy Calls on CURV

SIX DAYS AFTER THIS SETBACK, another noteworthy event took place. A C-141 cargo plane landed in Spain with a cargo from the Naval Ordnance Test Station, Pasadena, Calif. On board was another hero of this story, a device called CURV—a Navy cable-controlled underwater research vehicle (see centerspread)—accompanied by 12 technicians.

Alvin Crew Had a Close-Up View of the Bottom

The story of the operation of *Alvin* in the search for and recovery of the H bomb lost off the coast of Spain is the saga of the deep submersible's three pilots who, working two at a time, put the vehicle through a series of unprecedented maneuvers.

During a period of nearly two months, *Alvin* completed 34 dives, operating for a total of 222½ hours at depths down to 3000 feet. The average length of each dive was six and a half hours and the longest dive lasted 11 hours—the day *Alvin* first found the bomb.

The three pilots, all former Navymen, are Chief Pilot William O. Rainnie, an engineer who participated directly in the design and construction of the submarine; Marvin J. McCamis; and Valentine P. Wilson.

All three are employed by Woods Hole Oceanographic Institution, which operates *Alvin* for the Office of Naval Research in carrying out a broad program of undersea research as well as special Navy missions.

Alvin had barely completed its full-scale tests in which the vehicle had reached its design depth of 6000 feet, and was being prepared for scientific operations when the call came that it was needed in Spain. *Alvin* was taken to Spain and began operating on 14 February.

Also on the scene was the *Aluminaut*, a privately owned aluminum submersible operating under contract to the Navy for this operation. Working with the two submarines to provide navigational guidance was *Mizar*, the

Naval Research Laboratory's oceanographic research ship which has unique sonar gear developed by NRL.

A special transponder attached to the hull of the submarine emits a signal which *Mizar* can pick up and, using its computer, thereby maintain a constant fix on the position of the submarine. This not only meant that *Mizar* knew the exact location of the submarine at all times, but also by using undersea telephone, could guide it to locations on the sea bottom in about the same way a control tower operator talks an airplane down in a thick fog.

Alvin located a parachute with an attached object which turned out to be the bomb on 15 March. The pilots on this occasion were McCamis and Wilson.

The *Aluminaut*, which is larger than the 22-foot *Alvin* and has greater submerged endurance, was then sent down to stand by so *Alvin* could surface to have its batteries recharged.

It acted as a marker until *Mizar* with its special navigational equipment could pinpoint the position. *Mizar* guided the *Aluminaut* to the general vicinity of *Alvin* and the bomb site, and then the pilots of the submarines, using voice communication, accomplished the first rendezvous by two inner space research submersibles, meeting within less than 50 feet.

Another first was accomplished the next day, when *Alvin*, carrying a three-eighth-inch line in the claw of its mechanical arm, brought it down from the surface to the bottom and anchored it there. An

anchor fluke on the end of the line was drilled into the bottom by *Alvin* spinning its claw, which can be turned in a complete 360-degree arc.

This line, however, was not destined to assist in the recovery. An ensuing attempt was made to drag the parachute, with its attached object, up the steep slope on which it lay. The attached line parted, and contact with the object was lost.

Alvin then began its second search for the bomb. The *Mizar* guidance system enabled *Alvin* to return to the original site quite readily. In addition, the pilots themselves had become familiar with the terrain and were able to maneuver with more assurance. They finally came upon the parachute, but with no indication that the bomb was under it.

The pilots on this second sighting were Rainnie and McCamis. The *Aluminaut* again came down for a rendezvous with *Alvin* to serve as a marker.

The next day *Alvin* returned. At this time *Alvin* placed an electronic device on the parachute to serve as guidance for CURV (Controlled Underwater Recovery Vehicle) operated by the Naval Ordnance Test Station, Pasadena, Calif., which was brought into operation.

Throughout the entire period, *Alvin* functioned with only minor mechanical corrections. *Alvin* has returned to Woods Hole, where it is being completely checked out before proceeding with the work for which it was designed—ocean science research of the deep bottom.

CURV was developed by NOTS for recovering small objects, such as spent practice torpedoes, from the ocean floor. Its original depth capability for recovery was 2000 feet, but Admiral Swanson's Washington advisory group had foreseen the necessity for a recovery vehicle that could operate at 3000-foot depths. Consequently, they had asked that CURV control cables be modified and tested to this depth. This had been done shortly after the first recovery attempt.

Alvin had resumed its meticulous

search for the bomb, commencing with a radial pattern around its previous location. Then, on a contour search at 2800 feet, while investigating some mud slumps, the *Alvin* pilot again sighted the parachute on 2 April.

Although it was thought that the bomb was dragged some distance up the slope before the line snapped on 24 March, the new location was some 250 feet further down the slope (at a depth of 2800 feet) near a widening ravine, within a few hundred feet of a canyon extending

to depths of over 4000 feet.

Operations were touch and go from here on. *Alvin* attached acoustic pingers to the parachute shrouds on 3 April to mark the bomb's location.

Meanwhile, the CURV crew were testing a procedure which they were planning to use to attach lines to the parachute. After a successful trial away from the bomb, CURV was guided from topside while it hooked a nylon line into the apex of the parachute on 4 April. Two days later a second nylon line was attached.

THE DRAMA intensified during this period. After the first line was secured, *Alvin* moved in to inspect the situation. Tension on the line was causing the parachute to billow in the strong underwater currents, and the *Alvin* pilot unknowingly guided his craft almost inside the trap formed by the billowing chute. He responded quickly and reversed direction.

Constant contact was maintained with Object Number 261, however. With two of the desired three lines attached, the task force commander proceeded as deliberately as possible to effect the recovery.

