ALL HANDS

OCTOBER 1971

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• **FRONT COVER: CATAPULT WORKER** Clyde C. Baird watches flight operations aboard the nuclear-powered carrier USS Enterprise (CVAN 65) in the South China Sea off the coast of Vietnam. An A-4 Skyhawk jet bomber is blurred as it speeds down the flight deck. Baird hooks planes to the catapult and is the last man out from under the plane before takeoff.

• **AT LEFT: WHAT'S THIS?**—It's the fuselages of two F-9J Phantom II fighter aircraft, of course! The "eyebrows" are formed by another F-9J which is also reflected in the helmet goggles of LT Ernest E. Christensen, Jr. as he flies in the slot position during a demonstration by the Navy's Blue Angels.

Photo by LT Ernest E. Christensen.

Left: In 1911, Naval Aviation was born with then-Lieutenant T. G. Ellyson, the first Naval Aviator piloting the Curtiss Pusher, the first Navy plane. Below: Eugene Ely landing aboard USS Pennsylvania, thus creating the first Navy aircraft carrier. Below right: The NC-4 seaplane lands in the waters off Portugal ending its 11-day transatlantic flight, the first such flight by any type of aircraft. Bottom: USS Langley was remodeled to accommodate aircraft following Eugene Ely's successful maneuvers with the armed cruiser Pennsylvania.

6 Decades of NAVAL AVIATION

NAVAL AVIATION dates back to Eugene Ely and his successful landing and then launching from ships of the fleet 60 years ago. However, a joint Army-Navy board displayed more than a passing interest in the military possibilities of aviation as early as 1898.

Captain Washington Irving Chambers led the Navy's first cautious attempts at aeronautics as "officer in charge of aviation." With him came airplane builder Glenn Curtiss, who was to sell the practicality of the airplane to the military.

First Planes, First Aviator

IN EARLY 1911, Lieutenant Theodore G. Ellyson—the first Naval Aviator—reported to the Curtiss aviation camp at North Island, San Diego, for duty. In March that year, Congress appropriated $25,000 for "experimental work in the development of aviation for naval purposes." CAPT Chambers requested delivery of two Curtiss planes, officially marking the beginning of Naval Aviation.

Under CAPT Chambers' leadership, things began to move. During the next several years there was much time spent in technological research, including instrumentation and the perfecting of navigational techniques. Other activities during this time included: construction of a wind tunnel; testing of catapults; a recoilless aircraft gun; marine spotting trials; and establishment of physicial requirements for pilots.

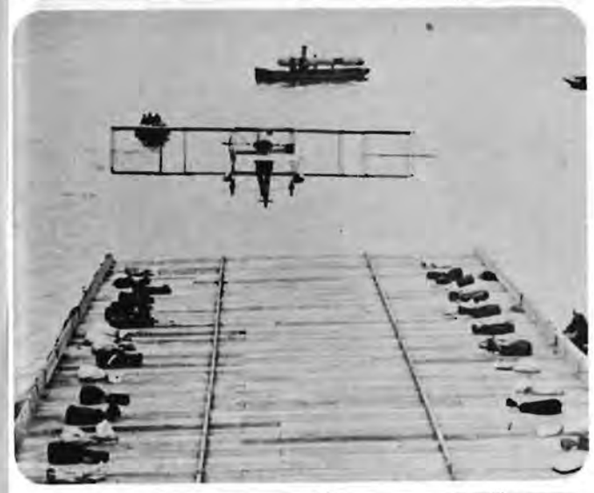
As a result of the tremendous advances in a brief span, Secretary of the Navy Josephus Daniels prophesied in 1914 that "the science of aerial navigation has reached that point where aircraft must form a large part of our naval force for offensive and defensive operations."

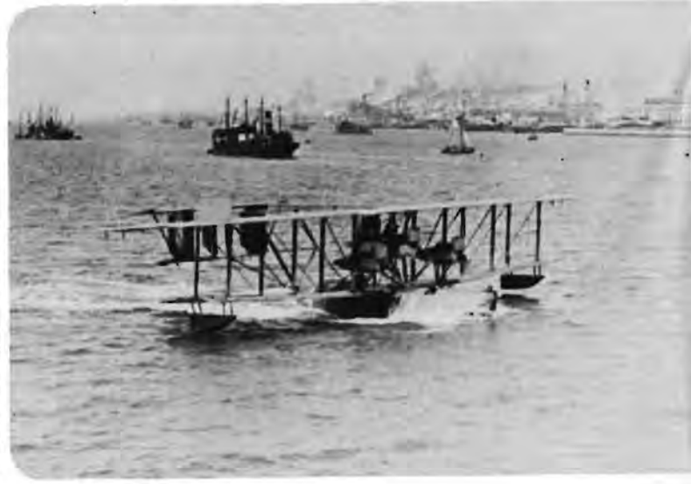
World War I

NAVAL AIR POWER advanced swiftly to face the combat situation which developed in April 1917. When the U. S. entered World War I, the Navy's air force was seriously limited. There were only 54 aircraft of various types, one air station, and only 287 personnel assigned to aviation. There were no forces or operations abroad.

Early in the war, the airplane proved its value as a supporting unit to surface antisubmarine (ASW) forces. The long-distance flying boat was the most outstanding element in naval ASW operations. Basically, U. S. efforts were involved with patrol duties, as evidenced by the appearance of 20 patrol bases in England, Italy, France, the West Indies, Canada and the Azores.

In Europe, by war's end, aircraft patrol and bombing attacks had logged over 790,000 miles. Over 126,000 pounds of bombs were dropped on German





sub bases and military targets, while planes damaged or sank 12 of 25 enemy submarines attacked.

The close of World War I signaled rapid developments in Naval Aviation. The Navy worked to perfect the flying boat, lighter-than-air ships and the land plane, but most attention centered around the idea of the specially designed aircraft carrier.

Research Continues

RESEARCH PROVED FRUITFUL in many ways. Folding aircraft wings for easier stowage aboard carriers, improved catapult systems, more accurate bombsights and the development of an air-cooled engine were a few. Controllable-pitch propellers and hydraulic arresting gear were invented and tested. The Navy also improved its radio systems and power plants.

Two carriers—USS *Saratoga* (CV 3) and USS *Lexington* (CV 2), both built from converted cruiser hulls—were commissioned in 1927. *Lexington* received her first torpedo planes the following year and began a period of perfecting techniques for scouting, dive-bombing and torpedo attack operations.

A milestone was reached in 1934, with the commissioning of USS *Ranger* (CV 4), the first carrier designed as such from the keel up. USS *Yorktown* (CV 5) followed in 1937, and USS *Enterprise* (CV 6) a year later.

Preparations for WW II

INTELLIGENCE REPORTS in the late 1930s indicated that Germany was amassing a tremendous force of sub-

Top to bottom: One of the first planes used throughout the Navy and Marine Corps, the FB-5, was used in the first dive bombing tests conducted in 1926. (2) Navy biplane, BM-1. (3) The PB-2Y, one of the largest seaplanes ever built, was first flown in 1937. Left: The P-2V Neptune was extremely valuable in antisubmarine warfare at the beginning of the Korean Conflict.

marines. Consequently, the U. S. began an increased emphasis on ASW operations to contrast with the rapid production of these type ships.

If it had not already been demonstrated in combat before the U. S. entered the war, all doubt as to the potential of naval air power was removed by the infamous, yet skillful, attack on Pearl Harbor by the Japanese.

Two important aviation events stand out in the war. The first was a raid on the Japanese mainland, and second, the first naval battle (Midway) fought entirely with aircraft.

The value of the carrier strike force became apparent early in the war. Sixteen B-25s, under the command of LTCOL Jimmy Doolittle, USA, traveled

Left, top to bottom: SB-2Cs return to their carriers following air attacks during World War II. These dive- and torpedo-bombers suffered many casualties during the war. (2) The Navy jet first made its appearance following World War II. The first two types, the Banshee (shown here) and the Panther, were used through the latter part of the 40s and the Korean conflict. (3) Last of the Navy's propeller-driven aircraft, the AD-6 Skyraider is known as the workhorse of the Fleet. (4) The Demon jet fighter, forerunner of the modern F-4 Phantom. Above: A Hellcat fighter landing aboard USS Lexington. (2) The blimp, a part of Naval Aviation for 50 years, has passed.

668 miles to the Japanese mainland for a successful bombing mission after being launched from the carrier uss *Hornet* (CV 8).

In the Battle of the Coral Sea, ships of the Imperial Japanese Fleet and the U. S. Navy never got within sight of each other, but the U. S. carrier *Lexington* was sunk, as was the Japanese carrier *Shoho*, and the carriers *Shokaku* and *Suikaku* were so badly damaged that their services were lost to the Japanese Fleet for months.

