

NAVAL AVIATION

NEWS

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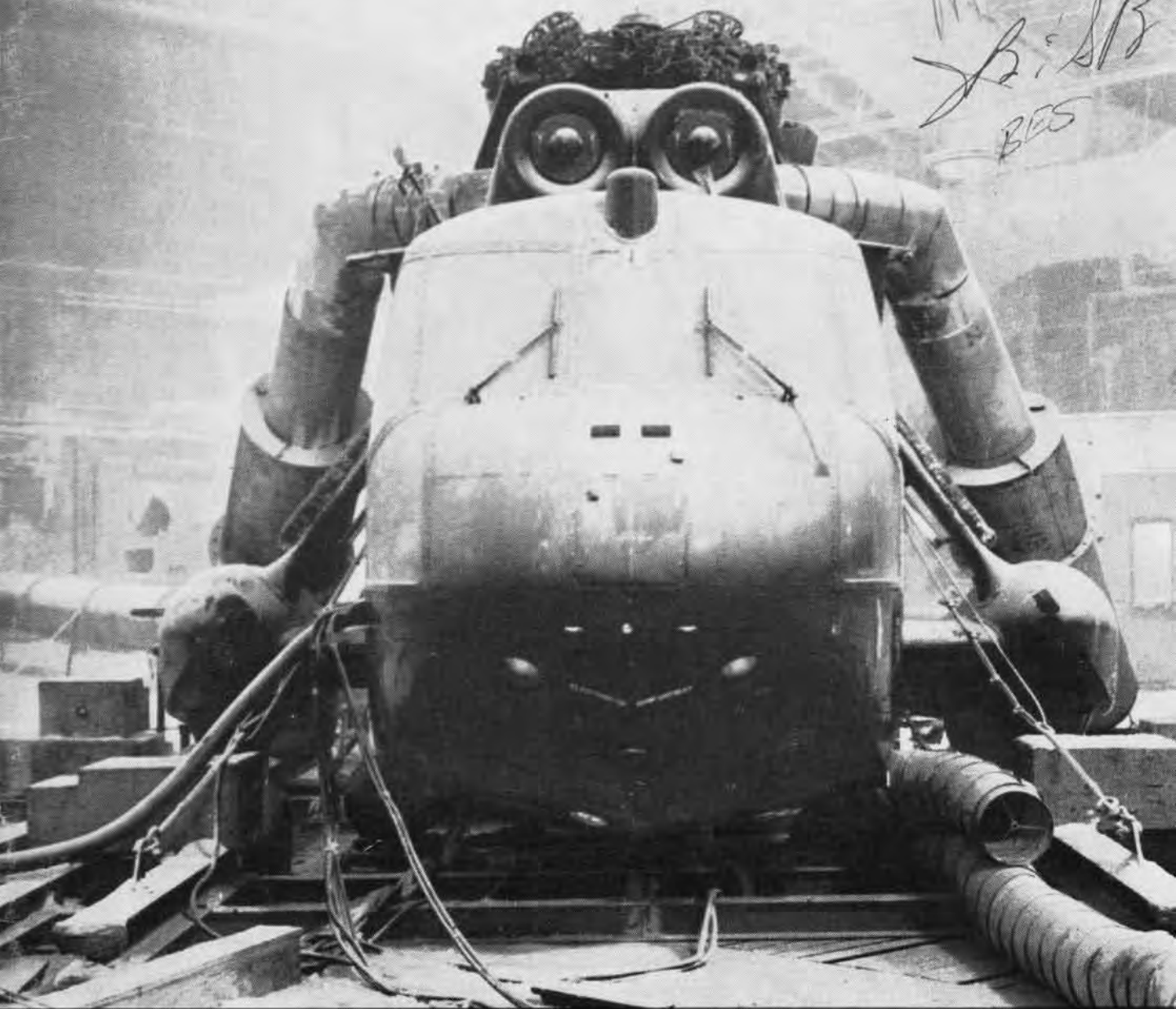
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43rd Year of Publication

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BERTHPPLACE OF BEHEMOTHS

Almost as long as Manhattan's highest skyscraper is tall, USS Constellation (CVA-64), one of the newest attack carriers to join the Fleet, moves slowly along New York City's East River on her way to the Naval Shipyard. When commissioned on 27 October 1961, Constellation became the 136th U.S. ship to bear the carrier designation. The evolution of the carrier is subject of a series authored by Naval Aviation News' Scot MacDonald, the first of which appears in this issue.

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■ COVER

Not all good Navy helicopters at AF bases wind up like this, but it happened to this HSS-2 at Eglin in a cold weather test conducted by Naval Air Test Center at Florida base. Originally entitled, 'Aviation's Gog,' picture was taken by J.H. Albrecht, PHA-2.

Issuance of this publication was approved by the Secretary of the Navy on 3 April 1961

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NAVAL AVIATION NEWS

VFAW-3's Special Insignie Norad Unit Wears Air Defense 'A'

All-weather Fighter Squadron Three, based at NAS NORTH ISLAND, has the special distinction of being the only Navy squadron authorized to wear a "foreign service" distinguishing mark on the right sleeve of their naval uniforms. The device is the Air Defense "A," an Air Force award to outstanding interceptor units of the North American Air Defense Command.

Having won the "A" for the third



WAVES HELP YEOMAN SEW ON PATCH

consecutive year as the only Naval squadron under the operational control of NORAD, VFAW-3 personnel received special permission to wear the emblem from Vice Admiral William R. Smedberg, III, the Chief of Naval Personnel.

VP-49 Spotted Space Can PSM Watched Descent, Called DD

VP-49 reports a "non-routine" occurrence on a patrol flight out of Bermuda 29 November. At 1425 Cdr. H.C. Hansen, pilot of a PSM-28, spot-

ted a craft parachuting from space.

Cdr. Hansen orbited the descending object until it entered the water at 1429, then marked the spot and summoned USS *Stormes* (DD-780) cruising 30 miles away. The spacecraft was hoisted aboard *Stormes* at 1549.

After being warned of his rights, the space monkey refused to make a statement. However, he was tentatively identified as Enos and his craft as NASA's *Mercury Atlas-Five* capsule.

Legion Honors VAdm. Pirie Gives Him Hawks Memorial Plaque

VAdm. Robert B. Pirie, DCNO (Air), received the 22nd annual Frank M. Hawks Memorial Award from Maxwell A. Kriendler, Vice Commander, Air Service Post 501, oldest aviation post in the American Legion, during a dinner at the Lotus Club, New York City, on 7 December.

The award is presented annually to an outstanding figure in aviation. It was given to Adm. Pirie for his contributions to the advancement of Naval Aviation.

A distinguished guest at the presentation was VAdm. Charles Wellborn,



PLAQUE IS PRESENTED TO VADM. PIRIE

Jr., Chairman, U.S. Delegation, Military Staff Committee to United Nations.

The award has been given to such leaders as Igor I. Sikorsky, Gen. Hoyt Vandenberg, Jacqueline Cochran, Robert B. Anderson, and DeWitt Wallace.

Three Nations Cooperate Exercise 'Cross Deck' Carried Out

For a three-week period, Attack Squadron 52, commanded by Cdr. A.R. English, participated in exercises involving three different nations.

Stationed aboard USS *Ticonderoga*, VA-52 participated in exercise "Cross Deck" with the British aircraft carrier HMS *Victorious*. After thorough checks to insure the safety of the operation, VA-52's AD-6 *Skyraiders* landed on the British carrier while the *Gannets*, their British counterparts, landed on the *Ticonderoga*. Checks were then run with the visiting aircraft to determine the exchangeability of fuels, weapons and maintenance procedures.

A short stopover was made in Hong Kong on their way to Formosa where VA-52, along with aircraft of Carrier Air Group 5, flew simulated strikes against the Chinese Nationalist air defenses. While aboard the *Ticonderoga*, officers of the Chinese Nationalist Air Force observed the maneuvers.

The *Ticonderoga* then headed for the Philippines where VA-52's aircraft joined the aircraft of the Republic of the Philippines in celebrating Philippine Aviation Week. The AD-6's participated in air shows at three widely separated air fields and also supplied a major portion of the fire power in a demonstration held for newsmen visiting aboard the *Ticonderoga*.

Winners of the NavAirPac Battle E Pennant, VA-52 will be stationed at NAS MOFFETT FIELD late this month.

U.S. Air Force Chooses F4H Will be Used for Reconnaissance

The U.S. Air Force has chosen the F4H Phantom II instead of its own F-105 for use as a tactical reconnaissance fighter.

USAF said it was ending design studies aimed at adapting the 1500-mph F-105 to reconnaissance missions.

A reconnaissance version of the F-411, to be designated the RF-110, will be produced by the McDonnell Aircraft Corporation.

In November, the Phantom II set a new world jet speed record of 1606.324 miles per hour. The reconnaissance version of the Phantom probably will be slower than the fighter type, since it will be loaded with equipment needed in its reconnaissance work.

A2F Shows Off Capability Coast-to-Coast on Internal Fuel

The Grumman A2F Intruder's long range flying capability was demonstrated recently when LCdr. C.P. (Bud) Ekas landed at Peconic River, Long Island, N.Y., with a 'comfortable fuel reserve' aboard the twin-jet attack aircraft after its first non-stop trans-continental flight from NAS NORTH ISLAND, San Diego. The Grumman Intruder made the 2250 nautical-mile flight solely on internal fuel, without the benefit of refueling, drop or wing tanks.

Cdr. Ekas, A2F Project Officer at BUWEPs, was returning from a demonstration aboard the carrier USS Kitty Hawk off San Diego. He had flown the Grumman jet to North Island for loading aboard Kitty Hawk, where it was shown on static display along with a number of other current Navy aircraft in connection with ASW and attack exercises held aboard for government officials during the cruise.

The flight home to Peconic was made at cruise altitude, which is in excess of 35,000 ft. Time from take-off to touch-down was about 4¾ hrs.

Jax Picks Best Instructor Will Compete in 'Schoolmaster' Test

In the annual NATTU search for "Instructor of the Year," Jax has selected David L. Patton, AE1, of the Aviation Electrician's Mate Class (A) School, to represent that Unit in the



AT FIRST GLANCE, this looks like a photograph of a "street that leads to nowhere." A second glance however, proves it to be the aft end of the flight deck of the carrier Enterprise (CVAN-65), towering over the waterfront of Newport News, Va. Squad of Marines adds to the illusion.

NATTC contest to determine the "Schoolmaster of the Year." Patton was picked from three competing finalists.

Patton received a silver cup award and a letter of commendation. He continued to Memphis, entering another contest which will determine NATTC's "Schoolmaster" titalist.

Akers New 'Grey Eagle' Succeeds to Adm. Brown's Title

RAdm. Frank Akers, Commander of Fleet Air, Alameda, Calif., was awarded the "Grey Eagle" Trophy during the Navy League's Regional Convention at Coronado, Calif., on 11 January 1962.

The trophy was presented by Adm. C.E. "Cat" Brown, the first to hold the title. Adm. Brown received the trophy 25 January 1960. He retired from active duty 31 December.

Donated to the Navy by the Chance Vought Corporation, the Grey Eagle Trophy recognizes the Naval Aviator on active duty who has held his aviation designation longer than any other individual.

Adm. Akers, in addition to his job as Commander, Fleet Air, Alameda, is also the Commander, Naval Air Bases, 12 ND. He was designated a Naval Aviator on 11 September 1923 and has served in aviation billets continuously since that time.

In his early days of flying, Adm. Akers was instrumental in the development of an instrument landing sys-

tem adaptable to carrier use. On 30 July 1934, after months of experiments and testing, the then-Lt. Akers was told that the carrier Langley was somewhere within 150 miles of San Diego. His job was to locate the ship by instruments and land aboard the carrier at sea. Taking off from the naval air station with his cockpit securely hooded, he found the carrier and landed completely by instruments, engaging the number four arresting wire.

Adm. Akers will retain possession of the title until his retirement from active duty, at which time the Grey Eagle Trophy will be passed to the most senior aviator on active duty with the earliest Naval Aviator designation number.

'Navy's Safest' Flies On VT-3 Passes 75,000th Safe Hour

Training Squadron Three, claiming title as the "Navy's safest," logged its 75,000th accident-free hour in mid-November.

In accumulating its outstanding flight-safety record, VT-3 has received every safety award for which it is eligible. It has received the Chief of Naval Operations' safety plaque four years running and holds the CNA-BaTra quarterly safety award. It has also received special commendations from CNABaTra and North American Aviation for the first 50,000 of VT-3's 75,000-plus accident-free hours.

Cdr. Ray Stacy is VT-3's skipper.



GRAMPAW PETTIBONE

Hairy Hurry

A young RAG pilot manned an FJ-4B for a night carqual launch. As he lit off the engine and checked the gauges, he figuratively kept his fingers crossed hoping this was a good one, for it was the third plane he'd preflighted for this hop. A tug driver had run into the wing of the first one, the second was downed for gripes, and now this looked like the last try.

The fuel gauge showed only 1200 pounds total fuel but 1400 pounds in the sump! Something was wrong—he should have 2500 pounds in all! Calling the tower, he asked to be struck below for a check. The tower told him he could launch for one trap and then go below if it were still required. He decided to try it.

Motioning to the taxi directors who were taking him to the elevator, he pointed to the catapult. Understanding he was now O.K., they guided him over to it. He spread his wings on signal as he taxied into position, made a quick check of the cockpit, tried to spot his red wing flags with his red-lensed flashlight, couldn't see a thing, hurriedly rechecked the cockpit, turned up on signal, flicked his lights and was shot off. As the catapult fired, one of the squadron plane checkers was frantically shouting and giving a "thumbs down." Wing flags were UP.



The FJ-4B's nose rotated normally as it passed off the bow but then started into an increasing right bank! The starboard wing was folding! The pilot, who had not seen this soul-shattering sight, tried to apply left stick to bring the wing up. It wouldn't move. He ejected immediately, altitude about 100 feet, level flight, right wing down about 20°!

The Martin-Baker seat performed as advertised. He tumbled forward one turn, and the parachute deployed while he was still ascending feet first and his back to the water. He had only time to unfasten his oxygen mask before he hit the water and the chute collapsed around him.

Carefully picking the entangling shroud lines away, he inflated his Mae West, lit a flare, and after only 10 minutes in the water was picked up by the plane guard destroyer's boat. He was grounded 10 days for back muscle strain. Lucky gent!



Grampaw Pettibone says:

Bust your britches! This eager beaver nearly hurried himself to death. He forgot to lock manually the wings and to "wipe" the controls as a double check. Things go at a pretty fast tempo during normal carrier ops, but carquals are not the time to set launch or landing interval records.

This catapult officer better take a hard look at his procedures before someone takes a hard look at him. A plane is **NOT** automatically UP 'till someone signals it DOWN. Just the opposite. He must get an UP from specifically designated checkers in 1, 2, 3 order or **IT CAN'T GO!**

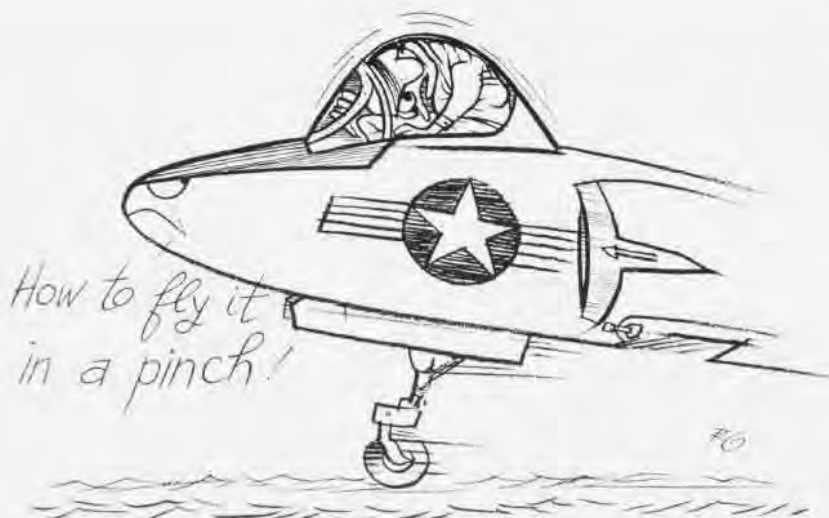
Tight Squeeze

A carrier pilot had been flown in to the beach to pick up an A4D-2N which had undergone some corrosion control work at a commercial aircraft plant. His assignment was to return it to the CVA.

He preflighted the plane himself, stowed his navigation bag on the starboard console (a tight fit, for there's not much spare room in the A4D-2N), got his operational clearance, took off and flew on out to the ship like the experienced man he was—no strain.

Given an immediate "Charlie" time, he broke overhead for a landing. As he reached 600 feet and 140 knots with everything down and coming abeam of the ship, he raised the seat for better visibility.





*How to fly it
in a pinch!*

As he raised the seat all h--- broke loose in the cockpit! The lap belt cartridge fired with what seemed a tremendous blast, releasing him from the seat. The seat separation bladders then inflated and jammed him upward against the canopy! Almost helpless in the cockpit he managed to pull out his survival knife and stab the uppermost bladder, punctured it, and then fell back into the seat as the bladders deflated.

Now firmly seated and without any restraint harness whatever, he faced an arrested landing with its inherent tremendous decelerations.

He informed the ship of his problem and continued his approach with meatball centered, airspeed and angle of attack right on the mark and made a normal arrestment—normal, that is, except for feet planted firmly on the rudder pedals and elbows braced against the sides of the cockpit!



Grampaw Pettibone says:

Bless his quick-thinkin' hide! I'd like to have about 15 young fellows like this in my outfit and I'd take on all comers! First of all, though, I'd teach the whole gang you gotta preflight a plane like you were BUYING it.

