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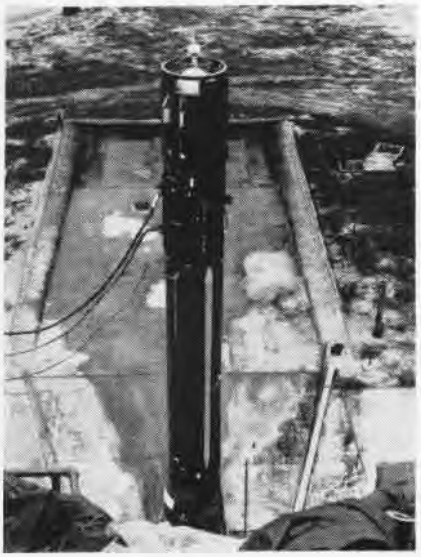
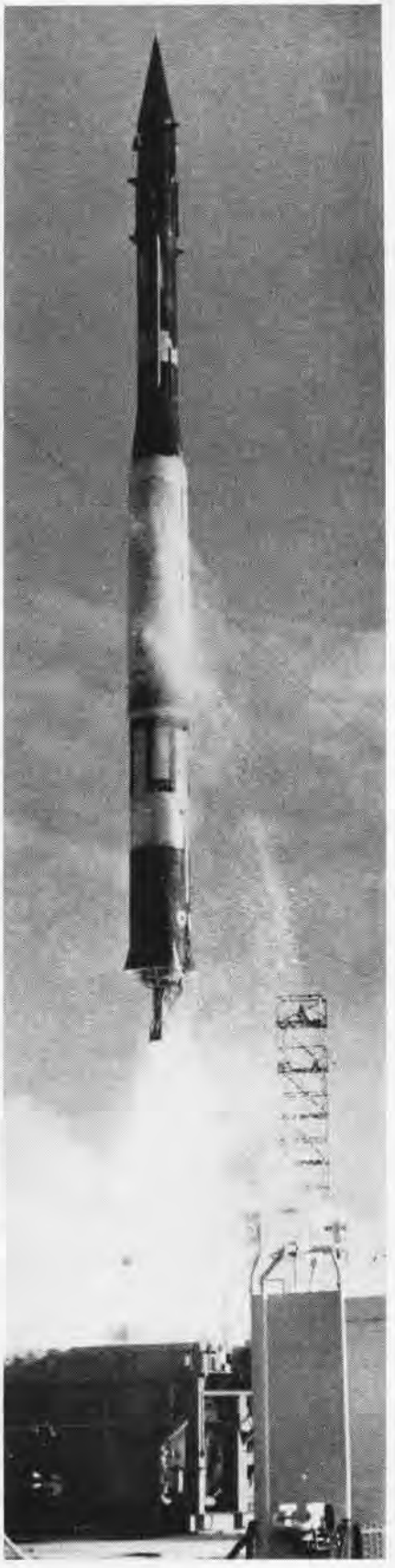


NAVY VANGUARD

Incredibly complex, the star of Department of Defense's Project Vanguard required the combined skills of hundreds of tireless scientists and technicians at Cape Canaveral to launch it. The seven-story high rocket, a three-stage vehicle built by the Martin Company, was sponsored by the National Committee for the International Geophysical Year as part of the participation of the United States. The launching of the IGY satellite was under the technical direction of the Naval Research Laboratory. From top down, photos show the six-and-half pound satellite in the nose; technicians guiding the nose cone into position; and topping off the second stage with white fuming nitric acid.



MARINE AIR-GROUND PUNCH

A MOBILITY of mind as well as of power characterizes the U. S. Marine Corps as it lays its plans in terms of air strength and the possible demands of warfare in the future. Just as a prizefighter does everything possible during his training period to reach his peak, the Marine Corps has peeled off weight. Put in its own words, the Corps wants no "unmanageable blubber on the muscles of a hard-hitting fighting entity."

A nuclear-age reorganization of the entire combat structure of the Marine Corps has entered its final phase and will be completed by September 30 of this year, according to Gen. Randolph McC. Pate, Commandant.

Basically, the reorganization involves creation of lighter, faster, more mobile combat units organized and equipped to conduct modern amphibious operations, including vertical assault by helicopter, in either nuclear or non-nuclear war.

Central feature of the reorganization is the creation of a streamlined Marine division having increased shock and firepower. It is an extraordinary combination of firepower and airpower, for the new division is completely transportable by air. Assault elements are completely helicopter transportable.

The whole plan is geared to what the Marine Corps demands: mobility, speed and firepower. It can get to the point of conflict with more firepower than ever before, though it has roughly 10 percent less personnel than the old division. Gone are the heavy support elements. Tanks are no longer an integral part of the Marine Corps Division but assigned to Force Troops.

What is happening in the Marine Corps this year has been ten years in the making. Back of the planning for reorganization is a decade of research and development in which new weapons, equipment and techniques were perfected.

In 1956, from June to December, the "FMF Organization and Composition Board," headed by MGen. R. E. Hogaboom, met at Quantico, Va., to determine what the Marine Corps must have in terms of organization in this nuclear age.

AMPHIBIOUS LANDING *craft LVT's still bring Marines ashore. Here Marines practice amphibious attack in NATO Operation Nav Marlex.*

LEATHERNECKS *come ashore from a Navy R3Y-1 Flying LST. Helicopters overhead airlifted advance party to harass simulated "enemy."*

DURING THE KOREAN *conflict, helicopters became a familiar sight. This one lands additional troop reinforcements for hillside bunker.*

THE BOARD established requirements that the Marine Division must meet:

1. Ability to make an amphibious assault against the most modern defenses in accordance with Marine Corps concepts for amphibious operations and tactical atomic warfare.

2. Freedom from service functions on the part of combat elements in order to attain mobility, freedom of action and homogeneous tactical structure.

3. Ability to rapidly create temporary task groups that will operate smoothly and efficiently.

4. Readiness for rapid strategic movements by limited air, sea or land transportation.

With these ends in view, the streamlining program was immediately put into action by Gen. Pate. He ordered the reorganization of the First Marine Division, Camp Pendleton, California, and the Third Marine Aircraft Wing, El Toro, California, at once. This reorganization was completed 30 June 1957. Since then both Division and Wing have tested new equipment in extensive desert, mountain, cold weather, and atomic warfare training exercises.

The streamlining program involved all the Corps' Fleet Marine Force units—three divisions, three aircraft wings, and combat support elements.

By early March 1958, Gen. Pate ordered the reorganization to be accomplished between April 1 and September 30 of this year for the Second Marine Division, Camp Lejeune, N. C.; Third Marine Division, Okinawa; Second Marine Aircraft Wing, Cherry Point, N. C.; First Marine Aircraft Wing, Japan, and First Marine Brigade, Kaneohe Bay, Hawaii.

Also being revamped in the current reorganization, Gen. Pate has announced, are certain "Force Troops" supporting units under Commanding Generals FMF Pacific, with headquarters in Hawaii, and FMF Atlantic, with headquarters at Norfolk, Va. The function of Force Troops is to provide additional support to divisions and wings on missions which require it.

While the Tank Battalion was eliminated from the Division on the basis that tanks would, in many cases, prove only a hindrance or an easy victim, tanks are still part of Marine Corps strength. They are attached to "Force Troops," so that they are available to support divisions where time, method of transportation, terrain and the enemy permit.

At the same time, the Division is equipped with an antitank battalion armed with the *Ontos*, a tracked vehicle with devastating firepower in six 106mm recoilless rifles. Each Division has 45 *Ontos* vehicles. These vehicles are transportable by fixed-wing aircraft.

Still another important change was the addition of a division reconnaissance battalion to replace the old reconnaissance company. This move reflects the increased requirement for enemy information and target designation in the extended tactical formations which will characterize modern amphibious war.

The Reconnaissance Battalion, composed of one Headquarters and Service Company and three reconnaissance companies, will conduct:

1. Helicopter and ground reconnaissance beyond the combat area, but short of distant reconnaissance missions.

2. Road reconnaissance.

3. Flank, separation and rear area reconnaissance.

4. Battlefield surveillance by establishment and displacement of helicopter lifted observation posts.

5. Counter reconnaissance.

One of the interesting organizations of the Marine Corps is the Force Reconnaissance Company (see pages 4-5) which can be used for special missions. It may or may not be attached to a Division. This would depend on the situation and special requirements.

These atomic-age Leathernecks are examples of the new Marine Corps in its use of airpower—this time the helicopter —to bring added strength to Marine Corps intelligence and planning.

There are three segments in the Reconnaissance Company. Members of the Amphibious Reconnaissance Platoon are outstanding swimmers and expert in hydrographic and beach reconnaissance. Members of the Parachute Reconnaissance Platoon, have jumped at night from all types of aircraft both by static lines and free falls over strange terrain, and have travelled long distances while living off the land itself. Members of the Parachute Pathfinder Platoon, have become highly skilled specialists with a mission that has developed from the needs brought about by rapid, mobile warfare.

And this need of airborne intelligence is also one of the changes made in the structure of the Marine Aircraft Wings. There, too, a helicopter reconnaissance squadron has been formed as an air counterpart of the Division's reconnaissance battalion.

Other changes in Marine Aircraft Wings include:

1. A slight reduction in the number of aircraft in fighter and attack squadrons—20 instead of 24—and fewer pilots in relation to the total number of aircraft.

2. Addition to the wing of another Air Support Radar Team to increase all-weather, close air support capability.

3. Centralization of supply, maintenance and service functions at the wing level, permitting earlier establishment ashore of operating groups and squadrons in amphibious operations.

The typical Marine aircraft wing consists of 8,000 to 10,000 Marines who operate about 400 aircraft of all types, including helicopters, jet fighters, assault transports, attack bombers and all-weather fighters.

While for purposes of organization, one talks of Marine divisions (ground) and Marine Aircraft Wings (air), the integration in combat operations is such as to make them again and again inseparable. They are an air-ground team in which air support includes helicopter lift, close air support and air defense for amphibious assault operations.

BY AIRLIFTING *assault troops to the combat zone, the U. S. Marine Corps takes tactical advantage of the helicopter to exert its strength at the point where it is most needed. These assault troops have been deployed against the "enemy" in a mock-attack demonstration.*

Modern Marine Corps doctrine can be summed up in a phrase the Marines themselves use, "Vertical Envelopment." Described in detail in the opening article in *Naval Aviation News*, June 1956, this doctrine envisions deep penetration of enemy territory by helicopter-borne assault forces, followed by rapid, coordinated, support operations across the beaches. The aim is to increase the shock in depth since it is not just a line or the beach that is at stake, but a whole area. By means of helicopter transport, the Marines emphasize speed, mobility, flexibility, wide dispersal of units, seizure and control of key terrain features and fluid tactical maneuvering by small units, this in contrast to the linear tactics in WW II. In a nuclear war, tactical atomic weapons delivered by plane, missile, or rocket would be used to neutralize enemy defenses and prepare the way for landings. The U.S. Marines are ready.

TRAINED AS SCOUTS AND FIGHTERS

MARINES OF FORCE *Reconnaissance Company have their equipment checked before they board the transport. All parachutists are graduates of extensive airborne course.*

THE PATHFINDER *Team leader bails out. Remainder of team will jump within seconds, as the first step of the helicopter-borne assault begins. Aircraft used is the Grumman TF-1 Trader.*

PATHFINDER *chutist releases bag of equipment he carries so it will hit ground first.*

CAMOUFLAGED *Marine Corps parachute scouts relax during final minutes before their jumps.*

JUMPMASTER *alerts team as plane nears objective. Pinpoint landings are imperative.*

WITH NO MOTION *wasted, Leatherneck Scout gets rid of parachute and goes into action.*

PARACHUTE SCOUT *makes a sketch of enemy terrain while lookout scout covers him.*

BRIGHTLY *colored nylon pylons erected by Pathfinders as target for incoming copters.*

AN ELEVEN-MAN *Parachute Pathfinder Team diplays gear and equipment it carries on one of its missions. Prime mission of the unit is to guide helicopter-borne assault force into landing sites.*

LEATHERNECK SCOUT *surfaces to get wrist compass reading before going shoreward. In war, information so gained might save countless lives.*

MARINE RECONNAISSANCE *team heads for shore on a mission as submarine, USS Perch, prepares to submerge until the rendezvous time.*

GRAMPAW PETTIBONE

Pinkie Pincher

The pilot of an F9F-6 had just returned from a flight and was taxiing his *Cougar* to its parking spot when he came upon a gas truck parked in such a manner as to restrict the taxiway. Rather than wait for the truck to be moved, he continued taxiing. A man had been stationed on each side to insure sufficient clearance of the wings.

When it appeared that the left wing would strike an aircraft adjacent to the intended parking spot, the left wing walker repeatedly struck the leading edge of the left wing in an effort to alert the pilot. Here's his story: "I hit the leading edge of the left wing. At the same time, the pilot was raising the flaps and my hand got caught in the opening where the slats fit. My hand remained caught in the opening until the pilot extended the flaps in order to free me."

Since the wing walkers were outside of the peripheral vision of the pilot of the swept-wing *Cougar*, the pilot was not alerted until the plane director in front of the taxiing aircraft finally signaled a stop.

The hand was serious injured, receiving lacerations and compound fracture of three fingers; the aircraft was undamaged.

Grampaw Pettibone Says:

Looks to me like just about everyone had a hand in this. Mebbe it was necessary for the gas truck to block the taxiway, but the pilot shouldn't have tried to crowd past in a narrow area where the hazard of hitting an obstacle was so great. Even though wing walkers were used, an airplane can't be squeezed through a space that's too small.

The plane director erred in not stopping the plane immediately when it was apparent that the left wing walker was trying to signal the pilot.

Getting caught in the slat trap made a lasting impression on the line man with the dented digits. He was just trying to do his job when the durned thing bit him. The lump method of learning was a rough way of finding out where not to place his pea-pickin' pinkies, but I'll lay odds that next time he'll get the plane director's attention—if he has to throw rocks at him—rather than blindly hitting at the wing in a vain attempt to alert the pilot.