Aircraft design progressed at a fantastic rate during the war. Planes went higher, faster, were more ma-

Above: The Neptune flew antisubmarine patrols for over 20 years for the Navy. It was replaced by the P-3 Orian. Right, top to bottom: The SP-5D, (PSM-2), one of the last types of seaplanes in the Navy, was phased out during the 60s. (2) The Navy's first all jet-powered heavy attack bomber, the A-3 Skywarrior. (3) A-4C Skyhawk being positioned on a catapult aboard USS America. (4) The Trader TF-1 is a carrier-based utility aircraft used to transport high priority supplies and personnel. Center top: The C-2A carrier-on-board-delivery aircraft. Center bottom: Two mainstays of the Master Jet Base, the F-4 Phantom II (left) and the A-6 Intruder located at NAS Oceana. Far right: The Seasprite helicopter fills a vital role in the Naval Air Force by providing combat support and supply support to the ships of the fleet.

neuverable and carried greater firepower. The seaplane, notably the PBY, became an integral part of air-sea rescue and many downed aviators were rescued by these "flying boats."

Balloons, Blimps, Dirigibles

THE AIRSHIPS—sometimes called balloons, blimps, dirigibles, etc.—were used with varied success throughout the Navy from 1916 to 1961. They really made their mark in World War II, however, with not one ship lost to enemy action of the 89,000 surface ships they escorted.

The onset of World War II sparked tremendous expansion at NAS Lakehurst, the hub of lighter-than-air flight and home port for many of the dirigibles. The fleet grew from a meager collection of six small airships to a fleet of 125 ASW ships composing 15 squadrons. All, though, were phased out by 1961—their tasks in the Navy complete.

Post-War Years: 1945-1950

UNLIKE THE PEACEFUL YEARS following World War I, the post-war period from 1945-1950 was a busy one. Naval researchers discovered new ASW techniques and perfected new equipment, tactics and aircraft. All naval aircraft were redistributed into patrol, attack and fighter squadrons and featured newer and more effective radar and sonar systems.

With the close of the war came the advancement of the jet engine. In June 1948 a squadron of FH-1 *Phantoms* qualified for carrier operations aboard uss *Saipan* (CVL 48). Other carriers were adapted to accommodate jet aircraft. British experience with angled flight deck operations resulted in flight decks being built at an angle to the hull centerline to facilitate launching and recovery of aircraft. This design change was particularly advantageous for jet aircraft operations.

Helo Makes Korean Debut

WHEN North Korea launched its attack south of the 38th parallel in June 1950, the Navy knew the Soviets had more than 80 submarines in the Western Pacific area. Several patrol squadrons began to provide immediate ASW patrol and escort support around Korea.

In Korea the helicopter came of age. The "ugly duckling" choppers evacuated wounded, spotted for artillery, flew emergency supply runs and took part in direct combat duties.

It was during the 1950s that many of the new ideas and concepts that are part of today's Navy came into being. Korea provided the catalyst and testing ground for many of these innovations.

Between Wars

THE '50s WAS A TIME OF CHANGE. By the end of the decade, most operational aircraft in the Navy's fighter and attack arsenal were jets. More and more angled deck carriers were authorized and new deck edge elevators allowed simultaneous takeoffs and landings. The hurricane bow and the now familiar designations of CVA (attack carrier) and CVS (antisubmarine warfare support carrier) also were instituted.

At the close of the first 50 years of Naval Aviation, a new era was dawning; the period of change that had begun in the '50s continued into the '60s. Five new attack carriers joined the fleet, including the world's first nuclear-powered aircraft carrier, USS *Enterprise* (CVAN 65), whose speed and power outclassed anything that ever sailed the seas.

In the process of receiving new ships, many of the well-known warriors were retired. Many of the types of aircraft in use today were introduced during the '60s and the seaplane was phased out.

Vietnam: New Kind of War

VIETNAM brought a new kind of war. In order to fight it the Navy needed new types of aircraft such as the OV-10 *Bronco;* some of the older propeller-driven *Skyraider* fighters were brought out of retirement and put to use in the conflict.

For Naval Aviation, it was a proud moment when a naval aviator, Alan Shepard, became the first American in space (5 May 1961), and before a decade passed, five of the six men to walk on the surface of the moon had been trained as naval aviators.

—JOC Bill Wedertz

NAVAL AVIATION
An Outstanding Record

Left, top to bottom: The four-man EA-6B electronic surveillance and countermeasures aircraft of the future. The Intruder version of the aircraft is already being introduced in the Fleet. (2) USS Nimitz, nuclear-powered aircraft carrier. (3) USS Eisenhower, currently the last atomic-powered aircraft carrier being funded. Below: The S-3A, the first jet antisubmarine aircraft is to replace the Tracker. (2) Naval Aviator Alan Shepard, the first American in space.

NAVAL AVIATION, celebrating its 60th anniversary this year, has evolved from an idea held by a few men of prophetic vision to become the heart of modern sea power today. The chronology presented here has been prepared to include the most significant events in the rapid growth of naval aviation.

• *The Beginning*—25 Mar 1898—Theodore Roosevelt, then Assistant Secretary of the Navy, recommended to the Secretary that he appoint two officers "of scientific attainments and practical ability" to examine Professor Samuel P. Langley's flying machine and report on its potential for military use.

• *First Flight from Ship*—14 Nov 1910—Eugene Ely, a civilian pilot, took off in a 50-hp plane from a wooden platform built on the bow of uss *Birmingham* (CL 2).

• *Naval Aviator No. 1*—23 Dec 1910—LT T. G. Ellyson became the first naval officer ordered to flight training, at the Glenn Curtiss Aviation Camp, then at North Island, San Diego.

• *Shipboard Air Operations*—18 Jan 1911—Ely, flying a Curtiss *Pusher,* landed on a specially built platform aboard the armored cruiser uss *Pennsylvania* and took off for a return trip to Selfridge Field, San Fran-

cisco. This was the earliest demonstration of the adaptability of aircraft to shipboard operations.

• *First Appropriation of Funds*—4 Mar 1911—The first funds specifically for naval aviation were appropriated, giving $25,000 to the Bureau of Navigation for "experimental work in the development of aviation for naval purposes."

• *NavAir's Official Birthday*—8 May 1911—CAPT W. I. Chambers, "officer in charge of naval aviation," prepared to order two Curtiss biplanes. This date has come to be considered as the official birthday of naval aviation.

• *Catapult Launching*—12 Nov 1912—The first successful launching of an airplane by catapult was made at the Washington Navy Yard by LT Ellyson in the A-3.

• *Formal Training Begins*—6 Jan 1913—The entire aviation element of the Navy arrived at Guantanamo Bay, Cuba, and set up the Aviation Camp on Fisherman's Point for its first operations with the Fleet.

• *First Aviation Fatality*—20 Jun 1913—ENS W. D. Billingsley, piloting the B-2 at 1600 feet over the water near Annapolis, was thrown from the plane and fell to his death, the first fatality of naval aviation.

• *Aviation Receives New Emphasis*—10 Jan 1914—Secretary of the Navy Josephus Daniels, announced that "the science of aerial navigation has reached that point where aircraft must form a large part of our naval force for offensive and defensive operations."

• *Aeronautics Division Formed*—1 Jul 1914—Aviation was formally recognized with the establishment of an Office of Naval Aeronautics in the Division of Operations under the Secretary of the Navy.

• *NC-4 Crosses Atlantic*—27 May 1919—The NC-4, commanded by LCDR A. C. Read, landed in the harbor at Lisbon, Portugal, completing the first crossing of the Atlantic by air.

• *Langley Commissioned*—20 Mar 1922—USS *Langley* (CV 1), converted from the collier *Jupiter*, was placed in commission as the first carrier at Norfolk.

• *All-Metal Plane*—25 Apr 1922—The first all-metal airplane, the ST-1 twin-engine torpedo plane, made its initial flight.

• *First Carrier Takeoff*—17 Oct 1922—The first carrier takeoff in the Navy was made by LT V. C. Griffin in a Vought VE-7SF from USS *Langley*.

• *First Carrier Landing*—26 Oct 1922—LCDR G. deC. Chevalier, flying an *Aeromarine*, made the first landing aboard USS *Langley* while underway off Cape Henry.

• *Squadron Deployed*—22 Jan 1925—VF Squadron 2, the first trained to operate as a squadron from a carrier, began practice on *Langley* off San Diego.

• *Ranger Keel*—26 Sep 1931—The keel for USS *Ranger* (CV 4), first ship of the Navy designed and constructed as a carrier, was laid at Newport News.

• *Underway Refueling Test*—13 Jun 1939—USS *Saratoga* (CV 3) and the tanker USS *Kanawha* (AO 1) completed a two-day underway refueling test. This technique was to prove vitally important to operations in areas where bases were not available.

• *First Enemy Warship Sunk*—10 Dec 1941—Aircraft from USS *Enterprise* (CV 6) attacked and sank the Japanese submarine I-170 in waters north of the Hawaiian Islands. This was the first Japanese combatant ship sunk by the U. S. during World War II.

• *Offensive Carrier Operations*—1 Feb 1942—Task Forces 8 and 17, built around the carriers USS *Enterprise* and USS *Yorktown* (CV 5), effected the first carrier operations in the Marshall and Gilbert Islands.