Technical difficulties presented by the first such recovery of an object in deep water were compounded by recurrent bad weather on the surface. Caution could be exercised only to the point where the situation could be kept at status quo.

However, should unusually bad weather threaten to interrupt operations this time, or should the bomb commence to slide further down the slope, the recovery team was prepared to take immediate action to raise it.

Early on 7 April CURV descended to attach the third and last line. This began a final three-hour drama. The purpose of this third line was to act as a "lazy line" to enable them to locate the bomb if it were dropped again, and to prevent the two lines already attached from twisting and becoming fouled.

At 0515 Admiral Guest, aboard *Petrel*, was awaiting word that the third line had been attached so he could order the bomb hoisted. But the word was not so good. CURV was now caught in the parachute and could not be maneuvered. Faced with this situation, the admiral directed that the two lines already attached to the parachute be brought aboard *Petrel* from their buoys, and that the hoisting operation begin.

ALVIN was launched immediately and sent to a safe position on the bottom where she could track the hoisting operation on her sonar.

Then, about 0700, the moment of truth arrived. The parachute and its cargo and the entangled CURV all left the bottom. So smoothly did this take place that it was not known for certain whether the attempt was successful.

About 0800, with the entangled collection about 50 feet below the



EGG HUNT—Navy frogmen search for clues in shallow waters off Palomares.

surface, Navy Scuba divers entered the water to disentangle CURV and identify the object wrapped in the chute.

After attaching additional lines, the divers confirmed the hopes of the task force. It was the missing bomb which the parachute had so carefully and completely hidden from view for so long.

At 0845 the weapon was safely on board *Petrel*.

Navy and Air Force ordnance teams checked the bomb, which was only slightly dented. Then Admiral Guest flashed word of the recovery to his superiors.

The operation was a milestone in Navy deep sea recovery efforts; its successful outcome will be a lasting tribute to the members of Task Force 65.

—Bill Howard, JOC, USN

U.S. Navy Delivers a Fast CURV

HERE'S HOW *Curv* operates in its regular role.

A support ship is used to transport the *Curv* to the recovery area. Normal operation of the vehicle at sea requires a crew of five: a mechanic, two electronics technicians, a sonar technician, and a project coordinator. After the vehicle has been lowered to the ocean bottom, the sonar technician directs the vehicle's course. The electronics technicians control the vehicle and the claw. Control and monitoring is accomplished from the control console on board the ship.

Operation of the vehicle has been geared to provide an efficient and highly reliable search and recovery system. Under ordinary circumstances, the entire system is routinely checked out well in advance of a scheduled event.

After the general location of the target is established by standard range methods and the topside

checkout has been accomplished, the *Curv* is lowered over the side of the anchored support ship and submerged, then it is directed to the required position for recovery on the ocean bottom.

Search and recovery procedures are, briefly:

- Locate target using *Curv's* high resolution sonar with passive and active modes for cooperative and uncooperative targets, respectively.

- Classify target with TV camera and document event with 35-mm camera.

- Position and attach hydraulically-operated recovery claw on target to be recovered.

- Release and surface recovery buoy.

- Eject claw from *Curv*.

- Back off *Curv*, leaving claw attached to target.

- Surface *Curv* and secure it aboard the support ship.

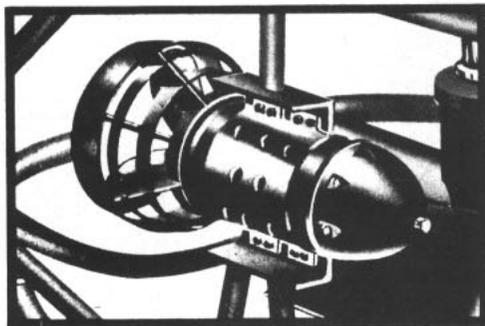
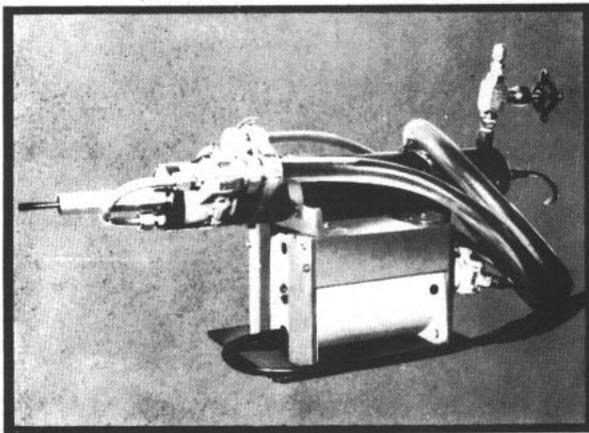
- Surface recovered target.

NAVY'S CURV: What it is and how it works

The Cable-controlled Underwater Research Vehicle (CURV) was procured by the Underwater Ordnance Department, U. S. Naval Ordnance Test Station, Pasadena, California, where it was redesigned and developed by the Missile Branch for the purpose of deep-submergence search and recovery of hardware. It is a dependable and efficient device weighing approximately one ton and operating to a depth of 2,000 feet. It is designed for continuous service operation and is capable of recovering hardware weighing a maximum of one ton. The CURV searches and recovers faster than any other system currently available.

HYDRAULIC SYSTEM

The hydraulic system provides power to control the TV tilt and pan, the angle inclinators for the sonar transducers, positioning and ejection of the claw, and release of the recovery buoy. The system consists of an accumulator, a free-flooding motor, and a hydraulic pump. The hydraulic system is specifically designed for operation in a deep-recovery environment. It is pressure-compensated and the total system is charged to the ambient pressure to which it is subjected. The pressure differential created by the pump, therefore, produces the same working pressure on the hydraulic components at any working depth. The motor for the hydraulic system has an open-frame construction, freely admitting sea water to the inner portions of the unit and eliminating the necessity for seals.

