

NAVAL AVIATION

NEWS



42nd Year of Publication

MAY 1961

SHARE
THIS
COPY



A2F SHOWS HERCULEAN STRENGTH

Grumman A2F-1 Intruder demonstrates an amazing lift potential by flying with fifteen thousand pound payload of thirty 500-pound bombs mounted externally in clusters. Purpose of the recent flight was to test the suitability of multiple bomb racks on the carrier-based attack plane. With this muscle, the A2F will combine long range and improved electronic equipment which frees pilot from normal navigational problems while in process of making his attack.

FORTY-SECOND YEAR OF PUBLICATION, MAY 1961

■ IN THIS ISSUE

- Naval Aircraft** 6 *Fourth in a series of articles by BuWep's Hal Andrews deals with heavy attack and anti-submarine types through the years.*
- ELTO Course** 14 *Diary of student at NATTC Memphis reveals interesting facts about Navy's junior postgraduate school.*
- CVA-64 Bounces Back** 16 *Constellation cuts time and cost; adds new improvements.*
- Carrier Press Release** 19 *PIO provides striking photo-feature treatment of recent Med deployment.*
- F4D Refueling** 25 *New, approved method of gassing airborne Skyrays is explained by VF-74's Al Da Rodda.*
- Disaster Mission** 28 *Michigan Weekend Warriors, en route from Jax, delay return to home base to bear big band in Georgia flood areas.*
- MAG-16** 34 *Rundown on Marine helo group based in the Far East.*

■ THE STAFF

- | | |
|--|--|
| Cdr. George F. Rodgers | Head, Aviation Periodicals Office |
| Cdr. Walter E. Aymond | Editor |
| Izetta Winter Robb | Managing Editor |
| LCdr. R. J. Massey,
Joseph E. Oglesby, JOCS | Associate Editors |
| Cdr. Oliver Ortman, Harold Andrews | Contributing Editors |
| Dorothy L. Bennefeld | Assistant Editor |
| James M. Springer | Art Director |

■ COVERS

Appropriate on our Naval Aviation 'birthday' cover is a 1911 print of Naval Aviator #1, Lt. T. G. Ellyson (at controls) with famed passenger, Capt. W. I. Chambers. On the back cover is a future Naval Aviator, Larry Hampt. A University of Maryland senior, he begins his air training shortly.

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

Published monthly by Chief of Naval Operations and Bureau of Naval Weapons to disseminate safety, training, maintenance, and technical data. Send mail to Naval Aviation News, Op 05A5, Navy Department, Washington 25, D. C. Office is located at 2306 Munitions Bldg. Telephone: Oxford 62252 or 62259. Annual subscription rate is \$2.50 check or money order (\$1.00 additional for foreign mailing) made payable to Superintendent of Documents, Government Printing Office, Washington 25, D. C. Single copy, \$.25.



NAVAL AVIATION NEWS

More Hawkeyes Authorized Grumman Gets \$38-million Pact

Additional production of Grumman W2F-1 *Hawkeye* aircraft has been authorized under a \$38-million contract.

The *Hawkeye*, a carrier-based early warning and intercept control plane, was accepted in October. It was designed to protect task forces from airborne attack, to detect and evaluate the nature of an impending attack, and to advise the force commander of the minimum lead time necessary to intercept fast-flying attacking planes.

The W2F-1 carries a crew of five. It is powered by two T-56-A8 engines.

S2F-3 Reaches Pacific Fleet Delivered to VS-41 at North Island

The first Grumman S2F-3 *Tracker* has entered squadron service with VS-41, replacement training squadron based at NAS NORTH ISLAND.

On hand to inspect the improved aircraft were VAdm. C.E. Ekstrom, ComNavAirPac, RAdm. W.F. Rodee, ComFAir San Diego, and Cdr. Lewis S. Bogan, Commander of VS-41.

The S2F-3 provides hunter-killer groups with greater range, improved

radio and radar equipment, the latest ASW electronic gear, and better cockpit layout to decrease crew fatigue and thus increase crew efficiency in flight.



VADM. EKSTROM, BOGAN INSPECT S2F-3

Glynco Graduates 4 NAO's First USNA Grad Gets NAO Wings

Wings of gold and letters of Naval Aviation Observer (Controller) designation were awarded 9 March to four officers who completed the AEW/ECM Course. These symbols of

achievement were presented to Lt. David G. Guthrie, Ens. Gary L. Tucher, Ens. Wendell C. Ridder, and Ensign Frederick S. Wilson by Capt. W. J. Bush, Jr., C.O. of the U. S. Naval Aviation School at NAS GLYNCO. This class brought to 16 the number of NAO's to go to the Fleet from Glynco.

Ltjg. Guthrie is the first Naval Academy graduate to receive Naval Aviation Observer wings at NAS GLYNCO under the Naval Aviation Officer Program.

VX-5 Receives Phantom Will Test Its Delivery Capability

Air Development Squadron Five received an F4H-1 *Phantom II* for tests in dealing with delivery of nuclear weapons. Capt. Karl S. V. Meter, squadron commander, flew the plane to NOTS CHINA LAKE.

Other squadron pilots who have been checked out in the F4H are Lt. C.B. Austin, Marine Capt. H.W. Vincent, and Lt. G.E. LeBlanc, Jr.

VX-5's primary interest is to evaluate the attack capability of the Phantom and determine the efficiency of the airplane as a delivery platform for conventional and nuclear weapons.



F4H-1 PHANTOM II fighter lands aboard USS Ranger in Pacific for first time. Also aboard for a week of intensive operations, as Ranger completed yard availability, were A3J Vigilante and Crusader aircraft to participate in Carrier Suitability Trials.



BUTTER MELTS IN WEARER'S HAND AT 135°

40° Below to 135° Above Comfort at the Flick of a Switch

A suit capable of keeping a man comfortable in temperatures ranging from an engine room with all vents closed to the chilling environment of an ice cap has been designed by the Navy and Westinghouse.

The flick of a single switch makes all the difference.

The suit proper weighs 13 pounds; the thermoelectric unit mounted on a wearer's back weighs 45 pounds.

Heating or cooling is done by passing a current through thermoelectric couples. A variable number of couples



AT 40° BELOW, SUBJECT IS COMFORTABLE

can be used to adjust temperatures.

Tests show that a temperature of about 80 degrees F. is maintained when external temperatures vary from 40 below to 135 above.

Air tight, the suit is made of an insulated aluminum coated fabric. Air for breathing is supplied through a face mask connected to the side of the suit helmet where incoming air is heated or cooled by a small heat exchanger.

Design and fabrication of the garment, installation of the air-conditioning system, and testing of the finished suit were done by the Clothing and Textile Division of the Naval Supply Facility at Bayonne, N. J.

Air Group Eleven Returns Spends 24 of 36 Months in WestPac

When Air Group 11 returned to Miramar after its latest Far East deployment aboard the *Hancock*, the group had spent 24 of the past 36 months in the Western Pacific.

As last deployed, CVG-11 was comprised of VF-111 and 114, VA-112, 113 and 115, detachment Charlie of VAH-4, HU-1 and Light Photographic Squadron 61.

Total flight hours logged by the air group were 19,894, more than twice the time flown from the same ship on its previous deployment. These hours included 5700 catapult launches and 6900 arrested landings.

In addition to training flights with elements of friendly forces from the Philippines, Taiwan and Japan, CVG-11 personnel found time to advance the people-to-people program, distributing clothing to the needy in connection with Operation *Handclasp*.

Air Group and ship's company personnel contributed blood in the Philippines and Hong Kong, and money and food for orphans in Japan.

Air Group 11 represented the U. S. Navy at the gala celebration of the 12th annual Philippine Aviation Week.

Man with an Unusual Job Danico, 21, Deals in Destruction

The occupation of Fred Danico, AE3, at the Naval Missile Facility, is unique among the tasks performed among a half-million Bluejackets.

Danico, 21, checks out the destruct system that destroys ICBM's and satellite boosters which veer off course after being launched into the Pacific. Left

in flight, an erratic bird might destroy life and property. To date, no one has been injured from missile launchings from either NMC or Vandenberg AF Base.

About two weeks before a missile is scheduled to be launched, Danico checks all transmitters and receivers in the destruct system. Final tests are made approximately five hours before launching. During these checks, the destruct package is removed from the missile and a flash bulb or meter is put in its place.

A radio signal is then sent to the missile and Danico determines if the destruct receivers are getting sufficient voltage. If tests are satisfactory, the package is installed.

If a missile violates safety criteria after launch, a specially coded radio signal is sent to the missile. Receivers pick up the signal and pass an electrical impulse to explosive charges located strategically in the missile. When triggered, charges rupture the fuel tank, downing the bird.



DANICO USES METER DURING COUNTDOWN

Hunter-Killer Unit Deploys Departs San Diego for 7th Fleet

The Pacific Fleet's first permanent hunter-killer ASW task group left San Diego in March to join the Seventh Fleet in the Far East.

Ready hunter-killer Group Alfa is comprised of the ASW carrier USS *Kearsarge*, Destroyer Division 72 which includes the destroyers *John W. Thomason*, *John A. Bole*, *Lofberg* and *Taussig*, and Escort Division 31 which includes the Destroyer Escorts *Hooper*, *Bridget*, *Evans* and *Bauer*.

Embarked in the *Kearsarge* is Carrier Anti-submarine Air Group 53, which includes VS-21 and VS-29, HS-6, and a detachment of VAW-11.



GRAMPAW PETTIBONE

Bear Trapped

A T-28 with a couple of experienced pilots aboard touched down one dark night at a West Coast airfield. They had come in on an IFR clearance and, after a GCA approach, had landed a little long on the runway.

Both of the pilots in the T-28 had been into this field before and knew that the area between the main runways was completely paved with asphalt, in fact, frequently used for take-offs and landings.

During the roll-out and after crossing an intersecting runway, a right turn off the duty runway was requested. The tower cleared them to turn and also to taxi back across the intersecting runway.

Having slowed to below 20 knots, they promptly initiated a right turn, and as they crossed the runway edge onto the mat the nose gear suddenly collapsed, the T-28 came to a screeching halt. They had struck the heavy runway arresting gear chain!



Grampaw Pettibone Says:

'This puts tears in my achin' eyes! I sure wonder how many pilots and these two probably right with 'em have looked at and NEVER REALLY



SEEN those arresting gear chains that lie alongside of 'most every runway in the Navy? Maybe we oughta paint 'em orange too, 'cause they're like a big cocked bear trap waitin' to catch an unwary, non-thinkin' pilot! NEVER turn off a runway at night except onto a marked lighted taxiway! The whole dark area may be full of ditches, pot-holes, parked steamrollers, trucks, or stored aircraft. The tower better get the word too. Some time ago this same thing happened here, only THAT TIME an AD put a wheel in an open manhole!

Big Help

A P2V-7 Neptune was en route from Argentina to Jacksonville. The weather was extremely rugged with heavy rain and severe turbulence. Suddenly, the plane was approaching a radar check point over New England, the port engine started to go haywire. Things went from bad to worse, so the plane commander had to feather the engine and shut it down.

Declaring an emergency, he requested weather at all major airfields in the area and selected a nearby Force base, an all-weather field, for his single engine emergency landing. Although the ceiling there was only 200 feet and the visibility one mile, the field had a GCA unit and a 11,400 foot runway with 1000 foot overruns.

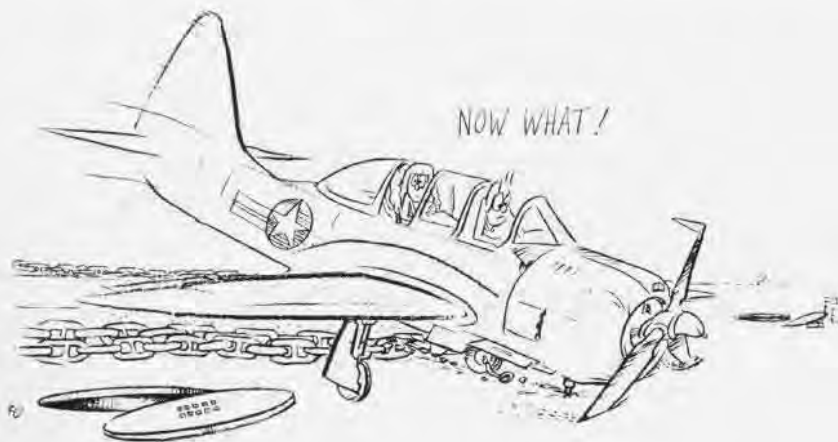
Four actual single engine GCA's were made to the airfield without touchdown. A crosswind of 50 knots at 2000 feet altitude created turbulence so severe that it took combined efforts of both pilot and pilot on the yoke to retain control and made a steady approach almost impossible. The PPC decided to have the plane captain come forward to the jump seat and monitor the engine instruments and make power changes directed, thus freeing himself for necessary communications.

On the fifth GCA approach, in spite of heavy rain, a successful touchdown was made 4000 feet down the runway.

During the roll-out, main brake was almost completely ineffective, probably owing to extremely wet runway conditions and a 15 knot 90 degree left crosswind, the pilot was having difficulty in maintaining directional control with the nose wheel steering.

As the P2V slowed down, nose wheel steering became effective, and the P2V began using the emergency brake system. At 1300 feet from the end of the runway, the pilot locked the emergency brake system and concentrated on staying on the runway centerline.

At this point, the plane captain reached forward and, without



pilots' permission, put the starboard engine into full reverse!

The PPC applied full left rudder to no avail, and the P2V came to a skidding halt 85° to the right of the runway heading and 1100 feet from the runway's end.

It took 400 man hours to repair the damage to the aircraft's landing gear. It's going to take more than that to repair the PPC's confidence in his plane captain.



Grampaw Pettibone says:

Sufferin' catfish! This lad undoubtedly had good intentions, but he showed darn little confidence in his plane commander. They still had 1300 feet to go and 1000 feet of good over-run after that. Anybody (other than the pilots) who grabs controls in the cockpit without being asked oughta get his arm busted! The same goes for passengers who get on the intercom with all kinds of bright ideas, usually delivered in a sort of high-pitched scream.

In one year such volunteer assistance has contributed to the loss of a P2V, an S2F, a TF, an R4D, and substantial damage to an SNB, and now another P2V! NO ONE should initiate any power or control changes unless the pilot orders it! You COULD surprise him to DEATH!

As a pilot friend of mine said to some apprehensive passengers the other day, "When I'm up front, DON'T SWEAT! It's when I go by, heading aft in a hurry, that the worry starts!"

Rugged Bolter

After a normal mirror approach, an F4D touched down on the deck of a big CVA. It felt like a good landing, the pilot was sure that he had gotten No. 2 or No. 3 wire. As the FORD decelerated after engagement, the pilot advanced the throttle to MRT, following squadron SOP.

At this point the deceleration ceased, and he realized something had gone wrong. He was going to bolt! He selected afterburner and continued down the angled deck! The light-off seemed excessively delayed, but the burner finally cut in, and he lifted off safely, pulling up in a left bank, wondering what had happened. Perhaps a wire had broken. This had happened only the day before on an FSU engagement.

As he thus calmly thought over the bolter, the relative calm of the land-

launch radio circuit was shattered with cries of "Pull up and get out!" "Eject," "You're on FIRE!" and "Helos, go get him!" This last little phrase really did it.