• *German U-Boat Sunk*—1 Mar 1942—ENS William Tepuni, piloting a PBO, attacked and sank the U-656, the first German submarine sunk by U. S. forces in World War II.

• *Doolittle Raid*—18 Apr 1942—From a position 668 miles from Tokyo, the carrier USS *Hornet* (CV 8) launched 16 B-25s, led by LCOL Jimmy Doolittle, for the first attack on the Japanese homeland.

• *First 'No Sight' Engagement*—4-8 May 1942—In the first engagement in history fought without opposing ships making visual contact, U. S. carrier forces stopped a Japanese attempt to land troops at Port Moresby by turning back the covering carrier force.

• *First (and only) Airship Lost in War*—18 Jul 1943—The airship K-74, while on night patrol off the Florida coast, attacked a surfaced U-boat and in the gun duel which followed was hit and brought down—the only U. S. airship lost to enemy action in World War II.

• *First Night Battle*—24 and 26 Nov 1943—The first use of night fighters from carriers took place on 24 Nov 1943 during the Gilbert Islands campaign. On the first occasion, no intercepts were made but on the second (26 Nov), a team of fighters engaged the enemy in the first aerial battle of its type.

• *Helo Pilot Training Begun*—1 Jan 1944—On this date a helicopter pilot training program was begun by the Coast Guard, then part of the Navy, at Floyd Bennett Field.

• *Rockets Fired at U-Boats*—11 Jan 1944—The first attack with forward-firing rockets was made against a German U-boat by two TBF-1Cs from the carrier USS *Block Island* (CVE 21).

• *Shipboard Test of Jet*—21 Jul 1946—In the first test of the adaptability of jet aircraft to shipboard operations, an FD-1 *Phantom* made successful landings and takeoffs from the carrier USS *Franklin D. Roosevelt* (CVB 42).

• *First Korean Air Kills*—3 Jul 1950—Carrier aircraft went into action in Korea. This was the first combat test for the F-9F *Panther* and the AD *Skyraider* and also marked the first Navy kills in aerial combat, as F-9F pilots shot down two enemy planes on their first strike over Pyongyang.

• *Angled Deck Concept*—26-29 May 1952—The feasibility of the angled deck concept was demonstrated in tests conducted on a simulated angled deck aboard USS *Midway* (CVB 41) by pilots flying both jet and propeller aircraft.

• *Missile Squadron Deployment*—12 Mar 1956—Attack Squadron 83, equipped with *Cutlass* aircraft and *Sparrow I* missiles, departed Norfolk aboard

USS *Intrepid* (CV 11) for Mediterranean duty on the first overseas deployment of a Navy missile squadron.

• *All-Weather Landing System*—12 Aug 1957—An F-3D *Skyknight* landed on board USS *Antietam* (CVA 36) at sea off Pensacola using the Automatic Carrier Landing System. This landing began the first shipboard test of the system designed to bring planes aboard in all weather conditions without help from the pilot. Although the landing research was to continue for years, this was a landmark in the program.

• *Keel Laid for Nuclear Carrier*—4 Feb 1958—The keel of the world's first nuclear-powered aircraft carrier, USS *Enterprise* (CVAN 65), was laid at Newport News.

• *Astronauts Selected*—9 Apr 1959—Four Navy-trained aviators, including one Marine—LCOL John H. Glenn, USMC, LCDR Alan B. Shepard, LCDR Walter M. Schirra and LT M. Scott Carpenter—were among the seven men selected as prospective astronauts under *Project Mercury*.

• *End of an Era*—31 Aug 1962—The passing of an era was marked at NAS Lakehurst by the last flight of a Navy airship. The flight also marked the end of a year's service by two airships kept in operation after the discontinuance of the lighter-than-air program. This ended the 45-year LTA saga which began with DN-1, the Navy's first airship.

• *"Hands Off" Carrier Landings*—13 Jun 1963—An F-4A *Phantom* and an F-8D *Crusader* made the first fully automatic carrier landings with production equipment onboard USS *Midway* (CVA 41), highlighting almost 10 years of research and development.

• *VertRep Becomes Reality*—28 Feb 1964—A helicopter made the first landing on the deck of the combat stores ship USS *Mars* (AFS 1) off the California coast. Although the concept of vertical replenishment had been discussed and tested as early as 1959, commissioning of *Mars* provided the first real opportunity to incorporate the helo into the Fleet logistic support system.

• *Aviation Hall of Fame*—17 Dec 1964—CDR T. G. Ellyson, Naval Aviator No. 1, was enshrined in the National Aviation Hall of Fame at Dayton, Ohio—the first naval officer to be so honored.

• *Carrier Aircraft In-Country Missions Against Viet Cong Positions*—15 Apr 1965—Carrier pilots of the Seventh Fleet joined in-country missions in the Republic of Vietnam with a strike against Viet Cong positions. Carrier action against North Vietnamese at sea began 2 Aug 1964.

• *First Man on Moon*—20 Jul 1969—*Apollo 11* Astronaut Neil A. Armstrong, Navy-trained and a veteran Naval aviator turned test pilot, became the first man to walk on the surface of the moon. Astronauts Edwin E. Aldrin, Jr., USAF, and Michael Collins, USAF, were the other members of the *Apollo 11*.

• *Ice Reconnaissance for Manhattan*—8 Sep 1969—As part of Project Birdseye—an Arctic ice-survey mission—Oceanographic Development Squadron 8 provided ice surveillance for SS *Manhattan* during the ship's historic voyage from the East Coast of the U. S. to Alaska through the ice-packed Northwest Passage.

• *All-Navy Apollo Crew*—24 Nov 1969—The *Apollo 12* astronauts, an all-Naval Aviator crew of Richard F. Gordon, Jr., Charles Conrad, Jr., and Alan L. Bean, were recovered by HS-4 off the carrier USS *Hornet*.

A NEW 440-page book—"United States Naval Aviation 1910-1970," NavAir 00-80P-1—contains summary narratives on each decade, over 2000 individual chronologically dated items, and 13 appendices covering over 100 pages. The paper-bound book, priced at $4, is available from the Superintendent of Documents, U. S. Government Printing Office, Washington, D. C. 20402.

Navy's Efforts in Space

OVER-ALL the Navy has made some very significant contributions to the nation's space program. Here are some of the more important highlights of the Navy's space efforts.

• The Navy has the distinction of being the largest single contributor in the U. S. astronaut program. Of the 73 past and present astronauts, over half—39 men, to be exact—have either been Naval Aviators or have received their initial military training at naval installations. RADM Alan B. Shepard, senior military astronaut and first American in space, heads up the list of the Naval Aviators currently enrolled in the astronaut program.

• Twenty-one of 45 astronauts today were commissioned military officers from Navy sources.

• All recoveries of manned spacecraft have been made at sea by Navy ships.

• Original flotation collars for capsules were Navy-designed.

• Navy's development of the full pressure space suit was steppingstone to manned space flight.

• Navy trained Monkey Baker—one of two animals first to survive a space flight. Monkey Baker (a lady) is still living and resides at the Alabama Space Museum, Hunstville, Ala.

• Navy's experiments with balloons began shortly after World War II to provide better understanding of problems to be solved before manned space flight. This led to Project *Stratolab*—a series of balloon ascents, one of which carried two men to an altitude of 86,000 feet.

• Beginning in March 1958, three Navy *Vanguard* satellites were placed in orbit. *Vanguard* was responsible for a more accurate determination of the shape of the earth.

• Environmental studies gathered from submarines (especially nuclear subs) where adequate supply of oxygen, shielding from radiation and an effective environment for men to work long periods were common to both submarine and space.

• Significant Navy Launchings/Projects: *Viking*, *Aerobee*, *Rockoon*, *Argus*, *Polaris* and Transit Navigational Satellites.

FLIGHT LINE

AVIATION Electronics Technician 3rd Class Kim R. Graham finishes shaving—and notes that the water is not quite as hot as normal. That's the clue to him that this morning the steam catapults, used for launching aircraft, are being readied.

Aboard the attack carrier USS Oriskany (CVA 34) conducting exercises off the coast of Southern California, a boatswain's pipe whistles. Flight deck crews pause to listen:

"Flight quarters. Flight quarters. All personnel concerned man your flight quarters stations."

Graham makes a high-speed trip to his locker and, donning a brown jersey on the run, he heads for a steel cubbyhole near the ship's bow. On the way, he joins other plane captains, or "brown shirts." They have nicknames—"Weave," "Mex," "Casper." They're the "dirty" crowd, infantry of carrier aviation. In high wind and noxious jet exhaust, with heavy chain bags to carry, they face constant danger. Each now doubletimes toward his assigned aircraft, life vest on, and helmet under one arm.

Graham clanks down a ship's ladder to the hangar deck, where his aircraft, number 112, an F-8J *Crusader,* is parked. The first order of business is to give his airplane a thorough preflight inspection.