The ejection seat harness release rear guard was secured only by the upper bolt and was swiveled to the UP position. This left the actuator firing pin exposed. His Nav bag was firmly wedged in against the exposed seat. Raisin' the seat did the rest.

Our maintenance crews are the best there are and sometimes a topnotch plane captain kinda spoils a pilot—he tends to rely on him pretty heavily. But, when away from home, inspect it like

a bunch of saboteurs had been working it over. You'll live longer that way.

Buddies to the End

A couple of lieutenants flew a T2V-1 from their southwest base to the West Coast, landed and refueled at a large naval air station and then took off for the trip home.

They cruised the sturdy trainer at 40,000 feet. All went well until the pilot up front, who was flying it, eased the throttle back to commence an idle descent to the home field. The engine unwound rapidly, a flame-out! No sweat yet, although the mountains underneath stuck up to about 13,000 MSL everywhere. On the way down several relights were attempted, all unsuccessful. The engine was a real deadie.

At 15,000 feet and with the mountain peaks uncomfortably close the front seat pilot informed the rear seat man they had to eject and after get-

ting a roger disconnected radio and oxygen leads and yanked the curtain HARD. NOTHING HAPPENED! The canopy didn't even jettison! Several more hard pulls brought no results, so he tried the canopy jettison handle—still unsuccessful. By this time they had reached 12,000 feet, down among the peaks, and plugging back in again, he informed the rear seat man the front seat wouldn't fire and he'd have to ride it down all the way.

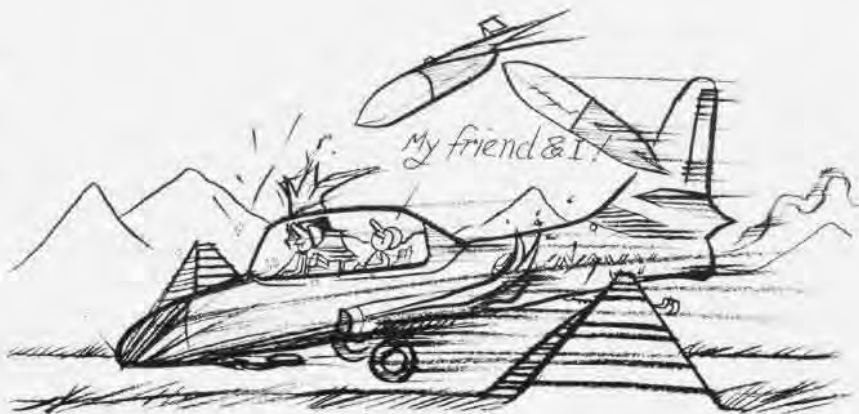
The rear seat man decided the mountains were too close for ejection and decided to ride it down too!

The pilot spotted a paved highway below and setting up an approach for a deserted stretch, set the T2V on, gear and flaps down, at 120 knots. The nose gear collapsed soon after touchdown and as they whizzed along the road nose down both wings were sheared outboard of the flaps by the posts of a cattle guard alongside the pavement. The T2V slid off the road into some soft dirt and finally stopped. Still unable to open the canopy, both pilots, uninjured, hacked their way through the plexiglas with their survival knives.



Grampaw Pettibone says:

Sufferin' catfish! This man gave up too soon! You can crank the canopy open and let the slipstream carry it away or use the alternate ejection handle and go through the glass. Although they came out of it smellin' like a rose, most anything is better than riding it down in the mountains. The rear seat man really had confidence in his buddy. With zero lanyard attached (and it should be there), his seat and auto equipment would have given him a blossomed chute 200-400 feet below ejection altitude, gliding as they were.





CLIMAX TO A YEAR in which Navy pilots broke ten world records, these three latest record breakers, Capt. B.K. Lloyd, Cdr. E.J. Roulstone and Cdr. G.W. Ellis, were decorated with Distinguished Flying Crosses by the Chief of Naval Operations, Admiral George W. Anderson, Jr.

THE 1961 NAVAL AVIATION REVIEW



USS ENTERPRISE, world's largest ship and first nuclear-powered carrier, underway from Newport News bound for open water and her sea trials off the Virginia Capes. VIP observers were returned to the mainland in TF Traders, first aircraft to launch from her deck.

THE YEAR 1961 was the Golden Anniversary of Naval Aviation. From January to December, it was filled with commemorative ceremonies and reunions honoring men and places prominent in naval air history and closely associated with its being and growth. But the year was more than a series of nostalgic reminders of the past. It was also a year in which Naval Aviation attained new stature as impressive additions to its operating forces augmented both their strength and their offensive capability.

The nuclear-powered *Enterprise* and two newly constructed carriers of the *Forrestal* class were placed in commission—perhaps the greatest single array of air might ever added to any fleet in any one year of history. Two new aircraft, fully accredited by their performance as better than the world's best, were assigned to attack carrier squadrons. A new helicopter, equally well accredited, was assigned to fleet anti-submarine forces. The first ship designed and built for Marine helicopter assault operations, was commissioned. One attack carrier and one anti-submarine carrier, with air groups for each, were authorized additions to the total carrier operating strength.

Expansion of the country's total defense structure after mid-year, as the President and the Congress took a strong stand in an apparently deteriorating international situation, permitted an increase in aircraft procurement that would slow the downward drift of the aircraft inventory of the past several years. Their decision also to extend active duty tours and to mobilize selected Reserve units bolstered the operating forces and raised the total personnel strength of the Navy's air arm.

It was also a year in which sustained tension and unrest throughout the world kept fleet units on the alert in both oceans. Harsh accusations, thinly-veiled threats and proud boasts of national prowess made headlines and fed upon themselves to create yet other pronouncements, charges and counter charges. Although the principal focus of attention seemed to fall on the divided city of Berlin, there were riots and demonstrations, uprising, incidents and small wars in both hemispheres. The Congo, north Africa, south Africa, the Dominican Republic, Cuba, Laos and Vietnam all shared the spotlight of world attention at one time or another and crowded the agenda of an already overworked United Nations Security Council.

And it was a year in which man made his first flights into space. The Soviet Union was the first to put a man in orbit, completing a single turn about the earth on the first flight and seventeen turns on the second. The United States sent two men into space on successful sub-orbital flights and successfully completed the preliminaries to manned orbital flight. Twenty-three new satellites placed into orbit during the year by the United States, not only indicated our increased capabilities in rocketry but also progressively broadened our knowledge of space. Among them, the weather and navigation satellites *Tiros* and *Transit* sent back continuous streams of data which had immediate application and were put to practical use for life on this earth.



USS KITTY HAWK, CVA-63, was first carrier armed with Terrier air defense missiles. Commissioned in April, she rounded the Horn in September for operations with Pacific Fleet.



USS CONSTELLATION, CVA-64, sixth carrier of the *Forrestal* class and second to be armed with Terrier missiles, was placed in commission at New York Naval Shipyard on 27 October.

As the year began, the United States and Cuba broke off diplomatic relations; the security of our base at Guantanamo became a subject of speculation. Existence of a missile gap was affirmed, denied and studied. A new President took office, and a new Cabinet was sworn in. The world was startled, indignant and somewhat intrigued by an act of piracy on the high seas. Trouble in the Congo was aggravated by demands for UN withdrawal. The Seventh Fleet projected U.S. policy in the Southwest Pacific during crisis in Laos. The President called for volunteers to man a Peace Corps.

JANUARY

1—Operational control of ComFairWingsLant and all but one of its subordinate fleet units was transferred from ComNavAirLant to ComASWLant.

10—A *Polaris* missile of the advanced A-2 design, was fired from Cape Canaveral 1600 miles down the Atlantic Missile Range. It was the third success in as many firings for the *Polaris* A-2 designed to operate at a range over 1700 miles.

11—Frederick C. Sherman Field was dedicated at Auxiliary Landing Field (ALF) San Clemente Island in honor of the late Adm. Sherman, Naval Aviator, three-time winner of the Navy Cross and renowned leader of Carrier Task Groups during World War II.

25—A ball at the Sheraton Park Hotel in Washington marked the beginning of a year of special events celebrating



WORLD'S FASTEST combat plane is F4H Phantom II. A plane of VF-114, first to operate Phantoms in the Pacific, lands on USS Coral Sea.

the Fiftieth Anniversary of U. S. Naval Aviation.

31—A Marine Corps helicopter made an at sea recovery of a Mercury capsule, bearing the chimpanzee Ham, after it had completed a 15-minute flight reaching 155 miles high and 420 miles down range. The capsule was launched by a Redstone rocket from Cape Canaveral in a preliminary test for a space flight by one of the Mercury Astronauts.

During the month VAH-13, CVSG-57, VS-35, VS-37 and HS-2 were commissioned; ZW-1 was redesignated ZP-1.

FEBRUARY

1—The Space Surveillance System (SPASUR) at the Naval Weapons Laboratory, Dahlgren, Va., was commissioned under command of Capt. D. G. Woosley, USN, and the control of the North American Defense Command.

21—The navigation satellite *Transit III B*, carrying *Lofti* pickaback, was put into orbit by a *Tbor-Able-Star* rocket fired from Cape Canaveral. Improper burning of the second stage and its failure to separate from the payload prevented achievement of the planned orbital path.

MARCH

2—The fourth firing of an advanced *Polaris* and the first from a ship, was made from the USS *Observation Island* as she cruised 10 miles offshore Cape Canaveral.

15—The first CV-1 tankers and assault transports were accepted and delivered to Marine In-Flight Refueler/Transport Squadron VMGR-353 at MCAS EL TORO, California.

30—The first production model of the Lockheed P3V-1 antisubmarine patrol plane made its first flight and on the same day was named the *Orion*.

In March, ALF KISARAZU was activated in Japan.

Early in the second quarter manned space flight was successfully achieved. Castro repelled an invasion by Cuban patriots, then offered prisoners for tractors. Trouble broke out again in Algeria and fighting resumed in Laos. Ships of the Atlantic Fleet patrolled off the Dominican Republic after assassination threatened open revolt. Threats of a separate treaty with East Germany did not ease the tension that was fast building up over Berlin.

APRIL

9—A C-130B1 *Hercules* of VX-6, piloted by Cdr. L.E. Newcomer and specially manned, landed at Byrd Station, Antarctica, on a mission to evacuate Soviet exchange scientist, Leonid Kuperov, who was suffering from an acute abdominal condition. The flight was the first to pierce the winter isolation of the Antarctic continent.

17—An agreement was reached between the Air Force and the Navy by which the Military Air Transport Service would provide mobilization training for 12 transport squadrons of the Naval Air Reserve Training Command.

21—Overhaul and Repair Facilities at NAS CORPUS CHRISTI were transferred to the U.S. Army for use in its aviation maintenance program.

25—Completion of training in the F4H-1 *Phantom II* by VF-121 and Detachment Able of VF-101 at NAS MIRAMAR, marked the readiness of *Phantom II* for the Fleet.



CARRIER ATTACK plane, A3J Vigilante, assigned to VAH-3 in mid-year, marked first operational use by fleet heavy attack squadrons.

25—The Navy announced termination of a contract which ended development of the *Eagle-Missileer* system.

29—The USS *Kitty Hawk*, CVA-63, was commissioned at Philadelphia, Capt. William F. Bringle, commanding.

In April, the Pacific Missile Range Facility, Hawaiian Area, was commissioned; VW-15 was decommissioned.

MAY

4—A world record balloon altitude of 113,733 feet was reached in a two-place open gondola *Stratolab* flight by Cdrs. Malcolm D. Ross and Victor A. Prather. Launched from the USS *Antietam* off the mouth of the Mississippi, the balloon reached its maximum altitude two hours and 36 minutes after take-off 136 miles south of Mobile, Ala. The balloon was the largest ever employed on manned flight.

5—Cdr. Alan B. Shepard became the first American to go into space as he completed a 15-minute flight reaching 116 miles high and 302 miles down range from Cape Canaveral. His space capsule, *Freedom 7*, was launched by a Redstone rocket and recovered at sea by a Marine Corps helicopter which transported it and Cdr. Shepard to the flight deck of the USS *Lake Champlain*.

17—An HSS-2 helicopter flown by Cdr. Patrick L. Sulli-

van and Lt. Beverly W. Witherspoon, set a new world class speed record of 192.9 mph for three kilometers at Bradley Field, Windsor Locks, Conn.

23—The Maritime Air Task Force was established as a ComFairWingsLant command within the ASW Force, Atlantic Fleet, to direct long-range, shore-based anti-submarine operations off the East Coast and in the Caribbean.

24—Three *F4U Phantom II* fighters competing for the Bendix Trophy bettered the existing record for transcontinental flight from Los Angeles to New York. The winning team of Lt. R. F. Gordon, pilot, and Ltjg. B. R. Young, RIO, averaged 870 mph on the 2421.4 mile flight and set a new record of two hours, 47 minutes.

24—Cdr. P. L. Sullivan and Lt. B. W. Witherspoon, flying an HSS-2 helicopter set another new world class speed record with a mark of 174.9 mph over a 100-kilometer course between Milford and Westbrook, Conn.

During the month, VAH-10 was commissioned.

JUNE

1—Ships of the Second Fleet, including the carriers *Intrepid*, *Shangri-La* and *Randolph*, were ordered to stand by off southern Hispaniola when a general uprising seemed about to follow the assassination of President Trujillo of the Dominican Republic.

15—The President presented the Collier Trophy for 1960 to VAdm. William F. Raborn, for his dynamic leadership, initiative and resourcefulness in directing the development of the *Polaris* Fleet Ballistic Missile.

16—The first A-3J-1 *Vigilantes* to be assigned to the Fleet were accepted by HATWing One at NAS SANFORD, Fla.

21—The Secretary of the Navy approved plans for terminating the lighter-than-air program that would decommission all operational units by November, put eight of the ten remaining airships in storage and inactivate the O&R shop at Lakehurst. Thus ended a 44-year LTA saga that began with the DN-1, the Navy's first airship.

26—As the Progressive Aircraft Rework concept of aircraft maintenance increased the volume of ferry traffic and created a need for closer cost supervision, ComNav-AirLant was assigned operational control, to be exercised through Aircraft Ferry Control Squadrons 31 and 32, over



NEW CRUSADER F8U-2NE, has improved radar and missile capability. First of the production models began flying early in November.



PRODUCTION model of the anti-submarine P3V, aptly named *Orion* after the hunter of Greek mythology, made its first flight in late March.

all ferry movements of naval aircraft except those overseas and movements within local operating areas.

29—The navigation satellite *Transit IVA* was put into a nearly circular orbit at about 500 miles by a *Thor-Able-Star* rocket fired from Cape Canaveral. Although *Greb* and *Injun* satellites riding pickaback did not separate from each other, both operated satisfactorily. The generator in *Transit* made the first use of nuclear power in space.

During June NAS OAKLAND, NAAS PORT ISABEL, NAAS BROWN FIELD, NAF OPPAMA and Aircraft Modification Unit, Willow Grove were disestablished; Naval Air Engineering Facility (SI) became a Laboratory.

As international tension over the fate of Berlin increased to the near breaking point, President Kennedy asked for, and was given, additional funds to strengthen the military forces and to expand the civil defense program. Manned space flight was again achieved. Death of the Secretary General of the United Nations in a plane crash while on a peace mission to the Congo, shocked the world and created new problems for the already harassed members of the Security Council. Testing of nuclear devices was resumed.

JULY

1—Navy pilots completed a year of operation in which three and one-half million flight hours were logged, with an aircraft accident rate 11 per cent below that of the previous fiscal year. The actual reduction was from 1.94 accidents per 10,000 hours in 1960 to 1.71 in 1961.

11—A reproduction of the Navy's first airplane made its first flight at NAS NORTH ISLAND. Cdr. Don Germeraad piloted the new A-1 on this and all its subsequent flights.

13—VAdm. David L. McDonald relieved VAdm. George W. Anderson, Jr., as Commander Sixth Fleet and Commander Naval Striking Forces, Southern Europe.

21—Capt. Virgil I. Grissom, USAF, became the second American man in space as he completed a 15-minute, 118-mile high flight, 303 miles down the Atlantic Missile Range. Premature blow-off of the hatch cover caused flooding and made it impossible to recover the capsule, but Grissom was

picked up by the recovery Marine helicopter and delivered safely to the carrier *Randolph* of the Recovery Force.

During the month NAS LEMOORE, NAAS MERIDIAN, and VA-64 were commissioned; NAF KEFLAVIK was disestablished, VW-2 was decommissioned, the USS *Valley Forge* was reclassified as LPH-8; VCP-61 was redesignated VAP and VCP-63 became VFP; Brown Field became an ALF to NAS NORTH ISLAND.

AUGUST

1—Adm. George W. Anderson, Jr., relieved Adm. Arleigh A. Burke as Chief of Naval Operations.

4—Thirty-eight units of the Fleet, Training Command and the Air Reserve were cited for their outstanding safety records and awarded Flight Safety Awards for 1961.

10—The NASA-USAF-USN research aircraft, the X-15, was flown by Cdr. Forrest S. Petersen to a speed of 2270 mph with its new XLR-99 engine.

11—USS *Kitty Hawk*, CVA-63, left Norfolk for passage around the Horn and duty with the Pacific Fleet.

Williams located the shipwrecked sailors of the Icelandic fishing vessel *Sleipnir* adrift in a raft and remained until six survivors were picked up by the USS *Kretchmer*.

6—Adm. Dewitt C. Ramsey, Naval Aviator 45, died at the Naval Hospital, Philadelphia.

11—Task Force 135 commanded by RAdm. F. J. Brush, composed of the carriers *Shangri-La* and *Antietam*, two destroyers, an attack transport and two fleet tugs, was ordered to the Galveston-Freepport area of Texas for disaster relief operations in the wake of Hurricane *Carla*.

13—Navy and Marine units of the *Mercury* Recovery Force successfully located and recovered an unoccupied space capsule after the first *Mercury* orbital test.