End Of The Line

The pilot of an HUL-1 gave a "thumbs up" to the plane director to indicate that his helicopter was ready to take off from the icebreaker. Receiving a green flag, the pilot picked up into a hover. However, the aircraft lost RPM, so the pilot landed the helicopter in order to adjust the power. Immediately upon regaining RPM, the helicopter was again picked up into a hover and another takeoff was attempted ahead and to the starboard. However, a tie-down had been applied to the starboard float and left on.

Attempting to gain forward flight with the starboard tie-down secured to the deck, the helicopter was tipped to starboard causing the main rotor blades to make contact with the safety net. The helicopter fell to the deck on its starboard side. The main rotor mast assembly ruptured the starboard fuel tank causing gasoline to pour on the hot engine. The gasoline exploded and burst into flame. The helicopter came to rest in an upright position and was destroyed before the fire could be extinguished. The pilot and his two passengers escaped with injuries ranging from serious to minor.

The pilot had pre-flighted the helicopter while it was still secured on the forward section of the flight deck. Upon respotting for takeoff, the crew chief attached the starboard tie-down. Before giving the pilot a green flag to signal that the helicopter was clear for launching, the plane director, stationed in front of the helicopter, took a step to either side to check that the tie-downs were off. He failed to see the tie-down on the starboard side.

The aircraft accident board concluded that the primary cause of the accident was the failure of the plane director to *insure* that the tie-down had been removed from the aircraft prior to giving the signal to launch. A secondary factor was the pilot's failure to check the aircraft for an explanation of the power loss which

occurred during the first hover before attempting the second takeoff.

Grampaw Pettibone Says:

Sufferin' sunfish! Failure to make quadruply double sure you're unlassoed before launch is like playing with firearms without checking the chambers. By the time you find out you had a loaded situation, you may not be around anymore.

The board's conclusions as to the accident cause rates my amen, but I'd like to point out that the pilot also had a responsibility for making sure that he was untied before he reached the end of the line. Being an interested party in the events to come, he might well have taken time for a circuit of his flying machine after it was respotted.

Glider Practice

At an altitude of 24,000 feet during a practice bombing mission, the engine of an AD-6 began running rough and trailing smoke. While the pilot was turning toward the nearest airfield, the engine blew a cylinder through the cowling and failed completely.

The pilot then glided his powerless *Skyraider* to NAAS FALLON, Nevada, some 25 miles distant and executed a perfect dead-stick landing. He attributed his successful handling of the emergency to constant practice of emergency procedures which are emphasized through his squadron's aviation safety program.

Grampaw Pettibone Says:

Sounds to me like this lad turned in a 4.0 performance—the kind that comes from pre-planning and practicing possible emergency situations. Well done, lad, well done!

Gentlemen, Be Seated

In a recent R4D-8 landing accident which resulted in overhaul damage to the aircraft, the plane captain—as was his custom—stood between the pilot's and co-pilot's seats during landing.

The Medical Officer stated in his report: "It is emphasized that this man — when standing between the pilots—is in a most vulnerable position should there be a rough landing or accident on landing."

Grampaw Pettibone Says:

This kind of durned foolishness has been going on for years in *Skytrains, Neptunes, Privateers* and just about every multi-engine flying machine that has a plane captain aboard, and it's high time we knocked it off.

Mebbe there are some cases on record to show that his presence between the pilots served a useful purpose, but they're far outnumbered by the accidents in which the extra pair of hands in the cockpit created confusion and caused the accident.

Reminds me of the time at El Paso international airport when the pilot of an R4D on its takeoff run gave the co-pilot an affirmative sign to indicate that the engines sounded good following a magneto change. You guessed it—the plane captain, standing between the pilots, mistook the signal as an order to retract the gear, and the ground-fast *Skytrain* slid to an embarrassing halt as an unscheduled event viewed by a record audience assembled for an air show.

As stated in OpNavInst 3710.7A, each person in a Navy aircraft is required to wear his safety belt and shoulder harness during take-off, and their use is to be continued until the completion of the flight except when necessary activities require temporary removal.

When a plane captain stands between the pilots during take-off or landing, he's inviting a headlong dash into the instrument panel or through the windshield. Few heads are designed to stand such rough treatment.

Feet's Too Big

During touch-and-go landing practice, the pilot of an SNB inadvertently applied foot pressure to the brakes when actuating the rudder pedals. This action was not compatible with good aircraft control technique and overhaul damage to the aircraft resulted.

The pilot was a six-foot-four speciman who wore *size 14* shoes. After the accident it was discovered that when he placed his feet against the rudder pedals approximately three inches of each shoe rested solidly against the brake pedals.

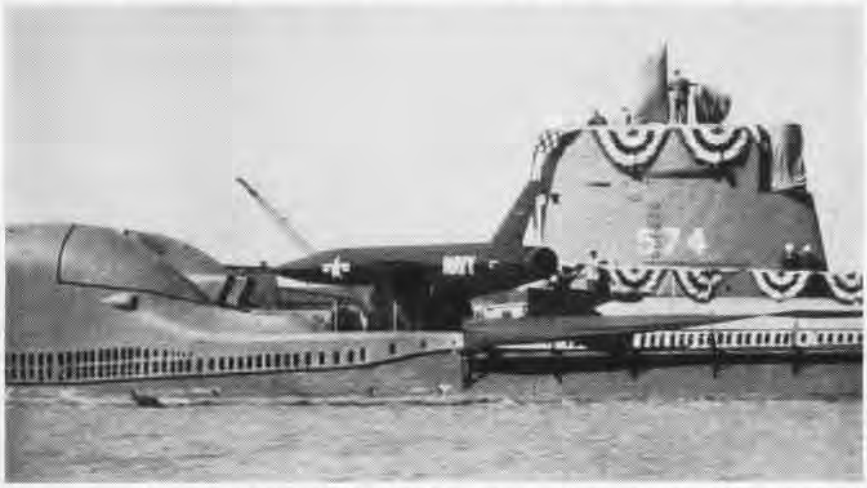
Grampaw Pettibone Says:

Lad, those size 14's may be mighty handy for stomping out grass fires, but when it comes to flying there may be times when your feet's too big. You've got a problem, but half the battle's recognizing it.

The Navy has a lot of pilots who are tall in the saddle, but they realize it and make the necessary allowances. If you crank the pilot's seat in the *Beechcraft* all the way aft, then be sure *to remove the back cushion*, you'll ease the leg room situation and cause less foot cramping. As for the brake pedal routine on the deck, you'll need a constant awareness of foot placement (and no cramps in the big toe) to keep out of trouble.

In airplanes with adjustable rudder pedals, always insure that they're set for maximum distance from you. If the allowances you can make in the various aircraft models won't ease your problem sufficiently, you may have to limit your flying accordingly. Meanwhile, just be happy that you were turned under enough to permit you to scoot under the wire and into the Navy flying program you wanted.

NEW 'BIRD' FOR A NEW BOAT



REGULUS II MODEL IS POISED BY GRAYBACK'S MISSILE HANGARS AT COMMISSIONING

LIEUTENANT Commander Nott, place the ship in commission." With these words the Navy's first true missile submarine, the *Regulus*-armed USS *Grayback* (SSG-574), was put in service by RAdm. George L. Russell, Commandant, Twelfth Naval District. The ceremony took place March 7, 1958 at Mare Island Naval Shipyard, Vallejo, Calif.

Other submarines of World War II vintage have been converted with deck-type hangars to fire Chance-Vought's *Regulus I*. *Grayback*'s missile capability is built in.

Twin cylinder-shaped hangars, faired into the upper hull forward, will contain the 'birds'. Immediately aft of the hangars is the launching platform. The new *Regulus II* missiles which she will carry are capable of striking more than 1,000 miles inland with nuclear warheads.

Regulus II is a 57-foot missile powered by the J-79 turbo-jet engine with afterburner. It is launched with a 115,000-pound thrust Aero-jet General booster rocket. Following a diversionary course—beyond 60,000 feet or low enough to get under radar fences—the missile would offer no predictable trajectory to an enemy. The speed is better than Mach 2, and it will be able to zero-in with great accuracy because of a full-time inertial guidance system. The improved 'bird' will also arm the conventional powered USS *Growler*, the nuclear sub, *Halibut* and the nuclear cruiser, *Long Beach*.

Grayback will roam the oceans of the world, ready to surface at any time and automatically slide *Regulus II* from the cell buried in her hull into firing position. Within minutes after surfacing she will fire the 'bird', then dive immediately. High seas, strong winds and foul weather will not handicap the launchings.

The SSG-574 is one of the Navy's largest submarines, with a length of 320 feet and a displacement of 3600 tons. She is conventionally powered, with high capacity batteries and all the offensive 'punch' of an attack submarine plus her missile capability. Her first skipper is LCdr. Hugh G. Nott.

RAdm. Frank W. Fenno, ComCruDesPac, was the principal speaker at *Grayback*'s commissioning. He summed up the significance of the occasion: "A *Polaris*-equipped submarine could never be designed had it not been for lessons learned during construction of this *Grayback*, the latest innovation of our scientific minds, a beautiful guided missile submarine equipped to launch surface-to-surface missiles of the *Regulus I* and *Regulus II* types interchangeably. . . . The most wonderful thing about *Grayback* is she is here today, soon to join the fleet."

According to Mr. Ray C. Blaylock engineering vice president for Chance Vought, "One of the most significant things about *Regulus II*, and something that is seldom realized—is the available status of the missile. It is not a test vehicle, or a prototype, or an experimental model, or just a good idea. It is 'hardware' in the fullest sense of the term."

Special Task Group Formed
Will do Advanced ASW Training

Adm. Jerauld Wright, Commander in Chief, U. S. Atlantic Fleet, is forming a special task group to do advanced antisubmarine training work. Designated "Force Alfa," the new group will be composed of an aircraft carrier with its air group of fixed wing antisubmarine aircraft, a helicopter squadron, destroyers, shore-based patrol aircraft and submarines.

The carrier assigned to "Force Alfa" will be the USS *Valley Forge*, commanded by Capt. Clifford M. Campbell. Destroyer Squadron 28, consisting of eight *Fletcher*-class destroyers with special antisubmarine warfare capabilities is also scheduled to be part of the group. This squadron is headed by Capt. K. P. Letts. Air units and submarines are expected to be named soon.

RAdm. John S. Thach will command the task group under the operational control and supervision of VAdm. F. T. Watkins, Commander, Atlantic Fleet Antisubmarine Defense Force.

The new group, according to Adm. Wright, differs from the regular hunter-killer forces in two ways: first, it will have semi-permanently assigned units; and second, the units in the group will concentrate solely on training in antisubmarine warfare.

"The advanced antisubmarine task group," Adm. Wright says, "will fulfill a need for more permanence in the assignment of all types of antisubmarine air, surface and submarine forces for testing and developing the coordinated tactics and methods for fighting submarines with new and advanced weapons. . . . By assigning units for an extended period of as much as 18 months to work together against target submarines, we expect to achieve greater efficiency in the use of modern weapons and equipment. It will also permit us to exploit to the fullest new equipment as it becomes available to the Fleet."

New assignment for RAdm. Thach as group commander will be in addition to his present assignment, Commander Hunter Killer Force, Atlantic.

NEWEST ADDITION TO LOCKHEED'S PICKET PLANES, U. S. NAVY'S RESEARCH AIRCRAFT CARRIES WORLD'S BIGGEST AIRBORNE ANTENNA

'STRANGEST SHAPE IN THE SKY'

AT THE FIRST public showing of the WV-2E *Super Constellation* at the Naval Air Development Unit, NAS SOUTH WEYMOUTH, Mass., onlookers agreed that it was "the strangest shape in the sky." The experimental "flying saucer" radar research airplane is designed to bolster America's air defense by greatly improving the ability of sky sentinels to detect and warn of attack.

The huge aircraft carries the most effective known airborne radar equipment to altitudes from where its detection devices can patrol vast distances—from the fringes of space down to the earth's surface.

Built by Lockheed Aircraft Corporation, the WV-2E aircraft resembles a *Super Constellation* airliner with a discus-shaped housing riding piggyback. Within its saucer—a 37-foot-wide rotadome which rotates in flight—is a super-vision "electronic eye."

"This airplane is a major milestone in the ever advancing field of airborne radar detection," according to RAdm. L. D. Coates, assistant chief of BUAER for Research and Development.

On hand for the press briefing and aerial demonstration of the WV-2E at the time of its arrival at South Weymouth was a group of key North American Air Defense Command Officers, led by MGen. Harvey T. Alness, USAF, NORAD deputy chief of staff for plans and operations of the combined Canadian-United States air defense system.

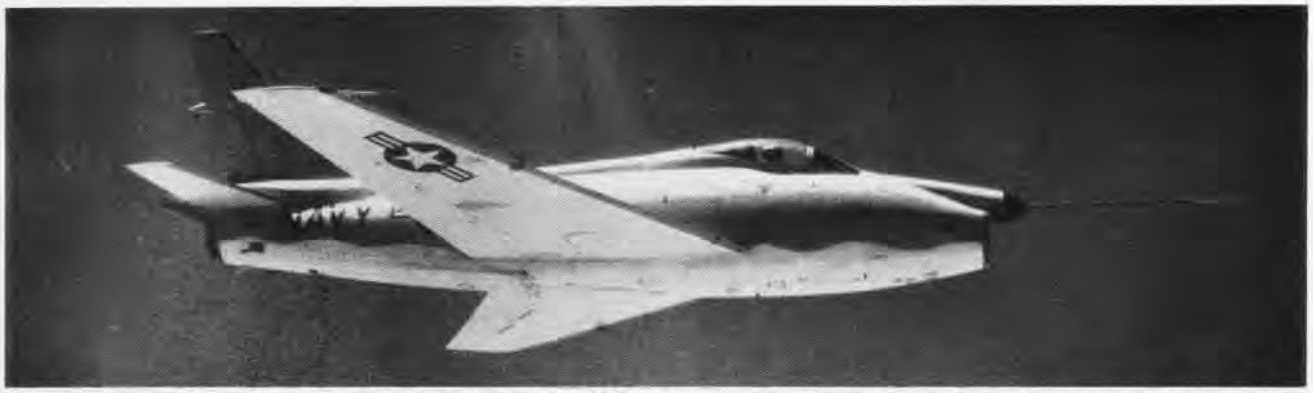
Pointing up the significance of the futuristic airplane and the vital role of airborne early warning in national defense, Gen. Alness said that nuclear-armed bombers constitute the most immediate threat to American cities and bases. He continued: "The eyes of the military services are upon this aircraft. Of particular interest will be the WV-2E's application to the aerial combat control field."