He begins at the plane's nose and works aft—checking fittings and fasteners for security, inspecting tires for cuts and wear. Scrutiny of tubing within each wheel well might disclose the presence of a hydraulic leak; a careful look at the undersurface of each of the fighter's wings may turn up a telltale streak of leaking jet fuel. Climbing on a wheel, Graham peeks into a small inspection hole to check the servicing of the aircraft's hydraulic system. In that instrument-crammed niche, the cockpit, just big enough to squeeze into, he sets switches in preparation for the launch. As do other plane captains, Graham "stores" the entire checklist in his memory.

HIS NEXT TASK is to wait—waiting is a big part of the job—for a plane-handling crew to move his plane to the flight deck, up on "the roof."

Tiedown chains clatter on the metal deck as another airplane prepares for the move to the roof. A special, low-profile tow tractor scuttles under wings and tail sections as nimbly as a man can walk.

As the second airplane begins to move, a whistle shrills. Men yell and steel chocks slam into place. A "yellow shirt" plane director bellows at the plane captain, who has been riding brakes in the cockpit.

"Don't you know to hit the brakes when you hear that whistle?!"

The plane captain shrugs, "No brakes," he says.

"Next time," the director snarls, "you might be over the side."

A blue-shirted plane-handler squats in the airplane's wheel well and manually pumps up hydraulic pressure for the brakes. He signals the plane director with a thumbs up and the moving operation continues.

It's old stuff to Graham, who has been a plane captain for one of his two years in the Navy.

To some the job he does may lack the glamor of other areas of naval aviation, but it is a most vital one, demanding courage and responsibility.

It's also a dirty job at times, but it offers real job satisfaction. *(Continued next page)*

AT3 Kim R. Graham watches planes take off at night from the deck of the USS Oriskany (top) and helps to tie down an F-8 after a successful trip (above).

deck amidships on the starboard side broods over the activity. Wind whips at multicolored signal flags. Above the glass-enclosed bridge and primary flight control, a complex array of radar antennae casts rotating shadows on busy crews and parked aircraft. The whole thing looks like a floating world's fair.

The pilots are on deck. Now things will change rapidly.

In primary flight control, the "air boss" barks an order.

"All unauthorized personnel clear the flight deck. All personnel on the flight deck get in full flight deck uniform. Goggles down. Chin straps fastened. Sleeves rolled down."

A SMALL FLEET of low yellow trucks parades onto the flight deck. These "huffers," with their turbine-powered air compressors, will be used to start the jet aircraft.

"Stand by to start all 'go' aircraft," says the air boss.

A moment's pause, then "Start 'em!"

A high-pitched wail rises from the flight deck. Engines turn. *Oriskany's* bow swings into the wind for launch.

The pilot in his cockpit watches Graham, and the two exchange hand signals. They discuss the health of their airplane. When all 22 operational checks have been made, Graham turns the airplane over to the yellow shirts. They will direct it to the catapult.

All the hardware—chains, downlocks, jury struts—which has been removed from the aircraft is loaded into an "instrument of torture"—the chain bag. Made of canvas and fitted with shoulderstraps, a chain bag weighs about 60 pounds when loaded.

Aviation Fire Control Technician James T. Weaver, VF-191 Assistant Line Petty Officer, helps Graham into the straps. The bag rests low next to Graham's spine. He bends over awkwardly.

As Graham and Weaver make for the safety of the island, aircraft maneuver all around. The two men zigzag across the deck, crouching against jet blast, running when there's an opening, pausing to let a plane go by, watchful, suspecting everything that moves.

NEXT IT'S GRAHAM'S TURN to be lifted to the flight deck. He climbs into the cockpit to ride brakes. Blue shirts remove 112's tiedown chains. The special tow tractor, shaped like a tuning fork with towing assembly in front and a driver riding a pan seat in the rear, latches on to the plane's nose wheel and heaves backward. Its twin red headlights glow like a dragon's eyes in the semidarkness of the hangar deck.

One-twelve rolls into the sunlight on *Oriskany's* number two elevator, a platform which juts over the water on the ship's port side. When at the top of its track, the elevator forms part of the flight deck.

On "the roof," plane-handlers spot, or park, Graham's plane and help chain it down.

Brown shirts, yellow shirts, blue shirts, the red-shirted ordnancemen and green-shirted maintenance crews swarm over the surprisingly small deck. Planes are parked wingfold to wingfold.

The island, rising seven stories above the flight deck, is a crowd of other plane captains at the island. As they watch, aircraft 112 moves into place on the starboard catapult. Once the plane is positioned, steel blast-deflectors rise behind it.

The F-8's afterburner lights just before launch. The wind grows hot. Noxious fumes burn observers' eyes and engine noise makes their chests tremble like drumskins.

The airplane is launched; the deflectors retract. Cool air and clouds of steam race back over the island. The steam has a faintly metallic smell.

Operations continue until midnight. Graham works in the dark or under the red floodlights of the island. When 112 is finally taken below, Graham must clean it, using a spray bottle of household detergent and a rag, for the next day's flying.

For his travails, he receives $55 per month extra pay from the Navy. In Southeast Asian waters he gets an additional $65 per month hostile fire pay.

In the wee hours of the morning, Graham returns his spray bottle and flight deck gear to the line shack. Then he finds his way to the crew's quarters near the ship's stern.

"I'm tired," he says.

A little later he stretches out on his bunk and stares at the taut canvas of the bunk above his.

"I watched the F-8s launch in afterburner tonight," he says. "It was beautiful." A moment later he's asleep.

—AMSAN Larry Winn

Below: Jets lined up on CVA 34's flight deck for the next flight operations make an impressive scene.

on this and the following pages:

A ROUND-UP ON THE HARD-WORKING AUXILIARIES OF THE FLEET

A SEASONED VETERAN

IN TROPICAL GREEN

Housed within the ship (above) are precision machines which are used in the type of repair work USS Satyr has been modified to handle. (Photo by A. J. Ringuette). Left: Armored troop carrier rests on a pontoon barge, facilitating hull repairs. Below left: Anchored in the Mekong River, USS Satyr (ARL 23) provides support and repair facilities for river assault craft of the Vietnamese brown-water Navy. Below: Off-duty assault patrol boats tie up alongside ARL 23.

INSTEAD OF THE TRADITIONAL BATTLESHIP GRAY worn by most U. S. Navy ships, USS *Satyr* (ARL 23) is painted a dark tropical green. And while most 7th Fleet ships steam extensively throughout the western Pacific ocean, *Satyr* is limited to an area of operations in the Mekong River about 85 miles southwest of Saigon.

The landing craft repair ship is one of four tank landing ships the Navy modified and recommissioned as floating workshops for repairing river assault craft in the Republic of Vietnam. *Satyr* recently underwent a 7½-week overhaul in Yokosuka, Japan, after a 16-month continuous tour of duty in the Mekong Delta.

"That is probably the longest period any Navy ship has been on the line without upkeep since World War II," said Lieutenant Commander G. W. Giganti, *Satyr's* skipper.

The green coloring, standard among brown-water Navy craft in Vietnam, is to help camouflage her for riverine operations.

Besides furnishing intermediate repair services for river patrol boats, swift boats, and other river assault craft of the Vietnamese Navy, *Satyr* acts as an operational focal point, handyman, and supermarket for riverine units patrolling the upper Mekong River. She has a powerful "A" frame located amidships which is used to hoist river assault craft out of the water in order to repair hull damage.

WHILE DUTY IN *Satyr* cannot be classified as the easiest in the Navy, living conditions would have to be ranked among the best in the delta. Her excellent food services and air-conditioned spaces give evidence to this. However, operations often necessitate seven-day work weeks, and the flow of repair jobs never seems to cease.

Lieutenant K. R. Myers, executive officer of *Satyr*, says that despite the minor problems expected when 215 officers and men live and work in the same small area for months on end, the ship's crew has done an outstanding job.

During her last lengthy line period *Satyr* completed nearly 3500 job orders. Her logistic liaison support section assisted thousands of allied missions, and her ship's service department often supported an average of 100 extra personnel daily—over and above her regular crew.

Because she usually anchors near military outposts and populated areas under government control, *Satyr* normally sees little combat. The ship's crew is, however, constantly on the alert against underwater sappers who might attempt to attach mines to her hull.

NOW THAT THE INLAND WATERBORNE COMBAT ROLE of the U. S. Navy has been turned over to the Vietnamese, the next step is turning over the support and logistics roles to them too. Until that time arrives, however, the brown-water Navymen of the green-colored *Satyr* will continue their vital support and repair role in the Mekong Delta.

Left and above: Standing in her drydock at the Pakistani Naval Shipyard, the USS Valcour is sandblasted in preparation for a new coat of paint.

An Unusual Overhaul
VALCOUR

USUALLY, a ship's overhaul is relatively routine. However, when it is executed without benefit of a U. S. base or tender as a support facility—that's an overhaul of a different color.

The crew of USS *Valcour* (AGF 1) learned that after they completed a two-month overhaul period without leaving the Persian Gulf neighborhood.

The first part of the overhaul took place at a commercial facility in Bahrain. Although everybody was busy, the Engineering Department was particularly hard-pressed to maintain its normal shipboard duties while also operating a 12-hour daily work schedule.