26—RAdm. David M. Tyree arrived at McMurdo Sound in a C-130 *Hercules* of VX-6, marking the official opening of *Deep Freeze '62*.

29—A modified *Polaris* missile, testing a revolutionary thrust-control system, scheduled for use in the third generation of *Polaris*, was fired successfully from Canaveral.

In September ComFAirAlaska was established; CVSG-62,



AMERICA'S FIRST astronaut, Cdr. Alan B. Shepard, wears his unique Wings of Gold.



BENDIX Trophy winners Gordon and Young crossed the continent in less than 3 hours.



CDR. P.L. SULLIVAN and Lt. B.W. Witherspoon set speed records in an HSS-2 helicopter.

20—A four-cent U.S. Postage Stamp commemorating the Fiftieth Anniversary of Naval Aviation went on first day sale by the Postmaster at San Diego, California.

20—The field at NAS NORTH ISLAND was named Halsey Field in honor of the late Fleet Admiral William F. Halsey, Naval Aviator and famed leader of the Third Fleet in World War II.

28—Lt. Hunt Hardisty, pilot, and Lt. Earl H. DeEsch, RIO, flew an F4H *Phantom II* over the three-kilometer course at Holloman AFB, New Mexico, and averaged 902.769 mph for a new low altitude speed record.

In August CVG-13 and its component squadrons VF's-131, 132, and VA's -133, 134 and 135 were commissioned.

SEPTEMBER

1—Task Group *Delta*, commanded by ComFairWingslant and composed of VP-24 and a detachment of VP-45, was established under ComASWFor, Atlantic Fleet to permit special emphasis on the improvement of patrol plane unit capability in combatting submarines.

5—A WV-2 of VW-11 commanded by Cdr. W. G.

VS-20, VS-42 and HS-13 were placed in commission.

The clash of views over Berlin became more serious, physical barriers were strengthened and escape routes cut off. More troops were sent overseas, selected Reserve units were mobilized. A North American air defense exercise grounded all non-military aircraft for 12 hours. Trouble flared up again in the Dominican Republic, more blood was shed in the Congo as trouble broke out anew. Some agreement was reached over the situation in Laos. The President made a good will visit to South American countries.

OCTOBER

1—Five patrol squadrons and 13 anti-submarine squadrons of the Naval Air Reserve reported for active duty.

15—VAdm. William A. Schoech relieved VAdm. Charles D. Griffin as Commander Seventh Fleet.

16—The Astronautics Operations Division, Op-54, with mission, functions and personnel, was transferred from the

Office of DCNO(Air) to Op-76 of the Office of DCNO (Development).

18—VAdm. Fitzhugh Lee relieved VAdm. Robert Goldthwaite as Chief of Naval Air Training.

23—The *Polaris A-2* was fired from underwater for the first time as the USS *Ethan Allen* fired it 1500 miles down the Atlantic Missile Range.

24—A small *Aerobee* liquid-fuel rocket was fueled and successfully fired from the water at Point Mugu in a test which demonstrated new possibilities for launching rockets from the open sea.

27—The USS *Constellation*, CVA-64, the sixth carrier of the *Forrestal* class, was commissioned at New York Naval Shipyard, Capt. Thomas J. Walker, commanding.

30—First air operations were conducted by the USS *Enterprise* during her sea trials off the Virginia Capes as LCDr. Oscar Folsom of VR-40 piloted the first of three *TF Traders*, transporting VIP's to the mainland.

31—RAdm. William I. Martin relieved RAdm. Arnold W. McKechnie as Chief of Naval Air Reserve Training.



RECORD BALLOON flight from *Antietam* in May followed a test flight in which the balloon not only took off but also landed on the deck.



LATEST VERSION of the Skyhawk, A4D-5, has versatility as a weapons carrier and added performance. It made its first flight on 12 July.

31—Fleet Airship Wing One and Patrol Squadrons ZP-1 and -3, the last operating units of the LTA branch of Naval Aviation, were decommissioned at NAS LAKEHURST.

NOVEMBER

6—The aircraft carrier *Antietam* left British Honduras for Pensacola after four days of relief operations following hurricane *Hattie*. Helicopters, from Training Squadron 8 and Marine Squadron 264, carried over 57 tons of food, water and medical supplies and transported medical and other relief personnel to the people at Belize, Stann Creek and other points hit by the hurricane.

15—A *Transit IVB* carrying a Transit Research and Attitude Control (TRAAC), was launched into orbit by a *Thor-Able-Star* rocket fired at Cape Canaveral.

20—The field at NAS LEMOORE, Calif., was dedicated and named Joseph Mason Reeves Field in honor of the late Adm. Reeves, Naval Aviation Observer and farsseeing pioneer in the tactical employment of carriers and aircraft.

22—An F4H *Phantom II* piloted by LCol. Robert B. Robinson, USMC, claimed a new world speed record in



HSS-2 SEA KINGS of HS-10 on a transcontinental flight from Key West to their home base at Ream Field averaged 132 knots ground speed.



HERCULES C-130B of VX-6 at Byrd Station, on a special evacuation mission, was first flight to pierce winter isolation of Antarctica.



MARINE'S NEW TURBOPROP GV-1 Hercules refuels two A-1J attack jets. An aerial tanker of over 10,000-gallon capacity, the GV also has

assault transport capability and can airlift 92 Marines. First of the type began service with the Fleet Marine Force, Pacific in mid-March.

runs over a course at Edwards Air Force Base, averaging 1606.324 miles per hour.

25—First nuclear-powered carrier, *Enterprise*, commissioned at Norfolk, Capt. V. P. dePoix commanding.

DECEMBER

1—An HSS-2 helicopter, flown by Capt. Bruce K. Lloyd and Cdr. E. J. Roulstone laid claim to three new world speed records over a course along Long Island Sound between Milford and Westbrook, Conn., with performances of 182.8 mph, 179.5 mph, and 175.3 mph for 100, 500 and 1000 kilometers, respectively.

5—Cdr. George W. Ellis piloted an F4H *Phantom II*

on another world record attempt, surpassing the existing record for altitude sustained in horizontal flight with a height of 66,443.8 feet over Edwards Air Force Base.

6—In a joint Air Force-Navy ceremony, new pilot-astronaut wings were pinned on America's first astronauts, Cdr. Alan B. Shepard, USN, and Capt. Virgil I. Grissom, USAF. The new design displays a shooting star superimposed on the traditional wings of the respective services.

8—The landing field at NAS ANACOSTIA closed and air traffic control facilities ceased operations.

30—An HSS-2 helicopter flown by Cdr. P. L. Sullivan and Capt. D.A. Spurlock, USMC, at Windsor Locks, Conn., bettered its old three-kilometer record at 199.01 mph.



LAST TAKE-OFF from NAS Anacostia. An R4Y piloted by the station skipper, Capt. Frank D. Heyer, was the last plane to operate from

the field, thus winding up a period of continuous flight operations that began forty-four years before from a small seaplane ramp.

RADAR PIONEER, DR. HOYT TAYLOR, DIES

DR. ALBERT HOYT TAYLOR, an internationally known scientist who for many years was Superintendent of the Radio Division of the U.S. Naval Research Laboratory, died on 11 December 1961 at Claremont, Calif. Interment was at Arlington Cemetery, Va.

His many pioneering achievements encompassed the broad field of electronics. Under his leadership, radar was first developed in the U.S.

Dr. Taylor was commissioned an officer in the U.S. Navy in 1917. During WW I, he organized and served as Superintendent of the Navy's Transatlantic Communication System with headquarters at Belmar, N.J. At the end of the war, Dr. Taylor, having been promoted to the rank of commander, reverted to inactive Naval Reserve status.

In 1919, as a civilian he became head of the U.S. Naval Aircraft Radio Laboratory at NAS ANACOSTIA, Washington, D.C. He directed pioneer work in radio broadcasting which led to one of the first broadcasts in the United States. He was responsible for the development of equipment which led to the first broadcast address of a President of the United States (Harding) and the first radio broadcast of a session of Congress.

Dr. Taylor originated many of the basic radio broadcasting studio techniques in use today. In Washington were accomplished the original demonstrations of the first radio facsimile transmissions in 1921 and the first crude TV transmission across the city in 1922.

Though he was often called the "father of American radar," Dr. Taylor refused to take credit for its development. He said hundreds worked on it and always gave a major share of the credit to an assistant, Leo C. Young.

It was with Young in 1922, that Dr. Taylor noticed the interference with radio waves that was caused when ships on the Potomac passed his laboratory at Anacostia. This observation led to the development of radar.

When the U.S. Naval Research Laboratory was established in 1923, Dr. Taylor became Superintendent of the Radio Division. Under his leadership,



HIS RESEARCH CAREER SPANNED LIFETIME

many achievements were recorded.

Of considerable importance were the original investigations of radio-propagation phenomena in the high frequency band and the original work on quartz-crystal frequency control which led to the practical use of high frequencies for radio communication by the U.S. Navy and commercial interests.

For his pioneering work and the research and experimentation resulting in the discovery and development of radar, President Franklin D. Roosevelt in 1944 awarded Dr. Taylor the U.S. Medal of Merit.

Dr. Taylor was the author of 35 papers on instruments and measurement techniques, radio devices and radio wave propagation. He held 54 patents.

Radar was also developed in England, France and Germany (1935-40). In 1939, the Americans exchanged technical radar information with a British mission headed by Sir Henry Tizard. In this exchange, the Americans gained the cavity magnetron; and the British, the radar duplexer.

The first operational American radar was installed on the USS *New York* (BB-34) in 1938.

Dr. Taylor and his staff provided many scientific achievements which greatly assisted the military forces in winning WW II.

Dr. Taylor retired from the Navy in 1948 after more than 30 years as an officer and civilian scientist. He made his home in California.

HMR(L)-262 Raises Record Passes 10,000th Safe Flight Hour

In early December, Marine Helicopter Transport Squadron 262 passed its 10,000th accident-free flight hour at MCAF JACKSONVILLE, N.C. The momentous hour was flown by the C.O., LtCol. Richard L. Nickerson and copilot Capt. James T. Gordon, present aircraft maintenance officer.

HMR(L)-262 made 4259 day and 735 night carrier landings while accomplishing its safety record. During this period it maintained three detachments in the Mediterranean and for a time one in African waters.

The squadron's helicopters picked up Cdr. Alan B. Shepard, USN, and Capt. Virgil Grissom, USAF, after their sub-orbital *Mercury* flights.

Future of X-15 Announced Flights May Reach 400,000 Feet

The X-15 project, a joint NASA-Navy-Air Force effort, was originally established to gather scientific information on aerodynamic heating, stability and control, structures, operating problems, etc., at speeds up to Mach 6, 250,000 feet altitude and 1200° F. skin temperature.

These limits have now been exceeded or closely approached. The X-15 hit 4093 mph (Mach 6.04) while leading edge skin temperature built up to 1147° F. An October flight reached 217,000 feet, and a flight to 250,000 feet is planned as soon as the windshield has been satisfactorily modified.

With completion of the original X-15 research tasks imminent, NASA has announced plans for future use of the rocket craft.

Approximately 30 flights will be made over the next 18 to 24 months. After installation of a back-up stability augmentation system, expected in March of this year, flights are planned to acquire information between 200,000 and possibly 400,000 feet at speeds from 2000 to 5500 feet per second.

Extension of the program beyond these flights is being considered by the Research Airplane Committee, VAdm. John T. Hayward, USN, MGen. Marvin C. Demler, USAF and Dr. Hugh Dryden of NASA.

Many space experiments have been proposed to use the X-15 as a test bed to obtain information at altitudes from 150,000 to 350,000 feet, above balloon, but below satellite levels.

NROTC Middies to Fly Offer Made at 32 Universities

Selected NROTC seniors are now flying in connection with their university training. Present plans call for offering Flight Indoctrination Program (FIP) training at 32 schools. By late November, contracts had been completed with 26 schools.

The flight course, which will be in addition to the student's regular college program, will be the standard FAA private pilot's course of 35 hours flight and 35 hours ground school training. FAA-approved civilian flight schools will provide the training under contract.

Navy expects solid benefits from the approximately one-quarter million dollars it expects to spend on the program this fiscal year. FIP training cuts in half the number of failures in service flight training, according to Army and Air Force experience with similar programs. Also, the FIP is expected to boost the number of NROTC students volunteering for flight training.

Both contract and regular seniors, both Navy (line) and Marine Corps, are eligible for the FIP training.

Mexico VIP at Whidbey Receives Orientation in ASW

Adm. Manuel Zermeno, Secretary of Marine of Mexico, received an orientation in anti-submarine and heavy attack warfare as he toured the NAS WHIDBEY ISLAND, Wash., in December.

On hand to meet the Secretary and host his tour of the station was RAdm. William A. Stuart, Commander, Fleet Air Whidbey and Capt. James D. Wright, C.O. of Whidbey.

Adm. Stuart pointed out the missions, capabilities and training responsibilities of patrol and heavy attack squadrons based under his command.

Static displays of Whidbey-based aircraft were shown to the Secretary. These included the A3D *Skywarrior* twin-jet bomber; a P2V *Neptune*, and an S2V *Tracker*.

The Secretary was taken inside the Martin P5M *Marlin* as crewmen manned their flight stations and demonstrated anti-submarine tactics. A ready alert exercise was demonstrated by the seaplane Patrol Squadron 47 as they taxied down the ramp into the water and took-off in approximately six minutes.



ADM. STUART AND ADM. ZERMENO, CENTER

In Adm. Zermeno's official party were: VAdm. Luis M. Bravo, Commander General of the Mexican Navy; RAdm. Fernando Magana, Mexican Naval Attaché to Washington; Capt. Gustavo Martinez, Chief of Aides to the Secretary, and Lt. Tomas Ortega, Personal Aide to the Secretary.

Memphis Fire Department Views NAS Fire Fighting Equipment

A committee of Memphis Fire Department officials visited NAS MEMPHIS to view demonstrations of the Navy's aviation fire fighting equipment, comparing it to that in use at the Memphis municipal airport.

The committee's inspection covered the various types of trucks, pumps, and gear used by the station's crash crew. They also saw a demonstration of the rescue of a dummy pilot from a burning plane cockpit and methods used in fighting liquid fuel fires.

Chief W.A. Eubanks, district chief officer, was a member of the committee. He said that some of the information they gathered would be used in preparing a training pamphlet for the Memphis firefighters.

This information will be needed should the Memphis Fire Department take over the responsibility of fire protection at the municipal airport, he stated. At the present time, the airport has its own fire crew manned by government service employees.

New Helos Harry Squadron HMR-161 Makes Two Transitions

HMR-161 has had its troubles in the past year, but despite "the odds," is once again operational.

During the year, the squadron phased out the HUS aircraft. Not only did it get new aircraft, but it underwent a complete turnover in pilots. And, to make the situation just a little bit rougher, the squadron was

deployed from its home air station in the middle of the transition period.

The adoption of HUS helicopters meant sending ground crewmen to mainland U.S. (HMR-161 is based at MCAS KANOEHE BAY) for schooling. Pilots were retrained and qualified aboard aircraft carriers.

Just when personnel of the squadron felt they were no longer in a transition period, turnover time came around and with it, all of the newly qualified pilots were transferred.

HMR-161 then re-entered transitional "status." New pilots arrived in Hawaii and were assigned to the squadron, fresh from NATC PENSACOLA. These pilots trained in the operation of the HUS and were qualified.

Their problems finally ironed out, the squadron took to the air and in August logged 307.5 flying hours, heli-lifted 3931 troops and made 63 practice water pickups. In addition, they carried 14,512 pounds of internal cargo and lifted 9000 pounds.

Weather Head at McMurdo Reviews Meteorological Needs

Meteorologists on the staff of Operation *Deep Freeze '62* have only a few weather stations to report the weather for over five million square miles of the ice-capped continent of Antarctica, compared to the United States' three million plus square miles and over 750 reporting stations.

In December Capt. Sherman W. Betts, head of the U.S. Naval Weather Service, arrived at the Naval Air Facility, McMurdo Sound, hub of U.S. Antarctic meteorological activities and staging point for re-supply of inland U.S. scientific stations. He was the guest of RAdm. David M. Tyree, Commander of Operation *Deep Freeze*.

Capt. Betts made an on-the-spot review of the needs for U.S. weather support for the scientific program.

Two of the main requirements of his review include coordination with the meteorological services of New Zealand and Australia, and the International Antarctic Analysis Center at Melbourne, Australia, as well as ship and air support operations by the U.S. Navy.

During his tour, Capt. Betts visited "old" and "new" stations in Marie Byrd Land, the Beardmore Glacier, the Amundsen-Scott South Pole Station and sites of several automatic, unmanned weather stations.

Clean and Simple System BuWeps Tests Color-Coded Grease

The Navy has had a couple of persistent problems with aircraft grease: contamination—dust, grime, salt spray, etc., getting into the can after it is opened—and people using the wrong kind where specialized grease was needed.

BuWeps is experimenting with a system it hopes will solve both problems. Grease will come in cartridges like fountain pen refills. The cartridges will fit into special grease guns. Grease guns, grease cartridges and grease fittings on the aircraft will all be color-coded to help maintenance men get the right grease in the right fitting.

VF-121 at Miramar, VA-43, which calls Oceana home base and NAS PENSACOLA are evaluating the system. Tests are scheduled to be completed by 1 September 1962.

Midshipmen' Field Trip Corpus Christi Tours Commence

Twenty-four NROTC contract midshipmen arrived at NAS CORPUS CHRISTI from the University of Texas to begin the first three-day aviation field trip of the winter season. Ten other colleges and universities will follow.

The midshipmen are given an accelerated tour of aviation subjects studied by student pilots in the Advanced Training Command.