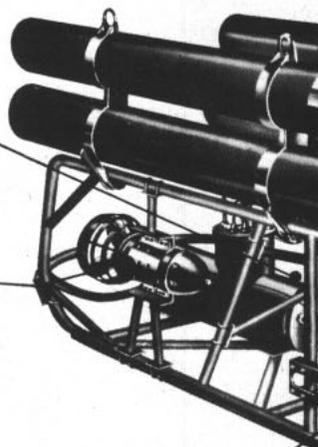
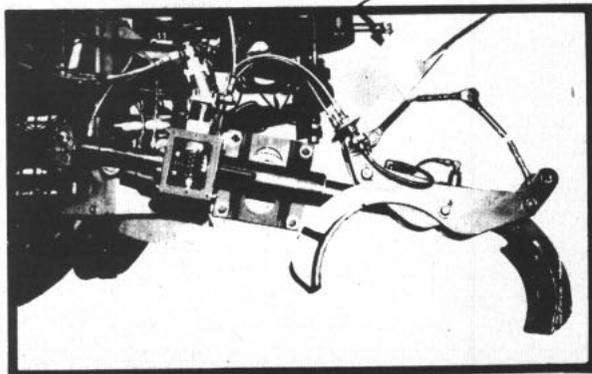


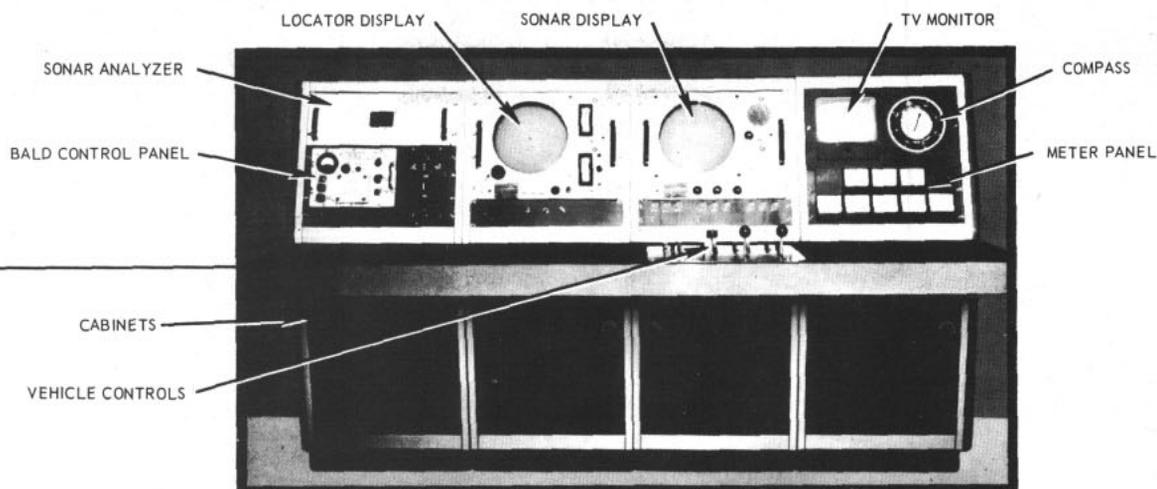
PROPULSION SYSTEM

The propulsion system propels the CURV in any desired direction in an underwater environment. The system consists of three screws (port, starboard, and vertical) each driven by a 440-volt AC, 3-phase, 60-cycle, 10-hp, oil-filled, and pressure-equalized motor capable of operation to 10,000 psi. The course and mobility of the vehicle can be controlled to a fine degree by proper operation of the motor controls.

SONAR

A SLAD-503 acoustic instrumentation system, containing a continuous-transmission, frequency-modulated, high-resolution sonar with active and passive modes, is used to search out the exact location of the hardware to be recovered so that the CURV can be steered on course until the hardware becomes visible on the TV monitor. The sonar is one of the four functional sections of the SLAD-503 system; the other sections are the locator, altimeter, and depthometer. The sonar provides a high degree of resolution and a 120° angular scan so that relatively small acoustically reflecting objects can be detected and delineated on the sonar display unit located in the control console aboard the support ship. The sonar assembly, mounted on the CURV, contains an electronic package, hydrophones, projector, and training-mechanism.





CONTROL CONSOLE

The Boat-mounted Acoustic Locating Device (BALD) is an auxiliary equipment which is mounted on the support ship and used initially to determine the bearing of the hardware to be recovered. It is then used to locate and track the CURV. The controls and operating mechanism are contained in the BALD CONTROL PANEL. The bearing trace is shown on the LOCATOR DISPLAY.

The SONAR ANALYZER analyzes frequencies from the sonar receiver and provides range and bearing in the active modes and bearing only in the passive mode. This information is transmitted to the SONAR DISPLAY. A speaker amplifier is also provided for aural presentation of target echoes.

The VEHICLE CONTROLS panel contains the switches and indicator lights used to control all hydraulic and electrical functions. It also contains the ON-OFF switches, indicator lights, and the variable auto-transformer controls for the three propulsion motors.

The TV MONITOR displays the video signal received from the underwater TV camera. The COMPASS is used to obtain the relative bearing of the CURV with respect to the support ship.

The METER PANEL contains two rows of meters which indicate the rpm's of the three propulsion motors, vehicle amperes, AC console voltage, and AC vehicle voltage. It also contains the leak detector.

The CABINETS house the electronic components located in the upper section of the console and the propulsion motor controls located in the lower section of the console.