The engineers logged more than

11,000 manhours working on diesel engines, steam lines, air-conditioning and refrigeration systems, electric motors, generators and controllers. Later, at the Pakistani Naval Shipyard in Karachi, the ship was sandblasted, the hull painted, and the sea valves repaired. The actual labor of repairing the ship, however, was only the tip of the iceberg.

MONTHS IN ADVANCE of the actual work, problems had to be anticipated, orders placed, material flown in and contracts negotiated. When an overhaul is undertaken outside the U. S. Navy family, things just can't be taken for granted.

Most of the work was done by the ship's force, but meter calibration, some technical assistance and crane facilities were furnished by a commercial facility while personnel at the Pakistani Naval Shipyard lent a hand, too.

While their ship was in drydock, *Valcour's* crew enjoyed life ashore at one of Karachi's hotels with its swimming pool, volleyball court, dining rooms and other amenities.

After the overhaul, *Valcour* embarked on a goodwill cruise to Kuwait, Kuwait; Jidda, Saudi Arabia; and Massawa, Ethiopia.

—Story by JOC Bill Clark,
Photos by JOC Bill Clark and
PH2 N. D. Crews

Top row, left: The ship receives a rebuilt capstan motor. Right: Electricians rebuild one of the many electric motors aboard the ship. Bottom right: Overhauling diesel engines and engineering equipment required over 11,000 manhours. Bottom left: Workmen install a scavenger blower for number one main engine.

Above: The Seventh Fleet destroyer tender USS Piedmont (AD 17) renders repair and maintenance service to the destroyer USS Agerholm (DD 826). Below left to right: An EM3 rewinds a section of a 340-pound saltwater circulation pump. (2) A Navyman regulates Piedmont's number two AC generator. (3) Oil bond sand is packed to make a mold in the ship's foundry. (4) An MR3 parts off a piece of stock on one of Piedmont's turret lathes. (5) Lens is polished in the optical shop. (6) A pantograph machine is used to engrave bakelite signs.

Providing Tender Care
SHIP CLINIC

DOC PIEDMONT TREATS ABOUT 52,000 PATIENTS annually but the doctor's credentials aren't recognized by the AMA. There is a good reason, however, for the lack of medical recognition, Doc Piedmont is a destroyer tender and her patients are not only people, but also sick ships.

Piedmont's abilities are wide-ranging. She can repair the sails and rigging of an 18th century museum piece as easily as she can service the missile launching system of a guided missile destroyer.

It might be well to mention here that *Piedmont* is rarely called upon to repair an 18th century sloop of war. Her yarn-spinning canvas shop more frequently is called upon to stitch awnings, bags, covers, cushions and to repair ship's furniture.

The canvas shop is only one example aboard *Piedmont* of an ancient craft put to modern usage. The ship's foundry employs the same basic principles used in ancient times, but her tools include electric heat and induction furnaces which melt metal.

The heat produced in the foundry's electric furnaces ranges in temperature from the 700 degrees needed to maintain lead in a molten state to the 3150 degrees required to pour steel.

Piedmont's foundry can also liquefy any man-made alloy for conversion into objects as small as a nut or bolt to larger items such as cylinders and pumps.

Piedmont is also a powerhouse, generating enough electricity to light 752 communities from among those located in the region for which the ship is named.

ALTHOUGH PIEDMONT WAS COMMISSIONED in 1944, she has yet to be rendered useless by younger models. She is still as capable now as she was nine months after her commissioning, when two severely damaged destroyers were in such bad shape that it was doubtful they could make it home under their own power.

Nevertheless, *Piedmont* patched up one so she was sufficiently strong to steam home and returned the other to the Fleet ready for sea.

A short time thereafter, *Piedmont* cleared the tangled wreckage of another ship's bridge superstructure and patch-welded her main deck to insure watertight integrity.

Piedmont also converted the gun platform into a navigation bridge and installed two high frequency radio transceivers and three sound-powered phones to compensate for the damaged ship's lost radio room. It was accomplished in record time.

A final touch was provided when a canvas awning was rigged to give the crew protection from the weather while the crippled ship steamed back to the states.

Although *Piedmont* has frequently been near battle areas during crises, she is classed as a noncombatant. She is, according to her own reckoning, one of the few vessels in her class to receive eight Battle Efficiency Es during the past 15 years, two of which were awarded in consecutive years.

—Story and Photos by JO1 Milt Harris, USN.

The Renaissance of AFDB-1

IF IT HAD NOT BEEN FOR AFDB-1 — Auxiliary Floating Drydock, Big — the United States would have gone into the battle of Leyte Gulf with two battleships instead of five.

The battleships *Pennsylvania* (BB 38), *California* (BB 44) and *Tennessee* (BB 43), all three severely damaged, were repaired in record-breaking time to contribute to the defeat of the Japanese Navy at Leyte Gulf.

Since 1953, the drydock has been inactive; now she is working again.

AFDB-1 was reactivated on 17 November at the Ship Repair Facility, Subic Bay, by Rear Admiral Nathan Sonenshein, USN, Commander Naval Ship Systems Command. The present AFDB-1 is a much smaller version of the original, which was once the largest ship in the Navy. During World War II, the drydock consisted of 10 sections; now five.

The present sections, however, can easily be expanded to 12 and, with modifications, could handle the largest ships in existence.

She was originally built because of the need for drydocking facilities west of Pearl Harbor. The war made it necessary to have a drydock to make major repairs at advanced bases. It took 21 months to design, build, tow and assemble AFDB-1.

AFDB-1 drydocked her first ship in 1943 at Espirito Santo, New Hebrides. During the war she was disassembled and moved to new locations three times. Her last drydocking assignment, before being mothballed, occurred in November 1946, in Leyte Gulf at the Guiuan Naval Base in Samar.

In the early part of 1947, disassembly and preservation of AFDB-1 was started; sections were towed to Pearl Harbor during the summer of 1947 by *Liberty* ships.

DURING THE EARLY 1950s, the sections were taken to Guam, reassembled, submerged and raised once.

USS *Wisconsin* (BB 64) was the last vessel AFDB-1 drydocked before she was again added to the mothball fleet, in 1953.

With the advent of the Vietnam conflict, the Subic Bay Naval Base was tremendously enlarged, and in May 1969 Subic's ship repair facility was authorized to reactivate five of the 10 AFDB-1 sections then located at Guam.

She is smaller now, but still very powerful. Her lifting capacity is 45,000 tons, or enough to handle two DLGs at one time. The structure of AFDB-1 is extremely rugged. Typhoons, torpedoes and attack by enemy aircraft have failed to deter her.

Left: In South Pacific during World War II, a battleship is moved into AFDB-1 for repairs: Right: The original 10-section AFDB-1 could dock four LSTs at one time.

Left: One of the wing walls for the AFDB goes into place. Center: High up on the floating drydock, crewmen call instructions to the linehandlers as they pull a ship into place: Right: A mike boat tows USS Windsor (ARD-22) in for drydocking.

Seagoing Knight

THE KNIGHTS of King Arthur's court would probably start flexing their creaky armor if they were alive today to see the U. S. Navy's netlaying ship *Cohoes* (ANL 78).

The ship's unusual design would bring out the fighting spirit in any medieval warrior. Protruding from both sides of her bow are what appear to be two giant jousting lances mounted at near 45-degree angles.

Actually her protruding limbs are what is known in Navy jargon as bow horns. Capable of lifting up to 100 tons, they were originally designed for hoisting submarine nets.

But *Cohoes*, commissioned at the end of World War II, is no longer used as a netlaying ship. Instead her horns and the rest of her equipment are engaged in salvage operations in the northern waters of the Republic of Vietnam.

The only U. S. Navy ship of her type in active operation, *Cohoes'* main task in Vietnam is the repair of petroleum offload lines. She is ideally suited for this task because her main deck is just 10 feet above the waterline and she has eight divers among her crew of 40.

Not all of *Cohoes'* work is with petroleum offload lines. Occasionally, she is called upon to undertake larger scale salvage operations.

RECENTLY, she was ordered to Qui Nhon harbor, 300 miles northwest of Saigon, to repair the civilian freighter *American Hawk*, damaged in mid-June by an enemy water mine. When *Cohoes* arrived at Qui Nhon, the stern of *American Hawk* was resting on the bottom of the harbor. The mine had blown a 20-by 23-foot hole at the waterline of the freighter. The engine room, steering room and three different holds in the ship were also flooded.

Working up to 16 hours a day, often oil-splattered and always covered with sweat, the salvage crew of *Cohoes* surveyed the damage and designed a patch to cover the gaping hole in *American Hawk's* side.

The patch, weighing nearly seven tons, was padded on its bottom half with a mattress-canvas covering to plug the sides which would be below the waterline. After the patch was put in place by a floating crane and secured, the crew of *Cohoes* completed pumping water from the freighter's damaged compartments.

The repair of *American Hawk* was the most ambitious undertaking of *Cohoes* this year. Part of the reason for her crew's success is their versatility. Among the ship's eight divers are a hospital corpsman, a damage controlman, a boatswain's mate, a machinist's mate, two firemen and the executive officer of the ship. Thus, the ship's small crew is able to perform a wide spectrum of salvage jobs.