Each midshipman has the opportunity to take a flight in a single-engine T-34 trainer, a T2V jet trainer, or a multi-engine S2F Tracker. Students are also given lectures on various phases of aviation training. The field trips introduce the midshipmen to Naval Aviation career opportunities.

Schools participating in the program include Stanford University, University of Oregon, Illinois Institute of Technology, University of Mississippi, Ohio State, Northwestern University, University of Oklahoma, University of Idaho, University of New Mexico, and Rice University.

Man-in-Moon Now 'Talks' Ship-Satellite-Shore Signals Sent

Radio signals sent to a ship from shore via the moon in December marked another first in the Navy's role in the space age. The Naval Research Laboratory transmitter at Stump Neck, Md., using a 60-foot, dishpan-

shaped antenna, directed two messages at the moon.

Reflected from the surface of the satellite, the messages were picked up by a 16-foot antenna mounted by NRL aboard the technical research ship USS *Oxford* (AG-159). The messages delivered were originated by Adm. G.W. Anderson, CNO, and Dr. R.M. Page, Director of Research for NRL.

This system is similar to the Navy's Communication Moon Relay System which has been carrying regular two-way radio traffic between Washington, D.C., and Hawaii for over a year. However, the shipboard antenna is necessarily smaller than the large equipment employed by shore-based CMR stations and its communication capacity in words per minute is consequently less.

Principal advantage of the moon circuit is reliability. The system is unaffected by magnetic storms, sunspot cycles and the ionospheric blackouts which often disrupt conventional long-distance earth communication. The Navy scientists are conducting further tests of the shipboard circuit to determine the number of additional channels it can support without exceeding the allowable limits of error.

The moon must be in simultaneous radio view of both the transmitter and receiver equipment for this system to operate. Since the moon is so far distant from the earth (about 240,000 miles), the system is available for a sufficiently long period each day to permit a large amount of message traffic to be passed.

Round-the-clock operation capability can be provided by supplementing the moon with artificial satellites such as those used in Project *Echo*.



ATTACK SQUADRON 52, embarked in USS *Ticonderoga*, has been awarded Pacific Fleet's Battle E award. VAdm. William A. Schoech, Commander Seventh Fleet, presents plaque to the unit's C.O., Cdr. Arthur R. English.

HS-11 Responds 'Pronto' Surprise Recall Proves Readiness

In November, Helicopter Anti-Submarine Squadron 11 conducted an exercise with an element added that is often missing in a peacetime problem and is always present in a wartime situation—surprise.

Unknown to the squadron, the commanding officer, executive officer and ASW officer had devised a problem and written an operation order which, when initiated by message, came as a complete surprise to the rest of the officers and men in HS-11.

The 26-hour problem began at 1930 one evening. It was designed to test HS-11's ability to recall personnel and to prove how soon the squadron could come to an alert status. It also established the squadron's ability to carry out a sustained ASW mission without previous preparation.

Two hours after recall, 70% of the men and 88% of the officers were in their assigned operating area listening on sonar for "enemy" submarines.

During the following 24-hour period, using a continuous three-plane launch, all flight requirements were met and a total of 89.8 hours were flown. Of the total, 67.6 hours were spent on station making automatic transitions and dips; 260 of these were completed. Forty-three hours of night time were accumulated.

The squadron's reaction, after initial disbelief and surprise, produced an efficient performance by all hands.

Navy Gets its Last P2V Orion to be Neptune's Successor

In December the Lockheed-California Company delivered the last U.S. Navy P2V *Neptune* ASW plane to the Fleet.

In continuous production since 1945—a record run for military aircraft—a total of 838 P2V's, including seven model changes, have gone on duty with the U.S. Navy.

Waiting in the wings to succeed the venerable P2V is Lockheed's P3V-1 *Orion*.

The *Neptune* is on guard with the air arms of nine nations around the globe. Production of P2V-7's for allied countries is scheduled to extend well into this year.

Equipped with advanced detection gear and a potent armament array, the 400-mph P3V *Orions* are scheduled to join Navy operation units this summer.



AERONAUTICAL VERSATILITY IS ILLUSTRATED AS DIFFERENT NAVY TYPES FLY BY, A3D LEADS

AVIATION WEEK CELEBRATED IN MANILA

NEAR THE END of every year, the Republic of the Philippines stages its Aviation Week, and 1961 was no exception. This year the occasion was linked with the Fiftieth Anniversary of U.S. Naval Aviation.

The U.S. Seventh Fleet ships and aircraft climaxed their participation in Philippine Aviation Week with a massive demonstration by jet aircraft and helicopters at Manila International Airport.

Twenty Navy aircraft from the attack carrier, USS *Ticonderoga*, including A4D *Skyhawks*, F8U *Crusaders*, F3H *Demons*, A3D *Skywarriors* and AD *Sky-raid*ers flew in mass formation over the field to open the Navy's section of the

annual air show and then broke up into smaller units to demonstrate low bombing techniques, slow and fast passes over the field, air-to-air refueling and simulated bombing and strafing runs. Three P5M *Marlin* aircraft from VP-40 followed the carrier planes in formation fly-by over the field.

Earlier in the show, 16 U.S. Marine Corps helicopters from Helicopter Transport Squadron 362, based on board the USS *Princeton*, demonstrated their ability to airlift troops in a simulated assault landing. A drum and bugle team put on a demonstration.

New Zealand, Australian, Philippine and U.S. Air Force aircraft also participated in the five-hour air show.



MARINE COPTERS PREPARE TO DROP ON FIELD MEN FROM OKINAWA'S THIRD BATTALION

Adm. Pirie Hails Wrights Ceremonies at Kitty Hawk, N.C.

Powered flight celebrated its 58th anniversary and the 50th Anniversary of Naval Aviation at Kitty Hawk, North Carolina.

Sixteen USAF and Navy planes zip-ped low over the memorial to Orville and Wilbur Wright in tribute to the new field of transportation they created.

Jets, capable of exceeding the speed of sound, darted over the towering monument at 10:37 A.M., the time when the Wrights made their first flight of 12 seconds and 120 feet in their first flyer, 17 December 1903.

More than 450 persons saw the ceremonies on the bleak sand dunes of Kitty Hawk and paid tribute to Lindsay C. Warren, former U.S. Comptroller General, who as a congressman stimulated foundation of the Wright Memorial.

At a luncheon later at nearby Nags Head, VAdm. Robert B. Pirie, DCNO (Air), praised the brothers who "had to pull technology up to meet their demands." For lack of aerodynamics knowledge, he said, they built a wind tunnel and, finding existing engines insufficiently powerful, developed and built their own power plant. They also studied, designed, experimented, tested and built propellers.

RN Officer Ends Tour Attached to O&R North Island

LCdr. Derek G. Mather of the Royal Navy completed a two and one-half year tour of duty at NAS NORTH ISLAND. He left for England in late November after serving as Progressive Aircraft Rework Program Officer in the Overhaul and Repair Department. LCdr. Mather came to the United States under the officer exchange program.

While assigned to O&R LCdr. Mather filled a billet on a full-time basis as an American Naval Officer would, subject to the same rules and regulations.

He commented upon the program before he left North Island: "This has been a rewarding experience. Now I am able to put myself in the place of a U.S. Navy man and really understand his problems and the policies and procedures under which he works."



JUMPMASTER David T. Hutchinson, PRCS, leads VX-6 Para-Rescue Team for second year.

IF YOUR FRIEND gets his feet frost-bitten, put his bare toes next to your bare belly. You'll save his feet and prove yourself a buddy at the same time."

This advice was delivered during a lecture given by Capt. Earland E. Hedblom, MC, USN, then staff surgeon for Commander, U.S. Navy Support Force, Antarctica. He was speaking before a group of Navy men who, within a month, would fly to the Antarctic continent to support civilian scientists during Operation *Deep Freeze*.

In the audience was a band of men with special talents: strength, endurance, adventurousness, courage, ability, and compassion. They were the first of a unique and trained group called Para-Rescue Team, assigned to the Navy's VX-6 Air Development Squadron. VX-6 provides air support for studies in Antarctica.

The team was formed in 1956 during the second expedition of the *Deep Freeze* force. It was designed to offer a margin of safety to Navy pilots and civilian scientists who fly over or roam the surface of the Antarctic.

RAdm. George J. Dufek, USN (Ret.), then leading the operation, ordered the team into existence toward the end of *Deep Freeze I*. Shortly before that, a VC-1 deHavilland *Otter* crashed into a mountain 125 miles northeast of Little America V station.

NAVY'S UNIQUE CORPS

VX-6 PARA-RESCUE TEAM



SNOW AND ICE LANDING surface at McMurdo Sound spills one member of VX-6 team while a second manages a stand-up landing. Proficiency jumps are made during Antarctic summer.

In the week-long hunt that followed, it was realized that there was no one on the ice qualified to parachute to the rescue of the plane's survivors should it become necessary.

Marine Capt. Rayburn A. Hudman, then attached to VX-6, was the only qualified jumper in the squadron. He had already returned to the U.S. On the fourth day of the search, a P2V *Neptune* was launched from NAS PATUXENT RIVER, original home station for the squadron, with Capt. Hudman aboard. The plane never reached the ice. It crashed en route, in jungles 29 miles northeast of Boco Vraco, Venezuela. Fortunately, no one was injured seriously. The search on the ice continued until the seventh day when the *Otter* was found. Survivors were spotted less than ten miles from Okuma Bay as they attempted an overland trek to Little America. None was injured.

Readying for *Deep Freeze II*, Capt. Hudman was given the job of forming a VX-6 Para-Rescue Team. He obtained 12 volunteers of various rates and ranks and trained them. Ideally,

six jumpers (two three-man teams) would work out of McMurdo Sound and six out of Little America. Capt. Hudman made the 13th member.

In selecting volunteers for his team, Capt. Hudman had little to worry about concerning minimum physical standards. Men in the VX-6 squadron volunteered for the unit and before being accepted had to pass rigid physical and psychological examinations. Basically, then, his men were in acceptable physical shape, but still he insisted they go through a grueling routine of calisthenics one hour before the squadron secured each day.

With the assistance of the squadron's parachute riggers, he taught each of the potential jumpers how to pack his own chute. He had sectional tables built in the squadron's hangar and every day for a two-week period, he had them practice packing and unpacking T-10 parachutes (with a 35-foot canopy).

When he thought they were ready, he flew the men to NAS LAKEHURST where they made six qualifying jumps in parachutes they had packed them-

selves. ("This gives the man more confidence," said David T. Hutchinson, PRCS, current enlisted leader of the team. "The man then becomes 'super careful' not to make a mistake when he packs any chute. The lesson is driven home.")

In the months before deploying, Capt. Hudman stressed survival:

- Igloos can be more of a danger than a blessing, the men learned, if they are improperly constructed. They were taught to cut and stack blocks of snow, arrange them in a square pattern, and cover the open top with a parachute.

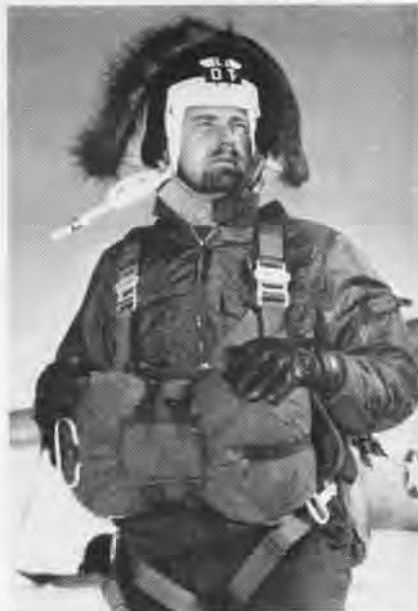
- Since there would be no fuel source in the Antarctic interior, other than what was in the aircraft, the men were taught to use oil and gasoline in a metal container other than the emergency cookstove, fashioning a wick from parachute harness. They were taught how to design eskimo blubber lamps, using animal fat from seals—if the team was flown to a coastal area where seals are available.

- They were taught how to catch seals, penguins and petrels, and which parts of these animals are edible.

- First aid was emphasized. Capt. Hedblom gave graphic lectures. The team was put through an intensive course. According to Lt. Michael Pardue, VX-6's flight surgeon in last year's operation, "I'd rather have a well-trained team member with me in an emergency such as you'd encounter on the ice than a trained hospital corpsman. The team can do the necessary first aid work, but their accomplishments are not limited to that. Last season they were invaluable when a WV-2 crashed while landing at McMurdo. There were seven injured men. I had two corpsmen and three Para-Rescue Team members. They proved themselves."

Capt. Hudman justified the size of his team. In assigning two three-man teams to McMurdo Sound and Little America, he made the maximum effort to have at least one full team on the ice at each station during the summer season. The previous operation underscored the fact that not all of the squadron personnel would be on the ice at the same time.

When the *Otter* went down in the



SUPPLY CORPS officer, Lt. D. C. Thietten, O-in-C of the team, qualified this season.

Alexandra Mountains, the big planes had already left the ice and some of the men had redeployed by ship. In *Deep Freeze II* (1956-57), operations were to be conducted at widely separated areas of Antarctica. It was then necessary to insure that a full team was at each of the two major stations throughout the season.

The squadron proceeded to New Zealand where it awaited wind and weather to become ideal before launching on the 2100-mile flight to the ice landing strip at McMurdo Sound. While waiting, the team again went through its paces. The men boarded an R5D *Skymaster* at the Royal New Zealand Air Force Station Wigram, just outside the city of Christchurch. In training and proficiency jumps, they plunged from the plane in four-man "sticks," using static line release rather than free-fall, and drifted to a marked area below.

Capt. Hudman was the last man in the last "stick." To the horror of those watching from below, his parachute opened directly under the plane and wrapped around the horizontal stabilizer. The R5D made several runs over the airfield as the Marine Captain worked his chute loose. He then made a normal descent. It was his 64th and final jump. Said he later of the incident, laconically, "I got bumped about a bit."

On 17 October 1956, Hudman was

aboard a *Neptune* making its initial fly-in to McMurdo for the summer support season of *Deep Freeze II*. Visibility was "soupy," and the pilot came in for a ground controlled approach landing. As he neared the strip, the pilot attempted a visual approach, but the aircraft crashed short of the runway. Three were killed instantly, including the pilot, and a fourth, Capt. Hudman, sustained fatal injuries.

The team did not jump in Antarctica that season, although after the squadron made the first landing in history at the South Pole, team members were in an R5D *Skymaster* which flew cover for subsequent R4D *Skylines* flying in men, supplies, and equipment to build a station there.

The first jumps in Antarctica—practice jumps, designed to keep the men proficient—were made the following season over thick bay ice at McMurdo Sound. The team quickly learned that there are softer landing areas than the steely ice near the strip. Thereafter, they selected the softer snow landing area near New Zealand-manned Scott Base.

In the years that followed, the team changed its personnel many times, so that none of the original members is left—either on the team or in the squadron. The changes came about either through normal attrition by squadron transfer (it is a two-year tour, cut to one if a VX-6 man winters over), or because the prospect of jumping into Antarctic mountains occasionally loses some of its glamor when the men are on the ice for a while. The team is in a standby status 24 hours a day, subject to instant recall.

In event of a real emergency, this procedure would be followed, according to Chief Hutchinson: "Chutes would break open above the men on the ground minutes after they are sighted. First would come survival gear and then the team. Once on the ground, we would administer first aid to any of the injured. Next, we would unpack the survival kits and prepare to set up camp or move the survivors to an area where a rescue plane could pick us up."

The airdropped survival kits would be in addition to gear already in the planes for those aboard. Each VX-6 aircraft on the ice is stocked with a minimum survival outfit. In the aircraft-stored kits are air mattresses,

single and double sleeping bags, cooking sets (including knives, forks, spoons, canteen cups, a gasoline stove, and a water-resistant matchbox with wax-dipped matches), VHF and UHF transceivers and batteries, a snow saw, trench shovel, 120-foot length of 3/4-inch nylon line, crampons, whisk broom, toilet tissue, chapsticks, sunburn ointment, heating pad, a barren land tent, skis, ski poles, bindings and wax, a five-gallon gasoline can, 1/2-inch syphon hose, pemmican, an ice axe, a lifeboat first aid kit, and a Gibson Girl transmitter.

"We take extra equipment, of course," said Chief Hutchinson, "even if the men we're going after are in a downed plane. Their survival gear could be damaged, scattered or destroyed and would, at best, be sufficient to support only those in the aircraft. The jumpers must, therefore, bring their own and enough for any survivors who may need them."

On the ice, training continues.

"We try to get away from camp for a two- or three-day period," Hutchinson said. "We take along just enough equipment and food to survive. We set up problems: how to supplement our diet of minimum foods packed in each survival kit; how to signal aircraft. Of course, the communications people and the squadron know well in advance that this is all a test—just so that there are no panic buttons pressed. And we're always within easy walking distance of the camp, though we don't take that route until the exercise is over."

When operations permit, Hutchinson leads his men to an ice cave near Scott Base. They enter the cave singly and, with the aid of ropes and assistants above, practice "walking out" of a crevasse. Sometimes one assistant is used, sometimes two. The man must

successfully test each of the methods.

"We do this just in case we ever fall into a crevasse while walking survivors to a clearing. If a man ever fell into one and survived uninjured or with only minor injury, he could make evacuation a lot easier if he knew how to do it. We don't like to send another man down into a crevasse."

Walking a trail, each member of the party is tied to the member ahead with stout nylon line. Each carries an ice axe around which the line is wrapped. Should the man ahead pierce the snow bridge of a crevasse and fall in, the man behind falls forward, digging the pick end of the axe into the surface at a 45° angle. The line brakes the descent of the man who has broken through the snow cover.

A second line is tossed to the man in the crevasse. He forms two loops for his feet, slipping the line underneath his waist lifeline. Then, one step at a time, he digs a cramponed foot into the side of the crevasse and awaits the taking in of slack by the assistant above. It is a slow process and a tiring one, but effective.