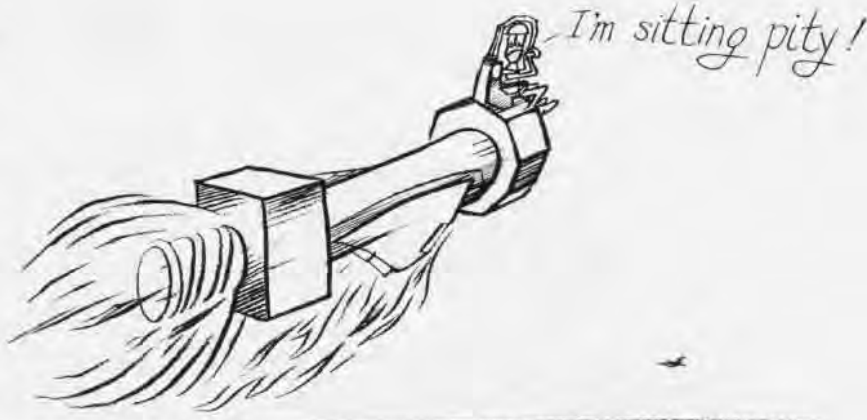
With adrenalin surging through his system, the pilot made some lightning calculations. He had his zero lanyard hooked up, had about 750 feet of altitude and was still climbing. He'd read of another pilot making it under similar circumstances after a catapult shot.

Positioning himself in the seat, he reached up with both hands and pulled the curtain...hard. The curtain extended about eight inches and stopped abruptly! He jerked hard two more times! Nothing happened! Not even the canopy had left.

find the handle flapping in the breeze! Grabbing the cloth portion, he worked his way up to the handle and PULLED. The seat fired and he felt himself tumbling violently, followed by a feeling of no motion at all. The chute had opened! He was safe! Or was he?

He found himself looking straight at an oncoming A4D and waved violently. The A4D man saw him, banked left and whooshed by. A few seconds later, after unbuckling his leg straps he looked down to see how high he was and saw himself looking back up, reflected in the glassy surface of the water.

After rescue by a helo a few minutes later, he found he had torn his exposure suit and was wet to the



Releasing the face curtain, he looked out to find himself in a nose-low, left bank, descending through 500 feet, still in burner. He leveled the wings, pulled the nose up and came out of afterburner, thinking this might diminish the fire and give him a little more precious time.

He wasn't particularly interested in ditching, so he decided to try ejection again after first blowing the canopy, or as a last resort to try to bail out over the side.

As he pulled the canopy jettison handle, all the fire-warning circuits were activated, but he didn't need those...he was riding the apex of a big ball of flame!

The canopy separated normally, so he reached for the curtain again—to

waist, the water sloshing around as he moved about the helo. In the excitement of rescue he hadn't even noticed it before.



Grampaw Pettibone Says:

In case you're awonderin', this lad's tail hook tore clean out takin' quite a bit of the tail structure with it. We can't PROVE what happened to prevent normal ejection, but there's been quite a few cases these past six months or so of seat failures which could have been prevented by good comprehensive periodic "dry run" checks.

That seat's only purpose is LIFE SAVING. Any time spent maintaining it in tip top shape is never wasted! This cool headed lad pretty well "made his own luck." ★ ★ ★



50 Years of Naval Aircraft

HEAVY ATTACK AND ANTI-SUBMARINE

THE NORTH AMERICAN A3J-1 *Vigilante*, shown above carrying external stores under the wings, will soon be the "big punch" of our attack carrier task forces. When the missions require long range and supersonic speeds to deliver a special weapon on a pinpoint target, these are the airplanes that will be catapulted from the carrier decks to do the job.

From other carrier decks, Grumman S2F *Trackers*, capable of killing subs with a wide variety of conventional and special weapons, will operate on their anti-submarine task, searching for subs with the latest avionic equipment available for the job.

As different as these two airplanes are—each being designed to perform its particular mission in the most effective manner—they have a common heritage among Naval aircraft up to little more than a decade ago.

In World War I there were initially light bombers or bombers. With the development of torpedo attack capability, the torpedo plane classification evolved. Having retained level flight bombing capability, they became torpedo bombers with the adoption of multiple purpose class

designations. As such, they served through WW II.

With the *Midway*-class carriers and the concept of large multi-engine, carrier-based strike airplanes, heavy attack types came into the picture. The torpedo strike capability was assumed by the smaller general purpose attack aircraft. With the advancements in specialized anti-submarine warfare equipment, a new class was born for those attack types serving this function; the ASW aircraft.

At the time of our entry into WW I, missions were not clearly defined for the different aircraft in use. Among these aircraft were the Curtiss R's, tractor biplanes typical of the period. With a fair load-carrying capability, the R-6L "service seaplane" was selected as one of the types to be procured. It marks a good beginning for the heavy attack line of naval aircraft, particularly because the R-6L, modified version with the 400 hp *Liberty* replacing the 200 hp Curtiss engine, was subsequently selected for early U.S. torpedo dropping experiments.

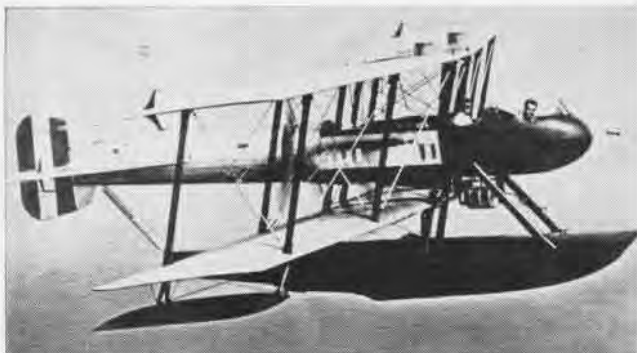
For actual combat operations, the Navy and Marine squadrons of the Northern Bombing Group in France turned to bombers of foreign design; particularly to the



R-9 WAS TYPICAL of Curtiss R Models used by Naval Aviation in WW I as "military seaplanes." Some of them were deployed overseas.



IMPROVED VERSIONS of the WW I DH-4, such as this DH-4B-1, were used during the early twenties, primarily by Marine aviators.



GALLAUDET D-4 was experimental seaplane. Unusual feature was prop mounted in fuselage aft of wings; blades rotated around fuselage.



TWO LIBERTY ENGINES powered this Martin MBT, first of ten purchased in 1919 and used initially for torpedo launching tests.

well-known DH-4, using the U.S.-built, Liberty-engined version of this British design. As in other services, modified and improved DH-4's were to serve a first line role for many years, used primarily by the Marines.

A number of other experimental types were developed in an attempt to provide higher performance bomber type aircraft during WW I and the early post-war period. One of the more interesting of these was the Gallaudet D-4 seaplane, which used a Liberty engine to drive a propeller rotating around the fuselage just aft of the wings. This design had its origin before our entry into WW I, when



FOKKER FT SEAPLANES were purchased from Dutch company, used Liberty engines. Design was typical of contemporary Fokker airplanes.



CURTISS CT, an experimental cantilever wing monoplane, using two 350-hp Curtiss engines, had tail strut-mounted to floats and nacelles.



SPERRY EXPERIMENTAL light bomber of 1920 was an unusual design, a triplane amphibian powered by a single 350-hp Liberty engine.

types were not specifically classified. The D-4 version was a bomber capable of carrying anti-submarine bombs.

Another somewhat ambiguous experimental type of the early post-war period was the Sperry triplane. An amphibian, also powered by a single Liberty engine, it was classified as a night bomber.

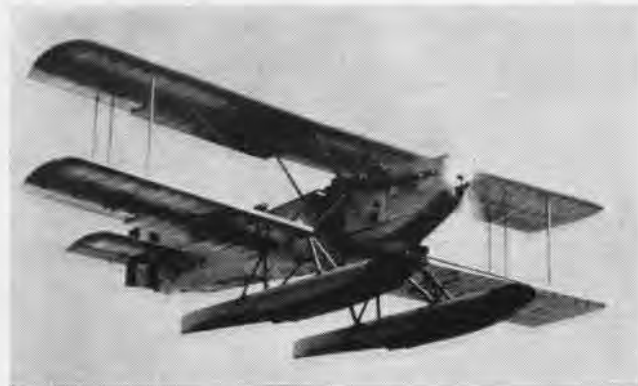
One of the limitations of the R-6L as a torpedo launcher was its lack of ability to carry weight, which limited it to carrying a 1000-pound torpedo. The Army's very success-



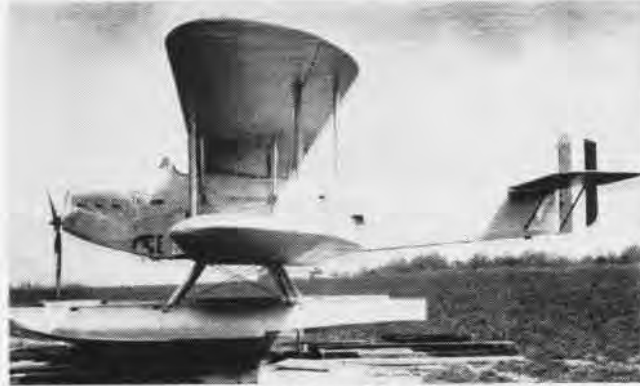
NAVAL AIRCRAFT FACTORY PT's were first aircraft used by new torpedo squadrons. Design was basically combination of existing types.



FIRST DOUGLAS military airplane was 1921 DT, a single place, folding-wing convertible biplane, powered with a Liberty engine.



MARTIN T3M-2 convertible of 1926 was the last production torpedo-bomber using large liquid-cooled engine; had 770-hp Packard.



BOEING TB-1 was experimental type of 1925; its configuration was typical of the large convertible torpedo-bombers of this period.



DOUGLAS T2D-1 with two 525-hp Wright Cyclones was used for carrier operations as well as being convertible; entered service 1927.



TWIN-ENGINE XTN-1 was Naval Aircraft Factory-built prototype which used early versions of the larger Wright air-cooled engines.

ful Martin MB bomber with two *Liberty* engines caught the Navy's eye, and a small number of MT/MBT types were procured and used in 1921 for launching development with the 1760-pound torpedo. They were also used by the Navy and Marine squadrons over the next few years.

With the successful development of torpedo launching, and the more orderly pace of the peacetime years, the path of progress in what had become VT class aircraft is easier to follow.

In 1920/21 the initial torpedo planes were ordered. These involved a wide range of types—some extremely advanced, others more conventional. While these were being developed, the Naval Aircraft Factory produced an interim torpedo plane based on the R-6 design, using the surfaces of the H-5-2L flying boat. This was the *Liberty*-engined PT,



WIDELY USED Martin T4M-1 was first torpedo-bomber in general service on carriers; also operated as seaplane, had 525-hp P&W Hornet.

the first new type to serve in the torpedo squadrons.

Two advanced designs were the Curtiss CT and Stout ST, both twin engine, cantilever wing monoplanes. The ST was one of the first all-metal aircraft of U.S. design to fly but its advanced design was too big a step forward and the problems arising were not solved. The Curtiss design was a twin float seaplane; it also suffered from problems related to its advanced design. Neither type reached production.

Interest in foreign aircraft designs resulted in two other types being purchased for evaluation. The Dutch Fokker FT was a new design, a low wing monoplane based on Fokker's successful cantilever wing designs. The British Blackburn *Swift* was a large conventional biplane based on the more extensive British experience with torpedo planes which dated back to 1915.

The most noteworthy type in meeting the Navy's needs for a service torpedo plane was the first Douglas military airplane, the DT. This was a conventional single-place, *Liberty* engine powered biplane, and was convertible (wheels or float gear) with folding wings for shipboard stowage. Revised to a two-place design, production of the DT series by the infant Douglas Company followed, as well as by the Naval Aircraft Factory and the old L.W.F. Engineering Company. Eventually different engines were installed and the airplane was redesigned for long-range scouting and horizontal bombing. One airplane was later modified with the predecessor of the Wright *Cyclone* series of air-cooled engines.

As Fleet experience was gained with torpedo and scouting operations, it was decided that one type of aircraft could do both jobs—as well as bombing. This resulted in



DOUGLAS XT3D-2 was experimental carrier based torpedo-bomber of 1933, using early, geared P&W Twin Wasp of 800-hp. Photo shows

features typical of VT class aircraft of period, including bombardier's cockpit directly behind engine, bomb-aiming panel below.



ATTEMPT TO PRODUCE higher performance torpedo airplane was 1930 Martin XT6M-1, with bomber mission deleted. Engine: 575-hp P&W.

the "triple purpose" aircraft, of which the Martin sc's were the outstanding example. These large cumbersome airplanes operated as seaplanes or landplanes, and were used by both torpedo and scouting squadrons during the mid-twenties.

In 1925 new designs entered the picture. These intro-

duced such features as all metal internal structure and twin air-cooled engine configurations.

Two followed the earlier pattern, both having large liquid cooled engines. The Boeing TB-1 with a Packard engine did not reach production but the Martin T3M-1 which was based on the sc, using a Wright T-3, went into service as a replacement for the sc's. Later T3M series aircraft included prototypes with air-cooled engines.

With a Wright air-cooled radial engine larger than the Whirlwind under development, BUAER had designed a twin-engine airplane capable of performing the VT class missions. A prototype was ordered from the Naval Aircraft Factory as the XTN-1, and subsequently additional prototypes were ordered from Douglas. The XT2D-1 went one step beyond the initial concept, and in addition to being convertible, it was designed to be operated from the new carriers. After some delays caused by problems in the engine program, the T2D went into production. In many ways, the service T2D-1's were the forerunners of today's heavy



LAST BIPLANE torpedo bomber was experimental Great Lakes XTBG-1 of 1935, using 800-hp Twin Wasp. Carried its weapons in bomb bay.



XTBD-1 WAS PROTOTYPE of outstanding Douglas monoplane which served into early WW II as Devastator, powered by 800-hp Twin Wasp.



CONVAIR TBY-2 *Seawolf*, a production version of the Vought XTBU-1 was just being delivered for squadron service at the end of WW II.



TBM-3E shown above in early post WW II period is typical of the TBF/TBM Avengers which served throughout WW II in many missions.

attack planes, capable of a long-range strike from a carrier force. In a redefinition of service roles, however, they were assigned as patrol types, operating from shore bases.

The advent of the large radial air-cooled engines set the stage for one of the outstanding Navy torpedo-bomber designs, the T4M-1, which was a folding-wing, convertible biplane. It was operated by the air groups on the *Langley*, *Lexington* and *Saratoga*.

When the Martin Company moved to Baltimore from Cleveland the Great Lakes Aircraft Corporation continued production in the former Martin plant as the TG series.

Two new prototypes appeared by 1930. The XT6M-1 was an attempt to build a more effective torpedo plane by eliminating the horizontal bombing mission, reducing the crew to two, and providing a lighter, faster airplane. It introduced modern, all-metal fuselage construction to the VT class aircraft.

The XT3D-1 was a multi-purpose type with the bombardier right behind the engine as in the T4M/TG's. It was greatly improved later with a twin-row engine and much streamlining. However, neither type was selected for production and TG-2's continued as the only torpedo bomber into the mid-thirties.

By 1934, the TG's still in service were obsolete and a competition was initiated for a VTB class replacement. One of two designs selected for a prototype contract was the Douglas XTBD-1, which introduced folding wing, all-metal, monoplane construction to this class of carrier aircraft. The other, the Great Lakes XTBG-1, was a biplane; its design was typical of Navy carrier biplanes of the mid-thirties. Both used early versions of the Pratt & Whitney *Twin*

Wasp. While the XTBD-1 carried its torpedo or bombs externally, its biplane competitor carried them in a bomb bay.

Time had run out for the biplane, however, and the TBD-1 was selected for production, setting a new standard for torpedo plane design among the navies of the world. The TBD's served into the WW II period when, as *Devastator* they were nearly eliminated in early actions.

With TBD's in service, and advancements such as large engines and power-operated gun turrets becoming available a new program was started to provide greatly improved torpedo bombers for the Fleet. Chance Vought and Grumman won the awards for construction of prototypes in 1940, building the XTBU-1 with P&W R-2800 *Double Wasp* and the XTBF-1 with Wright R-2600 respectively. Both were mid-wing monoplanes. Each had an internal bomb bay, an upper-aft power-operated gun turret as well as a lower aft gun position and a fixed forward firing gun.