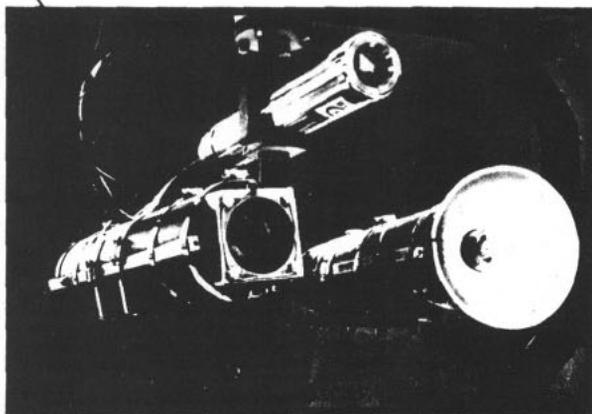
OPTICAL EQUIPMENT

The optical equipment provides identification and documentation capabilities during recovery operations. Final identification of the object to be recovered is accomplished by use of an underwater, transistorized TV camera which has a diameter of 3 inches, a weight of 9 pounds, a low-power requirement of 465 ma at 12 v DC, a warmup time of 7 seconds, and an f/1.2 lens permitting a view angle of 45° when submerged. The image is transmitted to the TV monitor located on the control console aboard the support ship. Light source for the TV camera is supplied by two mercury vapor lights, each having a beam angle of 40°, a 250 W rating, and a 40-second warmup time.

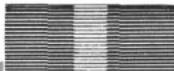
Documentation is accomplished by a 35-mm deep-sea camera, which is 27 inches long and 5 inches in diameter and has an f/11 lens, corrected for underwater use, and a black and white or color film capacity of 500 frames. Light source for the camera is supplied by a strobe light.

CLAW

The hydraulically operated claw attaches to the object to be recovered. After release and surfacing of the recovery buoy, which is attached to the claw by a nylon guideline, the claw is disconnected from the vehicle by the action of an eject piston against a quick-disconnect mechanism thereby ejecting the claw from its housing. The claw assembly consists primarily of the claw, claw shaft, quick-disconnect mechanism, eject piston, and housing. A claw, clamshell scoop, and snare have been developed for the CURV to fit the varying sizes and shapes of hardware to be recovered.



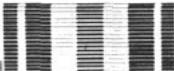
DECORATIONS & CITATIONS



DISTINGUISHED SERVICE MEDAL

"For exceptionally meritorious service to the Government of the United States in a duty of great responsibility . . ."

★ GUEST, WILLIAM S., Rear Admiral, USN, as Commander Task Force 65 during the period 23 January to 12 Apr 1966 Assuming command of a force of ships whose mission was to conduct coordinated surface and subsurface operations in the vicinity of Palomares, Spain, in order to recover wreckage and debris, including a nuclear weapon, which had fallen into the Mediterranean Sea following a collision between two U.S. Air Force aircraft, RADM Guest commenced search operations with the limited forces and personnel initially available to him, later integrating the activities of an augmented and extremely varied force which included specialized diving, research and navigational equipment. He contributed in large measure to the success of the task force in locating and recovering the lost nuclear weapon from the ocean floor and in returning the whole search area to its original condition.

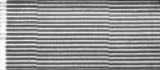


SILVER STAR MEDAL

"For conspicuous gallantry and intrepidity in action . . ."

★ DOREMUS, ROBERT B., Lieutenant Commander, USNR, posthumously, while serving in Fighter Squadron 21 aboard USS *Midway* (CVA 41), as Flight Officer of an F4B *Phantom* aircraft during a mission in support of combat operations in Southeast Asia against North Vietnamese forces on 17 Jun 1965. Engaging at least four and possibly six aircraft, LCDR Doremus accounted for one confirmed kill and contributed to the second by the other F4B aircraft in the flight by diverting the remaining enemy planes from their threat to the U. S. striking forces. With heavy anti-aircraft fire bursting throughout the patrol area, his crew maintained their vigil and pressed forward their attack, seeking out and destroying the enemy aircraft in the area. By his courage, skill and devotion to duty in the face of

grave personal risk, LCDR Doremus upheld the highest traditions of the U. S. Naval Service.



LEGION OF MERIT

"For exceptionally meritorious conduct in the performance of outstanding service to the government of the United States . . ."

★ ANDREWS, CECIL L., Rear Admiral, MC, USN, as Commanding Officer, National Naval Medical Center, Bethesda, Md., from January 1965 to June 1966, for improving the quality of care to a steadily increasing number of outpatients, and for his work in the rehabilitation of buildings and grounds at the hospital.

★ AUBREY, NORBERT E., JR., Captain, USN, as Head, Submarine Placement Section and Nuclear Power Personnel Program Manager, Bureau of Naval Personnel, from May 1963 to June 1965, for his supervision of the expansion of personnel requirements of the Navy's rapidly expanding nuclear-powered Fleet.

★ DOUGLASS, ROBERT M., Commander, USN, as Commanding Officer, USS *Sargo* (SSN 583) during three related missions conducted in the period 17 Jul 1963 to 19 Jun 1965, which resulted in achievements of great value to the U. S. government.

★ HOLLAND, JAMES L., Rear Admiral, MC, USN, as Commanding Officer, U.S. Naval Aviation Medical Center, from November 1964, to June 1966, for his work with the National Aeronautics and Space Administration in support of the nation's space program.

★ KIDD, ISAAC C., JR., Captain, USN, as Executive Assistant and Senior Aide to the Chief of Naval Operations from 10 Aug 1962 to 15 Jun 1966, for his performance in connection with the Cuban crisis, and in matters pertaining to the loss of USS *Thresher*, in planning responsibilities related to the Tonkin Gulf incidents, and in monitoring of the processes leading to the implementation of the Navy's reorganization.