"The squadron is indebted to Capt. Hudman for the magnificent job of organizing the Para-Rescue program," said Capt. William H. Munson (Ret.), former commanding officer of VX-6. "The training procedures required of its members have not changed significantly in the years since. It is a tragedy that he did not live to see the program in effect on the ice."

With the closing of Little America V station at the end of *Deep Freeze IV*, the team has dwindled in size to eight members and changed slightly in concept. The group is divided into two three-man teams, each having one back-up man. It is led by Lt. Dwight O. Thietten, the second Supply Corps officer to qualify as an official Navy

parachutist. He relieved Lt. Jerry R. Chambers. Hutchinson, as jumpmaster, has been joined by Jerry C. Jones, PRC, who qualified as jumpmaster at McMurdo last November. All other members are also parachute riggers, and include Marvin R. Bishop, PR1 (who distinguished himself in 1960 by becoming the first man to qualify in the Antarctic as a Navy parachutist), Milford D. Holland, PR2, John L. Cramer, PR1, Allen N. Edwards, PR1, and Richard L. Spaulding, PR1.

Over the years, VX-6 has received a number of requests for information about the squadron's Para-Rescue Team, its history and the qualifications required for joining. Letters have been received from officers and men throughout the Navy, from other services, and from interested civilians.

In their proficiency and training jumps, the team has jumped from R5D *Skymasters*, R4D *Skytrains*, C-130BL *Hercules*, UC-1 *Otters*, and HUS helicopters. This season, the team uses an *Otter* flown by Lt. Ron Bolt and Lt. Garrett M. Dyer, but would enter an R4D *Skytrain* or C-130 *Hercules* to answer emergencies, depending on location and circumstances.

Under Cdr. Martin D. Greenwell, now commanding VX-6, the team has been alerted twice this season—in early November when the squadron's R7V *Super Constellation* was forced to return to McMurdo with a feathered prop and on the following day when a P2V crashed at Wilkes Station across the continent.

Seldom called upon during *Deep Freeze* operations, the mere presence of the team at McMurdo offers a psychological boost to the morale of the pilots and crewmen. Said one VX-6 C-130 pilot, Lt. Tom Hale, "It's good to know they're *there* if you ever need them."



R4D SKYTRAINS, such as this one re-supplying an over-snow traverse party, as well as C-130-BL Hercules, are used by the Para-Rescue team for jumps to mountainous areas too distant for lesser-powered aircraft to reach. The team was called twice this season, but did not jump.

VMA-533 TAPS 'KEG' AT 25,000 FEET



TURBINE PROP ON MAIN BUDDY TANK OF TANKER PLANE CHECKED



TANK IS THEN JACKED IN PLACE WITH HAND-POWERED WINCHES.

TAPPING a keg at 25,000 feet can be tricky business. But Marine Attack Squadron 533 pilots do it with ease during "buddy" refueling runs. "Kegs," in their terminology, are external tanks carrying extra fuel.

The A4D-2 *Skyhawk* is utilized by VMA-533 as the tanker plane. It can also refuel any other aircraft equipped for inflight refueling.

The tanker plane is equipped with two wing tanks containing 300 gallons each, plus a main buddy tank that houses the turbine power unit for pumping the fuel while in flight, the drogue, hose and 300 gallons of fuel.

By SSgt. Roger Bredahl

The usual amount per transfer is 900 gallons, but if necessary, the tanker plane can transfer 400 gallons from its own main tanks, for a total of 1300 gallons.

Transfers are usually made at 25,000 feet and at an airspeed of 240 knots. Once a tanker pilot is notified a "customer" awaits, he turns on the turbine and checks to make sure that it is turning. Next he lets out the drogue line. A light in the cockpit goes on when the drogue is fully extended.

Now the fuel-thirsty plane drops behind the tanker and checks the main buddy store for leakage. For practice purposes, the pilot makes two or three dry plug-ins before taking on fuel. This is done to make sure a good connection is being made.

After the pilot of the "thirsty" plane has made the plug-in, his part in the transfer except for keeping the plane in level flight, is done until his tanks are full.

At the completion of the transfer, the refueled plane drops its airspeed to five knots less than the "buddy" tanker and breaks the connection.



AIRPLANE NEEDING FUEL DROPS BEHIND THE TANKER IN ORDER TO CHECK MAIN STORE AND BE SURE THERE IS NO LEAKAGE



LINING UP WITH DROGUE, 'THIRSTY PLANE' GETS READY FOR MOMENT WHEN FUEL TRANSFER IS MADE AT 200 GALS. PER MINUTE



FOR PRACTICE TWO OR THREE DRY PLUG-INS ARE MADE IN ORDER TO TAKE NO CHANCES AND INSURE A GOOD, RELIABLE CONNECTION.



NOW THE REAL THING, AS ONE SKYHAWK PROVIDES ANOTHER WITH VITAL FUEL



TANKS FULL, SKYHAWKS BREAK CONNECTION



AT GUANTANAMO 1913 fleet games, early Naval Aviators, in dark uniforms, are (l.) Victor D. Herbster (No. 4), Bernard L. Smith, USMC (6), Alfred A. Cunningham, USMC (5), John H. Towers (3), P.N.L. Bellinger (8), W.D. Billingsley (9), and G. deC. Chevalier (7).

Evolution of Aircraft Carriers

THE AEROPLANE GOES TO SEA

First Article in a Series

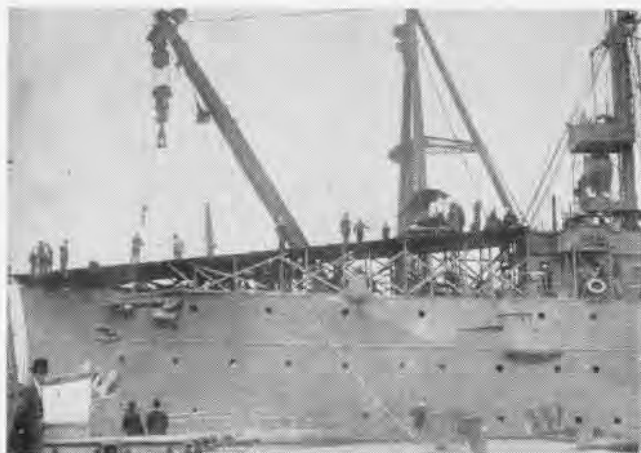
'The striking successes of carrier warfare in the Second World War are well known. Not so well known, but equally important in its own right, is the story of the evolution of sea-air power as a dominant segment in our military establishment. The formative years began almost with the birth of the aircraft itself, for the Navy was prompt to assess the value of the newest weapon in its arsenal.'—James V. Forrestal, SecNav, 1944-1947; SecDef, 1947-1949.

JULES VERNE, author of startling science-fiction during the last half of the 19th century, would have relished some of the sketches, plans, and ideas for "aeroplanes" that crossed the

desk of Capt. W. Irving Chambers in 1910. Capt. Chambers had recently been assigned as Assistant to the Secretary's Aid for Material, and was given the collateral duty of liaison

between the Navy and the swelling number of letter-writers who were eager to advance their own schemes or designs involving aviation.

Less than seven years earlier, the



ELY'S AIRCRAFT is loaded aboard a special platform in USS Birmingham at Norfolk for first take-off from ships, in 1910.



FIRST LANDING at sea aboard a Fleet ship is made by Eugene Ely in 1911 aboard USS Pennsylvania at San Francisco. Vessel was anchored.

Wright brothers had launched their pusher biplane into a brief but impressive flight. In the intervening years, advocates of aviation fought for recognition—and money.

At first, the Navy's interest in aviation was skeptical, if not openly discouraging. Twelve years before Chambers entered the picture, "The Joint Army Navy Board to Examine Langley's Flying Machine" was formed at the urging of Assistant Secretary of the Navy Theodore Roosevelt. A Navy member reported favorably on it to the General Board. But the Secretary, upon the advice of another Bureau in the Department, decided "the apparatus as [it] is referred to pertains

decide the destiny of nations." And he added, "Encumbered as [our big war vessels] are within their turrets and military masts, they cannot launch air fighters, and without these to defend them, they would be blown apart in case of war."

The "battleship controversy" was on, puffed by publicity in a competitive press. Curtiss added weight to his argument by a series of tests in which he lobbed 15 out of 22 "bombs" into targets as large as and shaped like battleships near Hammondsport, N.Y.

There was a rumor that France was building an aircraft carrier. More to the point, a growing group of enthusiasts, the U.S. Aeronautic Reserve,

bers and two other officers were sent; for the Navy, Chambers, and Naval Aviation, it was a fortunate decision. There he met Curtiss and the Curtiss-trained pilot, Eugene Ely. At that time, the Navy had neither an aircraft nor a designated pilot. In a series of startling tests, Chambers, Curtiss and Ely demonstrated that this situation must change, and soon.

Several problems nagged Chambers. There was not conclusive proof, for instance, that it was feasible to launch and land aircraft at sea. And if there was to be any future for aviation in the Navy, it had to be demonstrated aircraft could be operated in, and were important to, the Fleet. Navy officials,



CAPT. W. I. CHAMBERS was O-in-C of Naval Aviation from 26 Sept. 1910 until 17 Dec. 1913.



CAPT. M.L. BRISTOL relieved Chambers, served until March 1916, led aviation in *Gitmo* games.



CAPT. NOBLE E. IRWIN was next leader, held title, Director U.S. Naval Aviation in WW I.

strictly to the land service and not to the Navy."

On at least two important occasions between then and 1910, the Navy participated in or observed the fledgling "apparatus" in flight—in the 1907 Jamestown Exposition and the 1908 tests by the Wright brothers at Fort Myer, Va. But the Navy Board held to the attitude that "aeronautics" had "not yet achieved sufficient importance in its relation to naval warfare" to warrant Navy support.

It was not until 1910 that specific action was taken to alert the Navy to the potentials of aviation. In one incident, pioneer Glenn H. Curtiss successfully flew a prize-winning flight between Albany and New York. At its conclusion, he prophesied publicly:

"The battles of the future will be fought in the air. The aeroplane will

asked the Navy to appoint a representative who would handle aviation matters. Since this civilian organization enjoyed semi-official status, Capt. Chambers was assigned to handle all correspondence on the subject.

Chambers' job proved far from easy. He was given no space to work in, no clerical help, no operating money, no authority, and precious little encouragement. Despite this, he later wrote to Lt. T. G. Ellyson, "I am endeavoring to start an office of aeronautics here in such a way that things will run smoothly without having them all get into one Bureau and made a mess of as was the submarine question."

In October 1910, the Navy was invited to send the corps of midshipmen to Halethorpe, Md., where an aviation meet was to be held. Instead, Cham-

military and civilian, were still apathetic about the program and gave it token and grudging cognizance—when they treated it with any degree of seriousness at all.

The first test was prompted by plans of a German merchant line to launch a plane from one of its ships in order to speed up its mail service. Chambers was appalled that such an advance might be made by a foreign power when the aircraft had been, in fact, developed by this country. He obtained permission to make a similar attempt at launching from the deck of the cruiser *Birmingham*. The Wright brothers were contacted, but they demurred; Ely was eager.

A temporary wooden platform was erected on *Birmingham* at the Norfolk Navy Yard. The German line, mindful of the Navy's experiment, moved



AT VERA CRUZ aviation camp, Mexico, pilot Bellinger, right, poses with ground crew.

up its target date in an effort to be the first to launch, and thereafter bask in the honors of claiming a significant aeronautical first. Luck was not with them, however. An accident aboard, caused by a careless workman, forced a delay of the experiment.

Chambers' plan went ahead without a hitch. On Monday, 14 November 1910, *Birmingham* pulled into the waters off Hampton Roads, in company with three torpedo destroyers. Aboard was pilot Ely and his biplane. Weather was unsatisfactory; visibility was dropped by a low cloud cover and there were light showers mixed with hail.

Ely was not discouraged. He slipped into the seat of his aircraft near three in the afternoon and signalled his handlers to let loose. The plane roared off the platform, took a dangerous dip when it left the platform, then swung into the air. In the take-off, the skid framing and wing pontoons of his plane struck the water, nearly aborting the flight. The prop tips were splintered and water splashed over his goggles. This brief baptism, and a steady rain, blanketed his vision and for a moment he swung dizzily in the air. Finally, he spotted the sandy beaches of Willoughby Spit and touch-down, ending a 2½-mile flight.

The flight was an extraordinary success, but Chambers tempered his jubilation with native conservatism. Said he: "After [Ely] had demonstrated his ability to leave the ship so readily, without assistance from the ship's speed, or from any special starting device, such as that formerly used by the Wright brothers, my satisfaction with the results of the experiment was increased."

He admitted to pre-experiment perturbation: "The point of greatest concern in my mind, carrying out the

original program, was the uncertainty of stopping the ship or changing the course in time to prevent running over the aviator in case he should land in the water.

"His demonstration, that an aeroplane of comparatively old design and moderate power can leave a ship in flight while the ship is not under way, points clearly to the conclusion that the proper place for the platform is aft. An after platform can be made longer, will not require a lessening of the stays of any mast and its essential supports can be so rigged as a permanent structure of a scout cruiser as to cause no inconvenience in arranging the other military essentials of the ship's design."

News of the feat inspired a New York Navy Yard worker to design a light movable platform for installation above the turrets in battleships for the purpose of launching aircraft at sea. Some Navy officials were enthusiastic, but Chambers was not quite so ready for this innovation. "Recognizing the practicability of Quartermaster Joiner [E. C.] Keithley's idea," he wrote, he could "not contemplate the use of aeroplanes from turret ships in the immediate future."

Chambers' reasoning was cautious. As a result of the *Birmingham* flight, he did not think it necessary to launch aircraft into the wind. He had already gone on record as supporting the place-

ment of the platform in the aft section of the ship and saw no reason to take a different stand. The safety of pilots was another determining factor: he feared they would be run over by the ship if the plane, forced to ditch, landed forward of the carrier.

Though Ely's flight opened a few Navy eyes, it did not loosen the Navy's purse strings. Glenn Curtiss, at this time, offered to teach a Naval officer the mechanics of flying, absorbing the expense himself. Chambers recommended the immediate approval of the plan and Lt. T. G. Ellyson was ordered to Curtiss' San Diego camp. A series of experiments followed, in conjunction with the pilot's training.

Chambers, immensely pleased with the *Birmingham* launching, was now interested in proving it practical to land a plane aboard a Naval warship. Another platform was constructed at Mare Island and permission was obtained to install it on the armored cruiser USS *Pennsylvania*. While the vessel was anchored at San Francisco on 18 January 1911, Ely launched from a shore airdrome.

"There was never a doubt in my mind that I would effect a successful landing," Ely is quoted in a March 1911 Naval Institute *Proceedings* article. "I knew what a Curtiss biplane could do, and I felt certain that if the weather conditions were good there would be no slip."



PLANE LAUNCHES from catapult on cruiser Huntington. After U.S. intervention in WW I, catapult was removed from all U.S. ships. Huntington spent war years in convoy escort duty.

A simple arresting gear had been installed on the ship's platform. It consisted of 22 weighted lines stretched across the deck. On Ely's plane, a number of special hooks were fitted, designed to catch the lines as the plane made its rollout. In event the jury-rigged experimental arresting gear failed, a canvas screen was fitted to the end of the platform as an emergency stop.

The landing was, of course, a complete success, and Chambers was now armed with more ammunition in his battle to prove the feasibility of employing aircraft at sea. He vowed to take every opportunity to emphasize this fact to officers in the Fleet.

Just 31 days after the *Pennsylvania* landing, Curtiss taxied a seaplane from

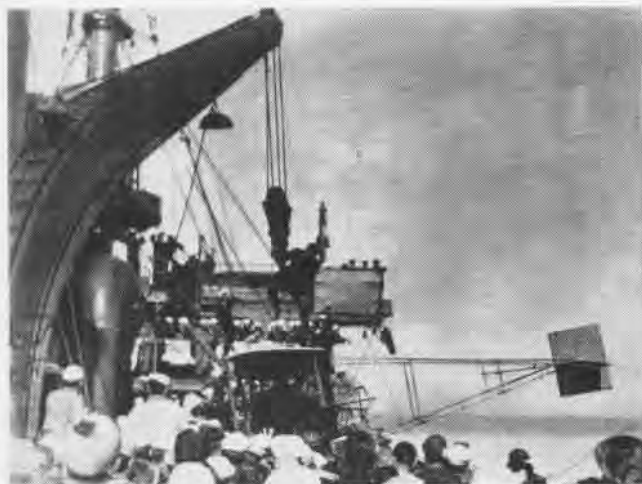
as "auxiliary ships." He stated, "I do not believe that we need such a vessel, even if we could get it," considering it "superfluous and inefficient."

With the hydro-aeroplane, Chambers hoped to find a method of getting a plane in the air from a fast-moving vessel without being forced to slow down the ship or stop. His solution was to devise a catapult system. Langley, the Wright brothers, and Chanute had pioneered in this field, but none of the systems developed quite met the needs of Naval Aviation.