Cohoes can also claim to have been earning her keep while working on *American Hawk*. Work that is done on civilian ships is paid for by the ship's owners.

In addition to being a unique ship *Cohoes* is also a distinguished one. During her service in Vietnam she has been awarded the Meritorious Unit Commendation and the Republic of Vietnam Armed Forces Unit Citation for Gallantry.

A seagoing knight and a salvage wizard, *Cohoes* belongs to a singular class of U. S. Navy ships—her own.

—JO3 Mike Goodrich

SELF HELP III
A Report from the Head Seabee

THE MAXIM IS QUITE CLEAR when it comes to Self-Help: The Navy helps those who help themselves. Nonappropriated funds for Self-Help projects—administered by the Bureau of Naval Personnel—are provided faster to those commands which show a willingness to put Self-Helpers alongside Seabees in order to get a project off the ground from the very start.

This is the thinking of Rear Admiral William M. Enger, CEC, USN, the Chief of the Naval Facilities Engineering Command, who's sometimes referred to as the "Head Seabee" in the Navy.

"I'm sure," he says, "they would authorize and provide funds first to a project which uses Self-Helpers to help Seabees over someone who says he can't provide helpers to assist Seabees. It's a matter of helping those who are willing to help themselves."

During the past year, in excess of $15 million in nonappropriated funds has been approved by the Bureau of Naval Personnel to finance a wide variety of personnel support facilities, ranging from Navy Lodges to swimming pools. The project—besides providing useful employment for stateside-stationed Seabees, along with an outlet for the creative talents of Self-Helpers—is demonstrating the emphasis put on "people" by the many directives and programs instituted by Admiral E. R. Zumwalt, Jr., USN, the Chief of Naval Operations. In essence, the Navy is putting weight behind these ideas by demonstrating that it cares for its people; the payoff is reflected in the recent increase of the first-term reenlistment rate which has risen from 16 to 19 per cent.

THE SELF-HELP PROGRAM is considered to be one of the factors contributing to this improved picture. As Admiral Enger says, "I believe one of the things that has contributed to it is the growing, general awareness that the Navy is doing everything it can to help its own people . . . Self-Help is one of the factors—although only one of the factors—that Admiral Zumwalt and his programs have done to encourage people to stay in.

"I can speak personally. I know that as I traveled around and talked to a lot of Seabees, I found this program is a great boost to the morale of Seabees—the constructive use of these men for the benefit of the other people in the Navy."

But Self-Help is not just a case of waving a wand and having things magically happen. Funding has always been a problem and it will remain a problem. Above all, funds earmarked for one specific purpose, such as dependent housing or operating maintenance, are not allowed to be used for another purpose.

RADM W. M. ENGER, CEC

"There was no managing source for the Self-Help funding and we had to turn to existing Navy resources. These resources are really inadequate to accomplish what should be done," Admiral Enger says. "The major commanders who have the responsibility for funding this program had a difficult time finding the funds which are necessary to carry out the program in the way we desire."

AT PRESENT, there is a deficiency of personnel support facilities which equals about $3 billion. It was found that in looking over the projects making up this variance, the Seabees—working with Self-Helpers—could accomplish about 10 per cent of the work. The other 90 per cent can only be corrected by the normal military construction rules, that is, Congress appropriates the money and the construction is undertaken and completed by civilian construction firms.

A Navywide target date was set up for 30 Jun 1972 for $2 million per month to be spent on the program. Admiral Enger has said that the program is not far behind schedule and with CNO placing a high priority on people-oriented projects and Self-Help in general, efforts are continually being made to identify more dollars for use in Self-Help projects.

According to Admiral Enger, Self-Help has been successful, but "not to the extent we would like.

"I think we can accomplish a lot more," he says, "I think we have plans laid out that will assure that we accomplish a lot more in the future . . . our goals are quite ambitious."

What is the aim of the program? According to the admiral, "This was our charter: to try to make maximum use of the Seabees within the Navy with help

from others in the Navy to do what we could in the way of first class support.

"We purposely established an ambitious program—we haven't realized it yet—but I believe we're well on our way. The program is gaining momentum and it has the complete acceptance and the wholehearted support of major commanders and station commanders."

RESERVISTS, too, have answered the call, and their efforts have been praised by fleet and area commanders, alike. Despite the fact that they are limited to working only during their weekend drills, they have proved effective on local projects. Working through the Reserve Manpower people at Omaha, Neb., activities have benefited from the "outstanding technical capabilities" of these Reserve units.

Admiral Enger says that the outfits that benefit most by these Reservists are those "that have the energy and initiative to get out and get the Reservists."

Some of their work sometimes involves more than a weekend at a single location. Like their Regular Navy counterparts, Self-Helpers also assist Reservists on projects.

IDEALLY, the goal in Self-Help is to achieve the ratio of four Self-Helpers to one Seabee in getting the work done. To date the ratio has been closer to two Self-Helpers for one Seabee.

Will Self-Help ever reach the point where Self-Helpers will work on their own? "I believe that would be true for certain aspects of it," Admiral Enger says, "but we don't intend to make Seabees out of non-Seabees.

"I should think that eventually some of this work will be accomplished by non-Seabee personnel, but we do still believe—for now—this work should be accomplished under Seabee guidance to insure that it meets specifications and standards. On the average, though, with the kind of projects we've been given, Seabees can be used effectively. For some things, the ratio may have to be one-to-one (as in constructing a parking lot)—for other things, it could be raised to as high as 15, even 20, to one (as in electrical work). It depends on the nature of the task.

"All of these Self-Help projects should be under the guidance of the Seabees or Civil Engineer Corps officers to be sure that they are long lasting projects and that the work is done properly."

Self-Help is not a "here today, gone tomorrow" program. The Navy is looking at long lasting projects and by long lasting, it means in the area of 20 years—not short span, one-year affairs.

THERE'S THE NECESSITY of seeing to it that all projects are inspected by a Civil Engineer Corps officer—usually a public works officer—upon completion. The Navy has no compunction about ripping down a structure if it doesn't meet specifications or safety standards. Here is where the 20-year life-span comes into play.

"One of the things we've insisted upon," says Admiral Enger, "is that this would be done properly and under technical direction and that the work is accepted; that it is as acceptable as if it had been performed by a contractor and—in general—that it lasts 20 years."

He underscores the necessity of doing the work properly the first time.

FEEDBACK FROM COMMANDS at this early date is not really possible since many projects are still underway and haven't been evaluated, fully, by the individuals who will make use of them. The Chief of Civil Engineers' people in Washington feel that it will take a while before the program can be evaluated with certainty that the goals have been accomplished. However, periodic surveys are made in Self-Help just as they are made in any Navy engineering program.

No matter how much is written or explained about a program, sooner or later, someone gets the wrong idea. Self-Help is no exception. There are some people who feel that the emphasis has been too heavy on projects that may benefit married Navymen and dependents at the cost of the unmarried Navymen. Nothing could be farther from the truth.

Admiral Enger explained that he could see how some people could get this idea when they see Seabees—especially overseas—putting in a parking lot near dependents' housing. What the observer doesn't realize is that the source of the funds dictates the project and the project never dictates the source of the funds. If the parking lot—in this example—is being put in near housing for the benefit of the people using the housing, then the money which is being used to pay for the construction comes out of Family Housing funds and nothing else.

There's no cross-matching of funds and projects, nor is it possible to do this—the Navy is strict as to what money is used for what purpose. Perhaps a hint to an observer in cases like this is really to observe: if the work force is made up entirely of Seabees, then it's a Seabee effort and it doesn't involve Self-Help. The Seabees have split their work into two major fields—and these involve Seabee Reservists as well as Regular Navy Seabees: (1) Seabee Projects and (2) Seabee Directed Self-Help Projects.

"The Seabees have long been used—long before Self-Help came along—in construction projects within construction battalions," says Admiral Enger.

"What we've tried to do in Self-Help, and Admiral Zumwalt has added to and tried to encourage greatly, is the supplementing of Seabees with other people," he said. "We make a distinction between a Seabee Project in which just the Seabees are involved—be they Regular or Reservists—and the Seabee Self-Help projects where we see the ratio (hopefully) of four to one, which helps people to help themselves."

CONFUSION CAN ARISE too when one reads the list of six categories of facilities given priority atten-

tion: living facilities, temporary lodgings, parking garages/on base parking, trailer parks, recreation clubs and other welfare facilities. The list can be interpreted to mean that the last two items which affect unmarried personnel probably to a greater degree than married personnel, are given the lowest priorities—but this is not the case. This is merely the way that the list is made up. Local commands—station and base commanders with a population exceeding 10,000—decide on what is needed most at their localities and then go about obtaining these particular personnel support facilities. In some areas it could mean that parking is more important than having an added club facility, or vice versa. The OpNav Instruction (11000.9 of 6 Aug 1970) states that CNO is interested in improving or providing personnel support facilities, where it is determined that morale and retention attitude may be affected. That statement emphasizes the two key words of Self-Help: morale and retention. It's just simply not a case of mixed priorities or misdirected effort.