Under the direction of Capt. H. B. Van Gorder, commanding officer of NADU at South Weymouth, the huge flying electronic laboratory will be put through an intensive six-month flight and engineering evaluation program. Lincoln Laboratories of the Massachusetts Institute of Technology played a key role in developing the electronic sentry's highly complex radar equipment and accessories.

Dr. W. W. Ward, AEW development engineer with Lincoln Laboratories, reported that the experimental airplane came into being under the sponsorship of BUAER. Project direction was assigned NADU with Lockheed as the airframe designer and electronics systems manager and General Electric and Hughes Aircraft as major suppliers.

Important advantages of the saucer antenna and the radar combination include: sharp reduction of "sea clutter" interference on radarscopes, and ability to report on objects in the skies from sea level to extremely high altitudes without shifting the antenna upward or downward.

Lockheed first pioneered early warning aircraft developments shortly after WW II, developing the original Navy PO-1W, based on a Constellation. Its success led to the larger and more advanced U. S. Navy's WV-2 and the USAF's RC-121 aircraft which are currently serving on the longest aerial police beats all over the world.



ONE OF NEWEST EXPERIMENTAL MODELS TO UNDERGO TESTING AT NATC IS THE FJ-4F FURY WITH AR-1 ROCKET POWER AUGMENTATION

MAIN GATE OF BUSY, VITAL PAX RIVER

NAVAL AIR TEST CENTER

1943 1958

YP-59, FIRST AMERICAN ALL-JET PLANE

NATC Patuxent River, Maryland, celebrated its 15th anniversary on April 1st. There are people on board today who well recall "the old days."

RAdm. Thurston B. Clark, present NATC Commander, was the first executive officer. When he arrived, barge service by water, a railroad 40 miles away and a narrow, winding road to Washington, D. C. provided the only contact with the outside world.

Adequate station security was of prime importance. In September 1943, a Coast Guard detachment, with 67 dogs and 29 horses, took the job of patrolling the nine miles of waterfront. They remained until roads were completed two years later.

Cdr. Lawrence E. Flint, now of Flight Test, remembers vividly the arrival of the Bell YP-59. It was an experimental plane which never got to the fleet. However, it was the first American built all-jet aircraft, and it was his task to test it.

Pax River was established to consolidate the test facilities which were scattered at Anacostia, Norfolk and Philadelphia. The 6800-acre site was chosen because it permitted lengthy runways and sheltered seaplane basins.

The importance of the Test Center's role during WW II cannot be overemphasized. New aircraft models were thoroughly tested, radar mining was developed, problems in bomb tossing were solved, pressure suits were checked out, instrument landing techniques perfected—to mention but a few projects. VAdm. John S. McCain (in picture below directly behind the speaker), Chief of the Bureau of Aeronautics in 1943, commented: "Patuxent was the most needed station in the Naval Establishment."

The activities at the Naval Air Test Center are just as vital and varied today. There are more than 100 jets undergoing evaluation. The P6M *Seamaster* and the F8U-2 *Crusader* are expected to reach the Center soon.

CDR. W. T. RASSIEUR, FIRST CO, SPEAKS AT COMMISSIONING

RADM. CLARK, MEETING WITH DEPARTMENT HEADS, HOLDS P6M

PAPPY BYRNE
A MAN AND A LEGEND

THE FINAL platoon had passed in review. Strains of *Anchors Aweigh* died in the distance. The ceremonies, marking the end of one of the great careers in Naval history—particularly Naval Aviation history—closed.

Chief Aviation Operations Technician Patrick J. Byrne retired from active duty after over 40 years of service to his country on 31 March 1958 at NAS LAKEHURST. VAdm. W. V. Davis, Jr., DCNO(AIR), read the final orders.

'Pappy' deserves the title of the "flyingest man in the armed forces." He has flown 140 different types of aircraft for a total of over 22,600 hours.

Of great importance has been his pioneering work in the field of seaplanes. Mr. Byrne helped to establish practically every U. S. seaplane base in the world. A former commanding officer, Capt. D. L. Mills (Ret.), said of Pappy that he is "without peer in the field of flying boats."

Byrne made his first flight in a Burgess-Dunne seaplane on 15 April 1915 at Rumson, New Jersey, which has always been his home of record.

Enlisting in the Navy in December 1917, he was trained as a machinist's mate and assigned to a seaplane patrol unit at Norfolk. Later he received his orders to NAS PENSACOLA for flight training and completed the course on 1 October 1920. He was designated naval aviation pilot #10.

The years that followed brought varied duty. In 1924 Pappy was ordered to USS *Langley*, the Navy's first aircraft carrier. He qualified in V-E-7's and 9's, *Aeromarine* 39B's and VO-1's. He served aboard USS *Wyoming*, *Augusta*, *Richmond*, and *Trenton*, acting at different times as catapult officer, flight officer and third navigator. He was attached to U. S. scouting and patrol squadrons all over the world.

By 1939, his skill at overwater flying was such that American Export Airlines, (later Pan-American), when it needed someone to survey potential routes across the Atlantic, asked the Navy for the loan of Pappy Byrne. With the Navy's permission, he used his accumulated annual leave to do this.

PAPPY IS SET FOR ONE OF HIS LAST HOPS

He had established such a reputation for outstanding flying ability within the Navy that he was selected in 1942 to make the test flights of the famous Martin *Mars* flying boat. He was the first Navy pilot to try it.

During WW II, Byrne was attached to transport squadrons, had duty as flight instructor and continued survey work. In 1944 he was instrumental in the establishment of a large ferry wing (VRF-4) at Floyd Bennett Field.

In 1948-49 Byrne was active in ferrying seaplanes from the East Coast to Seattle, Washington. After service with VR(F)-31 at Norfolk, he was transferred to NAS LAKEHURST, his first shore duty in 26 years. He served as Operations Duty officer.

Official recognition came to Patrick J. Byrne in January 1955. The Assistant Secretary of the Navy for Air presented him with the Legion of Merit on behalf of the President of the United States. The citation read in part: "Piloting aircraft in the beginning which had no instruments other than an oil pressure gauge, he has flown all naval planes so proficiently through the years, including the seaplane *Mars*, that the name, Byrne has become a legend among naval aviators. . . . His outstanding professional skill and conscientious and resolute devotion to duty during his many years in the Navy reflect the highest credit upon Chief Boatswain Byrne and the United States Naval Service."

Mr. Byrne recalls how he used a string tied to the bow of the plane to tell whether it was slipping, skidding or flying straight ahead. He judged his airspeed by the singing of the wires. Instead of a radio, telegrams were used to notify a field of the arrival of an "aeroplane." At night and on overcast days, Pappy's sense of smell took the place of today's navigational aids. He recalls flying down the east coast, more than once, at about 200 feet, knowing only by the aroma of coffee that he was over Brooklyn, and by the odor of fish packing plants that he was over the Delaware Coast.

Byrne's list of friends reads like a portion of "Who's Who in Aviation." The weekend before his retirement, he participated in the Bald Eagle reunion at Pensacola (p. 20), and saw many of his early flying mates for the first time in 35 years. Letters and telegrams poured into Lakehurst from other pioneers regretting his retirement.

As for Pappy, he's the first one to admit that he'll miss the life and the flying for a long time to come. However, since he's reached 62, the mandatory retirement age, he accepts the inevitable and is looking forward to settling down with his wife and daughter at Rumson.

The Navy's feeling toward the aerial mariner can be summed up in the words of Al Williams, the famous Navy test pilot of the twenties: "You may retire from active service in the Navy, but darned if you will ever be able to retire from the memory of your shipmates, old and young."

ANGEL WITH A TRIPLE SADDLE

A LITTLE more than a year ago, Helicopter Utility Squadron Two began to develop a new rescue seat. Since then, the seat has been improved locally, sent to sea for evaluation by the Angel detachment aboard the *Ranger*, and tested by members of VX-3 at NAS ATLANTIC CITY, N. J.

BUAER has authorized the manufacture of a quantity of seats at O&R LAKEHURST for evaluation by Air Force, Coast Guard, Marine and Navy units.

The new seat was designed to supplement the kapok rescue sling which has become less effective as the quantity of personal flight clothing worn by naval aviators has increased.

Fashioned after an anchor, or a fish hook, the new seat has three "flukes" which extend from a shank, permitting the hapless victim in the water to simply straddle the saddle, lean forward, relax and be hoisted safely into the helicopter.

The new seat provides two major assets; multiple rescue in less time, and unlimited clothing to be worn by the person being rescued.

Under the sling-rescue method, rescuees violated prescribed procedures in a number of ways, to be dunked when the sling was hoisted. Now the floating man boards one of the three flukes in a natural, *forward* manner. The lift package is so well balanced that the man being rescued need not even hold on. An unconscious person can be put astride one of the flukes with his head and shoulders propped forward against the shank, and his rescuer can board another fluke to be hoisted up simultaneously.

VX-3 PILOT RIDES SADDLE SEAT IN TEST

The 34-by-22-inch seat, made of aluminum, is lighter than the total weight of the kapok sling and its lead marker. A tank provides enough flotation for visibility. Bright red and yellow colors improve visibility even further.

In tests at Atlantic City, VX-3 pilots wore flight suits of the Mark IV exposure suit type, plus the Mark II life preserver; the 3-C life preserver which is more bulky when inflated; and the Mark II pressure suit with all its equipment.

In all cases, it took the man being rescued less than five seconds to position himself on the seat. The pick-up took less than a minute.

One pilot, wearing the Mark IV anti-exposure suit and life preserver, said "Getting on was easy. There is no need to remember *how* to do it." Another said, "I seemed to fit naturally into position. I recommend that all pilots go through this training."

PILOTS WEARING THIS ASSORTED ARRAY OF FLIGHT CLOTHING EXPERIENCED NO DIFFICULTY IN BOARDING THE TRIPLE-SADDLE SEAT

Marines Fly on Ground

El Toro Has Low Pressure Chamber

A mobile low pressure chamber has been put into operation at MCAS El Toro by the Aviation Physiological and Survival Training Unit. In the past, local pilots and crewmen journeyed to San Diego to undergo qualification tests.

The low pressure chamber, operated by Medical Department personnel under supervision of the Aviation Medicine Branch, will simulate flights to altitudes in excess of 35,000 feet.

During each simulated run of approximately 45 minutes, the chamber will contain eight trainees and two observers. Additional observers and operators will be outside the chamber.

Men enter the chamber, adjust their oxygen equipment, and the airtight door is locked. Pressure inside the chamber is slowly lowered. Throughout the operation, constant visual and vocal contact is maintained with all participants. Trainees in the chamber may talk to each other or to the technicians outside.

If a trainee must be removed from the chamber during "flight," he is shifted from the main chamber to a pressure lock. He is then brought back to sea level in that unit, thus allowing others to complete the test.

Rescue Kit is Designed

Can be Jettisoned Like a Bomb

A new emergency rescue container for supersonic jet pilots has been developed by the Air Research and Development Command. It packs 450 pounds of survival equipment.

Measuring 23 inches across and 14 feet long, the shell hooks onto the aircraft's bomb rack. Equipment within the container enables an airman to survive until actual rescue is effected. It is paradropped to persons in distress.

Each container is crammed with enough food and medical supplies to last one man 30 days. Both arctic and tropic survival gear are available. Standard rescue equipment such as signal flares, bedding, clothing, a gun, matches, tools, knife and radio are stowed into the container.

Dropping the container to downed airmen at sea or in areas not easily reached on land is described as being as "simple as jettisoning a bomb."

PANGLIMA *and son-in-law are overcome with gratitude as they receive ship models from the new Datu. Mr. Garrett was presented with an ancient kris, the leader's most valuable possession.*

'BLOOD BROTHERS' MEET

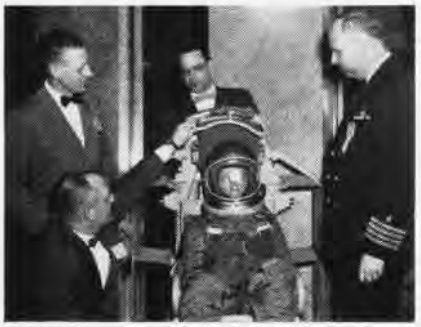
In 1940 Horace P. Garrett was a Radioman Third serving with a seaplane squadron operating out of the Sulu Archipelago, the southernmost part of the Philippine Islands. He became so friendly with the Moslems living there that the Panglima Sarawi, or local leader, adopted him as a blood brother, a privilege rarely given to a person outside the Moslem faith.

Seventeen years later, Aviation Electronics Technician Garrett returned to the Philippines with Patrol Squadron 42. He arranged a flight from Sangley Point to the tiny island of Bungao, for the first reunion with his "relatives" in all that time.

CEREMONY *consists of drinking rain water, burning incense, reading prayers from Koran.*

BLOOD BROTHERS *say farewell. Mr. Garrett boards a VP-42 Marlin to return to Sangley.*

A 25-minute ceremony at the Panglima's home climaxed a day of celebration. Warrant Officer Garrett was clothed in robes especially made for him and watched the "Dowa Salamat" rite, held in thanksgiving for his return. At the conclusion, he was granted the coveted title of Datu Mahabassar, which is only two grades below the high moslem rank of Sultan.