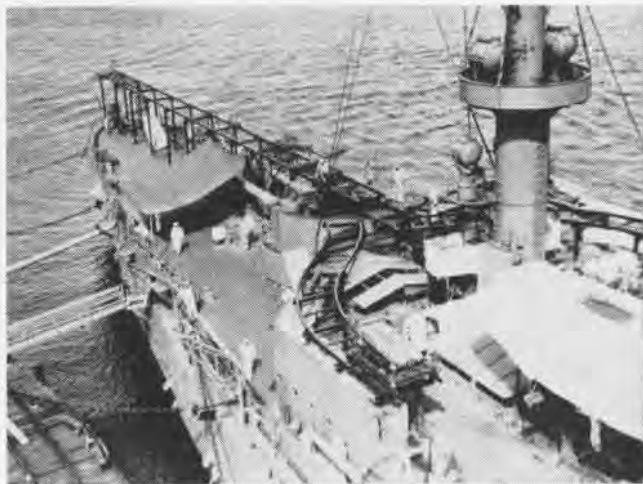
The catapult was a challenge. Chambers proposed a device using compressed air for thrust. The first test of it was made at Annapolis, with Ellyson at the plane's controls. The experiment was a failure operationally,

missions and exercises in spotting mines and submerged submarines. Under specific instructions from SecNav and Chambers, the unit, led by Lt. J. H. Towers, demonstrated the operational capabilities of the aircraft to stimulate interest in aviation among fleet personnel. More than a hundred "training" flights were made, carrying interested line officers on local hops to demonstrate the safety and maneuverability of aircraft, as well as to point out the superiority of aircraft in scouting and reconnaissance tactics.

Other nations, especially in Europe, were moving faster in the development of aviation for their navies, allocating more money than the U.S. for experiments. In the same month that Chambers was officially retired, in



TO PROVE IT POSSIBLE, Glenn H. Curtiss taxis his seaplane to USS *Pennsylvania*, is hoisted aboard, then returns to water and his base.



EARLY CATAPULT in USS *North Carolina* viewed from crane. Nov. 1915, LCDr. H. C. Mustin was first to launch from earlier model.

his North Island base to the same ship, then in San Diego Harbor. The plane was hoisted aboard, returned to the water, and taxied back to its base. This experiment indicated the eventual liberation of aircraft from being anchored to shore bases, a necessary advancement if the aeroplane was ever to join the Fleet.

The Navy ordered its first aircraft the following May. SecNav George vonL. Meyer had earlier supported appropriations for Naval Aviation. In a meeting of the House Naval Affairs Committee he requested and received \$25,000 for aeronautics.

Chambers was against the development of the true aircraft carrier by the U.S. Navy at this time. He vehemently opposed the seaplane carrier or hangar ship concept, classifying them

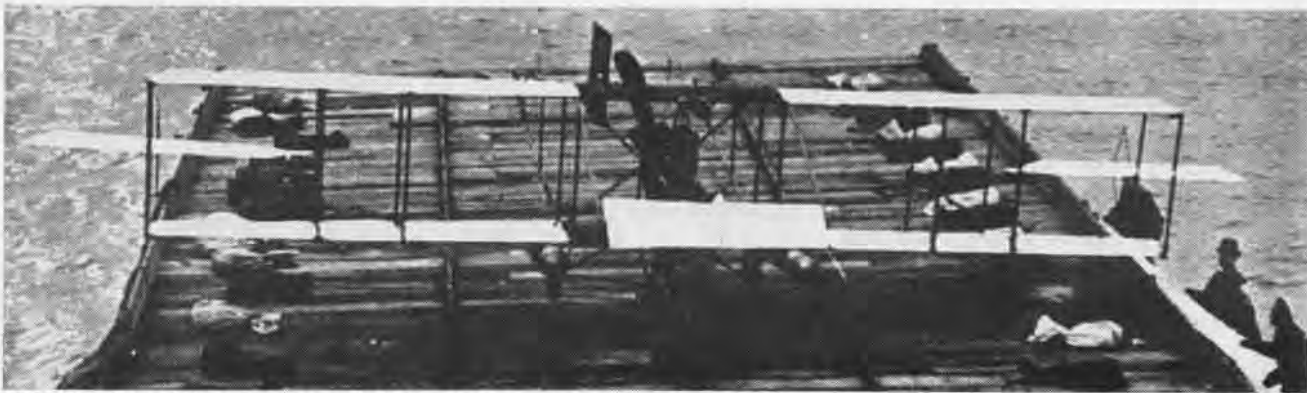
but Chambers learned much from it. He turned the project over to Naval Constructor H. C. Richardson who, with suggestions from Ellyson and Chambers, developed it further.

Three months later, they were ready to try again. On 12 November 1912, Ellyson launched in a hydroplane, the A-3, from a catapult installed in a barge off Washington Navy Yard. This time, they met with success. Curtiss, who witnessed the demonstration, considered it a significant achievement.

The following January, aviation joined the Fleet. Chambers sent the entire aviation unit to Guantanamo Bay, Cuba, to participate in Fleet operations for the first time. During the eight-week period beginning 6 January 1913, the unit conducted scouting

June 1913, the British reconfigured the cruiser *Hermes* by placing a launching platform on it and using this ship actively in maneuvers that followed. The nations vied with each other in building up their air arms; in the offing were the faint rumblings that soon would swell to a roar, eventually erupting into the outrage of war.

In April 1914, Naval Aviation went into action for the first time. A crisis developed in Mexico when a U.S. naval party was placed under arrest by Mexican police. Pilots and planes were embarked in *Birmingham* and *Mississippi*. Those in the former were dispatched to Tampico and saw no action. But Lt. Patrick N. L. Bellinger, leading the *Mississippi* detachment, continued down the coast to Vera Cruz and conducted daily reconnaissance flights.



PRIMITIVE ARRESTING GEAR comprised of 22 taut ropes weighted by 50-pound sandbags were strung four inches off the deck of USS *Pennsylvania* for Eugene Ely's historic landing. Plane had three hooks beneath it to catch ropes. DFC was awarded Ely posthumously in 1933.

On 5 November 1915, RAdm. W. S. Benson, the Navy's first Chief of Naval Operations, visited the *North Carolina* and a decision was made to launch the AB-2 aircraft from a new and temporary catapult installed aboard. LCdr. H. C. Mustin, who headed the Naval Aeronautic Station at Pensacola, was also aboard. He climbed into the aircraft and a successful launch was made. Though Mustin's launching was satisfactory, obvious improvements in the system were necessary. Other pilots tested the catapult, changes were made in the unit's mechanism, and finally, the catapult was removed altogether. Later a permanent catapult was installed.

Great Britain was the undisputed leader in number and operation of aircraft from ships at this time. As the U.S. was experimenting with *North Carolina*, the Royal Navy already had five vessels from which aircraft operated. First of these were *Hermes*, a cruiser converted to carry three seaplanes. Three others, formerly used as cross-channel turbine steamers, were outfitted with hangars and partial flight decks. These were *Engadine*, *Empress*, and *Riviera*, pre-*Langley* "carriers." The fifth was a converted tanker, *Ark Royal*.

Capt. Mark L. Bristol relieved Chambers in the winter of 1913. Mindful of Great Britain's progress in carrier experiments, he shot off a memorandum to SecNav:

"I desire to suggest the taking up of this question at once," he wrote, "along the line of purchasing a merchant ship and converting her into an aircraft ship, and at the same time considering the plans for a special ship of this type, developing these plans as more information is received from

abroad. It is strongly recommended that the bureaus consider the question of including in the estimates for the coming year money for the purchase and fitting up of such a ship with an idea of recommending to Congress the appropriations with the provision that it become immediately available without waiting until [1 July 1916]."

The memo went through the Chief of Naval Operations who sensibly felt such a venture premature. In his endorsement, he wrote: "It appears to the Department that the more immediate need of the Aeronautic Service is to determine by experience with the USS *North Carolina*, now fitted to carry aeroplanes, the details of such service upon which the characteristics of special aircraft ships, if needed, could be used." RAdm. Benson concurred with Chambers: it was not wise to spend large sums of money on carriers when the aircraft itself had not reached an acceptable state of development. There was still much to learn.

Undeterred, Bristol asked for funds for two three-million dollar carriers in his estimates for fiscal year 1917. It was a futile try. Next, he requested permission to take the command of naval air to sea and, upon receiving it, moved aboard *North Carolina*. He retained command over the Navy's aircraft, their development, the shore establishments connected with aviation, and the shaping of the air service.

Shortly after he assumed command of *North Carolina*, Bristol sailed for Guantanamo Bay to participate in war games with the Fleet. This 1916 exercise proved the most important participation of naval aircraft in any Fleet problems to date. By end of the exercise, the four planes aboard had

logged more than 3890 miles in a series of tests that proved instructive and, at the same time, emphasized the lack of equipment available and that coordination and planning left much to be desired.

In the summer of 1916, the organization, morale, equipment and prospects of Naval Aviation reached the ebb tide mark. The status of naval air so exasperated the normally reticent Bellinger that he wrote to SecNav a detailed, realistic summation of equipment available and experiments conducted. "Aeroplanes now owned by the Navy," he noted, "are very poor excuses for whatever work may be assigned them." Viewing current catapults, he continued, they are "by no means the finished mechanism desired in some of [their] essential features." The letter was frequently quoted by officers in the Aviation department.

With war imminent, the Appropriations Act of 29 August 1916 helped pull Naval Aviation out of the doldrums. Granted a million dollars the year before, this Act now allotted an additional \$3½ million to the development of naval air.

In October, Towers completed a tour in London as assistant naval attaché and reported to the Executive Committee of the General Board to inform it of European progress in aviation. He spoke glowingly of zeppelins, advocated the assignment of land planes on capital ships, and discouraged the direction of attention toward aircraft carriers.

"Aeroplane ships cannot keep up with the Fleet," he reported, echoing a widely held conviction. "If [the British] build a ship big enough and powerful enough to keep up with the Fleet, its cost is so high that they do not

consider it worthwhile. They are rather giving up the idea."

Towers' recommendations weighed heavily with the Board. In its subsequent recommendations, it requested over 500 planes, in addition to kite balloons, non-rigid dirigibles, and an experimental zeppelin. No recommendation was made for the fitting out of a major ship of the line for the operation of aircraft on the scope of an aircraft carrier.

The U.S. entered WW I in April 1917. In the years prior to this, Naval Aviation concerned itself with the development of aeronautical design and a continuing series of studies was implemented to determine the adaptability of planes on ships. The war interrupted these studies. Instead, emphasis was on expansion in aircraft inventory, increase in the number of trained pilots and ground crew men, and anti-submarine warfare.

In April 1917, RAdm. W. S. Sims, heading the European naval forces, recommended to SecNav that, since German U-boats were sinking tremendous tonnages, attention be directed toward acquiring large numbers of seaplanes for anti-submarine reconnaissance. He also asked for the development of seaplane carriers for small seaplanes. Going a step further, he advocated the development of vessels from which seaplanes could be launched directly from their decks.

This emphasis on ASW was a reflection of the experiences of the Allied nations. Expectations of the British were high. Sims, in answering SecNav's request for information on what Allied nations' requirements for naval air support were, revealed the British preoccupation with ASW problems. Through Sims, they requested four seaplane carriers, with a capacity of six two-seater planes, six single-seaters, and a speed of at least 18 knots. They also requested four or more seaplane tenders, 100 kite balloons with necessary manpower to operate and maintain them, "any number of trained pilots," and a good 300-hp engine.

But Sims appended a note of caution to these requests. He did not advise the U.S. Navy to develop this line of aeronautics if it would interfere with the completion of anti-sub programs already in progress.

Though the British pioneered in aircraft carriers, their emphasis in WW I—and that of U.S. Naval Aviation—

was on the development of seaplanes. Throughout this war, seaplanes and their tenders achieved far greater attention than any other weapon in the naval air arm arsenal.

The U.S. looked for the super seaplane, one that would be large enough to carry enough fuel aboard to make a trans-ocean hop feasible. This was an attempt to circumvent the worrisome number of sinkings of cargo ships by German U-boats; with the stricken ships went a large number of aircraft built for flight against the enemy in Europe. This plane was given the designation NC and was later to prove such a flight possible.

In the summer of 1918, the General Board showed considerable interest in the future of aircraft carriers. It called before it most of the leading Naval Aviators of the day in an effort to determine how much importance to attach to this development. Testimonies presented offered a wide range of thought on the subject. Several wanted carriers for ASW work. Towers suggested the conversion of a merchant ship—for experimental purposes. Others pointed out that aircraft aboard *Huntington* were smashed by concussion when that ship fired a practice salvo. Only a ship with the major mission of launching and landing aircraft at sea would do.

The Board deliberated and in September recommended a six-year program of expansion in all branches of the fleet. For Naval Aviation, it recommended that six carriers be built within that time span, each having a 700-foot flight deck, with an 80-foot beam "absolutely clear of obstructions." Designed top speed was to be

35 knots, with a cruising range of 10,000 miles.

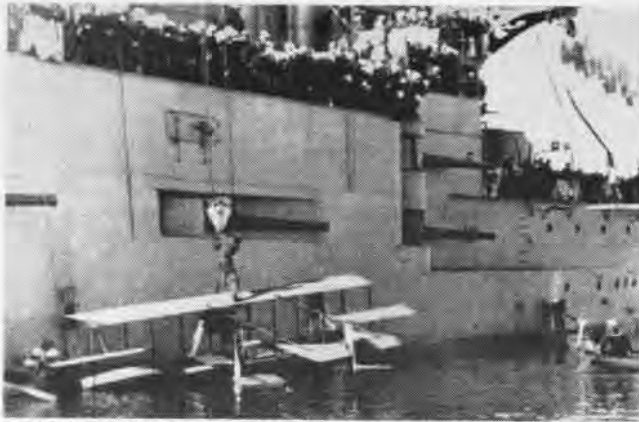
The bright future darkened swiftly on 2 October when SecNav Josephus Daniels temporarily put an end to the project. "The question of building aircraft carriers of special construction is held in abeyance," he wrote, "and no action will be taken until the military characteristics considered advisable by the General Board are submitted, and no action will then be taken of a positive character unless it appears probable that these vessels can be completed and made serviceable during the present war." This did not put a period to the program, simply a series of suspension dots . . . until the Armistice.

The British had been mulling over the problem of ASW and in October 1918 proposed a possible solution to it. The proposal, at the same time, gave a keen revelation of the effectiveness of its carrier operations. Since most submarine sightings and sinkings (there were few of the latter) made by aircraft were from shore-based seaplanes, the Royal Navy suggested planes be given a much wider range than they enjoyed. They proposed a plan to tow the planes on lighters or barges to within striking distance of the targets selected. A rear compartment in the barge would be flooded sufficiently to float the plane. The aircraft would then take off, bomb its target and return to home base.

Surprisingly, the plan met with favor. The British volunteered to contribute 50 of the lighter units and asked the U.S. to provide 30, along with 40 planes. By the end of July 1918, the towed-lighter project saw the commissioning of a base at Kill-



DURING WW I, British developed a towed lighter from which planes were launched. Rear compartment was flooded for seaplanes. Here landplane is towed, later launched.



NAVYMEN ABOARD USS *Pennsylvania* stare incredulously as a Curtiss seaplane is brought alongside and hauled aboard by ship's crane.



A MUSTIN SEA SLED holds a Caproni bomber in post-WW I tests at Hampton Roads. Sled was designed to add launching power to planes.

ingholme, Ireland, with an American detachment in command. In a dress rehearsal for the scheduled bombardment of the submarine base at Helgoland, a German zeppelin appeared on the scene and photographed the entire operation. The secret type of attack no longer secret, the British called off the campaign in August.

The first draft for Naval Aviation's request for appropriations after the war contained no provision for the construction of aircraft carriers nor the conversion of a current ship of the line to carrier characteristics. But on return from Europe of Capt. Noble E. Irwin, who then had the aviation desk in the Office of the Chief of Naval Operations, the entire budget was revamped, new estimates were made, and the Navy was subsequently authorized to convert the collier USS *Jupiter* into the first experimental carrier.

The British, at that time, had three operating carriers, two training carriers and two under construction.

In 1919, the General Board met again, this time centering its attention on Naval Aviation. It was an exhaustive inquiry from which was produced a report on "Future Policy Governing Development of Air Service for the United States Navy." In it the Board stated, "The development of Fleet Aviation is of paramount importance and must be undertaken immediately if the United States is to take its proper place as a naval power."

At the close of the war, the evolution of thought on carrier designs centered on the development of two types, one a fast vessel with large radius for scouting operations with scout cruisers, and the other a larger, slower vessel to operate with battleship units as a base

for launching torpedo plane attacks.

The experiments and experiences of the British Navy in operating aircraft carriers influenced American thinking when design and performance were considered. Their carrier *Argus* weighed 18,000 tons and flew 20 Sopwith planes carrying 1000-lb. torpedoes. Its speed was 21 knots. Two other British carriers, *Furious* and *Cavendish*, were designed for scouting missions, travelled at 32 knots, and carried reconnaissance planes.

Arguments continued during the Board meetings. One faction wanted to convert battleships instead of colliers, but were out-argued by Irwin who pointed out the lack of stowage space below decks, the smoke menace amidships, the small headroom between decks, and the additional personnel needed for the fire room. One admiral protested the conversion. "I believe the development is going to be so rapid that by the time you get your carriers you will find you have to make all your ships carriers." But another voice

was heard, that of LCdr. E. O. McDonnell: "A plane carrier would carry 15 torpedo planes and, in my opinion, would be a menace to a whole division of battleships and in the same way a fleet of carriers could attack a place like Hawaii."

Congress considered converting cruisers. Merchant ship possibilities were renewed, but the Board prevailed; the collier *Jupiter* was selected.

Even at this late date, a new threat developed. After Congress authorized the carrier, RAdm. Benson shelved the project. Capt. Thomas T. Craven, who had by then relieved Irwin, found himself in the awkward position of facing a Congressional hearing and admitting that the appropriated money would not be used. He consulted Daniels who at once reversed the CNO's decision and ordered work to proceed immediately. In January 1920, Daniels allocated \$500,000 for the conversion and the future of *Jupiter-Langley* was assured.

Several years later, LCdr. B. G. Leighton commented on the controversy surrounding the selection of *Jupiter* for the first conversion to a carrier design. "There is no good reason," he said, "why a battleship might not become an aircraft carrier, or an aircraft carrier a cruiser.