"Admiral Zumwalt was merely saying (in the instruction), 'here are some of the things the Navy needs and we would like to do this and do that,'" Admiral Enger says. "We have a very fine system set up for base commanders and area commanders and major claimants to devote their resources to the areas in which they believe the need to be greatest.

"There may be reason for people to believe that we're overemphasizing the families—that's because of the nature of the funding.

"One of the first things we were able to do was to 'shake loose' some Family Housing funds and start building trailer parks. That money is not usable for anything except the Family Housing Program. A lot of the emphasis on the projects being built is dependent upon the source of funds for those projects. We couldn't use regular Navy Operational Maintenance funds for anything in the Family Housing area, nor could we use Family Housing funds for other than housing projects."

SELF-HELP IS MAKING ITSELF KNOWN throughout the stateside Navy at such places as Charleston, S. C.; Quonset Point, R. I.; Pensacola, Fla.; Memphis, Tenn.; Corpus Christi, Tex.; and Miramar, Calif., to name but a few locations. The projects include partitioning off sleeping and living areas in enlisted men's barracks; revamping sections of an officers' club—with officers working on the project just as enlisted Self-Helpers do on other tasks; modernizing a lakefront recreation area; and even installing boat slips at other locations.

The work is professional—completed projects could stand side by side, in quality, with similar construction-repair undertaken by any stateside contracting company. Besides the volunteer labor used on these projects, every attempt also is made to cut down the costs of materials used in the projects. An example of this is a recreational lake house at NAS Memphis

which has been assessed at $80,000 and was constructed at a cost of $18,000—most of the wood used in the house was obtained free of cost. A tract builder—clearing the land in the area—provided the logs and a local sawmill produced the finished product on a 50-50 basis. The local recreation department picked up the logs, delivered them to the sawmill, and brought the air station's share of the finished wood to the lake house site. Ingenuity was again used when it came to bricks for the fireplace—all obtained at bargain basement prices.

But—admittedly—obtaining the low-cost building materials at NAS Memphis was unique. On most Self-Help projects, it's the labor costs that are saved while material is obtained at the usual over-the-counter prices. The projects are diversified: rehabilitation of six bachelor enlisted quarters at NAS Pensacola; installation of 20 boat slips—also at Pensacola; repairing hurricane damage to facilities at NAS Corpus Christi; completion of a trailer park at NAS Miramar; a new meeting place for the local rod and gun club at the Polaris Missile Facility, Charleston; and construction of a nine-hole golf course—complete with three lakes—at NAS Kingsville.

Projects are numerous too, with such places as the Charleston area undertaking one Self-Help task after another—much of it centered around making life more enjoyable for the single enlisted man. Providing the know-how for these projects are the small construction battalion units situated throughout the States—primarily at large naval shore activities.

AREA COORDINATORS establish administrative procedures for processing requests for Seabee assistance. These procedures vary from area to area but they generally consist of a review by a board or committee, who then recommend priorities to the coordinator who has the ultimate decision-making authority.

Much of the decision-making involving Self-Help projects centers around projects that will directly affect morale and the retention attitude of the local naval population. Preference is given to those projects which provide the most common use in serving the widest spectrum of Navy people. Above all—the success of a project from its idea stage to completion depends on the number and enthusiasm of Self-Helpers pledged to the project.

"We've come a long way in the last year by the formation of these construction battalion units ashore," says Admiral Enger. "This gives Seabees a much greater feeling that their talents are being used for the benefit of the Navy.

"Every individual sailor can contribute through his own time or by volunteering for participation as a Self-Helper. He can also help by exhibiting the utmost care for the facilities that are now at his disposal to insure that they are fully available for both himself and others to use and enjoy."

—John Coleman

FOR A GUIDELINE ON SELF-HELP PROJECTS, TURN TO PAGE 51

navy programs in VIETNAM help them help themselves

WHAT Senior Chief Petty Officer Edmund B. Canby knows about the Vietnamese Navy would probably fill a book. In fact, it may—someday—if he decides to put his experiences down on paper.

At 46, past the age at which most career enlisted men have left the service to begin a second career on the outside, Chief Canby returned in June for his fifth tour in the Republic of Vietnam.

It all began in 1964, when he was assigned as one of six U. S. Navy advisors to coastal groups in the 3rd Coastal Zone. "At that time," he pointed out, "the junk force was a paramilitary organization. You never really knew how the Vietnamese sailors felt about the changes that were taking place then, but they stuck it out very well through this difficult period and are now an important part of the regular Vietnamese Navy."

INITIALLY, Chief Canby served with a coastal group security force, and later as a gunnery advisor to Coastal Group 37. There was a shortage of coastal group advisors at that time, and Canby was the only American sailor serving with the unit. He then went to Coastal Group 36, served as a patrol officer for a year with River Patrol Division 511 at Can Tho, and in 1967 began two consecutive tours with River Assault Groups (RAG) 23 and 31.

It was during his RAG tours that Chief Canby had his most interesting and challenging experiences as an advisor—especially during the 1968 Tet offensive.

"The days during Tet 1968 and the months that followed were rough," he recalled. "We had many tough and dark days during this period, but we were able to get the job done. I was working with a special group of people then, too—the RAG sailors were considered elite Navymen serving with an elite unit."

Chief Canby spoke highly of his Vietnamese counterparts of those days. "They had a hard job to do with the older boats," he said, "but they never complained, not even during Tet when the going was really tough. They never gave up," he emphasized, "they just kept going."

When the Vietnamization program began in November 1968, Chief Canby was on hand to see the first American combat boats turned over to the Vietnamese Navy. In fact, he was working with the unit which provided the first Vietnamese boat captains for the small craft.

When the program began, Chief Canby was working with RAGs 23 and 31, and was involved in several of the conferences with other advisors on the Vietnamization program. "We sent some of our best boat captains to receive boats and form Task Force 211," he said. "These men were given five months of complete training; they were able, though, to take over the craft in about six weeks."

Left: Seaman Nguyen Van Tinh and PO2 Nguyen Van Chi fish in the Saigon River. Above: Chief Edmund B. Canby reviews maintenance techniques with Chief Nguyen Thanh Tan. Below left: PO1 Kenneth G. DePlanche examines the son of Vietnamese sailor. Below center: PO3 John B. Moran studies a blueprint with a Vietnamese worker. Below right: PO2 Gordon C. Eberhardt makes electrical repairs.

CANBY FEELS that the Navy's advisory effort is paying dividends and that it is at its peak. The new two- and three-year advisor programs, he believes, are greatly enhancing this effort.

"The new advisors will be more valuable in many respects," he said, "mainly because of increased training in personal response and the extensive language training they receive before coming into the country. Both of these areas are especially important during this particular time when we're involved in turning over our remaining assets to the Vietnamese Navy."

Comparing Vietnam, today, with what it was like during his previous tours, the chief pointed out some specific differences he's noticed so far:

"I'm amazed at the amount of commercial traffic on the highways," he said, "at the large number of people engaged in productive labor, and the number of rice paddies that are now being worked that had been idle for several years. It appears that the pacification effort is really working now.

"The Vietnamese are going to have to help themselves," he continued. "They must do the repair work, get their supply system going, and use what we've given them in a productive way—just like they're doing now. If they continue, I firmly believe they'll come out on top."

ALTHOUGH FEW PEOPLE have spent as much time in the Republic of Vietnam or seen as many transitions—in the U. S. Navy, the Vietnamese Navy and the country itself—as Chief Canby has, anyone who goes to Vietnam today can at least see the results of the Navy's efforts and gain an understanding of how important a role U. S. naval advisors have played—and still are playing.

The U. S. Navy has done a lot, but a large task still remains. The great expansion of the Vietnamese Navy —it's now one of the 10 largest in the world—in a relatively short period has caused some critical economic problems.

Pay is low, even for senior officers in the Vietnamese Navy. The monthly pay for a petty officer first class, who has a wife and two children, is 9000 piasters—or about $32. In comparison, a Saigon taxi driver averages about $200 a month.

Coupled with the lack of government housing and other benefits, the low pay places Vietnamese Navymen on an austere poverty level. Disabled veterans

are even worse off—separated from the service because of permanent injuries, they have virtually no rehabilitation program, and—consequently—little hope of becoming productive in a postwar society.

IN RESPONSE to this situation, which has bad effects on morale, the U. S. and Vietnamese Navies combined their resources into a multi-faceted effort called Operation Helping Hand. The program, which was started in 1969, is designed to upgrade the standard of living and benefits available to the VNN sailor and his dependents, veterans, and widows and orphans. This entails the construction of housing, food supplement projects, and a rehabilitation center for disabled Navy veterans.

One of the first steps taken under OHH was the construction of dependent shelters. When the program began, the Vietnamese Navy and Marine Corps needed an estimated 17,000 dependent shelters. To meet this need, Vietnamese and American sailors are working together in a self-help program at more than 20 bases. Over 3500 units have already been completed, and more than 1000 others are currently under construction. At some bases, excess barracks are being converted into apartment dwellings.