DOCTORS GATHERED *at the 29th annual meeting of the Aero Medical Association, held in Washington, D. C., this spring. At left, HM1 M. E. Myers models for Capt. C. F. Gell, of the Air Crew Equipment Laboratory, Johnsville, the Navy's Mark III Lightweight Full Pressure Suit, made by B. F. Goodrich Co. Center, Capt. O. W. Chenault, Assistant Chief of the Bureau of Medicine and Surgery for Aviation Medicine, and Capt. P. B. Phillips, pose before a special exhibit. At right, Harry Peck, Paul Dugan, William Thomas, civilian experts with the Airborne Equipment Division of the Bureau of Aeronautics, and Capt. W. L. Jones, also of BuAer, inspect and examine ground level ejection seat*

Royal Navy Honors Ensign

Trophy Awarded for Gunnery Mark

Two officers of the British Royal Navy presented the Britannia Trophy for 1957 to Ens. Federick Metz of FASRon Nine, NAS CECIL FIELD.

Commander D. G. Goodwin, DSC, representing the British Joint Services Mission, Navy Staff, in Washington officiated at special ceremonies at Cecil. He was accompanied by Cdr. G. C. Baldwin, Staff Officer (Air) of BJSM.

The Britannia Trophy was presented last year by the Admiralty to the U. S. Naval Air Training Command in grateful recognition of the U. S. Navy's assistance in training over 250 British naval pilots under the Mutual Defense Assistance Pact from 1952 to 1956.

Subsequently, the Chief of Naval Air Training ordered the trophy to be presented annually to the best student in air-to-air gunnery.

Ens. Metz attained his high mark in aerial gunnery while attached to Advanced Training Unit 202 at NAAS KINGSVILLE. A scroll in recognition of his performance was presented to him, and his name was inscribed on the trophy, at Pensacola.

WORLD AIRCRAFT *altitude record returned under Navy flag to U.S. for the first time in 26 years when LCdr. George Watkins, NATC test pilot, flew his F11F-1F Grumman Tiger to new mark of 76,828.5 ft. 16 April. Plane had J-79 with afterburner. British held old record of 70,308 ft. set in a Canberra 28 August 1957. Latest American to hold the record was the late RAdm. Apollo Soucek. LCdr. Watkins received a DFC for his feat.*

VA-115 Scores 49 E's

Makes Fine Record in the AD

VA-115, commanded by Cdr. L. E. Kirk, Jr., looked over its accomplishments of the year preceding its departure from NAS MIRAMAR for a Western Pacific cruise aboard the USS *Shangri La*, CVA-38.

Squadron pilots logged over 6500 hours in the *Skyraider* during their training cycle, including many hours in long range, low level, special weapons hops. They also became proficient in the use of all conventional ordnance carried by the AD.

VA-115 won 49 E's during a month spent at NAAS EL CENTRO. Twenty of the 22 pilots aboard won E's in such events as rocket, bombs, masthead bombing, strafing and special weapons delivery. Leading in individual E awards were Ltjg. Doug Francis with six E's out of seven, and Ltjg. Jerry Gilbert with five E's.

Forecaster Weather Service

NAS Cubi Point Gives Pilot Aid

A forecaster-to-pilot weather service has been inaugurated at NAS CUBI POINT, Bataan, Philippine Islands. It is the first such service available at a naval air station outside the continental limits of the United States. It is available on Channel 13 (344.6).

A call for weather information to the Weather Office from a pilot in flight will provide the pilot with whatever weather information is desired. Alert weather personnel at Cubi Point provide accurate, round-the-clock service.

Special broadcasts are made during typhoon conditions to keep all hands up-to-date on the storm's progress.

BROTHER ACT *at NAAS Whiting Field finds Ltjg. Fred Raines (left) giving Navcad Robert Raines some views on T-28's. Navcad Bob admits his brother had a "bit to do" with recruiting him for a Naval Aviation career.*

El Toro Gets HR2S-1's

Pilot Logs 1900 Hours in Copters

When MSgt. Anthony J. Soltes set one of the six giant HR2S-1's down at the Marine Corps Air Facility, MCAS EL TORO, it marked another "first" in his book for helping make history. Not only was the arrival of the HR2S-1 a history-making event in itself by being the first to be seen on the West Coast, but for Soltes it meant he was the first Marine enlisted pilot to make a cross-country hop in that type helicopter as a plane commander.

He helped make history earlier too. In 1952, he was among the first to fly a copter from a carrier off Labrador.

Later, in Korea, while flying with HMR-61, he flew repatriated prisoners of war from their release points to Seoul and Inchon during Operations *Big* and *Little Switch*. And with the world's attention focussed on Panmunjon, he ferried peace officials to the site of the historical talk.

Tony has most of his flight time logged out in helicopters. He has more than 1900 hours since he started as a helicopter pilot in 1952 at Quantico. There he flew the Bell, Piaseki, HRS-1 and HRS-2 helicopters.

Chance Vought is Cited

Certificate of Merit for F8U-1

Chance Vought Aircraft, Inc. has received the Navy Certificate of Merit for services to the Navy in connection with the F8U-1 carrier-based fighter airplane.

The certificate, signed by SecNav Thomas S. Gates, was presented to Chance Vought Chairman of the Board C. J. McCarthy by RAdm. Robert E. Dixon, Chief of the Bureau of Aeronautics.

Adm. Dixon stated that the recognition of merit was due to outstanding services to the Department of the Navy in the field of aircraft design and production.

The citation read in part, "Through the design, development and production of the F8U-1 *Crusader* aircraft, Chance Vought has immeasurably benefited the U. S. Naval Air Force. With *Crusader*, carrier aviation has been ushered firmly past the sonic flight barrier into the era of truly supersonic striking power."

Also at the presentation were W. P. Thayer, vice president of sales, from Chance Vought in Dallas, Asst. Chief of BuAer, RAdm. W. A. Shoech; and other BuAer assistant chiefs.

Navy Scientist is Honored

Aero-Medical Group Gives Award

The Wives Wing of the Aero Medical Association has presented Dr. Florence W. van Straten, Navy meteorological engineer, with an honorary membership in recognition of her outstanding accomplishments and significant contributions to the science of

METEOROLOGIST WITH NAVY SINCE 1942

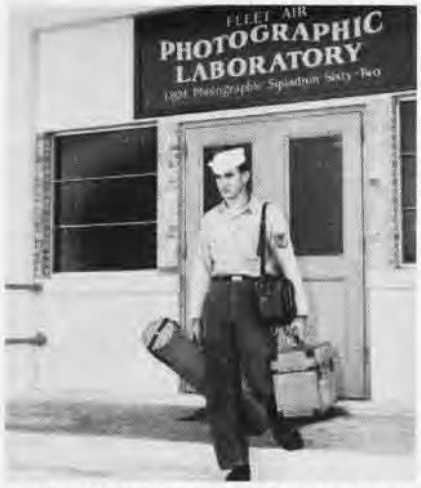
atmospheric physics so important now.

Dr. van Straten is head of the Technical Requirements Section of the Technical Readiness Branch, Naval Weather Service Division of CNO. In September 1956, she was given the Meritorious Civilian Service Award for her work in providing a method for computing radioactive fall-out.

A leading scientist in meteorology, Dr. van Straten's work in atmospheric physics has a direct bearing on the successful operation of aircraft by Navy pilots flying at high altitudes.

Since 1942, Dr. van Straten has been in the United States Naval Reserve. She now holds the rank of Commander.

THE F8U-2, MANUFACTURED *by Chance Vought Aircraft, has made its first flight. A faster and higher flying version of the F8U-1 Crusader, world's fastest Navy jet fighter, the F8U-2 can achieve speeds in excess of 1000 miles per hour and yet land on some 200 feet of carrier deck. Powered by a Pratt & Whitney J-57-P16 engine, the F8U-2 resembles the F8U-1 except for the addition of two fixed lower aspect ratio ventral fins mounted under the tail section and two afterburner airscoops on the tail cone between the horizontal tail and vertical stabilizer. The first flight of the production model of the F8U-2 is scheduled to take place in September.*



J. C. HEATON, PHA3, IS READY FOR WORK

WAVE BEWLEY PUTS NEGATIVES IN DRIER

R. P. DILDING PREPARES TO COPY A MAP

NEW PHOTO LAB IS IN ACTION

SINCE ITS opening early this year, the new half-million dollar Fleet Air Photographic Laboratory has been put to good use. The first major fleet photographic lab built since World War II, it is at Jacksonville.

The building which houses it was designed from the ground up to support fleet activities, particularly Light Photographic Squadron 62 and its sister squadron, Heavy Photographic Squadron 62, both located in the Jacksonville, Florida, area.

Operated by 60 officers and men from VFP-62, VAP-62, and other fleet activities, the new facility enjoys several distinctions. It is the first fleet lab to be built with support of the photo squadrons as a primary requisite. It is also the first to have a complete centralized chemical system. In every respect, the facility is streamlined.

The laboratory is fully equipped to process all 70mm photography. All 70mm equipment is the same as that being installed aboard the newest carriers. This is considered an important installation since 70mm aerial photography became operational in the Atlantic Fleet with the receipt of the F8U-1P's by VFP-62. In the last two months, the lab has processed about 22,000 aerial negatives and 25,000 aerial prints.

The air-conditioned one-story concrete block structure provides for the complete processing of intelligence information through the photographic, photo interpretation and intelligence report stages. Not only does the facility support fleet operations, it also provides valuable training.

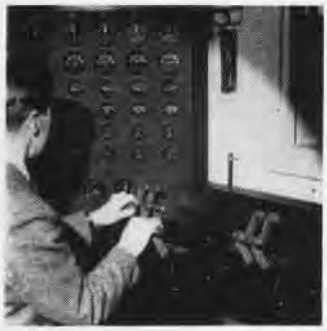
In the new lab are all types of photographic facilities which can turn out a great variety of pictorial work: portraiture, enlarging, developing, motion pictures, photostats and aerial mapping. Processing, editing, and finishing in both color and black and white are routine in the ultramodern laboratory.

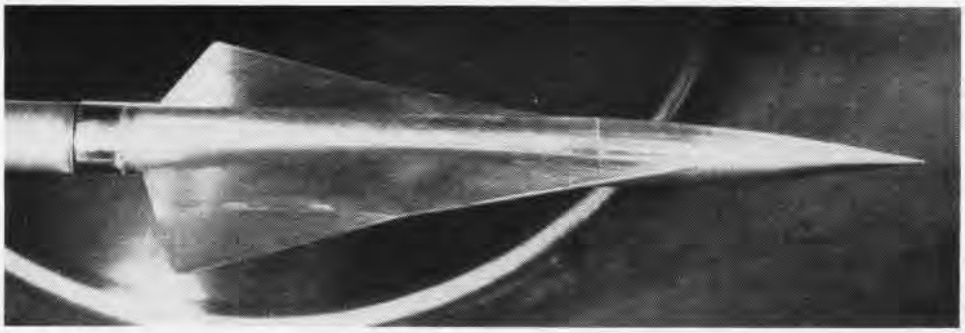
Head of the Laboratory is Capt. E. L. Keim, commanding officer of VFP-62.

THREE LAB CREWMEN MAKE GOOD USE OF THE NF-1 ENLARGER

T. O. HYMPHRESS, PHG3, TAKES PORTRAIT OF ENS. R. HORAN

S
A
A
B





STALWART TO THE NORTH

SWEDEN is not ordinarily thought of as a military power. Not since 1814 have the Swedes fought a war. Her long history as a neutral state is, however, no bar to her standing as a nation ready and able to defend herself. This very readiness has sustained her steadfast neutrality.

This neutrality is supported by a first rate air force and aviation industry. The Royal Swedish Air Force (RSAF) is a major air force by present continental European standards, and next to those of the United Kingdom, France, and the USSR, it is the strongest in Europe.

The RSAF has three major tasks: to provide air defense over Sweden, support naval and ground forces, and provide aerial reconnaissance. To carry out its obligations, the RSAF is comprised of approximately 1500 aircraft, three quarters of which are jet-powered.

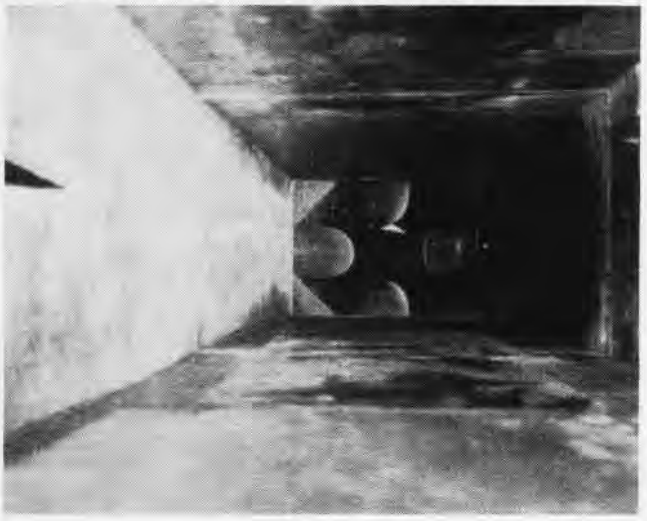
In view of her mission and historic neutrality, it is natural that Sweden should have fighter predominance in her air force, though she also has a number of light attack bombers. Her own rugged climate predisposes Sweden to the development also of a built-in capability in cold weather operations. Sweden has obtained a backlog of experience in the cold weather operation of jet aircraft.