Before either of these prototypes was flown, the military build-up forced a decision to proceed with production of one type. The XTBF-1 was selected, and it became the famous WW II TBF/TBM *Avenger* series, built by both Grumman and the Eastern Aircraft Division of General Motors. Fitted with various search radars and extensively modified internally, the *Avengers* were used for many varied missions throughout the war—including glide and low level bombing, mining, torpedo attacks, and anti-submarine convoy protection missions from escort carriers.

The XTBU-1 prototype program was continued as a backup, and when flight tests showed the XTBU-1 to offer some performance advantages over the XTBF-1, production of this design was also of interest. Since Chance Vought w



DEVELOPED as a large, heavily armed VTB airplane during WW II was the XTBD-1 using a 3000-hp P&W *Wasp* Major driving contraprops.



XTBF-1S and -2S preceded AF-2S/-2W *Guardian* ASW pair; developed from late WW II design that first had jet engine in aft fuselage.



FIRST 'HEAVY ATTACK' aircraft was the XAJ-1, prototype of the NAA Savage series which introduced this class to carrier task forces.



NORTH AMERICAN XA2J-1 with two Allison T-40's was experimental heavy attack plane; but was dropped in favor of jet-powered A3D-1.

concentrating on Corsairs, another production source was sought. The XTBU-1 finally went into production in a plant operated by Consolidated-Vultee (Convair) as the TBY *Sea-wolf*. Owing to the delays in starting this program, the limited number of TBY-2's delivered for service use did not reach combat.

Along with the changes which were taking place in combat tactics using the *Avengers*, revisions to attack plane concepts occurred. The increased power and size in service dive-bombers made it possible for them to deliver torpedo attacks—resulting in the bomber-torpedo (VBT) class of aircraft. This was to become the standard attack category.

Programs were undertaken at the beginning of the war to provide larger VBT types capable of extended range operations, including the XTBD-1, a single *Wasp Major* powered tricycle gear monoplane and the XTBF-1, a twin engine design. The latter was cancelled before reaching flight test, but the XTBD-1 was in the flight test stage when cancelled after the war. Both utilized heavy defensive armament.

The XTBF-1 was initiated in early 1945 to utilize jet boost for maximum speed operation with no guns.

With the war over, Naval Aviation looked ahead to determine what was needed for its future role. VBT (VA) class aircraft in the flight test stage were capable of performing most of the missions formerly in the province of the torpedo bombers. However, the ability of the *Midway*-class carriers to operate larger aircraft, and the new airborne weapons pointed to the need for a large, fast, long range attack plane to extend the striking power of the carrier task forces.

The North American XAJ-1 was designed to fill this role,

becoming the first of the carrier based, heavy attack types. It used two *Double Wasps*, with an Allison J-33 jet engine in the aft fuselage. After extensive development, AJ *Savages* went into service in the early fifties.

While construction of the XAJ-1 was underway, the XTBF-1 had flown. Developments in electronic equipment and an increasing emphasis on anti-submarine tactics led to the concept of using two airplanes, a search airplane and a killer to perform the ASW role. TBM-3W search airplanes were paired with new -35 killer versions, and the XTBF-1 was revised to become the AF-2S/-2W *Guardian* pair, without the jet engine.

The next step in heavy attack came with the XA2J-1 and XA3D-1. Initially conceived as a turboprop version of the AJ, the XA2J-1 was subsequently redesigned to a new configuration with the Allison T-40 engines. The XA3D-1 was conceived as a sweptwing, twin jet design.

Before the AF's entered ASW service, it was evident that with advancements in avionics equipment the two functions could be combined in one airframe. A design competition for an airplane of this type resulted in the XS2F-1, prototype of the *Tracker* series including the S2F-3, now entering Fleet use.

With the A3D *Skywarriors* entering service, improvements in aerodynamics, and carrier and airborne equipment, made possible a major jump in speed and altitude capability. These led to the design of the Mach 2 A3J-1 which was tied to the concept of an internally carried, aft ejected store. The *Vigilante* will soon be in service to add new capability. Thus the heavy attack aircraft, despite a tradition spanning more than 40 years, is a vital, dynamic implement in the Navy.



GRUMMAN S2F Tracker is current mainstay of carrier-based ASW operations; combines hunter-killer functions, uses varied weapons.



DOUGLAS A3D Skywarriors such as this one landing, make up our present heavy attack force, providing long arm of carrier task forces.



CONVINCED THAT ADVERTISING pays, the "Srikes" of Attack Squadron 94 decided to do something about getting recognition during a weapons deployment at NAAS Fallon, Nev. After a three-hour hike into the hills, they found a patch of white sand on one peak. Using black lava stones against the background, VA-94 constructed a sign approximately 200 feet square. Here a flight of the squadron's A4D-2N Skyhawks fly above the Shrikes' idea of the perfect billboard.

Weather Rocket is Tested Extensive Coverage at Low Cost

Use of a rocket launched from a WV-3 Constellation to gather high altitude meteorological data has been developed by scientists assigned to a BUWEPs project at the Naval Air Development Center, Johnsville, Pa.

The rocket, carrying meteorological instrumentation developed at NADC, was launched rearward while the WV-3 was at 20,000 feet. At maximum rocket velocity, the rocket attains a near vertical attitude approximately 2500 feet above the aircraft.

At this point (two seconds after firing), burn-out occurs, and the rocket head separates from the rocket motor. The rocket head continues up in free flight for a period of about 30 seconds until maximum altitude is reached.

The rocketsonde transmitter is released from the rocket head and descends to sea level suspended from a metallized parachute. During descent, high altitude information, such as air temperature, pressure, and humidity are recorded by the launching aircraft. Determination of wind velocity and direction will also be possible after slight modification of existing radar.

The rocket motors were carried in a multiple launcher attached externally to the WV-3 so that several soundings could be made.

The significance of this development becomes more apparent when it is realized that production costs of the rocket plus instrumentation should be less than \$150 to provide an altitude capability of 25,000 to 60,000 feet above the aircraft.

In addition to its aircraft application, the same rocket will provide a capability to ship or shore activities to obtain soundings from the surface to about 35,000 feet.

First of 750 in O&R Retires Completes 32 Years at San Diego

Frederick G. Arnold, Aeronautical Engineering Superintendent of Overhaul and Repair, said "Goodbye" to NAS NORTH ISLAND in March, thus ending 32 years of continuous Navy Service. At the same time he retired from the Naval Reserve in which he held the rank of captain.

Mr. Arnold, hired by LCdr. (later RAdm.) L. B. Richardson, Assistant O&R Officer in 1929, was the first Aeronautical Engineer to be hired for an O&R Department. Now in O&R

departments there are 750 aeronautical engineers and in all the Navy nearly 1200.

When "Freddy," as the old timers know him, came to work in 1929, there were only three small buildings with limited shop facilities. Most of the work involved the overhaul of seaplanes of various types, such as PN-9, but with three aircraft carriers in operation, work on land planes was beginning to mount.

Mr. Arnold's career spanned the era from slow, reciprocating engine types to the present supersonic jets. He has provided leadership for many pioneering efforts in aeronautics. For example, during WW II, when anti-friction bearings became in critical supply, the engineering staff under Arnold began to experiment with bearing overhaul. They first tried to clean a bearing by forcing hot oil through it. From that beginning, a Navy-wide bearing overhaul program was established. North Island, still spearheading this program, processes about 375,000 bearings yearly.

Most of his military tour was in his old job with a new title, Aeronautical



O&R EXPERT WAS PIONEER IN THE FIELD

Engineering Officer, and the uniform of a commander. For one six-month period, Cdr. Arnold was Assistant O&R Officer at North Island, and from November 1944 to October 1945, he was O&R Officer at Barber's Point where he administered an organization of 2500 civilian and military personnel.

New Survival Kit Designed Serves 7 Men's Needs for 10 Days

A new survival kit designed by Fleet Air Wing 11 permits enough survival equipment to be dropped in one pass to satisfy the needs of a P2V Neptune's seven-man crew for ten days.

Designed for airdrop by a P2V, the kit contains ingredients once packed into three separate containers.

With the modified equipment, which consolidates three packages into one unit, only one air drop is needed. The three survival packages are linked by line and dropped in one survival "bomb." By reaching any of the three containers, or the 210 feet of line that connects them, survivors have access to all components.

Included are a four-man raft, a Gibson Girl radio transmitter, six blankets, six leg splints, four first aid kits, two wire mesh splints, two tourniquets, 12 large first aid dressings, four chemical heating pads, two water-proof containers of matches, three Mark 2 life vests, a flashlight.

Also, chap stick, 12 dye markers, three shark chasers, eight message drop capsules, an ADR-1 sustenance kit, 11 Mark 6 drift signals, three de-salting kits, three solar still kits, a hand air pump, two bailing sponges, a reflector, three large ration cans, a compass, a jackknife, a whistle, and three oars.

HU-2, HUK-1 Part Company Last of Type Turned Over to Jax

Helicopter Utility Squadron Two has turned in its last HUK-1 helicopter to NAS JACKSONVILLE. The Kaman helo's log book was turned over to R. E. Carr, AMCAP, and LCdr. R. L. Morin of VRF-31, who ferried the HUK-1.

The type was first received 1 August 1958 and was deployed in 1959. While in HU-2, the HUK-1 flew more than 6500 hours, making 28 rescues.



THIS OLD TURKEY which graces the approaches to Navy Memphis inspires recall of facts and figures about the fabled WW II Grumman Avenger. Probably the most lenient of carrier-based types, the trusty torpedo bomber was first contracted for in April 1940, first flown in August 1941 and used initially in June 1942 by a shore-based unit of Torpedo Eight during Battle of Midway. In all, 10,820 TBF/TBM's were delivered to Navy and other services by Sept. 1945.

One of the HUK-1's most noteworthy rescues occurred last December when Cdr. Chas. Campbell and Ltjg. Frank Erhardt rescued 9 men from the tanker *Pine Ridge* which had broken up in heavy seas off Cape Hatteras.

Ofstie Field Tops Record Handles 7122 Flights in One Month

The monthly high of 5555 air operations in a single month at NAS Roosevelt Roads, Puerto Rico, has been topped by 1500+. When AF Maj.

Donald W. Bourke landed a *Globe-master* there, the total for one month stood at 7122 operations.

The previous record was set during Operation *Big Slam* last year. The new high was credited to *Springboard* operations and the operations of Marine Squadrons VMA-533, VMF-114 and VMF-263 flying from the field.

Roosevelt Roads' Ofstie Field was dedicated in May 1959 in honor of the late Vice Admiral Ralph A. Ofstie, former Commander of the Sixth Fleet.



SPECTACULAR STATIC EXHIBIT, a modular diorama highlighting great events and personalities in Naval Aviation, drew "I was there" comment from J. Sanford Otis (kneeling) in Chicago recently. Otis (Naval Aviator No. 127) and T. Clifford Rodman (l), Naval Aviator No. 125, received Navy wings in 1917. Otis flew Tri-motored Italian



planes in WW I, and Rodman is a veteran of both World Wars. With them at the Chicago Museum of Science and Industry are RAdm. A. W. McKechnie, Chief of Naval Air Reserve Training, and Maj. Lenox Lohr, museum president. The diorama (right) is to be shown throughout the nation during 50th Anniversary of Naval Aviation observances.



MIDNIGHT OIL was regularly burned. The Navy provides good instructors for the first eight hours of the day, but that second eight-hour period is strictly the "boot strap" variety.



FREE-FALLING boilers project was my best in the school's \$40,000 physics laboratory

JUNIOR POSTGRADUATE SCHOOL

Diary of a typical ELTO student gives a feel for the process by which topnotch electronics technicians learn to think like engineers so as to bridge a troublesome communications gap.

THE 52-WEEK Electronics Technical Officers (ELTO) Course for Limited Duty and Warrant Officers at NATTC MEMPHIS graduated its first class in February 1960. Initially conceived to bridge the gap of communication between the engineer and the technician, the course provides "selected Limited Duty and Warrant Officers (aviation electronics) with the advanced professional education which will enable them to provide the working level technical leadership."

In the past, although well qualified in practical electronics, technicians could not always understand what the engineers were talking about. Unfortunately, the reverse was also true. Now that the ELTO course is graduating students at an increasing rate, the Navy is bridging this vexing communication gap by providing the ex-technician with an extensive introduction to the theory of electronics based on mathematics. In this way, the ELTO course produces a "king-sized" junior engineer who has an extensive

By *LCdr. Richard V. Hartman*

practical background coupled with his newly gained theoretical knowledge.

The diary of a typical student gives you the inside word on this small but complex school as we follow the student from his initial contact to graduation. The captions also reflect the student's viewpoint.

January 15—Took diagnostic examination which was received from BuPers. Understand I must pass this to get into ELTO school in Memphis. Looks to me like they made a mistake and sent end of course test instead.

February 6—Must have passed test. Got orders to Memphis ELTO course. Better get hot on those algebra and trig correspondence courses.

June 21—Checked out books. Noticed they were all college texts. Ten people in my class. Surprised to see three Marine Warrant Officers also attending. Guess they need to get smartened up, too.

June 22—Met instructors. Four offi-

cers—all electronics engineers. Four civilians—all have degrees in math physics or education. Three Chiefs and a Master Sergeant. Understand they have college background, too. Going to be tough to know these guys.

June 25—First day of school! What am I doing here? They expect us to go to school eight hours, then study eight hours. English and engineering drawing seemed kind of silly at first until someone said that all the knowledge in the world doesn't do any good unless it can be properly presented to someone else.

June 30—Had 20 hours of math already ready. Passed first math test! Bought air conditioner and moved into garage. Three house apes don't make for best study conditions.

July 3—Started physics. This school has \$40,000 worth of brand new physics equipment.

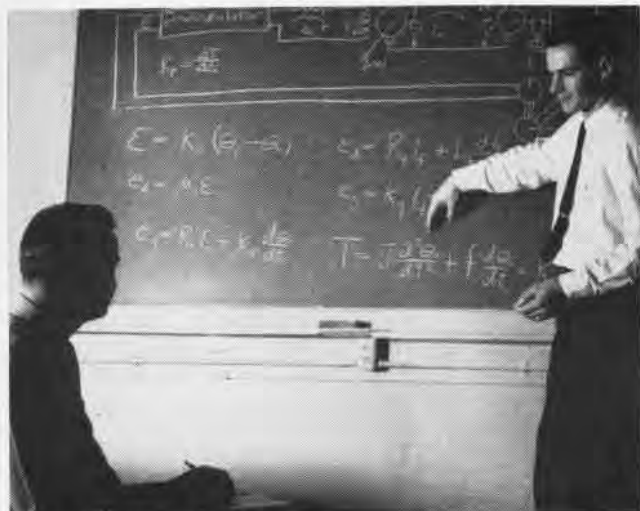
August 11—Just had lab on simple harmonic motion. Wonder where that word "simple" came from.

August 25—In calculus already. Glad I took correspondence course on the basic math.

September 21—Passed all first term final exams.

September 25—This second term has nine courses, mainly in the fields of math and physics. Hope I pass the tests. The only drawbacks in this school are the same as those at Adak—it's cold! Bought heater for garage.

November 19—Finished physics in 19th week. Didn't help much. They added a course on the math of vacuum



WHAT WAS IT the British used to say about the sun never setting on their Empire? It always set before I got differential equations.



COFFEE BREAK they called it. I never finished a cup. I spent the breaks trying to pump the instructors for just a little more dope.

tubes for our enlightenment.

November 26—Been here 22 weeks and haven't chased an electron yet. Hear that third term is a bear.

December 21—End of second term. Get two weeks off for Christmas. No wonder I couldn't understand those engineers at the factory last year. Everything they did was based on math. So is everything here. Better results this time.

January 15—Verify entry of November 26. Third term is a bear. Computers, measurements, antennas, vacuum tube circuits theory and design, AND English. Wow!

February 1—Everything we do here is based on math except English. We can expect that any day now.

February 20—Solved differential equation of tuned torsional pendulum on school's computer. Look out you engineers!