★ KREUZ, FRANK PETER, JR., Rear Admiral, MC, USN, as District Medical Officer, Ninth Naval District and Commanding Officer, U.S. Naval Hospital, Great Lakes, Ill., from February 1962 to June 1966, for increasing the re-

cruitment of potential medical officers in his district five-fold; for personally seeking to assure that all patients in the hospital were progressing properly and were furnished any reasonable service that could be provided; and for establishing special accommodations for families of patients on the serious or critical lists since no public accommodations were available.

★ MOODY DEWITT H., Lieutenant Commander, USN, from 25 January to 12 Apr 1966 as Commander Task Group 65.3, with additional duty on the Staff, Commander Task Force 65, in connection with operations involving the search for and recovery of a nuclear weapon and aircraft wreckage from the Mediterranean Sea.

★ PAGE, HORACE C., Captain, USN, from 23 January to 12 Apr 1966 as Chief of Staff, Commander Task Force 65, for his work in connection with operations relative to the search for and recovery of a nuclear weapon and wreckage and debris which had fallen into the Mediterranean Sea following the collision of two U. S. aircraft.

★ TORGERSON, THEODORE A., Rear Admiral, USN, as Director for Communications-Electronics, Organization of the Joint Chiefs of Staff, from July 1963 to June 1966, for insuring rapid development and control of defense communications on a worldwide basis, thus enhancing the command and control capabilities of the Department of Defense.

Gold Star in Lieu of Second Award

★ GRALLA, ARTHUR R., Rear Admiral, USN, as Commander South Atlantic Force, U.S. Atlantic Fleet, and Commander Task Force 86 from 15 Aug 1964 to 2 Mar 1966. During this period, RADM Gralla was responsible for and supervised the planning and execution of Operation Unitas V (1964) and Operation Unitas VI (1965), the combined antisubmarine warfare training exercises conducted annually by the naval forces of the United States and eight South American countries. Through his professional competence and efforts, he contributed in large measure to the success of the combined bilateral and multilateral operations.

Gold Star in Lieu of Second Award

★ JOHNSON, NELS C., Rear Admiral, USN, as Chief, Strategic Plans and Policy Division, Plans and Policy Directorate (J-5), Joint Chiefs of Staff

from July 1963 to May 1966. Responsible for developing and coordinating the basic planning documents of the Joint Chiefs of Staff during a period of rapid change, RADM Johnson was successful in carrying out his responsibilities, making significant contributions toward improving United States military strategy and force posture. His initiative and vision have enhanced long-range plans and the development of new concepts affecting future force levels and weapons systems.

Gold Star in Lieu of Second Award

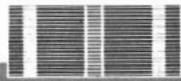
★ WALLIN, HARRY N., Rear Admiral, CEC, USN, as Director, Office of Management Information and Director, Secretary of the Navy's Management Information Center, from November 1964 to February 1966, for his part in improving the performance of the Department's basic mission—the support of Naval and Marine forces.

Gold Star in Lieu of Third Award

★ SIEGLAFF, WILLIAM B., Rear Admiral, USN, as Commandant, First Naval District, from January 1964 to June 1966, for his work in the creation of an outstandingly cooperative and productive relationship between the Naval Reserve, the Navy and the civilian community.

Gold Star in Lieu of Fourth Award

★ HILL, ANDREW J., JR., Rear Admiral, USN, as Commandant, Naval District Washington, from July 1964 to June 1966, for his work in the merging of the Severn River and Potomac River Naval Commands into the Naval District Washington.



DISTINGUISHED FLYING CROSS

"For heroism or extraordinary achievement in aerial flight . . ."

★ LYNN, DOYLE W., Commander, USN, posthumously, as pilot of a jet aircraft in Fighter Squadron 111, serving aboard *uss Kitty Hawk* (CVA 63), during a flak suppression flight on 7 Jun 1964. While subjected to enemy ground fire and the threat of armed interception by hostile aircraft, CDR Lynn successfully attacked and silenced antiaircraft batteries until he was forced to abandon his severely damaged aircraft. He displayed exceptional courage and resourcefulness in evading enemy ground forces until his rescue approximately 17 hours later.

Gold Star in Lieu of Second Award

★ LYNN, DOYLE W., Commander, USN, posthumously, for a coordinated attack on a group of PT boats in the vicinity

of Quang Khe, North Vietnam, on 28 Apr 1965. As leader of a flight of five F8D *Crusaders*, CDR Lynn used air-to-ground rockets to suppress the PT boats' heavy antiaircraft fire, thus allowing the attack bombers successfully and safely to make their low-altitude attacks which caused extensive damage to the boats.

Gold Star in Lieu of Third Award

★ LYNN, DOYLE W., Commander, USN, posthumously, for leading a flight of four aircraft on an antiaircraft suppression mission against the Vinh Railroad Yards, North Vietnam, on 27 May 1965. CDR Lynn initiated the Air Wing attack with his flight in the face of intense antiaircraft fire. His aircraft received fatal damage on the first run, entered uncontrolled flight, and crashed within the target complex. CDR Lynn's leadership, courageous fighting spirit and devotion to duty were in keeping with the highest traditions of the U. S. Naval Service.

Gold Star in Lieu of Fourth Award

★ LYNN, DOYLE W., Commander, USN, posthumously, for leading a flight of four F8D *Crusaders* against Vinh Airfield, North Vietnam, on 8 May 1965. CDR Lynn initiated the flak suppression attack, destroying the assigned target. By making multiple runs against antiaircraft gun emplacements in conjunction with light bomber attacks, he contributed in large measure to the successful completion of this important mission.