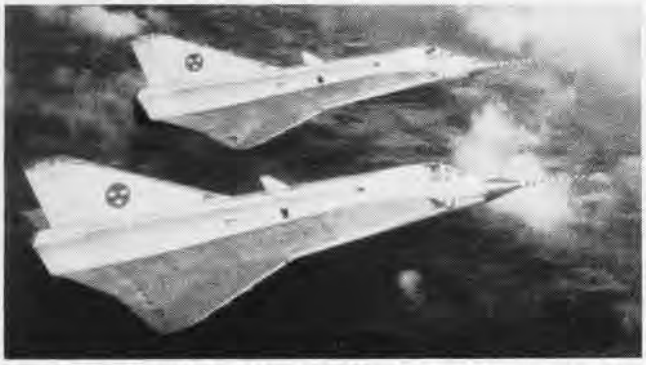
A number of foreign aircraft are used in some of the air force units, but these are given, in common with Swedish types and those built under license in Sweden, a designation, indicating the service duty to which they are to be put. Aircraft type designations employed are similar to those of the U. S. Air Force and consist of a prefix letter, followed by a number identifying the particular aircraft as follows: B (*bombplan*) for bomber aircraft; A (*anfallplan*) for attack aircraft; J (*jakplan*) for fighter aircraft; S (*spaningsplan*) for reconnaissance aircraft; TP (*transportplan*) for transport aircraft; and SK (*skolplan*) for training aircraft. The manufacturer's designation given to projects and new designs is altered on acceptance for service use; for example, the jet fighter design, the Saab 1001, has been designated J-29.

The principal aircraft manufacturing company in Sweden is the *Svenska Aeroplan Aktiebolaget*, conveniently abbreviated to Saab, which today employs approximately 7000.

OUTLET OF ONE OF SWEDEN'S WIND TUNNELS BUILT BY SAAB

THE SAAB WIND TUNNEL IS POWERED BY FOUR JET ENGINES





DOUBLE DELTA WING CHARACTERIZES THE SAAB J-35 'DRAKEN'

THE COMPANY was founded in 1937 for the manufacture of airframes and aircraft engines, with factories at Linkoping and Trollhatten. When WW II broke out, the company's entire resources were scheduled to military aircraft production and Saab built light bombers and fighters for the RSAF.

Before that the company had produced the Junkers JU-86K twin-engine medium bomber, the Northrop 8A-1 dive bomber, and the North American NA-16-4 advanced trainer under license. With this experience, the company began designs of its own, using temporarily the service of some 50 American designers to introduce stressed skin calculation methods. During this period, Saab designed and produced the B-17 single-engine and B-18 twin engine bombers (not to be confused with the U. S. bombers) and the J-21 twin boom pusher fighter.

During the war, Saab converted several U. S. Boeing B-17 F and G *Flying Fortresses* into commercial transports. When these aircraft had made forced landings in Sweden, they were interned and then acquired by purchase. Later these aircraft made survey flights across the North and South Atlantic in preparation for scheduled service by Swedish Air Lines.

The very necessities of war which cut off Sweden from her old channels of supply forced Sweden not only to build her own aircraft but design them. Sweden was able through the war years to produce a number of original designs which have been developed continually since then and now equal or surpass many foreign designs.

When WW II ended, information began to pour in from Germany and Great Britain. Engineers made visits to England and the United States to learn all they could about turbojet engine development. This information provided the necessary ground work for Swedish designers, and it was not long before a modern sweptwing jet fighter design was turned over to Saab's craftsmen.

The first fruit of this effort was the Saab 29, a sweptwing jet fighter which made its first flight in September 1948. It was the first sweptwing jet fighter to go into large scale production and service in Western Europe, and deliveries of this aircraft were made from 1951 to 1956.

Two new Swedish aircraft are now coming into prominence: the Saab-32 *Lansen*, a two-seat, transonic all-weather combat aircraft, and the Saab-35A *Draken* (Dragon), a single-seat jet fighter which has a supersonic speed.

The Saab-32 was built for the RSAF for a special mission: all-weather attack operations against ground and sea targets. In 1953, a *Lansen* prototype exceeded the speed of sound under complete control during diving tests.

In addition to the A-32A *Lansen*, the all-weather attack model, there are two other versions; the J-32B all-weather and night fighter version first flown on 7 January 1957, and the S-32C photographic reconnaissance configuration.

AMERICAN SNJ (SK 16), EARLIER TRAINER, IS LIAISON CRAFT

THE SAFIR, BUILT BY SAAB, IS BASIC TRAINER USED BY RSAF

The Saab-35 is Sweden's newest design. The prototype of this supersonic fighter flew first in October 1955, and the first production model made its flight from Saab's airfield in Linkoping on 15 February 1958. This "double delta" aircraft, planned and built entirely in Sweden, has been designed mainly to intercept bombers in the transonic speed range. It carries full radar equipment to accomplish this mission under all weather conditions.

A new and improved version, the J-35B will go into production featuring a new fire-control equipment for collision-course tactics, and according to MGen. Lennart Peyron, Chief of Staff of the Swedish Air Force, will also have improved armament.

A third version, the J-35C, a two-seat dual control version, is planned for training pilots to utilize the aircraft to its maximum limits at altitude and Mach numbers.

SWEDISH Naval Aviation consists of a small number of helicopters of a U. S. Army type, Vertol 44. Sweden plans to have helicopter squadrons in the next few years. These squadrons will be used in ASW operations, minesweeping, reconnaissance, fire control, minelaying, etc.

Sweden has entered the guided missile field. A new missile, two of which can be carried by Saab-32 *Lansen*, is designated "type 304."

The 304 was developed by the Swedish Guided Weapons Bureau (part of the Royal Swedish Air Board) and is being manufactured by the Air Force's central workshops and by civil contractors. The 304 is fitted with a rocket motor and is guided by an all-weather system.

According to MGen. Peyron, the *Lansen* with its radar equipment and the 304 missile represents the Air Force's best weapon system at this date. Gen. Peyron adds that preparations are well underway for the introduction of the new missile into squadron service, training of personnel has started, and missile storage is being provided.

Extensive proposals for the reorganization and modernization of Sweden's defense have recently been submitted to the Government by the Supreme Commander of the Swedish Armed Forces, Gen. Nils Swedlund. Purpose of the proposal is to give Sweden's defense forces maximum striking power in event of war by stressing more advanced weapons at the expense of more conventional aircraft.

In spite of proposed budget increase to compensate for higher costs of new equipment, some cuts are regarded as inevitable. The Air Force's present striking power is to be maintained through acquisition of the most up-to-date equipment—Saab *Lansens* and Saab *Drakens*. In addition, air-to-air and air-to-surface missiles may be procured while surface-to-air missiles may augment fighters.

According to Bryan R. Noton of the Aeronautical Research Institute of Sweden, all organizations involved in providing the RSAF the striking power it requires, are working together in excellent and effective cooperation.

SAAB A-32 'LANSEN' IS SWEDEN'S TRANSONIC FIGHTER BOMBER

FOR DEFENSE OF STOCKHOLM, HAWKER HUNTERS ARE BEING USED

THE J-32B LANSEN WILL SUCCEED THE J-33, THE D. H. VENOM

SWEDISH WORKERS HAVE KNOW-HOW THEIR NATION NEEDS TODAY

HERE IS THE FACTORY LINE UP FOR TURNING OUT LANSEN 32'S

PIONEER AIRMEN AT PENSACOLA

HERE ARE *a few of the "Bald Eagles": F. E. King, G. E. Rummil, D. S. Ingalls, R. G. Pennoyer, H. H. Landon, G. D. Dumas, C. P. Mason (president) and RAdm. J. M. Carson, CNABATRA.*

by A. O. Van Wyen
DCNO (Air) Historian

FROM EAST, west, north, and south, from Boston and San Diego, from Chicago, Cleveland, and Cincinnati, and up from Miami, the early birds of Naval Aviation gathered at NAS PENSACOLA from 27 to 29 March at the invitation of the Secretary of the Navy.

This was their second reunion. Their first was a cruise on the USS *Forrestal* in September 1956. Known officially as "The Early Naval Aviators Association," the organization has a more colorful sub-title, "The Bald Eagles," an already firmly established popular name. But they are not all so bald. As one of the guests remarked, "This is the hairiest bunch of bald eagles I've ever seen."

This year there were some new faces and some that were missing, but the spirit was the same. Although the start of the trip was marred by bad weather and arrivals somewhat delayed, once the planes arrived from their four directions, the station put forth its best weather. It lived up to its reputation for sunshine that was responsible for its selection by the Chambers Board in 1913 as the site upon which the Navy's first permanent air station should be built.

A hearty welcome was sincerely extended by all hands from VAdm. R. Goldthwaite, the Chief of Naval Air Training, on down. Each hour was filled and there was hardly time for reminiscence. There was a fish fry and a number of receptions. The pioneer airmen heard the story of the Training Command and its program that seemed so different from the one with which they had first hand knowledge. They witnessed a pre-flight graduation ceremony, and they flew in jets and helicopters.

At the big dinner, they were entertained by the Pensacola Navcad Choir. Secretary of the Navy for Air, Garrison Norton, was their principal speaker. Next day, before the assembled body of flight students and instructors, a half dozen of The Eagles told of their experiences in learning to fly and proved beyond a shadow of doubt that, as one of them remarked, "all Naval Aviators are the same breed of cats." For the last event of the visit, the *Blue Angels* put on a special performance for their benefit.

The days were full but there was time for official business too. They elected VAdm. Charles P. Mason, Naval Aviator No. 52, as their Pilot (President), R. L. Ireland, Naval Aviator No. 84, as Co-Pilot (Vice-President), and Gibson Gardner, Naval Aviator No. 344, as Radio Officer (Sec. & Treas.). New members, honorary and regular, added to the roster included Secretary Garrison Norton, RAdm. I. M. McQuiston, Capt. A. O. Preil, F. Trubee Davison, Seymour H. Knox, and Patrick J. Byrne.

Among many delightful experiences, none equalled the flights in jet aircraft. Most flew in T2V trainers, but a few rode F9F's and the F3D. Their word for it was "wonderful." VAdm. Charles P. Mason, who had flown in jets before and admitted that he went up because he "just likes to fly", used the same word and added, "but the boy wouldn't let me put her in a roll."

Cdr. George Shaw, survivor of more than his share of crack-ups in postwar barnstorming flights, said, "She flies beautifully, and I'll bet she's easier to handle than the old Jenny."

The departure began as soon as the *Blue Angels* had taken the group's applause. As they embarked in their aircraft to go their separate ways, the band played *Anchors Aweigh* to cover the parting. The flights home were quieter than the going, but there were still many yarns to swap. There was time for reflection too. Although the prospects of equalling the *Forrestal* cruise had seemed remote in the beginning, there was a common feeling that this had been done. It was hard to decide, but perhaps the feeling was the afterglow of a happy and exciting time. Still undeveloped plans for next year promise even more excitement to come.

One thing is sure, individually and as a group, the men demonstrated convincingly to the cadets under instruction, to their instructors, and to those in charge of aviation programs that time and age may be different, but the spirit is the same. There was visible evidence that the past and the present had been brought closer together through the presence of the men who started Naval Aviation in the direction through which it achieved its high place in naval power. The remark with which "Pappy" Byrne, 40-year veteran, concluded his brief talk to the flight students, expressed it well—"And never forget, boys, that you are on the best team in the world, the United States Navy!"

RYAN AERONAUTICAL STORY

This is the 13th in a special series of feature stories on the companies which have built and are building aircraft for the aeronautical organization of the Navy.

RYAN AERONAUTICAL COMPANY HAS HAD 35 YEARS EXPERIENCE IN BUILDING AIRCRAFT

In 1922, young T. Claude Ryan elected to go into the flying business and bought a war surplus *Jenny*. He obtained use of a postage-stamp sized field on the San Diego waterfront.

Ryan purchased six *Standard* biplanes from the government, modified them and established a scheduled airline between San Diego and Los Angeles.

At the same time he was running the airlines, Ryan embarked on the building of light monoplanes, the M-1's. Attracted by this type of plane for his proposed trans-Atlantic hop, Charles Lindbergh asked Ryan and his staff if they could build one to meet his requirements.

The answer is part of history. In 60 days of fevered activity, Ryan and his colleagues built *The Spirit of St. Louis*.

In 1931, the present Ryan Aeronautical Company was established. The new location, appropriately called "Lindbergh Field," proved a fortunate one, and in 1933, the Ryan S-T monoplane, a small airplane of metal construction, was introduced. It won acceptance during the depression years for use of commercial operators, the military services and sportsmen pilots around the world.

Simultaneously the Ryan School of Aeronautics was giving flight and ground school instruction to civilians. It fitted Ryan admirably for the role of instructor in primary planes, and in WW II thousands of young men entering the USAF were given primary military flight training in the low-winged monoplanes.

During WW II, the company strode into the jet field by producing the Ryan FR-1 *Fireball*, a jet-pushed, propeller-pulled Navy fighter. It was the first jet fighter to land on a carrier.

Today over the desert sands of New Mexico are flying Ryan *Firebees*, pilotless, jet-propelled target drones produced for the armed forces. Today aircraft projects of Ryan's own design include, in addition to the *Firebee*, the new USAF X-13 vertijet research plane. Ryan is also a subcontractor and builds for Boeing 60-foot-long aft fuselage sections; for Douglas, jet engine power packs and support pylons.

Power plant projects include the manufacture of all types of heat and corrosion resistant components for every type of engine, including jets, jet engine afterburners, piston engines, ramjets, turbo-compound engines and rocket motors.

Avionics projects developed by Ryan involve the use of continuous wave radar techniques for long range automatic navigation system, for the missile guidance, and for systems adaptable to helicopter operations.

Today T. Claude Ryan can survey facilities of 1,285,000 square feet, in which 7,500 employees produce some $50,000,000 worth of airframes and aircraft engine components annually.

THE FIREBEE TARGET, CAPABLE OF MACH 0.9, MOUNTED ON P2V

RYAN FR-1 WAS FIRST JET FIGHTER TO OPERATE FROM CARRIER

GRUMMAN AIRCRAFT *recently gave a mural of the Blue Angels to the U.S. Naval Pre-Flight School. Shown here are Mr. W. E. Babington, Grumman representative, and Capt. R. E. Riera, Chief of Staff, Naval Air Training.*

Cubi-Atsugi Hop Made

VMF-323 Commended for Flight

The Commanding General of 1st Marine Aircraft Wing has commended officers and men of VMF-323 for a 1687-mile, non-stop jet hop.