February 22—I am getting good. Designed push-pull power amplifier. Put it together and it worked.

March 6—Wish I knew this stuff when we couldn't get that blasted TACAN to work on the *Boxer* in 1956.

March 25—Seems like we're back to pure math but they call it antennas and propagation now.

April 19—Maybe I'm getting numb, but this term seems easier. All we have are servomechanisms, speech, systems, and solid state electronics.

May 6—This speech course is O.K. Wonder what "pedantic" means?

May 7—Got orders to A3J squadron at Sanford, Fla. I guess this studying is paying off.

May 8—Working hard on my thesis. Must have been out of my head when I picked telemetering.

June 6—Finished third straight week on ASB-7 in systems course. Glad I didn't design that one.

June 7—Convinced transistors are not here to stay. Just flunked exam. Guess I shouldn't have relaxed so much after third term.

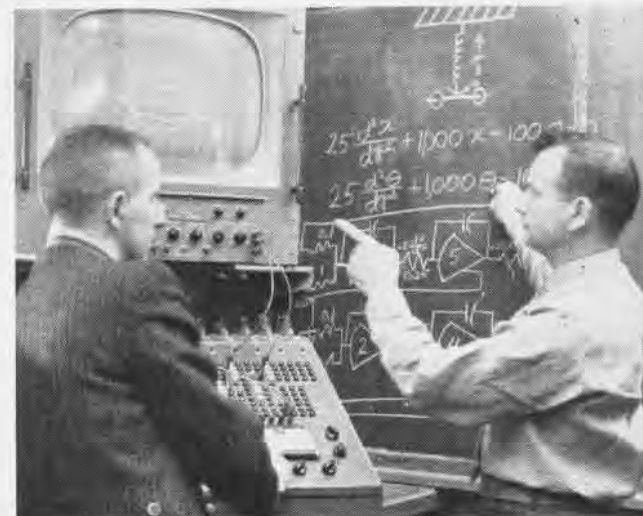
June 21—Finished last final. Passed 'em all. Next week we get a short admin and supply course.

July 1—Field trips this week. Now feel confident talking with engineers.

July 3—O.K., Sanford, here I come.



SCREEN ROOM reminded me of quiz show isolation booth. Copper wire shielding allowed us to experiment without stray radio interference.



ANALOG COMPUTER, on the desk, is used to solve differential equations. That's really a two-dollar description of an electronic slide rule.

FROM DISASTER: A NEW DETERMINATION



NAVY ENGINEERS STUDY THE BLUEPRINTS

THE GIANT supercarrier *Constellation*, severely ravaged last December 19th by fire, today is the scene of hard work and determination. Over 4000 New York Naval Shipyard workers and a 225 man nucleus crew are now speeding her toward the new commissioning date of 28 October 1961.

A shipyard study of the damage at the time of the fire estimated the cost of repairs at \$48,000,000 and the time required at one year. A special task force was organized to purchase the equipment needed to repair the ship and top priority was put on all items ordered for *Constellation*. Because of the efficiency of this group, the cooperation of commercial supply sources, new salvage techniques, and uninterrupted reconstruction work schedules, the commissioning date is now five months ahead of the date estimated immediately after the fire and the cost estimate will probably be reduced.

A number of additional safety precautions have been introduced aboard the giant carrier since the tragic fire. All fuel tanks have been moved from the ship to the dock. Repeated fire alarm instructions have been given to working crews and a special abandon ship signal has been introduced. All wooden structures aboard the ship have been torn down and special collections of waste material are made around the clock. In addition fire-resistant scaffolding on metal supports has replaced

the wooden scaffolding which contributed to the seriousness of the fire last December. *Constellation* now has specially treated timbers that will be used in all future Navy construction and salvage work.

All structural work on the carrier is scheduled for completion by the end of May. Repairs to the flight deck are necessary as are the critical rewiring and outfitting of the ship's Combat Information Center which was demolished by the fire. Buckled hangar deck plates have been completely repaired.

and New York pre-commissioning details into a 225 man group located at the New York Naval Shipyard. Dozen of the officers slated for duty aboard *Constellation* have been temporarily assigned to carriers operating in the Sixth Fleet to gain current practical and operational experience. In addition, the nucleus crew will have seven more months for training, writing organizational doctrines and ship riding.

The ship will have improved radar, a new nose wheel, a new launchin



CONSTELLATION IN THE DRY DOCK WHERE SHE WAS MOVED AFTER FIRE RAVAGED HER

About 95 per cent of the electronic equipment of the ship, including radio and radar equipment, has been salvaged. A new ultrasonic cleaning device used to clean this equipment greatly reduced the time needed for this operation. The damaged equipment was removed to shops in the shipyard and there immersed in chemically treated liquids. Ultrasonic waves were then shot through the tanks and the cleaning operation resulted.

The *Constellation* nucleus crew has been consolidated from the Norfolk

system for its catapult and a new section of deck. The pie-shaped addition will be on the port side of the deck and will be hinged to enable the ship to get into dry dock. The new deck is being added to *Constellation* as an additional safety feature for airplane that might make off-center landing on the flight deck.

Constellation's commissioning on Navy Day weekend will highlight this annual celebration, marking the addition of the largest *Forrestal*-class carrier and 100 jet aircraft to the Fleet

New Squadron Record Set VP-16 Flies Its 35,000th Safe Hour

A P2V *Neptune* of VP-16, airborne on an exercise with the Sixth Fleet, broke a squadron safety record by logging the squadron's 35,000th hour of accident-free flight.

The squadron's last accident occurred in January, 1957.

Jacksonville-based VP-16 has taken part in several exercises outside the U. S., flying from distant bases ranging from the Arctic Circle to Africa.

Positive Effort Pays Off VT-4 Logs its 10,000th Safe Hour

Completion of a jet-transitional flight marked the 10,000th consecutive accident-free flight hour for Training Squadron Four, Lt. T. P.



MASTERS AND WATSON SIGN YELLOW SHEET

Watson and his student, 2nd Lt. C. F. Masters, flew the flight in a North American T2J basic jet trainer.

VT-4 credits the "ten grand" record to positive efforts by all squadron hands, maintenance personnel as well as pilots, and to constant emphasis on both ground and flight safety.

New 'Senior Stork' Named Ferry AP has 320,000 Safe Miles

New holder of the title "Senior Stork" in Ferry Squadron 31 is enlisted pilot Ralph E. Carr. When he took over the title from LCdr. Donald L. Pefferman, the chief had accumulated more than 320,000 accident-free miles ferrying naval aircraft to the operating commands of the Navy.

"Stork" awards are hard to earn, although one ferry pilot in WW II earned 30. Each ferry pilot suffers a reduction of his accident-free mileage by penalties of 10,000 to 75,000 miles for a pilot-induced accident, depending on the damage code, and 5000

miles for a flight procedures violation.

In the early years of the ferry command, pilots' names were listed on a "Glory Board." When a pilot flew 15,000 miles safely, he was awarded a pair of wings by his name. Five pairs of wings, or 75,000 safe miles, earned him one stork award.

In the last fiscal year, pilots of VR(F)-31 logged 18,700 flight hours, accounting for three and a half million miles. In March 1944, 657 pilots of the squadron (then called VR(F)-1) ferried 1967 aircraft for 19,000 hours in the month.

On becoming Senior Stork of VR(F)-31, Chief Carr accepted the Royal Order of Streamline Stork award.

Golden Hawks to Fiftieth Canadian Team Fills Reunion Cast

The *Golden Hawks* have made it complete. With acceptance by the Royal Canadian Air Force of the invitation for its famed flight demonstration team to perform at Pensacola during the Fiftieth Anniversary of Naval Aviation celebration in June, the cast for the finest demonstration of precision flying ever to grace the

Pensacola sky is now filled. In addition to the *Golden Hawks*, the Air Force *Thunderbirds*, the Army Helicopter Square Dance Team and the Navy's own *Blue Angels* will perform.

In a slightly different category, but also in a class by themselves, Navy's new Parachute Exhibition Team, the *Chuting Stars*, plan to drop in on this the greatest reunion of Naval Aviators ever held.

All Naval Aviators, active, inactive and retired, are invited to the homecoming at NAS PENSACOLA. The Arrangements Committee expects thousands to attend.

GV-1 Refuels its 1000th NATC Commander Praises Marines

An F8U-2 *Crusader* piloted by Marine Capt. J. W. Fritzlen of VMCJ-2 became the 1000th to refuel from the GV-1 tanker during the latter's Board of Inspection and Survey trials at Patuxent River.

Second Marine Air Wing personnel concerned with the trials have been commended by RAdm. E. A. Hannegan, Test Center Commander, in a dispatch to the Commanding General.



NAVAL AIR (LOOM) is assured for the Erler family of Washington, D. C. Cdr. William C. Erler, Sr., of Composite Company 5-51 stands with his three sons to be enlisted in Naval Aviation. James, Airman Recruit (left), 17, and William C., Jr., 25, Airman (in flight suit) are in VP-663. John L., 19, (center), Airman Apprentice, flew up from NAS Oceana for the ceremony at NARTU Anacostia. Cdr. Erler is a Management Specialist at the Veterans Administration.

TIGERS FLY SAFELY AT HIGH MACH



F11F-1 TIGER EMPLOYED BY VT-23 FOR TRAINING IS COCKED AND READY FOR FLIGHT

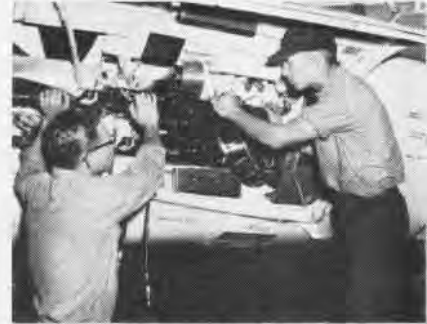
DURING THE TWO years VT-23 has used high performance F11F *Tigers* to train more than 300 advanced student pilots, only one major accident has occurred. It did not involve injury or loss of life.

On these pages are some of the men of VT-23 (formerly ATU-222) who made the feat possible. Maintenance crews were especially praised.

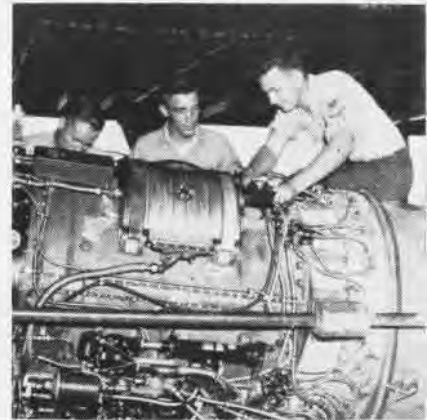
Training in the F11F is divided into four stages. In the M stage, students

get the feel of a supersonic plane while flying acrobatics, level high speed flight, slow flight, parade, cruise and combat formations, carrier break-ups and rendezvous, and touch and go landings.

Moving to the N stage, they fly combat formations and high altitude maneuvers carrying dummy *Sidewinder* missiles. In stage O comes high altitude gunnery, followed by stage P which stresses Ground Control Intercept.



ORDNANCEMEN ARM A TIGER FOR GUNNERY



MECHANICS PULL CHECK ON J-65 ENGINE



RECEIPT OF CNO AVIATION SAFETY AWARD FOR FISCAL 1960 WAS PROUD OCCASION FOR THE OFFICERS OF TRAINING SQUADRON 23

CVA-62

PRESS RELEASE



'Latest and Greatest' leaves Norfolk in August....

Having steamed over 33,180 miles of sea and made over 7000 carrier landings during the seven months away from home in the Mediterranean, the INDEPENDENCE (CVA-62), known as "the Latest and Greatest," now returns to her home port from a long operation with the Sixth Fleet.

During these seven months of deployment, the INDEPENDENCE has anchored off the shores of nearly every major Mediterranean port--from Barcelona, Spain, to Athens, Greece. And from these ports the men of the CVA-62 have traveled to all parts of the continent to see some of the great cities of the world. London, Paris, Munich, Geneva, Florence, Pisa, Milan and Rome all opened up to participate in one of the INDEPENDENCE'S prime missions, "People to People."

Rome, first stop for the INDEPENDENCE, gave the men a glimpse of the past at the Roman Forum, the Colosseum and the Pantheon. The Vatican City, seat of the International Roman Catholic Church, with St. Peter's, the world's largest church, and the Sistine Chapel displayed some of the great works of art to many awed eyes. An audience with Pope John XXIII fulfilled the aspirations of many as did the games of the Seventeenth Olympic that were in progress at the same time. A colorful city, with colorful places to go...Rome.

On to our next port, Cannes, on the warm Riviera. With its wonderful bikini-clad beaches and crowded casinos, Cannes is also the home base for many of the

(Continued on page 22)



...heads into wind and starts a hard seven months of operating



CLOSE ON THE SOUND of 'flight quarters' aboard *Independence* more than 1000 men go into action to conduct air operations . . . and this impressive panorama unfolds. Her Air Group . . . CVG-7 . . . is the same one that logged historic hours at Palau, Luzon, Leyte, Okinawa, Manila and in the San Bernardino Straits in WW II . . . followed with an impressive record in Korean skies flying from *Bon Homme Richard*.

Skippered by Cdr. H.F. Lang, CVG-7 is: VA-72, VA-86, VMA-224, VAH-1, VF-41 and VF-84 . . . plus detachments from VAW-12, VFP-62 and HU-2.

From her 4.1 acres of flight deck . . . night and day in foul weather and fair . . . *Independence* operates the world's most sophisticated carrier aircraft . . . Chance Vought *Crusaders* . . . McDonnell *Demons* . . . Grumman *Tracers* and *Traders* . . . Douglas *Skyriders*, *Skywarriors* and *Skyhawks* . . . Vertol HUP's dubbed *Angels*.

VITAL SHIP's statistics are staggering . . . her overall length is that of an 80 story building . . . displaced over 70,000 tons she has more than 200,000 hp for speed



excess of 30 knots . . . and uses 100 tons of fuel daily.

More than 3000 men call *Independence* 'home' . . . requiring the serving of 10,000 meals daily . . . which consumes provisions at the rate of 7 tons per day . . . food shaping machines make 2400 hamburgers an hour . . . coffee urns make 40 cups a minute . . . potatoes are peeled at rate of 1000 an hour . . . her Supply Department operates 5 ship stores, 3 fountains, 3 barber shops, a cobbler shop, tailor shop, dry cleaning plant and 2 clothing and small store outlets . . . and a laundry which processes 50,000 pounds of clothes per week.

ASTOUNDINGLY versatile as well as mobile, mighty *Independence* can be used alternately or simultaneously against submarines and their bases, surface ships and their yards, aircraft and their airfields, and for the support of amphibious, land and air operations. In "brush fire" conflicts the attack carrier can move quickly to supply the exact amount of offensive power called for by the situation. In event of total war, these ships represent mobile hard-to-find bases from which strikes can be rapidly launched.





In between...Rome....Athens...Cannes...people to people----

world famous perfumes. Not too far away, the beautiful French Alps, where many tried to ski. From Cannes some journeyed to gay Paree, fabulous city of dreams. Paris with its famed Eiffel Tower, the Champs-Elysees and Notre Dame. Versailles, a short distance away, brought one back to the fashionable Bourbon-French and the life of leisure. Then it was back to Cannes for a quick last look.

Around the boot of Italy, INDEPENDENCE steamed to the land of Greece and the city of Athens--not only Athens the ancient but also Athens the new and contemporary. At the top of a hill above the modern city, the Acropolis still stands to remind man of what was and

can be perfect. In the small village of Daphni on the outskirts of Athens, care-free Greeks mixed with the men of the INDEPENDENCE to celebrate the happy occasion of the tasting of the autumn wines. Folk dancers in traditional costumes pantomined the labors involved in transforming the grape to the wine. The golden days of Greece are not only reflected in the structures of yesterday, but also in the golden faces of the people that still hold on to the once great culture. We enjoyed our Athens Holiday.