"The *Langley*, 14 knots, no guns, 400 officers and men—a converted collier—is an aircraft carrier. The *Saratoga*, 33 knots, eight-inch guns, three times the size of the *Langley* with three times as many men—a converted battle cruiser—is an aircraft carrier. The British *Argus*—a converted passenger ship—is an aircraft carrier. 'Aircraft carrier' may mean almost anything!"



FIRST SUCCESSFUL launch of a flying boat was made at Washington Navy Yard in Dec. 1912.

VU-5 STAGES REUNION AT OKINAWA



PROP FORMATION includes, left to right, two P2V's, one JD-1, and two AD-5T's. The KDA drones are in position on the Neptunes, while

the JD-1 and AD-5T's are rigged for towing targets. The squadron, usually so widely scattered, furnishes Fleet air target services.

USUALLY Utility Squadron Five is widely scattered, but Cdr. Lester Morris, C. O., recently mustered his detachments for a training operation at NAF NAHA, Okinawa. Nine aircraft from NAS ATSUGI, Japan, and three from Detachment Alfa at Cubi Point converged on Naha, home of the ten-plane detachment Bravo.

Since furnishing air target services to the Seventh Fleet is their common mission, the pilots have little chance to compare notes on a person-to-person basis. In addition to performing training exercises, VU-5 staged a fly-over, their "patchwork quilt" colors giving a striking appearance.



A SECTION of FJ-4 Furys, another type of aircraft VU-5 operates, is shown in take-off for formation rendezvous preceding an exercise.



VU-5 HAS REASON to believe it operates more types of aircraft than any Naval Aviation squadron. Lined up at NAS Naha are props JD-1,

P2V, AD-5T, and SNB-5P; jets FJ-3D, F8U, FJ-4, F9F-5KD, and helicopter HUS-1A and a KDA drone, a proof of squadron's variety.

1962 RESERVE TROPHIES SUSPENDED



ALL STEPS TO THE TOP were represented by this group of enlisted men at Atlanta's Naval Air Station. Included in the station's largest advancement group are new Third, Second, and First Class petty officers; three senior CPO's, and a new CPO. New master CPO is at the top.

COMPETITION has been suspended for fiscal '62 for major trophies of the Naval Air Reserve Training Command. Upon recommendation by CNAResTra, the office of Chief of Naval Operations approved suspension for one year of the Conway, CNATra and Noel Davis competitions. Units of the Naval Air Reserve are judged each year on both a unit and squadron level. Recall of reserve squadrons was cited as a major reason for the suspension of competitions.

Los Al NAIIRU's 'Turn To'

Combining their varied talents, the four Naval Air Reserve air intelligence units at Los Alamitos have "turned to" on a number of projects. Foremost on the project list is a manual for anti-submarine warfare, entitled "Submarine or Whale?" Also under preparation are a manual on marine mines

and a section of a new manual for Naval Air Reserve attack squadrons. The work projects are in addition to routine briefings and lectures conduc-

ted during weekend training drills at the Los Angeles area station.

Survivors Meet after 19 Years

During a routine interview at South Weymouth, Journalist Richard Wood discovered that the target of the interview, Capt. Elliott Steinman, USNR, had been involved in the sinking of the USS *Meredith* (DD-434) some 19 years earlier in the Pacific. Capt. Steinman, (a Ltjg.) attached to the USS *Vireo* (AM-52) when the attack occurred, had been shifted to the *Meredith* when the *Vireo* started to sink. Journalist Wood, then a seaman aboard the *Meredith*, assisted the *Vireo*'s crew aboard, then joined with them in the water a few minutes later when the DD sustained severe damage. Out of 40 survivors clinging to one raft, only six remained when rescue came. Two of the surviving six were



JOURNALIST WOOD and Capt. Steinman swap tales of their rescue after 1942 sinking.

Capt. Steinman and Journalist Wood.

Although the two have been at South Weymouth together for about six years, neither had recognized the other as a survivor of the *Meredith* sinking until the interview. Wood, in writing up the interview, said "After the ship went down, the men were covered with black fuel oil sludge and practically unrecognizable . . . and 19 years does change a person's features and appearance somewhat."



WHEN NOT DRILLING as a Weekend Warrior Alameda's Lt. Bitter is drilling weak teeth.

Dentist Drills a Skyhawk

For Lt. Bitter, VA-876 Weekend Warrior at Alameda, life is a succession of high speed drills. After flying his monthly drills in the high-



NEW ORLEANS commanding officer, Capt. Paul Gray, greets active duty VS squadron upon their return from first extended duty tour since unit was recalled on 1 October 1961.

flying A4D *Skyhawk*, Lt. Bitter spends his days using high speed drills as a practicing dentist.

Engineer Returns to Navy Duty

Recalled voluntarily to Navy duty at Alameda is Larry Freund, ADRC, who was the first enlisted man at NAS OAKLAND back in 1926. Freund, assigned as Duty Chief with VP-872,

has combined Navy duty with his civilian job as railroad engineer for the past 33 years, is now on a military leave of absence from the Southern



SQUADRON OF SEA LAWYERS is a natural tag for recalled reserve squadron VP-741 as Jacksonville, Florida's Chief Justice Roberts swears in Lt. Comerford as fifth qualified squadron lawyer.



DOUBLE EXPOSURE catches Chief Freund, Alameda, in garb required for his overlapping jobs.

Pacific Railroad. "Casey" was among the first Alameda Reservists to volunteer after the Berlin "add-on" was announced.

GCA Records 50,000th Approach

GCA Unit 28 at Grosse Ile, Mich., recorded its 50,000th approach with Lt. Stephen Balogh, VS-735, piloting an S2F on the milestone landing. The Grosse Ile unit has been in operation since 1947, averages 350 approaches or practice approaches every month.



FACTORY-FRESH sonobuoys are inspected and logged at the Maine plant of test contractor.



UNDERSEA SOUNDS broadcast by this "doctor" buoy are compared with test buoy signals.



VOCALINE technician monitors signals from aboard crash boat on the ocean test range.

TO BUILD A BETTER BUOY

LAST YEAR the Navy dropped more than a quarter-million dollars worth of expensive electronic gear into the cold and choppy Atlantic off Pemaquid Point, Maine. This dumping of treasure into the sea has proved to be a spectacularly profitable investment. It is all part of an all-out effort to improve the reliability of sonobuoys, an effort which has cut sonobuoy failures while the price was dropping from about \$200 each to \$150.

The sonobuoy test project has become the classic illustration of what determined efforts to improve the reliability of the Navy's aeronautical material can accomplish.

Sonobuoys have proved almost ideal for testing reliability improvement theories. They are manufactured in extremely large numbers; they are compact, loaded with reasonably complex and delicate electronics, and must be able to withstand the rough treatment of air launching and water impact. Also, their reliability is vital to the suc-

cess of important and expensive ASW operations.

Sonobuoys are dropped from an ASW aircraft at the scene of a known or suspected submarine detection. The buoys pick up the underwater sounds and radio them to the aircraft, thus permitting the plane to track a submerged submarine by listening to the noise it makes as it moves through the water.

A standard buoy is about five inches in diameter and three feet long. When ejected from the aircraft, a folded wing structure called a "rotachute" opens out and slows the buoy's fall. On entering the water, the rotachute falls off, a whip antenna comes out the top and a hydrophone drops out the bottom and descends to a predetermined depth. Sea water entering the lower portion of the buoy actuates a battery which powers the FM transmitter. After several hours an automatic scuttling device causes the buoy to sink.

The sonobuoy can do its job only if a long series of mechanical and electrical functions works properly. This series of events is called a "reliability chain." The rotachute must open and work; the hydrophone must unreel; the radio must transmit and on the right frequency; and other mechanisms must operate when used and as designed.

The sonobuoy itself is only one link in another reliability chain which includes the aircraft, crew, launching system and the airborne radio receiver. Three years ago the sonobuoy was considered to be by far the weakest link in the chain.

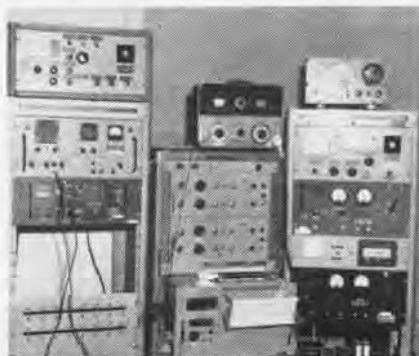
There were two major approaches through which sonobuoy reliability

might be improved: complete redesign, and the "brute force" approach. The test program is part of the latter. Buoys are expendable articles and their cost must be of prime consideration.

BUWEPs had good reason to believe that reliability could be greatly improved using the existing design and standard production methods.

Records showed definite patterns to the failures. Each manufacturer had weak links and strong links in the reliability chain for his units. Systems that were usually weak in one company's output were strong in another's, and vice versa. BUWEPs reasoned it should be possible to build buoys with each system as reliable as those that some manufacturers had been turning out routinely.

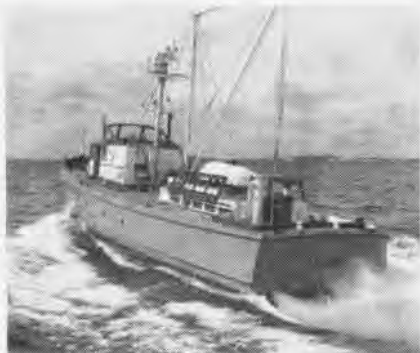
Acting on that theory, the government got "hard-nosed" and tightened acceptance standards, so that each manufacturer's product would have to come up to the reliability inherent in the basic design of the equipment.



JUST PART of the complex equipment for monitoring buoy output from shore-based site.



FISHED from water after test, buoys will be refurbished and, if OK, issued to the Fleet.



CRASH BOAT retrieves buoys and monitors signals. Drop aircraft also listens in.

Contracts were changed to specify that if more than four buoys from a sample of 35 from each 800 lot were defective, the government would not accept—nor pay for—the entire lot. BUWEPs previously accepted 11 failures out of 35, and rejected on 12. A buoy can be classed as a "defective" for any number of failures short of being completely "out."

Though many lots have been rejected and returned to their makers, it is not the aim of the testing program to separate the "good" from the "bad" buoys. The job of the test program is rather to insure that contractors build into their product all the reliability inherent in the design. When they do that, few lots will ever have to be rejected.

The test buoys are selected at random and dropped on the instrumented test range off Pemaquid Point, Maine. Drops are made at 250 knots from 500 feet, the design operating limit.

Testing is conducted under contract by Vocaline Corporation, IAMCO Division, of Waldoboro, Maine, with the drops made by an NAS BRUNSWICK P2V usually piloted by officers who are on the staff of the air station Aircraft Maintenance Department.



TESTS IMPROVE odds that buoys will work. These are being loaded for ASW exercise.



PEMAQUID Point lighthouse, overlooking Gulf of Maine, houses monitoring equipment.

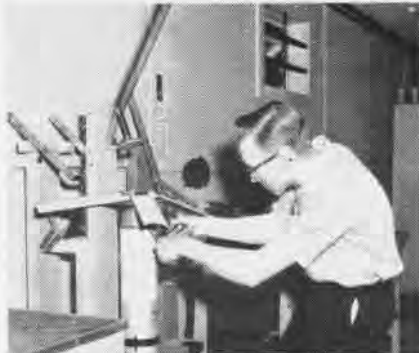
Quality of signal from the test buoys is monitored by receivers in the aircraft itself, in the Pemaquid Point lighthouse, and on a 66-foot crashboat maintained in the drop area. In addition, the signals from the buoy are compared with signals from a transmitter of known quality which broadcasts the actual underwater sounds on the test range.

After the drop test, buoys are picked up by the crashboat crew, and returned to the Vocaline plant. There they are analyzed, cleaned up and re-issued to the Navy. Manufacturers, who are provided with full information on defects in the test buoys, also have opportunity to examine the actual tested buoy in order to determine the cause of any failures. Manufacturers must correct any defects before the Navy will test another sample to see if the lot will be acceptable.

It is an interesting coincidence that at the same time the buoy-builders, stimulated and aided by the test program, were making their product four times as reliable as before, the contract prices, under competitive bidding, fell by about 25 per cent. The meaning of these facts is hotly debated. BUWEPs cites this evidence in support of its firm policy of refusing to pay contractors once for equipment and then an extra charge for "reliability."

The sonobuoy test program illustrates many of the approaches BUWEPs is applying generally in its efforts to improve material reliability. These approaches include:

- Reliability specifications in the procurement contract. Reliability must be defined in terms which can be demonstrated by objective tests.
- Procedures for testing representative samples for demonstration of



ROTOCHUTE is replaced on tested buoy. Wing device is knocked off by water contact.

"achieved reliability." The Pemaquid Point test range permits controlled testing under realistic operating conditions, whereas former testing was in shallow water at Patuxent River.

- Sharing of reliability information, particularly a feed-back of test results to the manufacturer so he can correct conditions in his manufacturing process which caused the defects revealed by the tests.

- Incentives, superior rewards for superior performance. Not being able to "sell" a lot that had more than four defective out of each 35 samples provides a powerful incentive. As additional incentive, BUWEPs plans in the future to reward the contractors for exceeding the specification reliability requirement.

A new reliability incentive wrinkle will use accumulated test results to develop "reliability ratings" for each defense contractor. Accumulated test results will develop comparative reliability ratings for each of the sonobuoy manufacturers. This rating will be given consideration in the award of any future U.S. Navy contracts.



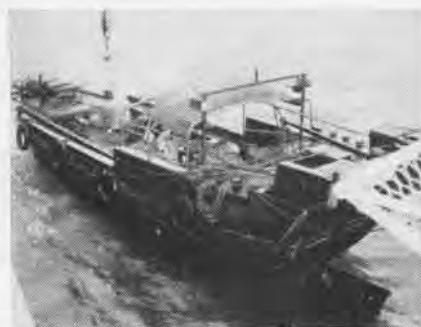
P2V NEPTUNE drops test buoys at operating limit of 250 knots at 500-foot altitude.



ATTACK CARRIER USS Coral Sea, during a visit to the British Crown Colony of Hong Kong, was host to over 350 high school and university students. Some of the young people are shown on the flight deck with their naval officer and bluejacket escorts.



CORAL SEA crew members are shown with some of bappy little Hong Kong recipients of "Operation Handclasp" clothing, collected in Bremerton before 7th Fleet tour. At right, baled clothing is lowered into a junk by crane from the big 63,000-ton carrier.



NAVY'S PEOPLE-TO-PEOPLE ROLE

THERE ARE many faces to friendship. Had Naval and Marine Aviation needed proof of this fact, the past year would suffice.

Some people needed clothing, others, a bell; some needed books, others food; and some needed fun—a party. The great aircraft carriers and the squadrons of the Fleet played their part. Navy's part in the President's People-

to-People program was motivated by the spirit of helpfulness.

The Navy was supported in its efforts by communities all over the United States who gave generously to Operation *Handclasp* and similar programs. The citizens of Pontiac, Mich., gave a light plane for the use of the Summer Linguistics Institute in the Philippines for use in remote provin-

ces. Naval Air Reserve squadrons, in the Mediterranean area on training duty, arrived loaded with gifts, foods, clothing, baseball suits for orphans, seedlings for trees, etc. At the Garden of Light Orphanage in Beppu, Japan, Marines from Iwakuni brought jackets for the children and shawls for the Sisters, the gift of servicemen at El Toro and Pendleton, California.



IN SUBIC BAY, Capt. P.W. Jackson, Kearsarge skipper, presented "Spirit of Pontiac" to Mr. F.B. Dawson of the Summer Institute of Linguistics.



WHEN 75 orphans toured the Bonnie Dick at Yokosuka, Tom Kasa, AQ2, showed boys how he would look as a student and they as sailors.



JAPANESE newspapermen, on a two-day tour of Bonnie Dick, enjoyed aerial demonstrations.



FR. McCAFFREY received "retired Navy bell" from Capt. W.E. Clarke, skipper of Valcour.



VS-21 15 providing part of aid to help Keiko Takaisbi spend high school year in the States.



SEVENTH ANNUAL Japanese-American Goodwill Musical Festival was held at Kintai Bridge, a structure reported to be nearly 300 years old.



Iwakuni residents and USMC servicemen regularly look forward to the event. Left, Gen. A.R. Kier, C.G., MAW-1 receives bouquet at opening.



THREE MEMBERS of Shangri-La's volunteer working party take part in a thorough redecoration of the village school located in Saffra, Turkey.



MOHAMMED XV is seated on gift of canned goods to Moroccan people brought from Memphis by Fleet Air Tactical Support Squadron 791.

A Japanese girl is attending high school in the United States under the sponsorship of Navy's VS-21. The squadron is providing a portion of the financial aid necessary to allow Miss Keiko Takaishi, Yokohama, to spend her final year of high school in Sturgis, S.D.

Probably one of the most interesting gifts was the bell for Father George in Punjab, West Pakistan. Father George wrote the Navy asking if there were a bell which could be used for calling the villagers together. The Chief of Navy Chaplains received the request and with the assistance of the Naval Curator, located an old ship's bell that had long been "retired from active service." USS *Valcour*, a seaplane tender deployed in the Middle



PRINTING TEXTBOOKS for Turkish children was friendly gesture of CVA-38's printshop.

East, brought the bell to Karachi where it was received by Father D.A. McCaffrey, acting in behalf of Father George.

In the spring of 1961, the *Bon Homme Richard* (CVA-31) offloaded more than 67,000 pounds of clothing and medical supplies at the Naval Base, Subic Bay, P. I. They also delivered 33 tons of medical supplies.

Officers and men of *Lake Champlain* scored in the People-to-People program in Jamaica by exemplary conduct ashore and a well-organized tour for visitors aboard the aircraft carrier.