Eleven FJ-4 *Fury* jets took off from NAS CUBI POINT, P.I., enroute to their home base at NAS ATSUGI, Japan. The flight took three hours, 17 minutes and was made without mid-air refueling.

The squadron commander, LCol. D. L. Cummings, said, "Original planning for this flight estimated three hours and 14 minutes from take-off to landing. Actual time consumed was three minutes more than planned.

'Forrestal's' Record Out

CVA-59 Seven Do Rock 'n Roll

Seven *Forrestal* sailors recently announced the release of their own rock 'n roll record. The sailors, called the "Forrestals," have recorded amongst other tunes, "Always" and "Koffee Shop Rock." The recording was made by Felsted, an outlet of London Records.

Quartermaster Doug Fowlkes presented the first record of the new hit to Capt. Richard L. Kibbe, Commanding Officer of CVA-59. After the presentation, the Forrestals unleashed a live version of their talents.

The seven bandsmen wrote both the lyrics and the music they recorded.

ALOFT, AFLOAT, *ashore, Navy Nurses care for the Navy's sick. Ens. Mavis Van Pennen and Hospitalman Mason tend NavCad H. Plum at USNH Pensacola. The Navy Nurse Corps celebrates 50 years of service 13 May 1958.*

GRAND OPENING *of Pier 12 at the Naval Operating Base, Norfolk, was held with the arrival of USS Ranger. As crew paraded at quarters, tug boats assisted CVA-61 into port. It was the first ship to tie up at the giant new pier, especially constructed to accommodate attack carriers.*

GUNNERY BANNER *held by Cdr. F. S. Standring, OinC ATU-201 Corpus Christi, shows 156 hits out of 200 rounds. The 78% score, a record for ATU-201, was fired in an F9F-5 using a fixed Aero-3A gyro without radar.*

Aerobee Junior Tested

60 Mile High Flight Successful

A new rocket developed by Aerojet-General Corporation has joined the ranks of the research tools available for the nation's expanding upper air research program.

Designated *Aerobee 100*, the rocket was furnished to the Naval Research Laboratory for its first flight evaluation at the Naval Ordnance Missiles Flight Test Facilities at White Sands Proving Ground, New Mexico. The test was successful with the rocket reaching an altitude of 60 miles.

Aerobee 100 is nicknamed "Junior" in deference to its distinguished ancestors, *Aerobee and Aerobee-Hi*. Although less sophisticated, the new rocket fills an important need as a vehicle which can transport a substantial instrumentation load to the lower ionosphere (50-100 miles up).

Aviation Skills Tested

Do-It-Yourself Rater at Memphis

A new machine that looks and works like a pinball machine, and is just as popular as one, has been installed in Operations Building N-2 at Memphis.

There's really no connection, however. A product of Career Training Devices, the machine is called an automatic rater. It has a series of 375 multiple choice questions pertaining to air navigation and operations, and was designed as a self-tester for aviation rate skills.

Memphis already has an electronics automatic tester, and there are plans to install a machine with questions for aviation mechs and metalsmiths.

RANGER MEN HIT THE BEACH

WHILE IN Guantanamo Bay, Cuba, for Bureau of Ships trials, USS *Ranger's* landing party "Hit the Beach" for several days of maneuvering in Gitmo's cactus and brush-covered slopes.

The landing party of 131 sailors and 58 Marines was commanded by Marine Capt. R. H. Barnard. Ltjg. Greenhalgh was exec. Rifle platoon leaders and observers were USS *Ranger* officers.

The first day's outing consisted of a hike to the rifle range where, after a short break, the squad and fire team leaders gave their men instructions on the M-1 rifle, Browning automatic rifle and 30-caliber light machine gun. Later in the day each man was given a chance to try his marksmanship. After the firing came weapon cleaning. Return to the ship was made by forced march after a good day in the field.

On the second day there was a short lecture at the field by ship's hospital corpsmen, then Lt. Evans lectured the men on march security. A live ambush was demonstrated, as was the employment of a rifle squad in the assault of a fortified position ashore.

PFC T. F. O'HARE *instructs men of Ranger's landing party on maintenance of M-1 rifle.*

LARGER GROUP *of Rangermen gets briefing on 30-caliber machine gun from Sgt. E. D. Green.*

ON THE RANGE, *Pfc. J. Ferraro shows proper firing position to Seamen Henderson, Perry.*

MARINE CAPT. *R. H. Barnard, (L) and Cdr. L. Grabowsky, (R) lead men of landing party on three-hour forced march to training area.*

RANGER MEN *begin the long hike back to landing site at the end of two days of work, instruction, fun and sun during the maneuver.*

CDRS. BOOTHE, *Sturdivant, Amori, Calhoun and Nelson stand on the steps of the Pentagon during their Command Indoctrination tour.*

CUTAWAY OF *an AD engine is explained by Chief Miller at NAS Moffett Field to members of Grosse Ile's Fasron 731 training there.*

TOP RESERVISTS TRAIN IN DC

EACH YEAR two groups of Air Wing Staff Commanders and assistants from Naval Air Reserve activities throughout the country come to Washington, D. C. for their active duty tour. They are attached to the Coordinator, Naval Air Reserve, known as OP-O5R. Capt. A. O. Preil, who holds the billet, acts as the principal adviser to VAdm. W. V. Davis, DCNO (Air), in all matters concerning the Naval Air Reserve program.

OP-O5R conducts a 14-day "Command Indoctrination" course specifically designed "to acquaint the individual officer with the total integration of the Naval Air Reserve within the Navy Department." Air Wing Staffs provide staff guidance to organized units. The semi-annual program was established a few years ago to familiarize CNARESTRA activities with Washington top level administration.

Cdrs. H. L. Boothe, A. Y. Sturdivant and A. J. Calhoun from NARTU Memphis; Cdrs. J. A. Amori and C. R. Nelson from NAS Oakland went through the most recent course. Part of each day was spent at bureaus and offices that have cognizance of reserve matters. For example in the Bureau of Naval Personnel, they visited the sections charged with aviation programs, reserve precedence and officer appointments. In BUAER, time was spent in the attack design, naval air reserve electronics and weapons evaluation division. They also got a rundown on air mobilization plans, air intelligence and the work of NANEWS.

NAS New Orleans Landscaped

Operation *Live Oak* was launched at NAS ALVIN CALLENDER FIELD, Gretna, Louisiana, with special ceremonies including military and civilian dignataries. Capt. W. A. Hood, the commanding officer, was the main participant. He was assisted by Judge Leander H. Perez, District Attorney of Plaquemines Parish and Mr. Ralph Wall, State Forester of Louisiana.

The operation is a planting program relocating small live oaks on the station property. The saplings will be transplanted along the 26 miles of streets and drives on the 3,252-acre base.

Each person, military and civilian, who was attached to the station on 13 December 1957 will have a tree planted and dedicated in his honor. A lovely concourse of oaks throughout the station will be left for posterity.

VR-861 Flies Clothes to Needy

Many needy migrant citrus laborers throughout cold-ridden areas of Florida received warm clothing as a result of a collection drive conducted by the Presbyterian churches of Norfolk.

Capt. R. S. Rogers, Commanding Officer of NARTU NORFOLK, was contacted concerning transporting the thousands of pounds of clothing to Florida. He assigned the flight to Transport Squadron 861. Cdr. M. F. Lewis, the squadron CO, LCdr. E. N. Pittman and J. W. Parkinson volunteered to leave their civilian jobs to perform the errand of mercy. They flew to the air station at Miami, Fla.

OPERATION LIVE *Oak gets underway as Captain Hood plants the first tree at Gretna, La.*

MERCY FLIGHT *to Miami is discussed by VR-861 skipper and the Reverend Donald Neel.*

WASHINGTON WEEKEND WARRIORS

Behind every hour logged aloft are many hours of skilled maintenance. Pilots of Anacostia's 1956 Noel Davis Trophy winner VA-662 point with great pride to their ground crews.

A VA-662 SKYRAIDER *prepares to taxi out at Naval Air Station, Anacostia. Part of the squadron's training mission is achieving top availability for weekend training operations.*

RADIO EQUIPMENT *is carefully tested and repaired for top performance aloft by Weekend Warrior technicians, Cooper, Barker, Coletto.*

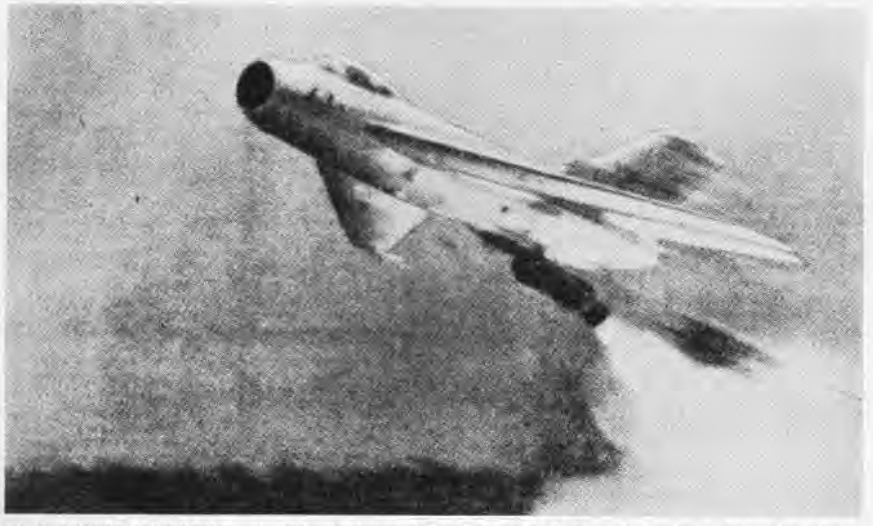
20 MM CANNON *is broken down during periodic inspection by VA-662 Aviation Ordnancemen. R. Greathouse, AO1, far right, is in charge.*

AVIATION ELECTRICIANS *get right down to the nuts and bolts of a Skyraider generator.*

AD-4 BRAKE *is given thorough going over by VA-662 mechs during weekend 90-hour check.*

FINAL TOUCH *in busy weekend routine is provided as squadron pilot mans AD-4 for flight.*

IN FOREIGN SKIES



IN A SOVIET MAGAZINE, *the "Sovietskaya Aviatsia," published in December 1957, the editors published a picture of a MiG-19 immediately after launching with a rocket booster. The booster, which is jettisoned after burn-out, is mounted below the rear fuselage. The launching system appears to be similar to those developed in this country for the Republic F-84 Thunderjet aircraft.*

Japanese Practice Drone Control

At U.S. Fleet Activities, Yokosuka, Japan, an important activity is KD-25, the drone operation and maintenance unit. The 11 Navy men who belong to it are helping to sharpen the shooting eye of Western Pacific ships' anti-aircraft gunners.

Besides providing drone targets for fleet exercises, the men of KD-25 train Japanese Maritime Self-Defense Force officers and men in the operation of a drone unit for ship gunnery exercises. Two Japanese officers and 12 enlisted men are learning to overhaul and repair drones and special drone equipment. For each hour the drone flies, five hours are required for overhaul.

The JMSDF sailors work with the Americans to learn overhaul and repair procedures. The Japanese take the drones, portable launchers and air compressors apart and assemble and reassemble them until they know every working part and how to repair it.

The two JMSDF officers are the drone controllers. To learn this, they and their crew go to sea aboard the USS *Etlah* (AN-79), a net laying ship, for regular fleet operations.

Once in the operating area, the Japanese crew launches the drone under the supervision of the Americans. When the drone leaves the catapult, the officers control its flight. Under the guidance of KD-25 men, they put the drones through runs which duplicate patterns of attack planes.

When the drone has expended its fuel or the exercise is completed, the controller causes the release of a parachute mechanism and the drone drops safely into the sea where it can be recovered, overhauled and used again.

Japanese Navy Buys Two S-58's

The Japanese Navy has taken delivery at Stratford, Conn., of two Sikorsky S-58 helicopters which have been purchased for use in anti-submarine warfare training. These are the first S-58's purchased by any of the Japanese Defense Forces, which have a total of 28 of the smaller Sikorsky S-55's in service.

Cdr. Takeyuki Sudo, representing the Japanese Navy, said the decision to purchase the Sikorsky S-58's was made after a thorough evaluation of all available helicopter makes and based on the experience the U. S. Navy has had with this aircraft, designated the HSS-1. The HSS-1, equipped with automatic stabilization equipment and special installations, is the only helicopter used by the U. S. Navy for anti-submarine work. The S-58 has a payload capacity more than double the S-55 currently in use by the Japanese forces.

Japan already has seen the S-58 in military operation. An S-58 (HSS-1) squadron flew from the USS *Boxer* on the carrier's recent visit to Japan.

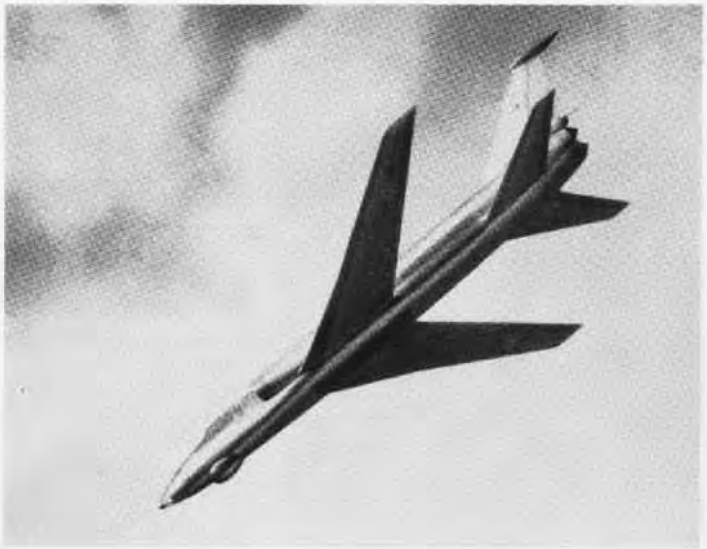
Danish VIP's Visit Saratoga

The Honorable Paul Hansen, Danish Minister of Defense, was guest on the USS *Saratoga* (CVA-60) and viewed flight operations and maneuvers of the Sixth Fleet.