Naples, the Big "I's" home port away from home, captured many a liberty hour for the crew of the INDEPENDENCE as they toured the surrounding country during their several visits to this southern Italian metropolis. Mount Vesuvius and the ruins of Pompeii were a must for all, while still others went by water to the Isle of Capri and Ischia to see the renowned resorts. Still others enjoyed the night life by attending the opera and symphonies at the San Carlo Opera House.

To help break up the first long stay in Naples, the CVA-62 made a quick trip down to Palermo, Sicily. Here, off the beaten tourist tracks, a bustling city offered a sunny welcome to the men of the INDEPENDENCE. There were tours to see the city's cathedrals where tons of gold mosaic decorate the walls and to the small but colorful fishing villages





Adm. Brown visits...COMCARDIV 2, RAdm. R. C. Needham...CVA-62 C.O., Capt. H. P. Lanham

along the rugged Sicilian coast. A rare and beautiful illumination of the cathedral at nearby Monreate in honor of the INDEPENDENCE, and a dramatic hangar bay presentation of folk songs and dances highlighted the week in this small city.

Genoa as the next stop on the deployment schedule gave the INDEPENDENCE a glimpse of Northern Italy and medieval Europe. The Europe of feudal castles and small villages. The beautiful Stigalino Cemetery, the home port of Christopher



Skilled specialists and ambassadors...men of Independence and CVG-7



Columbus and his fleet of three ships, and the twin Rivas all delighted the eye of the Bluejacket tourist. More visits were made to the distant inland cities of Milano, Florence, Pisa and Venice. Monuments of history as well as many festive traditional ceremonies captured the attention of many sailors.

The weather was cold during our second visit to Cannes, but the French people were warm and friendly as before. Some of the INDEPENDENCE men went on tours Paris and many more skied in the picturesque Alps or roamed through the quiet towns along la Cote d'Azur. Still others stayed aboard, saving their liberty money for the INDEPENDENCE'S next port of call---Barcelona, Spain.

Barcelona, Spain, reputed best of the "choice" ports in the Mediterranean, excited the men of the INDEPENDENCE. Although the bullfights were conspicuously absent, the Flamenco Dancers were still to be found. This ancient port also claims Columbus as a favorite son with a beautiful monument and floating replica of his ship. A short distance from the city is the Montserrat where many bussed to see the world beautiful Monastery and world famous Boys' Chorus. Tours also went inland to Madrid to see the famed Escorial and grand palace and Shrine of Saint Bernadette at Lourdes. In Barcelona, a high point in the tour was the Cathedral of Santa Eulalia.

While many men of the INDEPENDENCE toured the ports and far off places, the peoples of the ports also shared in experiencing tours aboard the mighty attack carrier. Over 13,500 visitors came aboard via utility boat to see the innermost workings of the floating city. In addition to general visiting in every port, the INDEPENDENCE often played host on board as part of day's sea tour. The pressmen observed the underway operations of the CVA-62, highlighted by an aerial fire power presentation. Another facet of the Big "I's" People-to-People program were shipboard parties for orphans. Men of the INDEPENDENCE acted as 'duty daddies' to the orphans of Europe.





REFUELING THE F4D

VF-74 Experimentation and Invention Mean all Carrier-based Planes now can be Refueled in Flight

FIGHTER SQUADRON 74 has devised a way to refuel F4D *Skyrays* in flight.

BUWEPs has adopted the technique and it will be used for refueling all carrier-based F4D aircraft.

Aerial refueling of the F4D has been proposed before, but it never became a reality until VF-74's experiments were conducted over the Atlantic and Mediterranean while the squadron was deployed aboard USS *Intrepid*.

During a cruise off the Virginia Capes, Lt. Jack Andrews, squadron Maintenance Officer, concluded it was possible to achieve a simple, inexpensive air refueling system.

Direct fueling to the internal fuel tanks in the fuselage and wings was not practical because of structural limitations and the cost involved. However, Lt. Andrews reasoned it was possible to install a refueling probe in one of the drop tanks for further transfer into the main fuel tanks.

When the squadron returned to Nor-

By Lt. A. J. Da Rodda

folk, Lt. Andrews' idea was proposed to ComNavAirLant. It was received enthusiastically.

Since VF-74 was to deploy within a month for a Mediterranean cruise, O&R JACKSONVILLE was asked to build the necessary modification with the A4D probe on the F4D drop tank.

The probe, attached to a wing rack, was flown to Jacksonville and the new rig was ready for testing in less than a week. Because of commitments only two test flights were conducted prior to deployment, one with an A4D tanker and the other with an AD.

Pilots were scheduled for practice wet and dry plug-ins with the duty AD tanker during the initial stages of the cruise. By October, all squadron pilots had qualified in aerial refueling. Testing of the new device continued until November, when the modified drop tank with the probe had to be jettisoned during an in-flight emergency.

Up to that time, the installation had withstood 71 catapult shots and arrested landings without injury. Thirty-two of these launchings were made after the probe length was increased from 31 to 48 inches.

No failure or malfunction of the probe was evidenced during the project, and results were forwarded to the Bureau of Naval Weapons.

The off-center location of the probe relative to the pilot's eyes required coaching and practice before consistent plug-ins could be effected. The longer probe made plug-ins easier by moving the required point of connection forward where it could be seen in the pilot's peripheral vision as he lined himself up aft of the starboard wing of the tanker AD.

Taking a 300-gallon gulp produced no adverse control difficulty that could be attributed to asymmetrical loading. Fuel so taken could be transferred to the main fuel cell in less than ten minutes after it was taken on board.

IN FOREIGN SKIES

Farnborough Dates Set

The annual Flying Display Exhibition, sponsored by the Society of British Aircraft Constructors, will be held at Farnborough, 4-10 September (public days 8th, 9th and 10th). Exhibition space is being enlarged to meet increased demand.

Applications for 161 sites have been received, 11 more than in 1960. Ground display of missiles staged by the Army will be on a larger scale than last year. Moreover, the Army will for the first time be taking part in the flying display. The Royal Navy and Royal Air Force will participate as usual.

Industry entries for the flying program may include the supersonic, all-steel Bristol T.188, Hawker P.1127 vertical take-off fighter, and Handley Page H.P.115 research aircraft. More than one new ground-effect vehicle will make first appearances.

Famed RAF Group Disbands

A decision of Britain's Royal Air Force to disband its No. 11 (Battle of Britain) Group will ring a sad note for veteran American pilots who crossed the Atlantic in the early days of WW II to form the famous Eagle Squadrons of the RAF.

No. 11 Group's headquarters at Martlesham Heath Air Base, Suffolk, are to be closed down under a plan to streamline the RAF's Fighter Command.

Many young American pilots flew with RAF squadrons of No. 11 Group, and in September 1941, the Americans formed the famous No. 71 Eagle Squadron, one of several such squadrons formed at that period.

Although No. 11 disappears as a combat unit, the RAF plans to retain the number to redesignate the existing No. 13 Group.

Brazil's Naval Aviator No. 1

Back in 1911 when airplanes were called "flying machines" and the pilots "aeronauts," Lt. T. G. Ellyson became U. S. Naval Aviator Number One.

Today when missiles and monkeys make the news, another country is waiting for the honor of listing its

Naval Aviator Number One. It is a toss-up between two officers now undergoing training in the Pensacola complex. They are Lts. T. A. Brazil and R. A. Ariera who belong to an initial contingent of 19 Brazilian students receiving training.

Lts. Brazil and Ariera, most advanced of the group, have successfully completed their air-to-air gunnery training at VT-3, Whiting Field.

Foreign Officers Study Supply

A group of 20 foreign military officers undergoing a course of instruction at the Naval Supply Corps School at Athens, Ga., visited NAS JACKSONVILLE the last part of March.

The officers hail from Denmark, Norway, Sweden, the Netherlands, Korea, Italy, Greece, Japan, Venezuela, and Burma.

During the Jacksonville trip, the group viewed supply operations at NS MAYPORT, NAS CECIL FIELD and NS GREEN COVE SPRINGS.

The training the officers are getting helps them to integrate their efforts and those of the U.S. in the common defense. To date over 300 officers representing 33 countries have been trained in the logistics of the U.S. Navy and its entire supply system.



MUTUAL INTEREST in mutual defense brought Brazilian Air Force officers to the U.S. Naval Aviation Supply office, Philadelphia, to confer on supply and support procedures for S2F and H aircraft. Left to right are Samuel Hahn, USAF Liaison Officer; Capt. Charles Favre, BAF; Lt. Edgar Schrieder, BAF; Maj. Paulo Amarante, BAF; Lt. Herber Figueira, BAF; Capt. E. Joshua, Jr., S.C., USN, ASO Operations, Capt. Jose Mosca, Capt. Joaquim Goncalves, BA



ARGENTINE NAVY Lts. Astesiano, Testarel and Cordero became the first foreign students to fly the T2J Buckeye basic jet trainer at Pensacola's VT-4. On returning Argentina, they will fly Grumman Panther

U. S. Role in Paris Air Show

The U. S. Government will participate in the 24th International Air Show in Paris, France, 26 May through 4 June.

The exhibit, based on the theme of "United States Contributions to Aviation and Space Research," will depict early aviation achievements, the development of modern aircraft, current space programs, and concepts of the future.

Among aircraft expected to be shown, will be the A3J *Vigilante*, the B-58 *Hustler*, the F-104 *Starfighter*, the F4H *Phantom*, the F-105 *Thunderchief* and the F-106 *Delta Dart*. Each of these either holds or has exceeded one or more world records sanctioned by the *Federation Aeronautique Internationale*, world record arbiters.



TITANIUM REQUIRED in F8U Crusaders above is pressed by 1000-ton pressure electrically heated dies at right, allowing metal to be formed and stress-relieved in one operation. Special oil protects metal from



oxidation during formation. Tough, heat-resistant titanium becomes hot as Crusader streaks through air at 1000 mph. Latest version of the Chance Vought F8U Crusader to enter fleet service is the -2N.

32-year Reservist Retires Served in First Minneapolis Unit

LCol. Marcus J. Maher was retired from the Marine Air Reserves in April after completing 32 years service. He was among the six officers and a handful of enlisted reservists who formed the first Marine Air unit in Minneapolis in 1929.

The predecessors of today's 500-man reserve unit in Minneapolis served without pay, built their own facilities, and wore no formal uniforms.

"Our first aircraft were two Consolidated trainers," Col. Maher recalled. "Later we received Curtis *Fledglings*, then N3N trainers. When we got the original Curtis *Helldivers* in the mid-thirties, we really thought we were a hot outfit."

Meetings were held one night a week and one weekend a month.

"You had to work in the hangar to be eligible to go up on hops," he said. "When a plane landed, all work ceased as Marines dashed out to see who would get the next ride."

Like present-day Reservists, several squadron members were college students. Several went on to become high ranking Marine Officers.

As the Naval Air Station grew, so did the Marine Air Reserve Unit.

"We conducted annual summer maneuvers and participated in the Chicago World Fair," the Colonel recalls. "Each plane captain was responsible for three aircraft in those days."

By the late thirties the squadron had grown to 12 officers and 60 men. When

reservists were called to active duty in November 1940, they were assigned to the Naval Air Station at North Island. Then enlisted, Maher was promoted to warrant officer.

When he returned to Minneapolis after World War II, he became associ-



THOSE WERE THE DAYS, SAYS LCOL. MAHER

ated with VMF-213. He joined VMF-234 in August, 1952. In 1958, he was asked to organize Volunteer Training Unit (Aviation) 14, and he served as its commanding officer until recently.

Plan Model 'World Series' Willow Grove to Host Annual Meet

Members of the Academy of Model Aeronautics and "Host," NAS WILLOW GROVE, Pa., have held the first planning conference for the 1961 National Model Aviation Championships.

Such items as area of responsibility,

locations for Speed, Radio Control, Stunt, and other events were discussed. It was concluded that the 1961 Nationals should be the best ever held.

Attending the conference in addition to representatives of Model Aeronautics and NAS WILLOW GROVE, were those from NAS DALLAS and GLENVIEW, Chief of Naval Air Reserve Training and the Hobby Industry Association.

The meet will be held 24 through 30 July. Scheduled to appear are the *Blue Angels* and the newly formed *Chuting Stars* team.

Commanding Officer of the host station is Captain Thomas H. Bookout.

Sara's CCA Unit Active Tops 20,000 on Latest Deployment

When USS *Saratoga* completed her latest Sixth Fleet deployment, her Carrier Controlled Approach Unit had amassed 20,314 total controlled penetrations. Of these, 4014 night instrument approaches were made between 22 August 1960 and 17 February 1961.

These 4014 night approaches were made with an average ramp interval per aircraft of 73 seconds.

In one day, 18 December, 124 IFR approaches were controlled to the ramp with an average landing interval of 75 seconds per aircraft.

Ltjg. A.F. Waier of VA-35 made the unit's 20,000th CCA 13 February. Controlling his approach were Lt. F.L. Lofton, Assistant CCA Officer, and J.F. Osbourne, AC2, final controller.



GROSSE ILE contingent (standing) and Georgia's civil defense skin divers (kneeling) were called on for assistance during Georgia floods.



FLOOD PATROL instructions were relayed to pilots in West Point, Ga. by Georgia State Highway Patrolman Lewis Bell, third from right.

WEEKEND WARRIORS FLY DISASTER MISSION

FROM AIR-SEA rescue training in Florida to a real life emergency and disaster mission in Georgia—is the record turned in by "Weekend Warriors" of Michigan.

The story of one unit of Helicopter Utility Squadron 731, NAS GROSSE ILE, Mich., reads like an adventure of the whirlybirds of television fame.

At the end of their sunny cruise at NAS JACKSONVILLE, Fla., five Naval Air Reservists of HU-731 and a NAS GROSSE ILE stationkeeper were en route home. Heavy rains forced them to land at NAS ATLANTA at Marietta, Ga., just two days before the end of their two-week annual training cruise.

The four helo pilots—LCDrs. Philip J. Gannon, W.J. Stefanac, F.J. Fisher, and Lt. R.W. Cooke—and W.C. Cary-

*By Emmett Presley, JO1
NAS Atlanta*

ell, ADC, and Robert Brancole, AD2, flying three Navy HUP's, hoped for clearing weather, so they could fly to Detroit and be back on their civilian jobs Monday morning. The flight home was delayed by the same rain that brought on the flood disaster at West Point, Ga.

On Saturday morning, 25 February, Capt. I. J. Schwartz, C.O. of NAS ATLANTA, received a request for assistance from Marietta's Civil Defense Director G.W. Hudgins. Mr. Hudgins had been requested to assist in disaster areas in Marietta, Atlanta and West Point by Georgia State Civil Defense

Headquarters. His request to the Navy was to patrol the river towns along the flooded Chattahoochee River—West Point, Columbus and others. Rampaging flood waters caused widespread damage along the Georgia-Alabama line, forcing thousands of valley residents to evacuate their homes.

Capt. Schwartz called Capt. Frank G. Reynolds, C.O. of NAS GROSSE ILE, requesting permission to use the three helicopters, pilots and crewmen to assist civil defense efforts in the disaster sections. Permission was granted and the HUP's went to work.

The same afternoon, the weather cleared long enough for the pilots to engage in area patrol operations over Marietta and Atlanta—flying over the rain-swollen waterways. Marietta civ-



RISING WATERS forced many of the people in West Point, Ga., to evacuate their homes.



THE SWOLLEN RIVER hit factory area and placed valuable properties in flood jeopardy.



AERIAL RECONNAISSANCE made it possible to keep track of the fast advancing flood.



AT THE PEAK of the resistance of the West Point dam, the 10-foot flood crest boiled over the man-made bulwark with tremendous force.



AERIAL VIEW from Helicopter Squadron 731's HUP-2 reveals the extent of the floods in West Point's worst-hit area, its business district.

defense director and three Marietta policemen went along as spotters. Patrols continued until darkness forced their return to NAS ATLANTA.