NAVY AND MARINE CORPS MEDAL

"For heroic conduct not involving actual conflict with an enemy . . ."

★ BRASHEAR, CARL M., Chief Boatswain's Mate, USN, while serving aboard *uss Hoist* (ARS 40), which was operating in support of Task Force 65 on 23 Mar 1966, in connection with salvage operations of great importance to the United States. While engaged in transferring stores from a landing craft to *Hoist* in heavy seas off the coast of Spain, Chief Brashear saw the bowline of the landing craft part. Realizing that a shipmate standing in the stern of the landing craft was in serious jeopardy if the heavily strained stern line also parted, he unhesitatingly pushed his shipmate to safety, but was seriously injured himself when the stress from the remaining line caused a portion of the craft to carry away and hit him on the leg. By his prompt and courageous actions in saving another man from injury or possible death, Chief Brashear, at the risk of his own life, upheld the finest traditions of the U. S. Naval Service.

★ KELLY, DAVID R., Hospitalman, USN, for assisting in the rescue of two passengers from a burning Air Force C-130 aircraft which had crashed off the runway into a lagoon during takeoff from Chu Lai Airfield, Republic of Vietnam, on 8 Dec 1965. The left wing of the aircraft had ripped loose and was burning violently against the left side of the fuselage. With billowing, wind-whipped flames from fuel floating on the water engulfing the cockpit and fuselage, Kelly waded into knee-deep water to assist in chopping an opening into the plane in an attempt to free two passengers who were trapped in the wreckage. Despite the imminent danger of further explosions, Kelly entered the burning plane and aided another man in removing one fatally injured passenger. He then worked his way through the fire and wreckage with another rescuer, found and freed the second trapped passenger, who was seriously injured, and helped carry the victim to safety. Through his prompt and courageous actions in the face of great personal risk Hospitalman Kelly was directly instrumental in saving a life.

★ MADDEN, CYRIL B., Shipfitter Fireman, USN, while serving aboard *uss Betelgeuse* (AK 260) at Mount Pleasant, S. C., on 7 Jan 1966. Upon being notified by the Command Duty Officer that two men had been overcome by fumes while working in the tank of a jet fuel barge drydocked in the shipyard, Madden donned an oxygen breathing apparatus (OBA) and climbed down the ladder into the tank. After securing a belt with an attached retrieving line around one of the unconscious men, he helped the other rescuers at the top of the tank pull the victim out. Before he could attach the safety belt to the other unconscious man, Madden encountered difficulty with his OBA and had to leave the tank. Another man effected the rescue of the second victim. Through his prompt and courageous actions in an emergency, Madden was directly responsible for saving a life.

★ ROBBERSON, JERRY M., Boatswain's Mate 2nd Class, USN, for rescuing a shipmate who had leaped into the East River from the flight deck of *uss Intrepid* (CVS 11), which was moored to Pier K, New York Naval Shipyard, Brooklyn, N. Y., on 31 Aug 1965. Upon observing a shipmate floundering in the water, Roberson dived overboard and swam to the side of the victim. Although the drowning man fiercely resisted all rescue attempts, and despite the treacherous current and strong undertow, Roberson succeeded in keeping him afloat until assistance was available. By his prompt and courageous actions in the face of grave personal risk, Roberson was directly responsible for saving another man's life.

TAFFRAIL TALK

THE NAME of the game is golf, and the duffers at Great Lakes Naval Training Center are using it to create something more than golf widows. They boost the annual Navy Relief Society's fund drive by playing at their favorite sport.

It works like this:

Each year a Golf for Navy Relief tournament is held during the drive. Ninth Naval District Commandant Rear Admiral Howard A. Yeager, a steady bogey golfer, challenges base golfers to beat his posted score during the tournament. If 50 per cent of the golfers score lower than the admiral, he doubles his contribution to Navy Relief.

The tournament entry fees are also donated.

Pitching, putting and driving contests bring more contributions.

Another highlight of the Navy Relief campaign is the issuance of golf "hunting licenses" to the men on the base. The commanding officers of the 15 Center commands (or their representatives, if they don't play the game) post a nine-hole score for the men to beat. By purchasing a \$.50 hunting license, a man can declare open season on his CO's score.

As with the tournament fees, the hunting license fees are donated to the drive. And, if 50 per cent of a command's entries better the CO's score, he doubles his contribution.

This year, more than 900 such hunting licenses were issued in the "Beat the CO" contests. With results in from eight of the commands, 33 men will receive certificates announcing their prowess.

The "Beat the Commandant" segment of the drive is another story. When the 1964 tournament took place, only six golfers out of the 145 topped the admiral's score. Last year, 62 out of 165 bettered it.

This year, the results were considerably closer. Of the 79 golfers playing to beat the 38 strokes posted by RADM Yeager, 39 men (or 49 per cent) did so.

Next year, ComNine may not be so lucky. But if he reaches a bit deeper in his pocket for the Navy Relief Society, we're sure he won't mind a bit. And the Navy Relief Society will again benefit from the golfers at Great Lakes.

(We have the word of an impeccable authority that Admiral Yeager is not the steady bogey golfer he would have prospective opponents believe he is while on the first tee.

(He is, says our authority, a pretty good golfer and a very tough one to beat in a head-to-head match.

(Our authority? None other than Vice Admiral W. R. Smedberg III, USN (Ret.), who found out the hard way).