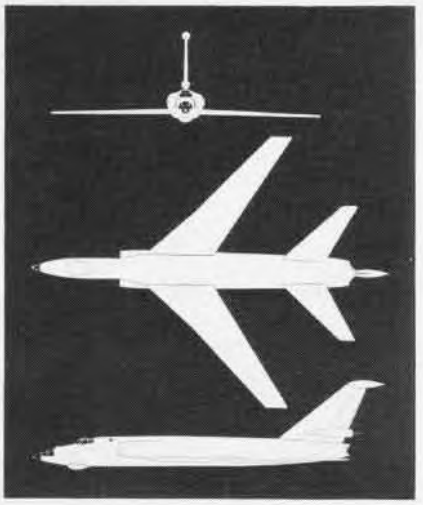
The Defense Minister and eight members of his Parliamentary Defense Committee were greeted by VAdm. C. R. Brown, USN, Commander, Sixth Fleet; RAdm. Clifford Cooper, ComCarDiv Six; and CVA-60's CO, Capt. A. R. Matter.

● The southernmost point of the world is on a rock terrain 903 feet above sea level beneath 8,197 feet of ice, according to seismic echo sounding conducted by Father Daniel Linehan, seismologist from Boston College.

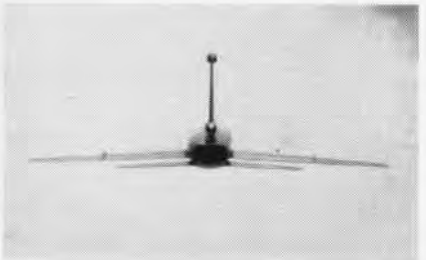
THE SOVIET-*designed Fagot has been designated LIN-1 by the Poles. Many Polish jet fighter regiments fly these aircraft. In recent years, a couple of these aircraft have been flown to Bornholm Island, Denmark, by two Polish air force defectors who made good their getaway.*



RUSSIAN BACKFIN



This supersonic Soviet medium bomber has two high thrust engines housed internally in the fuselage, an unusual design in bombers. Its sharply swept wings have cranked leading edge. Two engine intakes are high in fuselage.



FIREBEE TARGET RECOVERY

HELICOPTER FROM HU-1 RETRIEVES FIREBEE AND HEADS HOMEWARD WITH ITS 'CATCH'

THE HIGH performance target drone, the *Firebee*, built by Ryan, has made its first operational flight as a target for fleet aircraft off San Diego. VF-94, flying FJ-3M's fired *Sidewinders* at an altitude of 30,000 feet, pioneering the use of the *Firebee* as an up-to-date target.

On the West Coast, the Navy's

NO TIME IS LOST IN RETURNING DRONE

Firebees are under the operational control of Capt. Jack Roudebush, Commander Utility Wing, Pacific Fleet. At NAAS BROWN FIELD, VU-3, skippered by Cdr. A. H. Cooledge, handles maintenance and operation of the drones, from initial assembly to their decontamination from salt water.

The Navy launches its *Firebee* over the ocean from a JD. Remote control is then taken over by a P2V *Neptune* flying clear of the firing area. Once the drone is flying under its own power, all other aircraft clear out of the area. Projectiles used against the *Firebee* may include the *Sparrow*, *Terrier* or *Sidewinders*, usually with diminished warheads to minimize damage.

Flown by HU-1 at NAAS REAM FIELD, a helicopter keeps in contact with the drone's pilot plane. When the drone is shot down, its position is relayed to the 'copter, and the whirlybird goes in at top speed to get it. Most drones are picked up within 15 to 30 minutes after hitting the water.

DECONTAMINATION CREW AWAITS FIREBEE

Navigator Designator Used

Increasing Need for Specialists

AT NAS QUONSET POINT, Rhode Island, Ens. Raymond E. Ix and Ens. Melvin Elbaum of VP-8 were formally designated navigators by the squadron's skipper, Cdr. William E. Thomas. Ensigns Ix and Elbaum are the first officers in the U. S. Navy to receive this designation since WW II.

BUPERS approved the designation of Naval Aviation Observer (Navigator) because of the increasing need of carefully trained professional navigators in the field of Anti-Submarine Warfare/Tactical Evaluation.

The new officers had met the BUPERS requirements for navigators: (a) Successful completion of a formal course of instruction in Aerial Navigation approved by ComNavAirLant or ComNavAirPac; (b) Completion of at least 200 hours of flight time while performing navigation duties; (c) Demonstration of operational proficiency to the satisfaction of the commanding officer; (d) Physically qualified, temperamentally suited to fly.

POLAR PUBLIC RELATIONS! *Community spirit which is fostered by Navy men all over the world, is given an unusual and interesting twist at McMurdo NAF, Antartica. The sign is near ice highway leading from the airstrip.*

'Buddy' Fueling Tests Run

Thunderstreak Refuels Navy Jets

Evaluation tests involving the use of an Air Force F-84F *Thunderstreak* to refuel six types of Navy jet planes have been completed by the Service Test Section at Patuxent River.

Nearly 100 hook-ups were made in five days of testing. The F-84F, equipped for "buddy" refueling, was flown by Republic test pilot Ardery.

LAST STUDENT *pilot to earn Navy wings at NAS Memphis, Ens. Robert M. Cleveland gets wings pinned on by Lt. Margaret Medford, a Navy nurse. More than 500 pilots were designated in the training program at Memphis.*

Test Panel is Invented

Device Adopted by Several Units

Norman E. Royce, AE1 of Air Transport Squadron Seven, has invented a Quick Engine Change (QEC) electrical test panel for use with the R7V-1 *Super Constellation*. The panel has been adopted by Air Transport Squadron Eight, Maintenance Training Squadron Two, Lockheed Air Service in Honolulu, and the AEW Overhaul BarsRon Unit from Barber's Point.

While rotating through the various shops of VR-7, Royce found that an electrician working at top speed could barely keep up with workload of electrical meter reading required during an engine build-up test.

Royce designed and built a QEC electrical test panel.

The tester checks cowl flaps, oil cooler door actuators, front and rear cylinder head temperature bulbs and heads, propellor governor control and brush block leads, automatic feathering switch, a BMEP transmitter. It also tests manifold pressure transmitter, oil pressure transmitter, low pressure warning switch, and supercharger bearing drive shaft temperature gauge. It is also used to test fire-warning system in the R7V airplane.

ROYCE OPERATES PANEL AT NAS MOFFETT

MGEN. T. G. ENNIS, *CG of 3rd Marine Aircraft Wing, El Toro, watches Pfc. J. W. Irvine show how he held rifle in offhand position to fire 238 out of a possible 250. Irvine won the BGen. C. B. Matthews 1957 Trophy.*

Sidewinder Contracts Given

Philco, GE Continue Production

Contracts totaling $25 million for continued production of Navy's *Sidewinder* guided missiles have been awarded to Philco Corporation, Philadelphia, Pa., and the Light Military Electronic Equipment Department of General Electric Company, Utica, New York, by the Bureau of Ordnance.

Philco Corporation's contract amounts to aproximately $15 million; General Electric's to nearly $10 million. The two contracts are to meet the requirements of both the Navy and Air Force for *Sidewinders*.

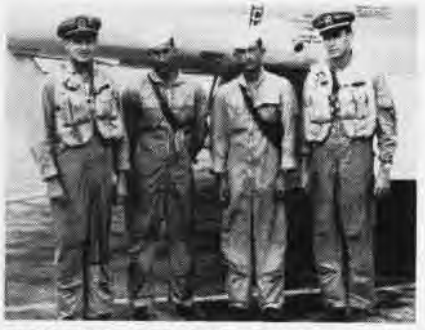
THE WORLD'S LARGEST *helicopter whirl test stand known to be in existence is now in full operation at Sikorsky Aircraft Division of United Aircraft Corporation, Stratford, Connecticut. The king size facility (R) has been in the process of design and construction five years. To the left of the cone-shaped, steel plated stand are elevators used to carry personnel and huge rotor blades to the top of the stand. The stand has a capacity of 8000 hp and 60,000 pounds thrust. The performance of the main rotor head and blades on the stand is recorded on a maze of instruments in the control room located at the base of the stand. Note the screen of a closed circuit television (upper center) which provides engineers with actual picture of rotor head and blades in operation during extensive and important wind tunnel tests.*

LET'S LOOK AT THE RECORD

Unofficial Record Made
Hawaii to Oakland under 4 Hours

A Navy twin-jet heavy attack aircraft set a new unofficial record from Hawaii to the mainland when it spanned the 2440-statute-miles distance in three hours, 58 minutes, on 15 March 1958. The record was made on a routine flight.

The Douglas A3D *Skywarrior* from VAH-2, based at NAS WHIDBEY



CREW: BELL, CALDWELL, BRYAN, GILMORE

ISLAND, took off from NAS BARBER'S POINT, Hawaii, at 0807 PST and passed over Oakland Radio at 1205.

The crew that made the new record were LCdr. G. M. Bell, pilot; Lt. J. M. Gilmore, copilot; AD2 Bill Bryant, navigator; Marvin Baldwell, AN, plane captain.

It was believed to be the first time that an aircraft has made the Hawaii to mainland flight in less than four hours. The flight was made non-stop and without refueling. The previous record of four hours 12 minutes was set by another A3D in August 1947.

20 of 24 Pilots Win E's
VA-145 Fliers Set Bombing Record

Twenty of 24 pilots qualified for Navy E's as VA-145 set a new Pacific Fleet record in practice atomic bombing maneuvers at China Lake.

Squadron pilots flew Douglas AD *Skyraiders* as they set an over-all 83 percent excellence record.

Cdr. Charles S. Brookes, squadron commanding officer, said, "The record can only be attributed to intensive training and 100 percent team effort."

FIRST STUDENT *to become carrier qualified in the F9F-5 jet trainer, Ens. Herbert Snyder talks with RAdm. J. B. Dunn, left, and Capt. R. W. Cooper on Antietam. Snyder was one of 23 students of ATU-201 to to qualify.*

Air Controlman is Cited
Praised for Saving 3rd Aircraft

James J. Sexton, AC1, has been commended by the Commanding Officer of NAS KEY WEST for his third aircraft "save" since November 1957.

The citation reads in part:

"This alert action on your part has saved the Navy and the United States Government . . . thousands of dollars."

Cake is Cut with Blade
HU-1 Celebrates Its 650th Rescue

A helicopter rotor blade was used to cut the cake which was baked in celebration of Helicopter Utility Squadron One's 650th rescue since the squadron was commissioned in 1948.

The blade was wielded by Ens. R. E. Marshall and W. L. Wilmore, AD1, pilot and crewman of the HU-1 helicopter which rescued Ltjg. Jerry E. Garlitz minutes after his F3H *Demon* jet fighter crashed into the sea off the Southern California coast.

With "Angels" of this squadron deployed over nearly a million square miles in the Pacific, the 650th rescue ceremony was postponed a month to give all units an opportunity to report other rescues.

The first operational helicopter squadron, HU-1 is commanded by Cdr. A. C. Snider, The squadron celebrated its tenth birthday the first of April.

HU-1 has achieved many 'firsts' during its 10-year existence. Its pilots have furnished innumerable utility services to the Pacific Fleet while pursuing a primary mission of saving human lives.

The majority of the 652 recues made to date were effected during the Korean conflict, often at distances of nearly 100 miles inside enemy lines.

CARRIER AIR GROUP FOUR *cake cutters display claims to fame aboard USS Randolph. The 1000th landings were made during the CVA-15's eight-month Mediterranean cruise. Left to right, here are the men who hit the numbers: Lt. William Hewitt, VF173; Cdr. Jack Kenyon, CO of VF-73; Ltjg. Donald Brown, VF-73; LCdr. Francis Dwyer, VAH-7; LCdr. Walter Maddox, VF-73; Lt. J. McColl, VFP-62; Ltjg. G. Dwyer, VF-22, Cdr. William Ely, CAG-4, center.*

New Equipment for Mugu

High Precision Tracking Radars

Tracking radars of extreme precision, the first ever built exclusively for use in guided missile testing have arrived at Naval Air Missile Test Center, Point Mugu. They are expected to increase greatly the range instrumentation capabilities of the Center.

Heretofore, all radar units used at Point Mugu were modifications of types built for other purposes. In the new radars, designated FPS-16, the modifications along with many improvements have been incorporated in the design stage. The new sets are precise to 1/10 mil and have a range of nearly 300 miles, about double that of the old sets.

In the flight testing of a guided missile, radar is used primarily to determine the missile's position in space —its range, elevation, azimuth and also its acceleration.

NAMTC has ordered ten of the FPS-16's. Four of the sets will be installed at the Center proper, four more on San Nicolas Island, and two at the Point Arguello Naval Missile Facility. The first unit at Point Mugu is expected to be in operation in June, and the last of the ten will be in operation by May of 1959, according to schedule.

A NAVY A3D *tests the Midway's modern jet-blast deflectors during a rest period in the busy ship's training schedule at Alameda, California. Deflector consisting of three plates may be used singly or jointly.*

Old Sailor Flies Away

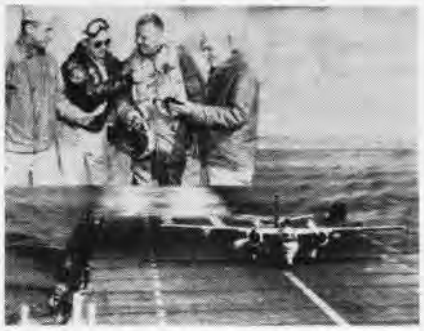
Retires After 'First and Last'

Cdr. Tim Dowdy, the *Tarawa's* gunnery officer, had served aboard just about every carrier in the Navy (except the *Forrestal* class) during his 30-year naval career. In all that time he had never flown from one.