Early Sunday morning, the sky was clear and with the sun shining, the day was warm as midsummer. People of Atlanta were busy digging out and clearing away the flood damage. But this was also the day that maximum flood crests were expected in Georgia's valley towns. Tension was building everywhere. Would the river dams hold the wall of water approaching?

It was HU-731's mission to answer the question. Taking off with four of Marietta's civil defense skin divers, they headed for West Point—a textile city of about 4500 located on the river. West Point's low-lying business district was covered by the swirling waters from the river that rose more than 28 feet. Mayor Tom Morgan quickly declared a state of emergency.

The three Navy helicopters landed at West Point's cemetery. This graveyard was the only clear operating area above water suitable for the temporary disaster base. West Point's citizens welcomed the pilots and crewmen. The Georgia State Patrol and Upson County's civil defense teams were on hand to give LCdr. Philip Gannon, the squadron's skipper, detailed reports on what must be done and what areas must be patrolled.

After a quick lunch provided by the Red Cross and town people, the three HUP's and crew were back in the air, checking the bridges and dams, inspecting the man-made defenses with

local officials. One West Point citizen, a Navy veteran, in his early 50's, said, "I feel that everything will be all right real soon. The Navy is here to help us out."

HU-731's search and disaster patrol in this troubled town helped civilian officials determine the sections hardest hit. They assisted the road commissioner and state patrolmen in a survey of water-covered roads and highways and helped the city engineers to assess the over-all damage.

Taking in both sides of the swollen river, the helicopter crews watched for stranded people and livestock. A drowned Hereford cow was spotted. Five others, still alive, were up to their stomachs in water, waiting for the river to go back to its channel. The

water moved swiftly and viciously, seeming to swallow everything in its path.

The search for survivors was negative. Only one death was reported in the stricken area. A young man was swept into the flood to his death when he attempted to drive across a bridge that had been washed out. The skin divers worked almost all that day, trying to pull out the car, but their attempts were unsuccessful. One pilot spotted a man standing in the flooded waters up to his knees, hosing down the red clay from the side of his house.

BY THE END of the day, all was quiet except for the sloshing of water against buildings, homes and hillsides. The people accepted the situation and waited. No one was joking, laughing, playing about—all were waiting, including the children, for the rushing red and muddy waters to recede. The crest had passed and the dams were still holding.

And so the six members of HU-731 returned to NAS ATLANTA, having flown over seven hours per crew, working with civil defense teams and local officials. A long weekend that was not on the schedule of their routine 14-day training cruise at NAS JACKSONVILLE was over.

A transport plane from NAS GROSSE ILE was waiting at Navy Atlanta to fly the tired reservists home.

The people of West Point, Marietta and Atlanta, will long remember the Ready Reserves—Weekend Warriors of Helicopter Utility Squadron 731.



THE KIDS SAID, "To heck with the whirlybird, we want to know what's up in this pipe."

VFP-62 AUGMENTS TIROS II COVERAGE



LTJG. MOORE, CDR. WINSLOW, LT. DECHANT AND LCDR. MONTHAN FLEW TIROS MISSIONS

LIGHT PHOTOGRAPHIC Squadron 62, stationed at NAS CECIL FIELD, Fla., has been actively participating in the *Tiros II* project by providing simultaneous photography.

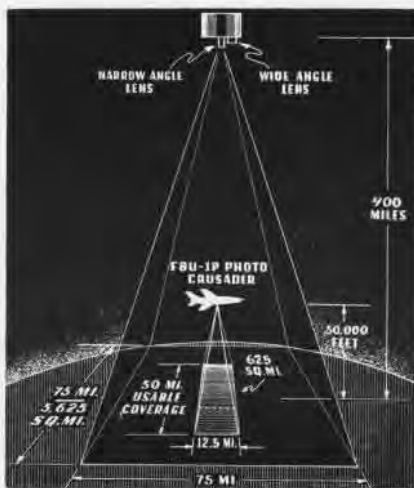
Through *Tiros* photography by means of two TV cameras which send pictures back to earth, the U.S. Weather Bureau has been successful in preparing weather maps forecasting advance storm warnings.

While *Tiros II* orbits the earth in a nearly circular orbit 400 miles up, VFP-62's photo planes photograph the satellite's track over the ground from 50,000 feet. Purpose of this simultaneous photography by photo planes of VFP-62 is to aid the analysis of the cloud photos taken by *Tiros II*. Analysis of the small scale photography of the satellite is made easier when it is supplemented by larger scale photography.

The photographs taken by the satellite's narrow-angle camera cover 75 miles of the earth's surface on a side, and the wide-angle photos 750 miles on a side. The photographs taken by the photo planes cover 12.5 miles by 50 miles of the earth's surface. This is done by a tri-metrogon installation which consists of three cameras each with a 1½-inch focal length lens.

One camera is aimed straight down to take a vertical photograph, and the other two are placed to the right and to the left of the vertical camera to photograph the passing horizon. These photographs of a much smaller area and on a larger scale are taken of the satellite's track within ten minutes before or after *Tiros* passes overhead.

VFP-62 has photographed portions of the satellite's track as requested by the Weather Bureau Meteorological Laboratory through Fleet Weather



TIROS II AND PLANE COVERAGE COMPARED

Central, Washington, D. C. The portions are usually about 400 to 500 miles in length over the southeastern United States.

The first mission was flown on November 1960. The portion of the satellite track covered extended from a point southeast of Cincinnati, Ohio to a point out to sea off Cherry Point, N.C. This mission was flown by Cdr. G.H. Winslow, Executive Officer, LCDr. G.R. Monthan, Operations Officer, and LCDr. C.J. O'Brien.

Other officers who have participated in similar missions are Cdr. R.F. Mohrhardt, LCDr. Norman Youngblood, and Lts. J.A. DeChant and P.J. Smith and Ltjg. J.T. Moore.

Logs 500th on 'The Champlain' Cdr. Walker Has Flown Off 10 CV

Cdr. Donald P. Walker, C.O. VS-22, recorded his 500th carrier landing when his S2F *Tracker* caught the wire aboard USS *Lake Champlain*.

He has flown from 10 aircraft carriers and has flown 54 models of military and civilian airplanes.

His 500 carrier landings include day and night landings in A3D's, A4D, FJ-4's, F3D's, T2V's, TF's and S2F's. He made the first "No hands" carrier landing in 1957 when the Navy tested the feasibility of the Bell automatic carrier landing system aboard USS *Albatross* in the Gulf of Mexico.

Cdr. Walker has hunted subs with VPB-135 (later VP-5) in the *Ventura*, and was operations officer of VS-26 when the carrier-based S2F *Tracker* was introduced to the Fleet.

Air Force Pilot Made 100th Flies F11F with VF-33 on Intrepid

Air Force Capt. Dana T. Moore II, was qualified as an underway Officer of the Deck aboard the attack carrier *Intrepid* during her latest Sixth Fleet deployment. He was aboard as an exchange pilot, assigned to VF-33 as operations and maintenance officer.

Flying F11F *Tigers*, Capt. Moore has logged more than 400 hours and has made 133 carrier landings.

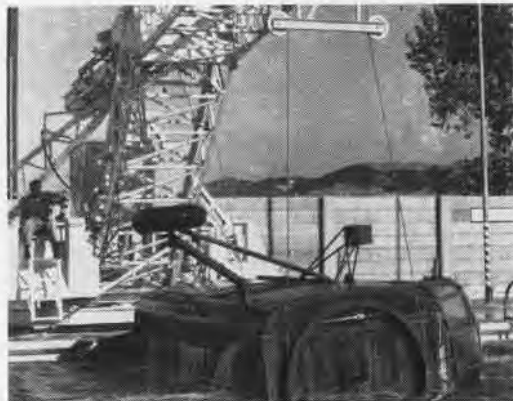
Before joining the Navy squadron he flew F-100 *Super Sabres* from Williams AFB in Phoenix.

He has more than 5,000 flight hours.

PRACTICE PLUNGE IN PENDLETON POND



IN COMBAT GEAR MARINES BOARD DUMBO COPTER



DEVICE IS OPERATED IN CAMP PENDLETON POOL



A specialty of Marines today is vertical envelopment. As practiced in helicopters, the tactic is largely a matter of ups and downs. On the downside of the undertaking, if the maneuver ends accidentally and far short of the objective in deep water, survival then for

the heavy laden passenger depends on many things: exceedingly calm reaction, quick escape and long pull to the surface without inhaling too much water. To further the acclimation of Marines in such emergency environment, a novel device called 'Dumbo Dunker,' developed by the Kellet Aircraft Corporation, has been undergoing evaluation at Camp Pendleton, Calif. The mock helo, a replica of the HUS-1, holds a standard load of combat-attired troops and provides a realistic facsimile of a ditching at sea. Survival trainees are required to keep seat belts secured until the Dunker is fully submerged. Then the watery word is "Get out—and get out fast!" Marine frogmen are stationed at critical locations underwater in order to assist men who experience difficulty.



TRAINEE CLEARS HATCH, HEADS UP FOR AIR



SAFELY OUT AND SURFACED, DRILL ENDS. INSET (TOP): FROGMAN WATCHES MARINE RISE



X000th LANDINGS

Aboard USS *Franklin D. Roosevelt*, no. 99,000, by Ltjg. C. R. Jones of VA-172, in an A4D *Skyhawk*; no. 100,000 by Cdr. A. R. Hawkins, CAG-61, in an A4D. *FDR* became the second attack carrier (*Essex* was first) to break mark of 97,000-plus set by the old *Saratoga*.

Aboard USS *Antietam*, no. 89,000, by Ens. Paul F. Grover, III, in a T-28C; no. 90,000, by Ens. William F. Smith of NAAS NEW IBERIA, La., in an S2F *Tracker*.

Aboard USS *Coral Sea*, no. 92,000, by Cdr. Charles R. Tucker, X.O. of VAH-2 with Ltjg. Gerald W. Rodgers and William M. Myers completing the crew, in an A3D *Skywarrior*.

Aboard USS *Essex*, no. 102,000 (arrested) by Cdr. Kenneth D. Helsel, CAG-60, and Ltjg. F. E. Volz of VS-32, in an S2F *Tracker*. No. 4000 (helicopter) by Ltjg. Barry I. Snow and Ltjg. Gary A. Schussler of HS-3 in an HSS-1 helicopter.

Aboard USS *Forrestal*, no. 50,000, by Ltjg. R. K. Miklas of VA-81, in an A4D *Skyhawk*.

Aboard USS *Independence*, no. 21,000 (after re-count) by LCdr. Barney Smith, flying the ship's own TF *Tradler*; no. 22,000 by Marine 1st Lt. Bruce A. Maxwell, in an A4D *Skyhawk*.

Aboard USS *Intrepid*, no. 50,000 since recommissioning in 1954, by Cdr. Dale C. Klahn, CAG-6, off France.

Aboard USS *Lake Champlain*, no. 11,000 and 12,000 (helicopter) by Ens. Richard G. Ivy of HS-5, flying an HSS-1 helicopter; no. 45,000 arrested landing by Lt. John D. Taylor of VS-22, in an S2F *Tracker*.

Aboard USS *Oriskany*, no. 51,000, by Marine 2nd Lt. Frank J. Horak of VMA-311 (his first carrier landing) in an A4D *Skyhawk*, and 16 days later, no. 52,000 by Marine Capt. Bert McCauley also of VMA-311 in an A4D.

Aboard USS *Ranger*, no. 27,000, by

Ltjg. Ray Peterson of VA-125.

Aboard USS *Sbangri-La*, no. 3000 by a replacement pilot, Ens. Coehen of VA-44, flying an A4D.

Aboard USS *Valley Forge*, no. 9000 by helicopter, by Lt. Willard H. Salo and Ltjg. John D. Hausmann of HS-3, flying an HSS-1 helicopter.



DESTROYERMEN RECEIVE SQUADRON PLAQUE

Pilot Dunks, J.G. Jumps And Black Shoes Go Back to Owner

"Ooops, she quit," radioed Ltjg. Bournique, as his *Skyhawk* slipped seaward at night with less than 500 feet altitude. On an emergency carrier controlled approach, his crippled A4D plopped into the dark waters astern the USS *Independence*. The ejected and parachuting pilot followed the plane into the water.

With alert seamanship, the USS *Hyman* darted from its plane guard station and was alongside the struggling pilot in minutes. Quickly realizing Ltjg. Bournique was tangled in his blowing parachute, Ltjg. Hildebrand dove from the bobbing destroyer into the choppy sea and supported the stricken pilot until he could be hoisted aboard.

In recognition of a job well done and the disregard of personal safety displayed by Ltjg. Hildebrand, the officers of VA-72, Ltjg. Bournique's squadron, blinked the following, tender epistle to the *Hyman*:

The night was black and you did well
To brave the dark and angry swell.
One flyboy in his hour acute
With "Mal de Mer" in poopy suit
All tangled in his soggy chute
Was rescued, wine and dined to boot.
And so to show our hearty thanks,
All officers in Hyman's ranks
Are asked to join in cheerios
On us, at Naples' Marios!
Heave to at El Sombrero, 1900, 17 December...
The Blue Hawks of 72.

With the swift reaction of a true watchdog, the *Hyman* blinked back her salty reply:

'Twas the hour of the movie when out of the sky,

Plunged a hawk with clipped wings, a sad look in his eye.

"Get him," cried bird farm, so we all manna the rail.

We expended great effort, we thought he had mail.

But, alas and alack, our hopes took a fall
He was just a lonely pilot paying a friendly social call.

Now we all did approve of his taking a bath
But his rather poor timing incurred our great wrath.

So we ask all of you who may be down a the heels

To please come after the movie, or at least between reels

We accept your kind offer with delight and great glee

But we really must warn you the work made us very thirsty.

At the designated rendezvous, cheerios were rendered. A transfigured pair of "Black Shoes," brilliantly shined, was ceremoniously returned to the owner from the estranged feet of Ltjg. Bournique. A plaque was also presented with a VA-72 insignia reading: "The Ransom of a Flyboy, 14 December 1960, the BLUE HAWKS, ATKron 72."

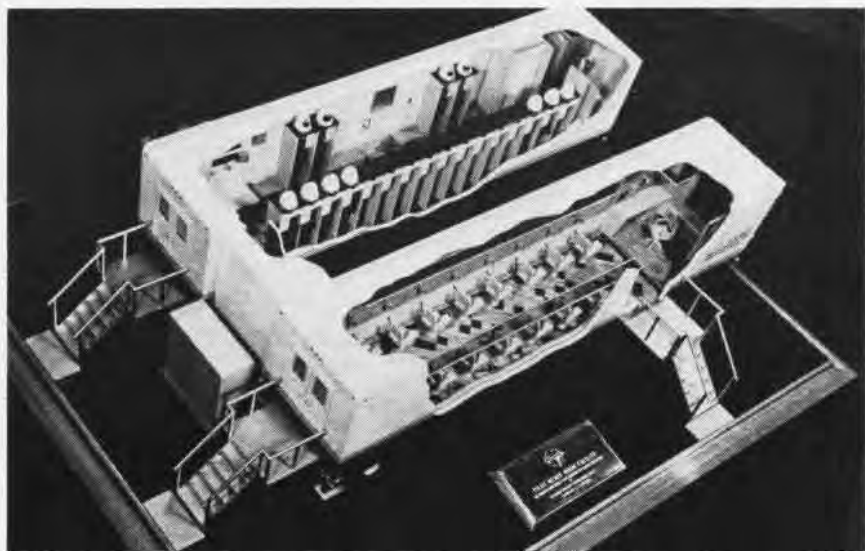
Bullpup Production Upped Additional Contract with Martin

The Navy has awarded a \$14-million contract to the Martin Company for the production of additional *Bullpup* missiles. Another contract for approximately \$1-million goes to Maxson Electronic Corporation for the manufacture and assembly of *Bullpup* guidance and control components.