The "pigs and chickens program," as it has come to be known by Navymen in Vietnam, was the second OHH project to be undertaken. Primary foods such as meat and vegetables, which are basic to the local diet, are scarce and expensive—especially for a navyman's budget. Food supplement programs, like that of OHH, are the most effective ways of providing tangible increases to the Vietnamese navyman's standard of living. Animal husbandry, agronomy and fishing projects are now underway to provide these needed dietary supplements.

USING U. S. NAVY advisors, all experts in their specific fields, the projects have progressed at an extremely fast pace. In animal husbandry, U. S. sailors share their know-how in the construction of facilities and the care and breeding of livestock, while the Vietnamese provide the labor and materials. Aside from the initial outlay of funds, these projects are designed to be self-supporting.

At Cam Ranh Bay, a model farm has been established and is currently being used as one of five livestock distribution centers. Here, livestock are bred, raised and distributed to other bases in the Republic. At present, 115 livestock projects are in operation at 44 bases.

In agronomy, U. S. sailors again provide the knowledge and advice to their Vietnamese counterparts in modern crop-raising techniques. Thirteen vegetable gardens and three fruit tree projects are now underway at several bases.

The latest addition to the food supplement program is a fishing project. Initially a pilot program, it has now been expanded toward reaching an eventual goal of providing low-cost fish—at 1/15 of the local market price—to all Vietnamese Navy bases and commissaries.

Top left: PO3 Archie A. Banfield works at the Seabees' construction site in Kien Hoa Province. Top right: Seabees and trainees take a break from a heavy workload at one of their construction sites. Above left: LTJG William E. Reichmuth (left) studies a blueprint with Republic of Vietnam Army Colonel Nguyen Van Son (center) and Chief Richard Murguia. Above: A Vietnamese sailor and his American naval advisor look over pigs raised at their base under Operation Helping Hand. Left: Two Seabees repair a swing at the public playground constructed by Team 0318 for the children of Ben Tre city. Standing to the left of the Seabees is a former Viet Cong who has rallied to the government side and is now a construction trainee.

The fishing program, which now includes 10 small-scale, long-line projects and a large-scale project deploying modified junks with fishing nets, has already resulted in a savings of more than $92,000 for Vietnamese Navymen during the past year.

THE THIRD FACET of OHH involves the establishment of a Vocational Rehabilitation Center for disabled Vietnamese Navy veterans. In an effort to make vocational rehabilitation a reality for the VNN veteran, widows and orphans, the Vietnamese and U. S. navies are constructing a 500-family hamlet. This will provide housing and food supplement programs for Navy veterans and their dependents at Cat Lai, adjacent to a vocational rehabilitation school supported by the government of Vietnam.

The center's primary goal is to ensure that former VNN sailors can return to their homes as productive members of the postwar society. Veterans will receive training in carpentry, auto mechanics, electricity, refrigeration, welding, plumbing and typing.

OPERATION HELPING HAND is just what the name implies—a program designed to allow and encourage the Vietnamese to help themselves and eventually become a self-sufficient nation. Although the Vietnamese have provided most of the labor for these civic action projects, it has been a group of highly qualified and dedicated U. S. Navymen who have largely been responsible for the progress which has been made. By sharing their professional knowledge and skill, U. S. Naval Advisors and Seabees have helped to convert raw manpower into productive labor.

Since the Seabees first set foot in Vietnam in 1963, they've been constructing roads, bridges, schools, shelters and even playgrounds for Vietnamese children.

But today, a change in Seabee tradition is evident at Cat Lai, on the outskirts of Saigon—there, Vietnamese military men and civilians are performing tasks which were accomplished by U. S. sailors only a year ago. Only one Seabee—PO3 John B. Moran, Jr.—is now assigned, as an advisor, to the Cat Lai construction site.

About 80 Vietnamese, applying skills taught to them by Seabees previously stationed in the area, are working under Moran's supervision on dependent shelters at Cat Lai for the families of Vietnamese Navymen and disabled veterans.

SEABEE TEAM 0318, now stationed in Kien Hoa Province 50 miles south of Saigon, has been supporting Vietnamese civic action projects in the province since it arrived there last December.

A specialized 13-man construction unit, the team consists of builders, mechanics, equipment operators, a steelworker, an engineering aid, an electrician, a utilitiesman, and a hospital corpsman who conducts his own civic action program by providing medical and dental assistance to residents of villages throughout the Kien Hoa province.

Above: A maternity hospital is one of the projects now underway by Seabee Team 0318 members and Vietnamese trainees.
Left: PO2 Wayne R. Dixon (right) observes one of 15 Vietnamese workers he helps to train at a construction site in Ham Long District.

These Seabees also provide a training program for the Vietnamese. At present there are 15 Vietnamese in training at Kien Hoa—including four former Viet Cong who left communism and joined the government side. Evidence increases each day that a trained nucleus of people will be left when the team finally departs Vietnam.

One project which is now underway is the construction of a maternity hospital in Ham Long District. "We have six construction trainees and usually only one Seabee who acts as an advisor to them," said Chief Petty Officer Richard Murguia, the assistant officer in charge of the team. "In fact, we have a Vietnamese man who often supervises the trainees," he added.

The combination of support from the Seabees and enthusiasm from the Vietnamese people has resulted in the completion of several projects already—including roads, a bridge, warehouses and a public playground.

Operation Helping Hand was created to meet the increased needs of the Vietnamese Navy which, during the past two years, has more than doubled in size. The program is strengthening their navy by providing the financial means to develop a stable corps of career men, improve family security, and build service loyalty.

UNFORTUNATELY, OHH is limited in its efforts due to a shortage of funds. In addition to the appropriated funds which have been made available for this cause, a total of three million dollars is needed to complete the necessary work.

Recognizing the importance of OHH and the need for additional nongovernment funding, a group of prominent American business and professional men in Saigon formed the Operation Helping Hand Foundation in March of last year as a means of collecting private donations for this cause.

To date, over $43,000 has been contributed to the foundation, and an additional $40,000 in assorted material and equipment has been collected and shipped to the Republic of Vietnam through Project Handclasp. But the total goal of three million dollars is still a long way off, and a great deal of private support throughout the entire Navy and Marine Corps community is needed in order to reach it.

EQUALLY URGENT is the need for volunteers—both officers and enlisted men—to serve as advisors in Vietnam. Since the need for volunteers was first cited early this year, over 800 officers and 2600 enlisted men have volunteered and many of them are now in training en route to Vietnam. The response has been good, but the need for qualified, motivated volunteers continues.

The Vietnamese Navy needs experience and advice in the areas of preventive maintenance, repair techniques, procurement, storage and issue of spare parts, transportation management, and logistic planning at all levels. While volunteers of all designators and ratings are needed, of particular importance are those officers and enlisted men who are skilled in the areas of logistics and maintenance. Enlisted volunteers are needed in the UT, CE, CM, BU, EA, ET, CS, EM, EN, GMG, RD, SK, and YN ratings, and those Navymen who have previously served in an advisory capacity are particularly encouraged to consider another tour in Vietnam as an advisor.

IN ADDITION to more intensive training (see accompanying page), the Navy ofters special benefits to volunteers for Vietnam advisory duty in order to compensate for the family separation and personal hardships inherent in this duty. Recent approval of responsibility pay for officers serving in certain senior naval advisor billets was a major step forward in this area, and other incentives for both officers and enlisted men are now being considered.

School for Naval Advisors

A new training program for Vietnam-bound U. S. Naval Advisors is now underway at the Naval Amphibious School, Coronado, and the Naval Inshore Operations Training Center at Vallejo, Calif. The program, which began operation on 1 July, is designed to provide "well qualified, highly motivated, trained sailors" to assist in the Navy's role in Vietnamization.

Navy volunteers are trained in one of three advisor areas—operations, staff or logistics—and later assigned to Chief Naval Advisory Group, USMACV for duty.

Those Navymen who volunteer and are accepted for the program already have basic functional skills which will enable them, with training, to become effective advisors capable of passing on their knowledge to their Vietnamese counterparts. They receive instruction in Vietnamese history, religious customs, and in human behavior so that they may better relate to those with whom they'll be working.

Most of the volunteers receive Vietnamese language training, and some—who will be assigned to key jobs—will receive as much as 47 weeks of training.

Volunteers who are accepted for the program are eligible for some special benefits, including:

- An expansion of the Spot and Field Promotion Programs.
- Preferential treatment in choice of next duty station.
- 30 days' leave before and after Vietnam tour.
- Preferential Navy housing consideration within CONUS for their dependents while they are serving in Vietnam.
- Hostile fire pay.
- Income tax exemption.
- 14 days' CONUS leave during the Vietnam tour.

For a complete listing of the benefits available to advisors, see ALL HANDS, June 1971.

Top left: Language training class at the Navy Inshore Operations Training Center. Top center: Volunteers climb ropes during a physical training session. Top right: Communication instruction. Above: Vietnam Advisory Program volunteers receive instruction in the use of the M-60 machine gun. Below: A river patrol boat (PBR) makes a patrol run during training at the center.