★ ★ ★

Visualize, if you will, the turmoil aboard a Navy cruiser when word is passed: "All hands report to the quarterdeck," and the crew of about 1500 converges on the appointed spot. Seems unlikely, we admit, unless a member of the crew happens to be Seaman Apprentice Bruce C. Allhands, USN, a recent acquisition of the Navy. Although a cursory check of ALL HANDS files failed to reveal specific instances, the collective recollection of the staff is that Bruce was preceded by at least two Navymen named Allhands in bygone days. However, this in no way diminishes our heartiest "welcome aboard" to our namesake.

The All Hands Staff

The United States Navy

Guardian of our Country

The United States Navy is responsible for maintaining control of the sea and is a ready force on watch at home and overseas, capable of strong action to preserve the peace or of instant offensive action to win in war.

It is upon the maintenance of this control that our country's glorious future depends. The United States Navy exists to make it so.

We Serve with Honor

Tradition, valor and victory are the Navy's heritage from the past. To these may be added dedication, discipline and vigilance as the watchwords of the present and future. At home or on distant stations, we serve with pride, confident in the respect of our country, our shipmates, and our families. Our responsibilities sober us; our adversities strengthen us.

Service to God and Country is our special privilege. We serve with honor.

The Future of the Navy

The Navy will always employ new weapons, new techniques and greater power to protect and defend the United States on the sea, under the sea, and in the air.

Now and in the future, control of the sea gives the United States her greatest advantage for the maintenance of peace and for victory in war. Mobility, surprise, dispersal and offensive power are the keystones of the new Navy. The roots of the Navy lie in a strong belief in the future, in continued dedication to our tasks, and in reflection on our heritage from the past.

Never have our opportunities and our responsibilities been greater.

ALL HANDS The Bureau of Naval Personnel Career Publication, solicits interesting story material and photographs from individuals, ships, stations, squadrons and other sources. All material received is carefully considered for publication.

Here are a few suggestions for preparing and submitting material:

There's a good story in every job that's being performed, whether it's on a nuclear carrier, a tugboat, in the submarine service or in the Seabees. The man on the scene is best qualified to tell what's going on in his outfit. Stories about routine day-to-day jobs are probably most interesting to the rest of the Fleet. This is the only way everyone can get a look at all the different parts of the Navy.

Research helps make a good story better. By talking with people who are closely related to the subject material a writer is able to collect many additional details which add interest and understanding to a story.

Articles about new types of unclassified equipment, research projects, all types of Navy assignments and duties, academic and historical subjects, personnel on liberty or during leisure hours, and humorous and interesting feature subjects are all of interest.

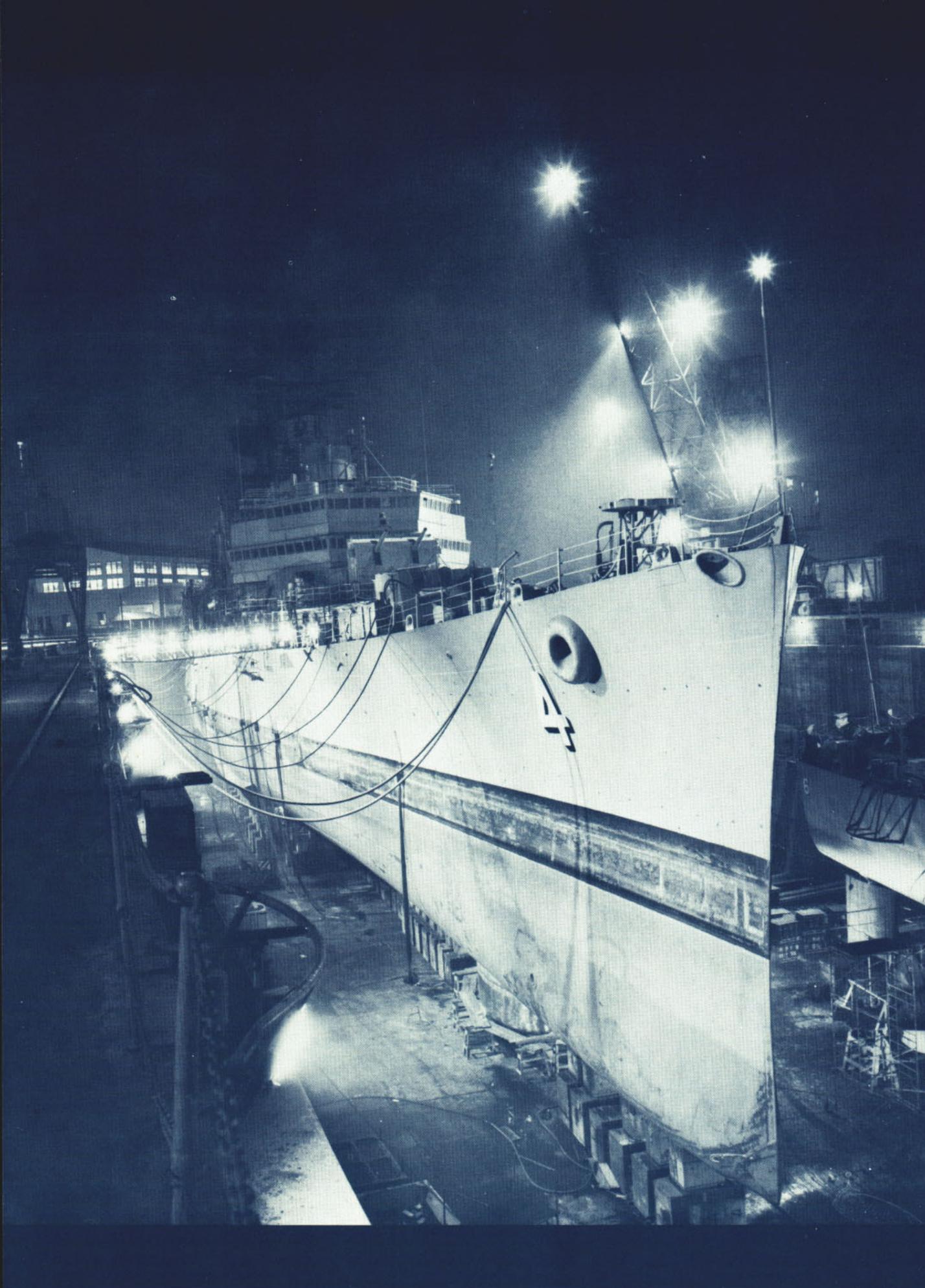
Photographs are very important, and should accompany the articles if possible. However, a good story should never be held back for lack of photographs. ALL HANDS prefers clear, well-identified, 8-by-10 glossy prints, but is not restricted to use of this type. All persons in the photographs should be dressed smartly and correctly when in uniform, and be identified by full name and rate or rank when possible. Location and general descriptive information and the name of the photographer should also be given. Photographers should strive for originality, and take action pictures rather than group shots.