A cost-reduction program by Martin and the Navy was based on the missile's reliability which made it possible to eliminate the missile test equipment originally planned. The Navy plans to fire *Bullpup* as it would a round of ammunition without a pre-launch test of each missile. Through the elimination of this equipment and other efforts to reduce costs, the number of man-hours required to manufacture the missile has been reduced by almost 75%.

Bullpup, an aircraft-launched radio-guided weapon with a conventional warhead is manufactured by the Martin Company of Orlando, Fla.

MOBILE READY ROOMS DELIVERED



DRESSING ROOM unit above has 20 stalls, lockers for storing belongings, shower and beard, water cooler and workbench for equipment repair. Ready room below allows comfortable wait.

EIGHT TRAILER-MOUNTED and mobile pilot ready rooms have been delivered by Grumman for use at Naval Air Stations in Japan, Okinawa, Guam, Spain, California, Florida and Nevada.

Each of the ready room facilities consists of two 40-foot aluminum trailers. The interior of one is furnished as a dressing room, while the other is a briefing room. Passage from one trailer to the other is provided by an enclosed walkway.

The two units, which can be set up by four men in 10 hours, provide a ready room facility to support specialized men and equipment under all weather conditions. Design of the

units was centered around the need to accommodate pilots who wear Mk. IV lightweight, high-altitude pressure suits.

The dressing room trailer contains storage lockers, toilet and shower facilities, a drinking fountain, a hot water heater, and special storage stalls for pilot pressure suits. When hung in these stalls pressure suits can be ventilated fully by connecting a hose from the suit to an outlet supplying conditioned air.

The briefing and alert room trailer contains 16 swivel-and-tilt pilot seats fitted with special "writing arms" for note taking. A closed-circuit television set provides latest weather data.

Chalk and display boards are provided for visual aid to briefing officers. Pilots wearing fully pressurized flight suits can ventilate their suits individually by plugging in to a hook-up in the air conditioning system located next to each seat.

Air conditioning for the dressing room trailer is supplied by a 7½-ton unit outside and adjacent to the trailer. A similar 7½-ton unit encased in the front of the briefing room trailer provides conditioned air for the second.

A third unit located outside the trailers supplies air for ventilating the pressure suits. Both air conditioning units can be loaded on the trailers and transported in them as they're moved.



MATED TRAILERS are built of steel and aluminum, with two 7½-ton air conditioning units providing proper atmospheric conditions. Two entrances at front and rear guarantee easy access.



GRUMMAN PILOT adjusts gooseneck lamp for note taking as he waits in tiltback swivel chair.

MARINE AIRCRAFT GROUP SIXTEEN



RIFLEMEN OF THIRD MARINE DIVISION CHARGE OUT OF HELO TO STORM A STRONGHOLD

IN THE NINE years since its commissioning at MCAF SANTA ANA in 1952, Marine Aircraft Group 16 has become a strong link in the chain of U. S. power in the Far East.

One of three helicopter groups in the entire Marine Corps, MAG-16 is the only one based in the Far East. Its home base is MCAF FUTEEMA, Okinawa.

MAG-16's number one job is providing helicopter assault support for combat personnel, delivering men, supplies and equipment for the Fleet Marine Force, Pacific, during amphibious landings, vertical envelopments, and making necessary flights within the force beachhead line. A secondary role is furnishing men and aircraft for air/sea rescue operations and evacuating sick and injured personnel.



MAG-16's HELICOPTERS PREPARE TO TAKE OFF FROM USS PRINCETON, LPH-5, ON A VERTICAL ENVELOPMENT PROBLEM

whether those personnel be either military or civilian.

In the latter role, MAG-16 has advanced the People-to-People program on a number of occasions by airlifting sick or injured civilians to hospitals.

Group pilots are as adept at flying from helicopter carriers on assault maneuvers as they are at flying from their home field in Okinawa.

The Group, working with the Third Marine Division, has taken part in every amphibious maneuver held in the Far East since it first arrived in Japan in 1953. It moved to Okinawa in March 1960.

Five squadrons comprise the Group. Three are tactical and two are support squadrons. Helicopter Transport Squadrons 162 and 163 fly light transport type Sikorsky HUS helicopters. Marine Observation Squadron Two (VMO-2) flies Cessna OE liaison aircraft (fixed wing), and Kaman HOK liaison helicopters. The support squadrons are a Marine Air Base Squadron, which is essentially a house-



COMPANY TECHREP DISCUSSES MAINTENANCE PROBLEM WITH MECH

keeping unit, and a Headquarters and Maintenance Squadron.

Each HUS helicopter can carry nine fully equipped Marine infantrymen internally, or 2000 pounds of supplies and combat equipment. Using an external lift, the HUS can carry a "mighty mite" with a 106-mm recoilless rifle mounted, a jeep, or 2000 pounds of cargo.

Both OE airplanes and HOK helicopters are used for aerial reconnaissance, spotting for artillery or Naval gunfire, message carrying, and the transport of field commanders during battle problems.

All aircraft of the squadron are rigged for rescue and mercy missions, and all can operate in darkness or reduced visibility. While the fixed-wing OE's cannot perform air-sea rescues as the helicopters can, they carry litters for evacuating field patients.

MAG-16 is commanded by Col. Richard W. Wyczawski. His squadron commanders are Lt. Col. Milton M. Cook of HMR(L)-162, Maj. Charles B. Chambers of HMR(L)-163, Maj. Joseph A. Nelson of VMO-2, Lt. Col. R. W. Johnson of MABS-16, and Lt. Col. R. E. Kelly of H&MS-16.



VMO-2 USES HOK ON BATTLEFIELD PROBLEMS, RESCUE FLIGHTS



LANCE CPLS. KIMBLER AND SCOTT REPAIR ROTOR HEAD ON AN HUS

TRAILER CLASSROOM FOR WF-2 KNOW-HOW

A 40-FOOT trailer is the newest training device used by Carrier Airborne Early Warning Squadron 11 (VAW-11) at NAS NORTH ISLAND.

Known as the WF-2 Tactical Trainer, Device 2D1, this trailer serves as an all-weather, non-flying classroom for training Combat Information Center crews of the squadron's Grumman WF-2 Tracer aircraft in the operation of APS-82 radar and in Airborne Intercommunication System procedures. Its secondary functions are to indicate limitations of the operation equipment under normal combat conditions, and to devise improved CIC procedures.

One of the big advantages of this trailer simulator is that it is capable of simulating a complete tactical mission, and any type of training problem can be injected into its complicated system in a matter of minutes. Two separate problems can be run simultaneously or a pre-selected variety of problems may be repeated exactly, or even frozen to emphasize student error. Almost any sub assembly of the radar or communication systems can be malfunctioned at any time by a chief in-

structor, to evaluate the student's reactions under these conditions without endangering life or equipment.

The trailer is divided into two major compartments, the Combat Information Center and the Problem Control Center. The CIC compartment, a replica of that in the WF-2 Tracer, provides a realistic training ground. All radar controls and the intercommunication systems are operational.

The Problem Control Center contains all the simulation equipment capable of generating up to 30 targets; 20 aircraft and 10 surface. Of the 30 targets, 12 can emit electronic jamming and 10 of the aircraft targets can simulate chaff jamming. The chaff jamming simulator enables the operator to control the size and duration of the chaff drop. The duration may be decreased to cause the chaff presentation to disappear in a few revolutions of the antenna, or increased so that the presentation will last for the complete training period.

Provisions have also been made for IFF (identification, friend or foe), and for the radar operators to estab-

lish voice communications with the operators flying in friendly aircraft. This enables the radar controllers to direct target intercept problems they would be conducted under normal tactical conditions. Since there is also a separate console for the chief instructor, who seconds as pilot of the Tracer, he can control the simulated engine noise level in the CIC area and the overall system sea return noise and video levels.

A dual track, four-channel tape recorder is also supplied to monitor voice communications. At the end of a training period the instructor can play back the problem to the students and indicate to him any weaknesses.

The system was designed to train three students during any one period of time, two radar operators and one tactical director. Seating arrangements have been designed for ten target controllers and one chief instructor.

Device 2D1 was designed and manufactured by Huyck Systems Company, Huntington, N.Y., under contract with the Naval Training Devices Center, Port Washington, N.Y.

Capt. A.B. Furer, skipper of Fleet Airborne Electronics Training Unit Pacific Fleet at NAS NORTH ISLAND, released the trailer to VAW-11 for training. It is maintained and operated by training device specialists of FAETUPAC, but all training problems, scheduling and instructors are supplied by VAW-11. The squadron is commanded by Capt. R.H. Mathey Jr., and Cdr. H. G. Carlson is XO.



NOW IN FINAL TEST stage before being installed on picket ships and cruisers, this is one of the largest radar antennas ever designed for shipboard use. Developed by Raytheon, the 10-ton system has a 40-foot antenna, constructed of aluminum, an ensemble of 150 horns that beam and collect signals to pinpoint invaders hundreds of miles away. The antenna rotates a full 360 degrees. Inside the antenna a maze of pipes carry radar waves to and from the horns.



IN FEBRUARY, an R4D-5 transport plane from NAS Oceana dropped 18,000 pounds of corn to hungry waterfowl in the Back Bay, Virginia area. An estimated 12,000 birds were starved before four mercy flights were carried out.



VAH-8's CHIEF JONES AND MR. SZYMANOWSKI OF O&R ALAMEDA EXAMINE DAMAGED A3D

NCTPSOYA

OVERHAUL and Repair personnel at Alameda have a favorite slogan: "Nothing Comes To Pass Sitting On Your Assets." They recently proved how they lived up to it by putting an aircraft into commission on the double for Heavy Attack Squadron Eight.

One of VAH-8's A3D's was damaged during carrier qualifications off the Pacific coast. After engaging the USS *Midway's* #1 wire on the fifth mirror approach, the nose wheel strut mounting sheared. Force of the resulting crash was severe enough to inflict major structural damage throughout the nose section of the aircraft.

A message from the *Midway* to the O&R Officer at Alameda had Planner and Estimator Szymanowski aboard COD (Carrier Onboard Delivery), winging his way out the next day.

Surveying the damage, Mr. Szymanowski estimated that it would take eight weeks to repair the aircraft after it arrived at Alameda. Cdr. C.F. Fitton, VAH-8 skipper, disclosed at that point that the aircraft would be needed for a weapons training exercise just seven weeks away—and here they were still out in the Pacific Ocean.

With a typical NCTPSOYA attitude, all hands set about to meet the challenge. VAH-8 commenced defueling and performed partial disassembly. Mr. Szymanowski caught a flight back to North Island (Alameda was weathered in), and while still 500 miles from home, he set the wheels

in motion via long distance telephone.

The Supply Department constructed a special handling dolly and had it ready when the USS *Midway* docked two days later. Planning was busy locating parts based on advance information on the damaged area; the cleaning shop was standing by to strip the nose section; the metalsmiths of Minor Repair had an area cleared and were ready to start repairs when they received the plane.

In addition to the repairs, O&R was to perform major inspection of the engines and airframe as well as incorporate certain modification of the



FINAL TOUCHES ARE PUT ON NOSE SECTION

CP-66 computer structure which was in the damaged area.

And the result of this little extra effort? Exactly seven weeks after the discussions aboard the USS *Midway* 29 work days after receipt of the aircraft, A3D #142236 rejoined Heavy Attack Squadron 8, proving again O&R Alameda is right—NCTPSOYA.

AF Pilot Named Centurion Grabs 100th Wire Aboard Hancock

Air Force Capt. John A. Smith became a Navy Centurion when he landed an A4D-2 *Skyhawk* aboard USS *Hancock* for his 100th carrier landing.

The captain has been an exchange pilot with VA-113 since March 1959.

Seventeen of his carrier landings were made at night.

Capt. Smith was the last "Stinger" to qualify as Centurion during *Han-*



SMITH AFTER 100TH SKYHAWK LANDING

cock's deployment. Others qualifying were Cdr. R.E. Gallatin, LCdrs. G.E. Smitman, Sam Chessman, R.E. Bennett; Lts. G.P. Barnett, Ben F. Short, E.A. Cernan; Ltjgs. R.W. Powelson, D.S. Grieling, O.F. Baldwin, L.C. Showman.

Safety Award to VF-151 For Service Stint in West Pacific

VAdm. C. E. Ekstrom, Commander Naval Air Force Pacific Fleet, awarded Fighter Squadron 151 the Quarterly Aviation Safety Award for the fourth quarter of calendar 1960. The squadron was in the Western Pacific aboard USS *Coral Sea* during the period.

The squadron averaged 480 hours per month during this period which it claims "is definitely a noteworthy performance for any fighter squadron."



A PAGE FROM THE PAST

NOTATION ON FLOTATION



SOPWITH CAMEL, a British World War I type subsequently used by the U. S. Navy, with flotation gear installed. Note inflated air bag on far side, rolled bag on near side, front hydrovane.

NAVAL AVIATION has always been ready with new challenges to the courage, imagination, and determination of its personnel. Through 50 years the marriage of the airplane and the sea has required the solution of new problems. One way or another, workable solutions have always been found.

During World War I, overwater operations were conducted with seaplanes and flying boats. In the early post-war period, interest turned to shipbased airplanes. The use of small turret platforms on capital ships focused attention on light, land-based aircraft, with wheeled landing gear for shipboard operations.



HANRIOT HD-1, another type modified for shipboard use, hoisted after water landing.

A Naval Aircraft Factory report of the post war period begins:

"Due to certain military requirements, it has been found necessary to use land machines in conjunction with the Fleet. This means the loss of many machines and pilots when operating any distance from land, as motor trouble is something which can be foreseen only to a certain extent, and is the cause of most forced landings."

The report goes on to cover the solution which was applied to the aircraft in use; the "flotation gear." External rubber fabric air bags, mounted under the forward fuselage, were inflated by compressed air from an air bottle; additional inflated air bags were installed in the aft fuselage. Hydrovanes were mounted ahead of the main gear and on the tail skid, and a spring-operated wheel release system was installed for the main wheels. A hand pump was also provided for the pilot—in case of emergencies with the emergency system!

Various instructions—based on testing—are included in the report. For example: a tail low landing is recommended in order to "put the tail vane under and hold the machine from nosing over." If towing is necessary, "the propeller hub would seem to

present an admirable location to make a quick attachment, but the machine will turn over on its back if towed from this point." Only the front hydrovane is recommended for attachment of a tow line.

Following recovery, procedures are given for immediately draining water from the rotary engines used in these shipboard planes, as well as from the interior of the wing surfaces, to prevent water damage.

With all procedures followed and spare pair of wheels added, the airplane was again restored to "up" status.

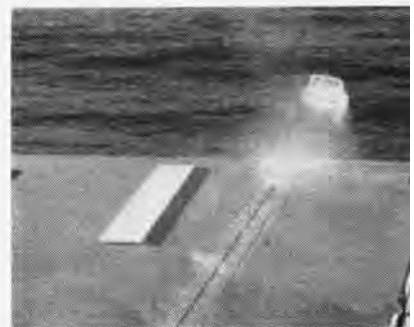
Shiny Stars in His Eye Marine General Chases Captain

There are chase pilots, and there are chase pilots, but few are winged gentry tackling the ticklish business of transition have had flank chasing them in the process of executing a first flight in a new type. Still in all it happened to Marine Captain R.E. Salzman of Oakland's VMI 133.

Salzman, a veteran *Banshee* driver was scheduled for a transition flight in an A4D. Aboard Oakland for the purpose of conducting his Annual Military Inspection was BGen. Louis I. Robertshaw, Commander Marine A Reserve Training, who is checked out in all types of Marine combat aircraft.

Thus was the stage set, and young Salzman found himself being briefed thoroughly on the *Skyhawk* by a substitute chase pilot with stars on his shoulders.

Donning borrowed hardhat and flight suit, the General then rode a experienced and helpful wing on the Captain as he flew his first flight in the small but mighty A4D *Skyhawk*.