While the *Shangri-La* was in Stamboul, the carrier's printshop became a floating publishing house when it produced about 10,000 books for distribution to Turkish school children. The original copy was selected by the Turkish Minister of Education in con-

junction with the Milliyet newspaper chain and the USIS in Stamboul. The front cover carries the picture of Kemal Ataturk, founder of the Turkish Republic, and the back, the pictures of USS *Shangri-La* and USS *Little Rock*, whose crews contributed money for the costs.

In the People-to-People program, all ages took part. The nursery set was represented when a trio of youngsters from a school in Saudi Arabia presented Capt. Harry L. Harty, Jr., with their school flag. The boys were given the full VIP treatment—ship tour, cartoon movie, ice cream and cake.

Whatever the need in whatever place on their global mission, the officers and men of the Navy played their role with courtesy and diplomacy.



VP-18 GAVE gifts to two Sicilian orphanages near Catania. Scooter proved a favorite.



CAPT. H.L. HARTY, Jr., USS *Greenwich Bay* C.O., gets flag from Saudi Arabia youngsters.

VP-11 PARTICIPATES IN UNITAS II



A VP-11 NEPTUNE makes low pass over the Task Force 86 flagship USS Norfolk off Venezuela during UNITAS II to South America.



ANOTHER NEPTUNE on a barrier patrol "protects" the combined Chilean-Peruvian-U.S. Fleet anchorage, located at Pisagua Harbor, Chile.

THREE P2V-7 Neptunes of Patrol Squadron Eleven, NAS BRUNSWICK, Maine, made a three month training and good will tour to South America during Operation UNITAS II. Cdr. Raymond G. Neal commanded the 14 officers and 32 enlisted men of Detachment C/3. An R4Y-1 Convaire from Fleet Tactical Support Squadron One supported the P2V's.

The VP-11 aircraft joined five Atlantic Fleet vessels to form TF-86, commanded by RAdm. Louis A. Bryan, Commander Destroyer Flotilla Two. Accompanying the flagship, USS Norfolk were the DE's, USS Courtney, USS Cromwell, and USS Hammerberg,

and the submarine, USS Clamagore.

The Neptunes preceded the ships to each country visited (Argentina, Brazil, Chile, Colombia, Ecuador, Peru, Uruguay and Venezuela) in order to establish a base for flight operations. They also established direct liaison with the host country's participating air units. In most countries, a P2V was put on public display.

The two largest crowds for a four-hour visiting period were at Guayaquil, Ecuador, and Montevideo, Uruguay. The tour in eight countries in South America was a contribution to the UNITAS II theme of Hemispheric Solidarity—Hemispheric Defense.



CHILDREN enjoy "open house" at Trinidad, B.W.I., as they peer from aft station hatch.



DOUGLAS MULIEN, ADY, describes the intricacies of a P2V-7 reciprocating engine to Colombian Air Force mechanics at Barranquilla.



AT MAIQUETIA, Venezuela, U.S. Navy officers are photographed with Venezuelan Air Force Officers, 2nd and 3rd from left; Cdr. Neal (L).



NATSF personnel processing some of the 70,000 FUR/EFR reports received monthly before the information is transferred to punch cards.



O-IN-C of NATSF, Capt. Dick Sewall, presses the button throwing the new IBM 1401 electronic data processing system into operation.

NATSF 'MESSAGES' FURS WITH EDP

NAVAL AIR TECHNICAL Services Facility (NATSF) at Philadelphia has put its new IBM 1401 electronic data processing (EDP) computer in service to "massage" (Pentagonese for analyze) data from FUR's and EFR's. FUR's (Failure, Unsatisfactory or Removal Reports) are made on each mechanical part which fails or is removed from an aircraft. EFR's (Electronic Failure Reports) are made on each failed or replaced electronic part.

FUR's and EFR's, which pour into NATSF at the rate of 850,000 per year, are the Navy's best source of information needed to improve safety and reliability of its aircraft.

NATSF processes the reports and has information on the way to users in an average of just nine days from receipt of the reports in Philadelphia. Information is routed to agencies interested in particular parts and equipment. For instance it may go to the BUWEPs desk responsible for the failed part or system, to the BUWEPs Representative in the plant which manufactures the part, to the O&R which overhauls the equipment, etc. One of the biggest customers for FUR and EFR information is the Aviation Supply Office which uses it to try to keep supplies a jump ahead of demand on high usage items.

The new IBM 1401 electronic data processing machine will be able to ex-

tract information from the "data bank" 100 times faster than was possible with the old punch card system it replaces. This high speed will make it possible to use the basic information in many more ways.

For instance, if several failure reports come in on the same part, EDP equipment will be able to search records for the past two years to determine the part's failure history. It will take only 20 minutes to check these records, which are now contained in eight reels of magnetic tape, compared to 30 hours with the former equipment.

The new machine will not only be able to get the data out of the data bank 100 times faster than before, it will also be able to put the information into formulas, make computations and give out answers. For example, it will be programmed to relate all failure reports concerning a particular aircraft, say the A4D-2N, to develop a composite picture of reliability. It will also be able to develop such a reliability profile for systems within the aircraft and for particular pieces of equipment. From this kind of analysis it will be possible to find the "weakest link" in the A4D-2N reliability chain and thus know where redesign effort will pay-off best.

The machine is a sharp new tool for getting the most benefit from accumulated FUR and EFR data, but

there is one thing it can't do: beat bad information.

Reports with errors in them are a major problem. Six people work full time at NATSF just trying to straighten out errors in FUR/EFR reports. Fifteen per cent of FUR's and EFR's have obvious errors in part number, time and nomenclature. NATSF does not know how many errors are made in description of malfunctions because there is no possible way of verifying that information.

Approximately two per cent of all the FUR reports received each week cannot be satisfactorily identified, even after diligent research, and thus cannot be processed.

Some idea of that problem might be estimated from these statistics gathered by an alert maintenance officer at a major fleet air station. "In the past 30 days we have received and screened for mistakes 763 FUR's. Contained in those 763 FUR's were 1810 errors. This is an average of 2.4 errors per FUR. One outfit averaged four errors per FUR."

NATSF requests, and BUWEPs heartily concurs, that squadron quality control officers help keep the FUR and EFR error rate "in control."

They suggest sampling enough reports to see if the error rate is "in control," and then getting the ball rolling on corrective action if it is clear that it is unreasonably high.

Kearsarge to Get FRAM II Carrier Begins 6-month Availability

USS *Kearsarge* (CVA-33) arrived at the Puget Sound Naval Shipyard to begin her six-month FRAM II availability for extensive rehabilitation and modernization.

The *Kearsarge*, commanded by Capt. L. E. DeCamp, has had her home port changed from Long Beach, California, to Bremerton for the overhaul. She underwent conversion in Bremerton in July 1956, during which time the hurricane bow and angled deck were added.

Subsequent years of intensive operations have taken their toll in wear and tear, and scientific advances in the art of warfare have rendered her weapons systems and electronics obsolescent. The forthcoming FRAM II overhaul will remedy these deficiencies, and will add at least five years to *Kearsarge's* useful life.

In September 1961, the *Kearsarge* returned to the United States after a seven-month tour of duty with the United States Seventh Fleet in the Western Pacific.

Wave Technician Honored First of Ten Young Women in 1961

When, for the 19th successive year, Mademoiselle Magazine selected "The Ten Young Women of the Year," the first named for 1961 was Jean Alice Szymanski, a WAVE Aviation Electronics Mate.

Miss Szymanski heads the list of young women in their twenties and early thirties "who have already distinguished themselves in their fields and are expected to achieve even greater honors," according to Betsy Talbot Blackwell, Mademoiselle's editor-in-chief.

The WAVE is one of two women chosen recently from 2200 applicants to study under the Navy Enlisted Scientific Education Program. This program offers a four-year college education leading to a baccalaureate degree in specified areas and a Navy commission.

After graduating from Pittsfield High School in 1958 with a straight-A average, Miss Szymanski entered the naval service. She is now studying electrical engineering at Cornell.

She has already studied three languages, and at Cornell she is now adding Russian to her linguistic facility.

INVENTORS ACTIVE AT MIRAMAR



PARMER, ADKINS AND ADKINS-PARMER BOX

NAS MIRAMAR Maintenance Department people recently came up with a pair of inventions which solve problems common to virtually the whole of Naval Aviation. The problems: how to test the device on the Martin-Baker ejection seat which opens the pilot's parachute as he falls through 10,000 feet, and how to service the under side of modern ground support equipment built low and compact for carrier operations.

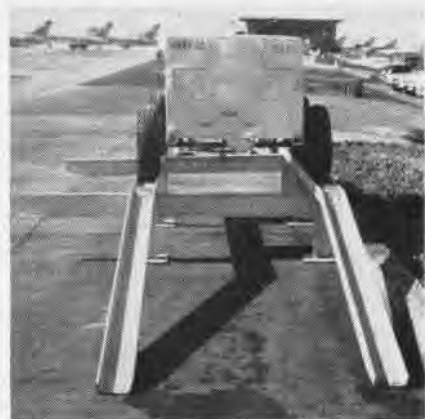
J.L. Adkins, PR1, and R.L. Parmer, AMS2 developed an altimeter-equipped plexiglass-covered vacuum box to test the release device. For the test the release mechanism is placed in the box, the cover plate put on, and air pumped out until the altimeter indicates 20,000 feet. The air is then slowly valved in until the mechanism triggers off. Release altitude is read directly from the altimeter.

McDonnell Aircraft has developed a somewhat similar device which was tested at Patuxent River along with the F4H. BUWEPs plans to order the McDonnell device with delivery scheduled for the latter part of 1962. It is to be issued to all squadrons operating the F4H-1, F9F-8B/ST, F11F-1, FJ-4B, F3H-2, F8U-1/-1P/-2/-2NF, and T2V-1 aircraft.

In order to service ground support equipment too low for a man to slide underneath on a crawler, CWO W.C.

Kershaw and R.A. Walters, CMCS, put together some scrap material, 20 man-hours of volunteer work and \$20 worth of other material into a universal, adjustable ground support equipment servicing ramp which fits all yellow vehicles.

Specifications and drawings for both inventions may be obtained by writing to Aircraft Maintenance Officer, NAS MIRAMAR, Miramar 45, California.



UNIVERSAL, ADJUSTABLE SERVICING RAMP

Australians at North Island Trained in P2V Neptunes and ASW

Seventy-two members of the Royal Australian Air Force, ended 16 weeks of training with VP-31 at NAS NORTH ISLAND, San Diego, on 22 December.

Under supervision of VP-31, the 40 officers and 32 enlisted men of Maritime Reconnaissance Squadron 10, received training in phases of anti-submarine warfare, tactical warfare and ground crew maintenance.

In January they received further training at aircraft manufacturing schools, then picked up the first part of a shipment of 12 newly acquired Lockheed P2V-7 Neptunes.

Upon picking up their new planes, Squadron 10 returned to NAS NORTH ISLAND for aircraft shake-down cruises. The Australian airmen are scheduled to fly their P2V-7's to their home base in Townsville, Australia, in late February.

Wing Commander C.A. Greenwood commands the Australian unit, the first British Dominion Squadron to operate against the enemy in WW II.

LETTERS

SIRS:

The U.S. Naval School, Pre-Flight, displays the insignia of many commands on the bulkheads of the passageways in the main academic building. The insignia are placed on appropriate plaques and promote appreciation of Naval Aviation tradition among Pre-Flight students.

It is the desire of Capt. J. G. Hedrick, Commanding Officer, Pre-Flight, to improve the display. Therefore, it would be appreciated if you would request all aviation units to send to the U.S. Naval School, Pre-Flight, NAS PENSACOLA, Florida, two decals of their insignia. We will mount the insignia and display them for the benefit of our prospective Naval Aviators, support personnel and guests.

JOHN M. BARRY, LT.
Service Information Officer

RESCUE DATA NEEDED

THE NAVY is seeking additional information from the Army, Air Force, Coast Guard, Merchant Marine, private pilots, boat owners and just plain citizens in its study of rescue and attempted rescue of Navy airmen.

The U.S. Naval Aviation Safety Center needs more complete information on rescues of Navy airmen, especially when performed by non-Navy personnel. If you rescue, help rescue or attempt to rescue a Navy airman, the Safety Center wants to hear from you.

Generally speaking, it wants to know how you reached the airman, how you found him in the first place, how long it took, how far you had to go and what delays, difficulties or failure occurred. Specifically, it is interested in the following items:

Rescue Vehicle: Boat, car, etc.

Means of Locating Airman: High visibility equipment—helmets with reflective tape, etc.; signaling devices—flares, flashlights, whistles, radio; miscellaneous—orbiting aircraft, telephone calls.

Time Factors: Time from accident to sighting survivor or his signals; time from accident to arrival of rescue personnel on scene; time from arrival on scene until rescue accomplished or abandoned.

Reasons for delays, difficulties or failure: Condition of equipment or training of rescue personnel, physical condition of victim; parachute drag; weather, darkness, etc.

Your factual information written or typed on a sheet of paper or a postcard will help the Navy improve rescue equipment and methods. Send your information to:

U.S. Naval Aviation Safety Center
NAS, Norfolk 11, Virginia
(Attn: Code 40).

Exhibitionist to Eglin Albert Ends Languish in Anguish

An unbroken tour of duty in Pre-Flight, 17 years long, will soon be ended by the issuance of orders. This record-making stay is held by 700-lb. Albert, an 11½-foot long alligator which, during this period, starred in a survival exhibit at NAS PENSACOLA school.

When originally acquired in 1944, Albert measured a scant nine inches in length. In the intervening years, an average 15,000 students and guests annually watched the gator grow—from a safe distance.

Upon detachment from Pre-Flight, Albert will report to the U.S. Army Ranger survival exhibit at Eglin AFB, and will have the same sort of assignment—resting and conducting terror tactics for the edification of students. A three-day survival field trip at Eglin reservation is part of the training all students receive at Pre-Flight.

At his new station, Albert will meet Sgt. Big John, one of the largest male alligators in captivity. Great things are expected of this meeting. Albert, for instance, will probably end an enforced lifetime celibacy.

Because of obvious consequences, Pre-Flight has finally informed the animal that its name is a misnomer. Albert is a girl.

VA-95 Turns in High Total Racks up 1005 Hours in Month

Attack Squadron 95, commanded by Cdr. S. F. Abele, completed November operations with a total of 1005 hours of flight time for the month.

Officers and men of the "Lizard Squadron," deployed in WestPac aboard the USS *Ranger* (CVA-61), played a major role in ship/air group team performance that compiled 4200 hours in one month's operations.

With one-third of the squadron's AD-7's held on board owing to operational requirements, VA-95 still managed to launch 273 sorties and 291 carrier landings, 110 at night.

Safety Award to Marines For Accident-Free Flight Records

Two squadrons of the 1st Marine Aircraft Wing based at MCAF Iwakuni are recipients of aviation safety awards for accident-free flight records during the second quarter of 1961.

VMR-253 and MARS-17 logged, respectively, 3735 and 1835 safe hours.

First Copter Rescue Cited Opened up Era in Saving Personnel

A young Navy lieutenant became the first Naval Aviator to be rescued by a helicopter when on 9 February 1947, he was pulled from the water by a Sikorsky S-51 after his SB2C had ditched in the sea.

Recognition of this event which took place 15 years ago came when Cdr. (the lieutenant of 1947) R.A. Shields was presented the Sikorsky Winged S award in ceremonies at NAS Miramar, Calif.

The rescue occurred while Lt. Shields was attached to VA-7A aboard USS *Leyte* during operations in the Atlantic and Caribbean areas. The rescuing pilot was Sikorsky Chief Pilot D.D. Viner who was aboard *Leyte* to demonstrate the S-51 for the Navy.

Lt. Shields' SB2C developed engine trouble so he was forced to ditch. Viner lowered the line he used for picking up mail, pulled Shields into the helicopter and deposited him on the deck of *Leyte*.

After his experience, Cdr. Shields developed an understandable interest in helicopters, received helicopter training and piloted the aircraft for more than eight years.

"I was in the water only a short time," Cdr. Shields recalls. "I had no idea at the time, however what an impact my experience would have on the business of flying, particularly air/sea rescue."

Cdr. Shields was X.O. of HU-1, Ream Field, before going to Miramar.

Sky-Hi Station Established Measures Earth's Magnetic Field

A new scientific station has been established in the Antarctic in what RAdm. David M. Tyree, Commander, Naval Support Force, has described as the most difficult air support project ever undertaken at McMurdo Sound.

The station, called Sky-Hi, lies between the Palmer Peninsula and the Sentinel Mountains, about 1500 miles from coastal McMurdo.

Sky-Hi will be used to make new measurements of the earth's magnetic field and of the ionosphere—a layer of electrified air vitally important in radio communications.

Three C-130 *Hercules* aircraft of VX-6 and three AF C-124 *Globemasters* made the lift, delivering 36,000 pounds of cargo, 7000 gallons of fuel.

SQUADRON



INSIGNIA



From San Diego to Singapore the fast lenses of Light Photographic Squadron Sixty-Three bring the entire Pacific into sharp focus. Since commissioning in 1949, the Miramar-based squadron has known many designations—VC-61, VFP-61, VCP-63 and VFP-63—but only one mission: "To provide photographic reconnaissance for the Pacific Fleet." Commanded by Cdr. Arthur D. Heinze, the squadron flies its photo-Crusaders from every U.S. attack carrier in the Western Pacific.





NAVAL AVIATION

NEWS

PREY FOR A P2V. It's said that the best way to find a sub is to 'think' like one. To this end, the thoughts of thousands of Navymen in our ASW forces are devoted on a round-the-clock basis. With hostile submarines one of our greatest threats, the intricacies of integrated ASW tactics must be mastered and improved, and skill in the use of several weapons kept proficient. The 'moment of truth' strikingly portrayed here is a drill. Tomorrow it might not be. For such an eventuality, the Naval Airmen who spearhead the ASW effort must and do maintain 'no drill' readiness, fully aware that there will be no trophies for second place.