QUIZ AWEIGH ANSWERS

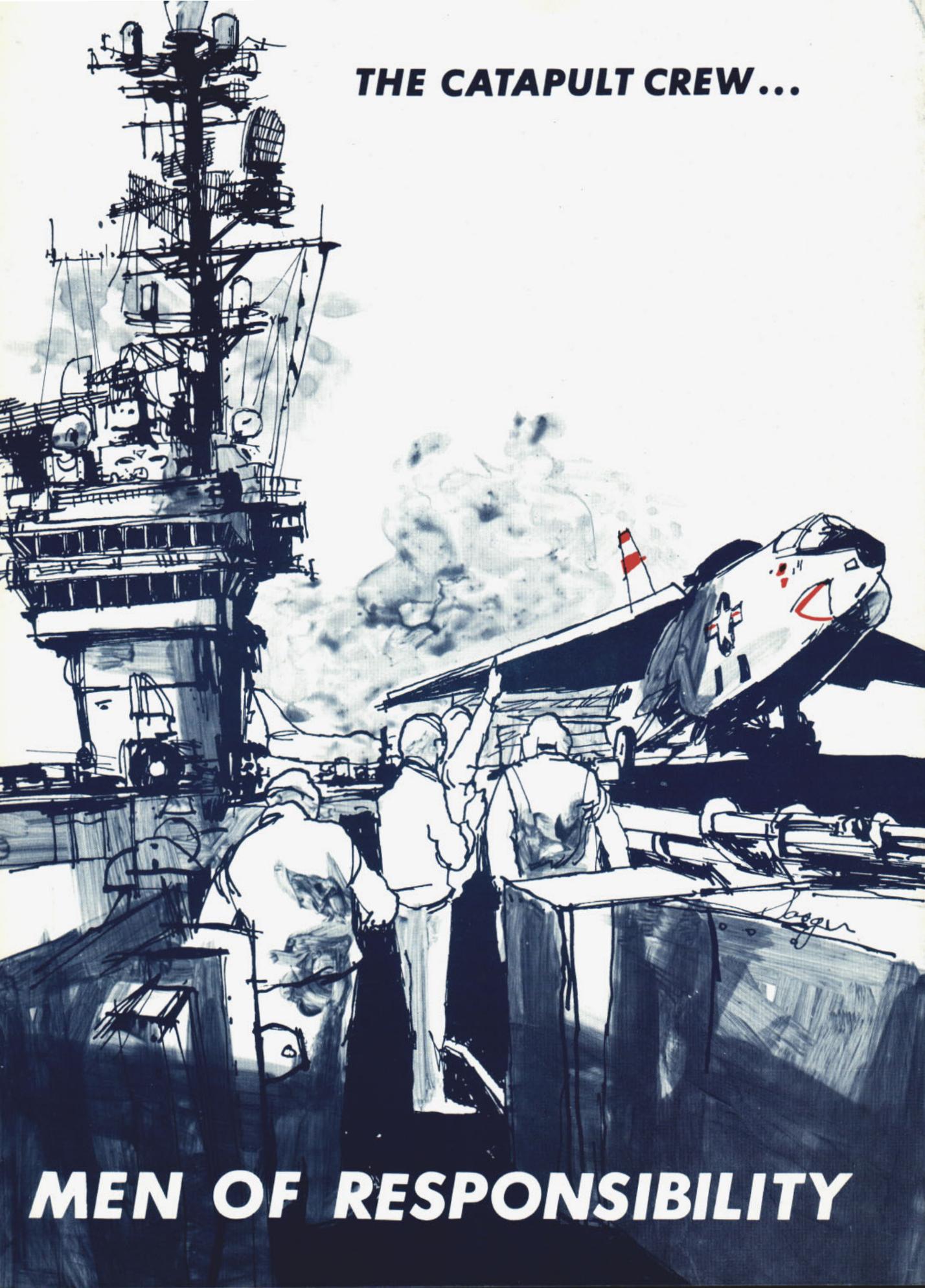
Quiz Aweigh's on page 49.

1. (c) Embers are not cooled sufficiently.
2. (b) Secure power to the circuit.
3. (d) Use foam to cool them.
4. (c) I am going ahead.
5. (b) Steam generated within the suit might scald the man.

• **AT RIGHT: TIME OUT**—Resting on keel blocks in drydock, USS *Little Rock* (CLG 4) spends a quiet night waiting for the noisy day's work to begin. *Little Rock* completed a 32-week overhaul this summer after three continuous years of operation and is now back on the job—Photo by Fred A. Heiy, PH2, USN.



THE CATAPULT CREW...



MEN OF RESPONSIBILITY