IT'S A CAR! As part of the USS *Bon Homme Richard's* program of assisting the National Safety Council in ridding the nation's big ways of unsafe cars, the old "beep" was simply "shot over the side" to Davey Jones.



CAPT. MEHLE CONGRATULATES LTJG. MARKS

Marks: A Triple Centurion Makes 300th Landing Aboard Sara

A new milestone in Naval Air was believed to have been established by Ltjg. Arthur J. Marks of VA-35 when he made his 300th arrested landing aboard the same ship, USS *Saratoga*.

He grabbed wire number 300 in an AD-6 *Skyraider* while the *Saratoga* was deployed with the Sixth Fleet.

Congratulating the former NavCad were Capt. Roger W. Mehle, the *Sara's* skipper, Cdr. E.G. Dankworth, Jr., CAG-3, and Cdr. W.F. Bailey, Commanding Officer of VA-35.

Ltjg. Marks, a former NavCad, was designated a Naval Aviator in March 1957. He has completed three deployments on CVA's of the Sixth Fleet.

Model Missiles Are Lighted Electronic Flash Aids Research

An electronic flash, which lights up with the intensity of ten press-camera flashbulbs, maintains the light evenly at peak brilliance and suddenly shuts off without an afterglow, has been developed for Navy missile research. The flash provides illumination for a high speed camera which takes 82 equally exposed pictures of a missile model undergoing reentry airflow tests which last a fraction of a second.

Developed by scientists at the Naval Ordnance Laboratory, Silver Spring, Md., the flash unit is a gaseous discharge tube coupled with an artificial transmission line made up of a number of charged capacitors. When the capacitors are discharged, alternating current races first back and then forth through the line, keeping the tube's arc burning evenly for three one-thousandths of a second. The light then abruptly ceases to shine without any afterglow, avoiding double-exposure with the high-speed camera.

The finished pictures are silhouettes

of the missile model as it is subjected to air flow travelling many times the speed of sound. Data from these pictures are invaluable in determining the aerodynamic stability of the full scale vehicle represented by the model.

The new electronic flash solves a major lighting problem which had plagued aeroballistic engineers using high-speed photography to collect hypersonic re-entry data.

Alameda Safety Rates High Program Includes Extra Privileges

The Aviation Safety Program at NAS ALAMEDA is proving effective. While the 1960 Navy-wide aircraft accident rate was 1.9 accidents per 10,000 flying hours, the rate at Alameda was but .68.

According to Alameda's Safety Officer, R.M. Reynolds, the other safety statistics on the station are equally impressive. At the Navy's largest aircraft overhaul and repair department, 1958 saw the towing of airplanes produce 12 accidents costing over \$2000. In 1959 the figures diminished and in 1960 there were only five towing accidents costing \$193.

The Alameda Aviation Safety Program provides for incentives, recognition, commendations, and extra privileges for safety-minded personnel.



SPIRIT OF 76 is displayed by Marine Detachment aboard USS *Kearsarge* to celebrate ship's 76,000th arrested landing. Marines employed files, drums, paraded colors to honor S2F pilots, Cdr. D. E. Schatz, Ltjg. L. W. Moore.

Controlled Intercept Mark MAG-11 Reports 10,000th Made

Marine Aircraft Control Squadron Eight of MAG-11 completed its 10,000th successful ground-controlled intercept in one year's operation in the Far East. Over 9000 of the total were completed after the squadron commenced operations at NAS ATSUGI, Japan, in June 1960. LCol. E. H. Winchester is the squadron skipper.

The 10,000th intercept was controlled by Air Defense Control Officer, Warrant Officer C. J. Mears, who directed an F4D *Skyray* flown by Capt. R. T. Roche of VMF(AW)-115.



LCDR. LESTER HELLER accepts delivery of Chuting Stars' new R4D-8 from K.E. Neuforffer, Lockheed representative at Ontario Airport, Calif. Team members are, standing (l. to r.) Walter Euari, AME3, C.D. Martin, AME3, Elmer Rice, PR1, Ltjg. Mel Greenup, kneeling, Lewis Vinson, CWO, Donald Burroughs, PR1, George Harrison, PR1, and K.D. Lentz HM1. Others are Rita Jimenez, Miss Ontario International Airport, and Cathy Davis (R), Cbaffey College student.

LETTERS



NAME IS 'SUBDESHELOBLIMPOPLANE' ZX-1

SIRS:

At a farewell party given to Cdr. Audley W. Holmes, USN, the Officers and Chiefs of the Operations Department, NAS LAKEHURST, presented him with a special model.

In that Cdr. Holmes has had duty in destroyers, submarines, balloons, airships and various other HTA aircraft, including jets, we felt a memento depicting his various talents was in order.

Calling upon our vast reserve of creative ingenuity, this is what we came up with. Think it will fly? We flew it the night of the party.

I see in many of your copies of NANews, pictures of "first experimental models," so I pass on to you another first—if you feel it print-worthy. Believe me, there is not another model like it in the world.

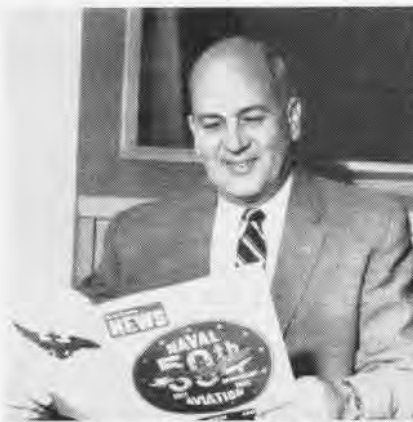
DAVID W. McFADDEN, ACC
NAS LAKEHURST

SIRS:

I have been uncommonly interested (see attached photo) in your replay of significant events and changes in Naval Aviation during the past 50 years.

Men, carriers, their aircraft, blimps, squadrons, RAG's and Fleets notwithstanding, one recent change—the demise of Op-05P—marks the "end-of-an-era" and should be newsworthy to Naval Aviators.

As the Personnel Liaison Staff attached to the office of DCNO(Air) since 1945, Op-05P



EX-OP-05P, PCO, USS NAVASOTA, DANIELS

should be well-remembered as the office (then called Op-54) which detailed all Naval Aviators until the function was shifted to BUPERS in '57. Transferred from BUAER to CNO under the aegis of Vice Admiral John S. McCain and known variously as Op-32, Op-54 and finally Op-05P, the small but sturdy staff closed its files on 1 March 1961 under VAdm. Robert B. Pirie, present DCNO (AIR).

Yours for staff sagas which have been vital segments of the Naval Aviation chronicle.

CAPT. J. P. DANIELS

SIRS:

Recent letters to the editor claiming records for this and records for that have sent us digging to see what kind of a record we can throw out for everyone to shoot at.

After researching old AAR files, we find that Marine Attack Squadron 217, an organized reserve unit, had its last accident on 28 August 1957. The pilot of an F9F-6 found he could not lower his flaps, made a long-fast landing, touching down 3000 feet down the runway. He caught the wire off center which resulted in the aircraft going off the edge of the runway, collapsing his nose gear.

Since this accident, 73 pilots have been attached to VMA-217 at one time or another, flying over 7000 accident free hours.

LCol. Frank Ashe commands this squadron which flies FJ-3 aircraft one week-end each month.

H. W. Taylor, Col., USMC
NAS SOUTH WEYMOUTH



50th Anniversary Cachet

The Pensacola Philatelic Society will offer a special cacheted envelope to mark the 50th Anniversary of Naval Aviation celebration to be held in Pensacola, Fla., June 6th to 11th.

The cachet will depict various types of Naval aircraft used from 1911 to the present, as well as an aircraft carrier and the Blue Angels. The color scheme of blue on a gold background will be used on a standard 6 1/4 envelope.

Addressed covers will be available at the rate of 15 cents each or two for 25 cents, postage included. Requests for envelopes should be sent to the secretary, Pensacola Philatelic Society, Box 2156, Pensacola, Florida. Deadline for receipt of orders is May 22nd.



Double Birthdays Mark Station's 20th, Naval Air's 50th

Double anniversaries were celebrated at NAS CORPUS CHRISTI in March—the station's 20th and Naval Aviation 50th. Special events included an open house, static displays of aircraft and equipment, an air-sea rescue demonstration, and a performance by the Blue Angels.

Corpus Christi was commissioned 1 March 1941 as the Navy's "University of the Air." The first group of students arrived eight days later. Ground school classes began April 7 and the first training flight was made 5 May 1941.

Originally, NAS CORPUS CHRISTI was to graduate 300 cadets a month but the quota was raised to 1200 a month when war began. Before World War II ended, some 35,000 pilots had been graduated.

USS ENTERPRISE REUNION

The Enterprise Association, whose membership is comprised of men who served on board USS *Enterprise* (CV-6) will hold its annual reunion in Washington, D. C., July 27-29. Headquarters will be The Sheraton Park Hotel.

Special events will include a trip to the U.S. Naval Academy at Annapolis, Md., and a trip to Newport News, Va., to see the new USS *Enterprise*, the Navy's nuclear aircraft carrier under construction.

All former shipmates, active in the association or not, will be welcome. For information and reservations, write Mr. Joseph Deigh, Reunion Chairman, 3750 Jason Ave., Alexandria, Va.

JULY 27-29

6 JUNE THROUGH 11 JUNE AT PENSACOLA

NAVAL AVIATORS' REUNION SCHEDULE

TUESDAY, JUNE 6

- Governor's Military Dinner (*Special invitation*).
- All day Naval Aviators arrive and register for reunion.
- Class Reunions and get-acquainted period.
- Navy Relief Bridge Tournament—Mustin Beach Officers' Club (*entry fee*).

WEDNESDAY, JUNE 7

- All day Junior Golf Clinic—High School Stadium—Free—Open to public.
- 8:30 a.m. Cadet Regiment Review—Naval Air Station.
- 9:00 a.m. Cadet Graduation Exercise. Oldest aviator pins wings on newest one.
- 9:30 a.m. Welcoming Address.
- 10:00-4:00 Open House—Naval Air Station—static displays and exhibits.
- 12:00-4:00 Cruise on aircraft carrier—carrier operations. Fleet delivery techniques—past and present Naval Aviators.
- 5:00-7:30 Naval Aviators' Homecoming Hospitality Party.
- 7:15 p.m. Bridge—Master Point game—Pensacola Country Club.
- 8:00 p.m. Krewe of LaFitte Parade—Palafox Street.
- 8:00 p.m. Dinner honoring pioneers of Naval Aviation and Aircraft Industry at Martine's Restaurant (*special invitation*).
- 8:30 p.m. Krewe of LaFitte Coronation—Municipal Auditorium.
- 9:30 p.m. Krewe of LaFitte Ball (*special invitation*).

THURSDAY, JUNE 8

- 8:00-11:30 Antietam Cruise—Past and present Naval Aviators.
- 9:00 a.m. Open House—Naval Air Station.
- 9:00 a.m. Yacht Parade—Pensacola Bay.
- 9:00 a.m. Beauty Contest for Indian Maid—Pensacola Beach.
- 10:30 a.m. DeLuna, Landing, Welcoming and Key ceremonies—Pensacola Beach.
- 12:30 p.m. Luncheon for DeLuna and Court by Island Chief Mayoki and his Council. Pensacola Beach (*special invitation*).
- 1:00-3:00 NAS. Presentations by leading aircraft manufacturers.
- 5:30 p.m. DeLuna Parade—Palafox Street, downtown.
- 6:00 p.m. Class reunions, dinners, etc.
- 8:00 p.m. First event of Beauty Pageant.
- 9:00 p.m. Coronation of DeLuna and Queen and DeLuna Ball—formal—Municipal Auditorium (*special invitation*).
- 9:00 til DeLuna Dance at Cantina, Pensacola Beach—semiformal (*admission charge*).

ELLYSON FIELD ACTIVITIES

- All day Navy Helicopter Pilots' Reunion.
- 9:00-11:00 Helicopter flight demonstrations by manufacturers. Commemorative ceremonies for Lt. Ellyson, the first Naval Aviator.
- 11:00-1:00 Band music and Star Flight demonstration team.
- 1:00-3:00 Helicopter flight demonstrations by various manufacturers.
- Army Helicopter Square Dance Team.
- 3:00-5:00 "Dutch Treat" party for military personnel and invited manufacturers' guests.

FRIDAY, JUNE 9

- 8:00-11:00 Antietam Cruise—Past and present Naval Aviators.
- 9:00-4:00 General visiting at NAS.
- 12:00 Early Aviators' Luncheon Meeting
- 5:30 p.m. Children's Day Parade—Palafox Street, downtown.
- 6:00 p.m. Aviators' Homecoming Fish Fry at Corry Field.
- 6:30 p.m. Crowning of Children's King and Queen at Municipal Auditorium.
- 7:30 p.m. Bridge—Women's Club, East Gregory Street.
- 8:00 p.m. Entertainment and second event of Beauty Pageant.
- 9:00 p.m. Crowning of Junior Miss Fiesta.
- 9:30 p.m. Junior Miss Fiesta Ball.

SATURDAY, JUNE 10

- All day Softball Tournament.
- 9:00-5:00 Aerial demonstrations and aircraft show, Naval Air Station
- Blue Angels
- Thunderbirds
- Skydivers
- Helicopter Versatility demonstration
- Helicopter Square Dance
- Canadian Golden Hawks
- Demonstration A3J, F4H
- Special flight demonstrations of antique aircraft
- Static display of aircraft dating from 1911 to present day craft
- Static display by various aircraft manufacturers.
- 10:00-12:00 Children's Treasure Hunt—Pensacola Beach. Open to all children through age 8.
- 12:00 Naval Aviators' Luncheon—Mustin Beach (NAS).
- 6:30 p.m. Golden Anniversary Parade—Palafox Street.
- 8:00 p.m. Final event of Beauty Pageant and crowning of Miss Golden Anniversary of Naval Aviation—Municipal Auditorium.
- Grand Anniversary Ball—Municipal Auditorium—semiformal (\$5.00 per couple).
- Five Flags Bridge Tournament—Hotel San Carlos.
- Men's Pairs and Women's Pairs in afternoon.
- Mixed pairs at night.
- Water Ski show—Pensacola Beach.
- Dance at Cantina—Chief Mayoki's Dance (*admission charge*).

JUNE 10-11

- Open Rifle and Pistol Championship (*entry fee*).
- Water Skiing Tournament.
- Model Airplane Championship Meet. Model airplane building contest with prizes being awarded for best model of Navy's earliest plane. Corry Field.
- Baton Twirling Championship (*entry fee*).
- June 8, 9, 10 Grand Old Opera—Pensacola Stadium.

SUNDAY, JUNE 11

- All day Outboard Motor Boat Treasure Hunt.
- 9:00-11:00 Memorial Service in the new Naval Air Station Chapel and all Pensacola Churches.
- 9:00-4:00 Open House—NAS—Static Display.
- Grand Treasure Hunt—Pensacola Beach.
- Water Ski Show—Pensacola Beach.



UNDER SECNAV PAUL B. FAY, JR., LARRY HAMPT, AND CAPT. R. C. LEFEVER, COMMANDING OFFICER, NARTU, ANACOSTIA

THE UNDER SECRETARY OF THE NAVY
WASHINGTON

To the Young Men of America --

On the occasion of the 50th Anniversary of Naval Aviation, it is a real pleasure to congratulate Larry R. Hampt, a Senior at the University of Maryland, on his forthcoming graduation and his acceptance in one of the Navy's Flight Training Programs. Naval Aviation offers a challenging career as a commissioned officer with an opportunity for higher education, travel, adventure and above all, Service to Our Country.

I strongly encourage the young men of America to think and plan their futures in terms of advanced education. We live in a changing world, the New Frontiers of the future present a tremendous challenge. Welcome Aboard!

Paul B. Fay, Jr.
PAUL B. FAY, JR.