His thoughtful shipmates decided to remedy the situation before Cdr. Tim retired. They arranged a flight.

There was quite a ceremony before take-off. Surrounded by his many friends and well-wishers, he listened to a rendition of "Auld Lang Syne" over the bull horn. When the music ceased, Ens. Gordon Scott, the legal officer, solemnly drew up the last will and testament; Dr. Roger Ireland, the ship's surgeon, gave a last-minute physical examination; Chaplain Ralph Hopkins administered the Last Rites.

It was an unforgettable flight for the 'Old Sailor'—a fitting end to a long, rewarding and happy career.



LAWYER, DOCTOR, PADRE READY 'SAILOR'

Cell Operators Graduated

FASRon Men Taught at Alameda

First graduates of the Turbojet Engine Test Cell Operators Program at NAS ALAMEDA have been presented certificates by Cdr. George Essenwine, assistant O & R officer. They were Albert R. Weigel, Bradley W. Hale and Ray. V. Gann, all AD2's.

NAS ALAMEDA was requested by BUAER and ComNavAirPac to set up a course of instruction to provide enlisted operators for turbojet test cells.

The operation and test of an engine is an exacting, specialized trade. Fleet Air Service Squadrons are provided, through the training program, with personnel who can test and evaluate turbojet engines after the repair or replacement of a major component.

OPERATION QUICK DRINK *is conducted by members of VA-151 while deployed aboard USS Bennington. By adapting the principle used in fueling the Regulus missile, FJ-4B Furies were refueled on the catapult. An adapter ground fuel check fitting was attached to the in-flight refueling probe. Time consumed by this method of refueling is approximately three minutes. Previously the Fury was struck below after the second or third arrestment for its refueling.*

Flying Farmers on CVS-37

Quick Inspection of the Carrier

Some 50 members of the National Farmers' Association, accompanied by their families, went aboard the USS *Princeton* at Long Beach, California.

The farmers, representing 30 states and three Canadian provinces, flew into California in their own light aircraft for their annual convention.

After a look-around at the "Sweet Pea," the visitors went below for a chicken dinner topped off with apple pie—regular crew menu for that day.

EXPERIMENTAL VEHICLE IS EXPECTED TO DO TASKS OF JEEP AS WELL AS HELICOPTER

ARMY VEHICLE UNDER TEST

GROUND TESTS *of Piasecki's* 59K VTOL (vertical takeoff and landing) airborne vehicle which was designed for the Army have been conducted. A full scale, full power test model was mounted on a strain-gauged balanced rig on the bed of a trailer truck.

Tests met the schedules prescribed by the Army Transportation Research and Engineering Command. Mr. F. N. Piasecki, company President, said construction of two flying prototypes required under the contract is progressing ahead of schedule.

The 59K VTOL is a radical departure from previous designs. All major components—dual engine powerplant, rotors and controls—are housed compactly in the flat, low chassis, eliminating the large overhead rotor of the conventional helicopter and simplifying the drive assembly.

Lift is derived from two horizontal, three-bladed rotors, one at the front and one at the rear of the machine, just three feet above the ground. The operator's seat and passenger compartment are in the center section between the rotors.

The rotors are completely shielded on all sides and the entire chassis is supported on three wheels to provide ground maneuverability.

"The 59K's ability to travel over any terrain, with or without roads, will make it a vehicle of inestimable value as a light utility transport, observation platform or weapons carrier," according to the company president.

Because of its compact design and protected rotors, the 59K can thread its way down narrow streets, between buildings, trees and other obstacles. It can be wheeled into cargo planes.

Midway Shakedown Ends

Air Ops Climax Training Period

"Clear the flight deck. All hands man your flight quarter stations." The word was passed throughout USS *Midway* as the carrier started her first air operations in two and a half years.

The first plane to land was an AD-6 piloted by LCdr. Bergner of VA-125. He rated and received a special cake.

Midway operated with four F3J4's and nine AD's. A total of 160 landings were logged during the first two days of operations. The ship's assigned squadrons will arrive on board in June.

The CVA-41, commanded by Capt. F. E. Nuessle, was recommissioned in September 1957, and has completed the rigorous shakedown training and underway exercises required after a yard period to test combat readiness.

Four Pilots are Honored

Judged Best 1957 NAATC Students

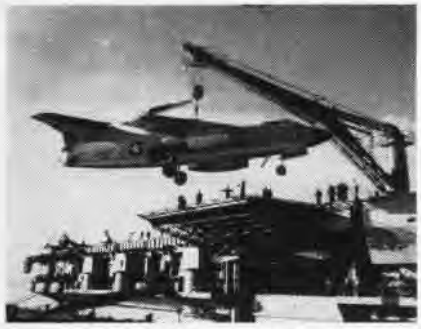
Four outstanding graduates of the Naval Air Advanced Training Command have been honored by the Texas Society of the DAR. Each received an engraved gold wrist watch.

Selected by officers of the training command staff on the basis of flight ability, ground school grades and officer-like qualities, the four recipients were chosen from 2500 students trained in 1957.

The winners were Navy Ltjg's Gene L. Woodruff of FASRon 5, NAS OCEANA, and James F. Peterson of VS-38, NAS NORTH ISLAND; Coast Guard Ltjg. William P. Kozlovsky of the Coast Guard Detachment, NAS CORPUS CHRISTI; and Marine 1st Lt. Ronald L. Owen of MAG 31, MCAS MIAMI.

One award goes each year to the outstanding student representing each of four types of training (jet fighter, multi-engine land plane, propeller driven attack plane and multi-engine seaplane) offered in the NAATC.

ICEBOUND IN THE FROZEN *waters of Willoughby Spit at Norfolk, this P5M of Patrol Squadron 45 required 48 hours for extraction. The big Martin Marlin was moored to a buoy in the northeast end of the bay when Norfolk recorded its worst weather in 25 years last winter. High winds and rough sea conditions made it impossible to bring the aircraft in the first day, so the crew of eight men remained aboard the aircraft, running the heater every 45 minutes.*



THE USS MIDWAY'S *new hydraulic crane, capable of lifting 50,000 pounds, offloads an A3D Skywarrior at Alameda, California. The crane has the largest capacity of any crane ever to be installed on a converted carrier.*

Cdr. Tate Sets a Record

Joins Other VS-36 Record Holders

History repeated itself aboard the *Lake Champlain* when Cdr. B. C. Tate, executive officer of VS-36, landed an S2F *Tracker* for the ship's 34,000th landing. Thirteen years earlier he logged the ship's 2000th landing in an F6F of VF-150.

The ship's 34,000th landing also put Cdr. Tate beyond the 300 mark in carrier landings.

Cdr. Tate and his co-pilot, Lt. T. H. Califf, joined the ranks of VS-36 officers who have made "record" carrier landings. Cdr. F. W. Oliver, squadron commander, and his co-pilot, Ltjg. W. A. Ross, made the 65,000th landing aboard USS *Valley Forge*. Ltjg. T. P. Downing and his co-pilot, Ltjg. M. R. Lee, made the 67,000th aboard the same ship.

While operating from the USS *Essex* during *Operation Strikeback*, Ltjg. S. W. Clayman and Ltjg. J. A. Miller made that ship's 76,000th landing.

FIRST RUN *of new Kittell Lacy jet engine-test cell at NAS Whidbey Island is watched by crash crew and station fire department. Cell, which can handle engines up to 30,000 pounds thrust, will be used by FASRon 112.*

New Helicopters Received

Five HR2S-1's Arrive at Santa Ana

Five HR2S-1 helicopters have been delivered to Marine Medium Helicopter Squadron 462 at MCAF SANTA ANA. Some 350 guests and members of the newly formed squadron greeted the arrival of the world's first twin-engined helicopters at Santa Ana.

Classed as carrier-based assault aircraft, the HR2S established a world record in 1956 by attaining a speed of 162.7 mph and by climbing to 16,000 feet with a 11,023-pound load.

It is equipped for assault, transport and cargo operations with its twin engines mounted in nacelles at the tips of a short wing. Fuel is carried in wing and nacelle tanks. Up to 36 combat-equipped troops and their equipment can be flown in the HR2S-1.

FIRST BELL *HTL-7 helicopter trainer with integrated instrument panel stands ready for flight test at Fort Worth. HUL-1 helicopters with similar instrument systems have been assigned to Antarctic Operation Deep Freeze.*

It's Safety-Check Time

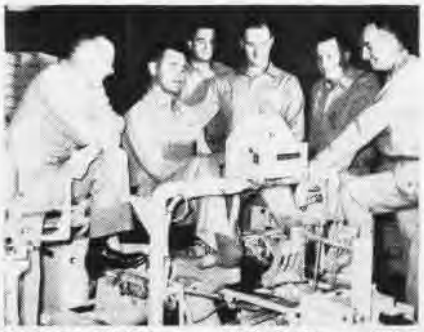
Auto Safety is Goal of Campaign

Voluntary automobile safety checks are again being made by teams working under sponsorship of National Vehicle Safety-Check for Communities.

Each May the program is carried out in the 34 states which do not have official programs requiring motor vehicle inspection.

In 1957, some 1300 cities and counties, including several Naval Air Stations, took positive action against traffic accidents by setting up checklanes at convenient locations to offer free and voluntary vehicle safety checks. (NANEWS, September 1957, p. 37.)

Again this year the automobile, tire and petroleum industries will work with community groups and military installations on the safety program.



VMF-122 PILOTS *from MCAS Cherry Point went through a week's ground training at Chance Vought Aircraft to get ready to receive their first F8U-1 Crusaders. Here they are studying the cockpit checkout trainer.*

HS-9 Has Busy Deployment

Airlift and Rescue are Highlights

"A friend in need is a friend indeed," and HS-9 made many friends while on deployment.

Over 285 USS *Leyte* and DesRon 20 personnel were stranded at Jacksonville when their ships left Mayport 12 hours ahead of schedule. The men were put aboard the *Antietam* which left Mayport the next day. When the *Antietam* overtook the *Leyte* and the destroyers, HS-9 airlifted the "lost sheep" to the fold in less than two hours. Ten HSS-1 helicopters were used, each carrying three passengers.

The rescue took place 250 miles southeast of Quonset Point while USS *Nautilus*, the first atomic submarine, was transferring an officer to the *Leyte*. L. J. Larch, TMC and chief of the boat, was swept into heavy seas when his safety line parted. An HS-9 copter, piloted by LCdr. S. P. Hill, immediately swung over the Chief, dropped a sling and rescued him.

SHIPPING OUT *in salty style is R. J. Giddens, AOC, at the wheel of his boat. When he was transferred from Saufley Field to NAS Jax he made the trip with Pensacola shipmates, W. H. Norris, AGC, and F. D. White, ADC.*

FAD CONTROLLER SCHOOL

FAWTUPAC ORIENTATION FOR AIR CONTROL STUDENTS INCLUDES AIRCRAFT BRIEFINGS

To a pilot riding herd on an all-weather jet on a night CAP hop, far out to sea in marginal weather, a friendly voice is a welcome sound.

"Bogey twelve o'clock, one, up five hundred"!

There it is; the reassuring voice of the FAD controller. Based on a ship 80 miles away the air controller has placed a pilot in firing position on a possible "enemy" aircraft thus enabling him to complete a successful interception.

Interception of enemy aircraft is a vital function of Fleet Air Defense and is a primary mission of air control in the fleet today.

How is the air controller able to put a pilot within a few hundred yards of the enemy aircraft? How does he know when to maneuver him into firing position with relative speeds as high as 1000 knots? The answer lies in the training conducted at the Fleet Air Defense Training Center (FADTC) in San Diego.

Located on Point Loma, the FADTC conducts a four-week course for officers and specially qualified enlisted personnel in basic aircraft control procedures.

In the classroom the student controller spends more than 40 hours learning the fundamentals of air control and related material. Classroom periods are devoted to air intercept procedures, voice communications, jet aircraft characteristics and tactics, aircraft emergency procedures, grid systems, carrier air operations, and helicopter operations.

From the classroom, the future air controller moves to the radar scope for approximately 25 hours of synthetic training. During this period the typical air defense problem is simulated on the synthetic equipment, and the controller develops the skill and technique necessary in the positive control of high performance aircraft. In this phase, the neophyte controller learns to speak the language of the FAD controller.

Working with aviation units of Utility Squadron Seven (VU-7) from Brown Field, the student controller conducts approximately 30 high and low visibility (day) air intercepts using F9F *Panther* and F4D *Skyray* jets.

Night and all weather intercept practice is conducted with aircraft from Fleet All Weather Training Unit, Pacific, based at NAS *North Island*. FAWTUPac employs the F3D Skynight equipped with air intercept (AF) radar; and during this phase, the student controller learns the teamwork required between pilot and controller for successful interception of "Enemy" aircraft during night and all weather conditions. The training is thorough.

The FADTC is equipped with the latest electronic equipment as used in the fleet air defense problem. By using CIC mock-ups which duplicate the shipboard CIC, the student controller becomes experienced in the equipment that will serve him in the fleet.

2nd Conrad Award is Made

CalTech's Lauritsen is Honored

The second annual Captain Robert Dexter Conrad Award, established by the Office of Naval Research, has been given to Dr. Charles C. Lauritsen, Professor of Physics, California Institute of Technology.

The award is made in recognition of outstanding technical and scientific achievements in research and development for the Navy. It is named for the late Capt. Conrad who, as first head of the Planning Division of ONR, was the primary architect of the Navy's basic research program.

Dr. Lee A. DuBridge, President of CalTech, presented the medal and citation to Dr. Laurtisen during an ONR sponsored, three-day symposium on "The Ocean as the Operating Environment of the Navy."

Dr. Lauritsen was chosen as the recipient of the second Conrad award for his many contributions to Navy science. As a member and Vice Chairman of Division A of the National Defense Research Committee, Dr. Lauritsen made a major contribution to the the proximity fuse program. As Research Director of a group at CalTech, he contributed so much to the Navy's rocket program that he became known among most experts in the field as "the father of Navy rocket power."

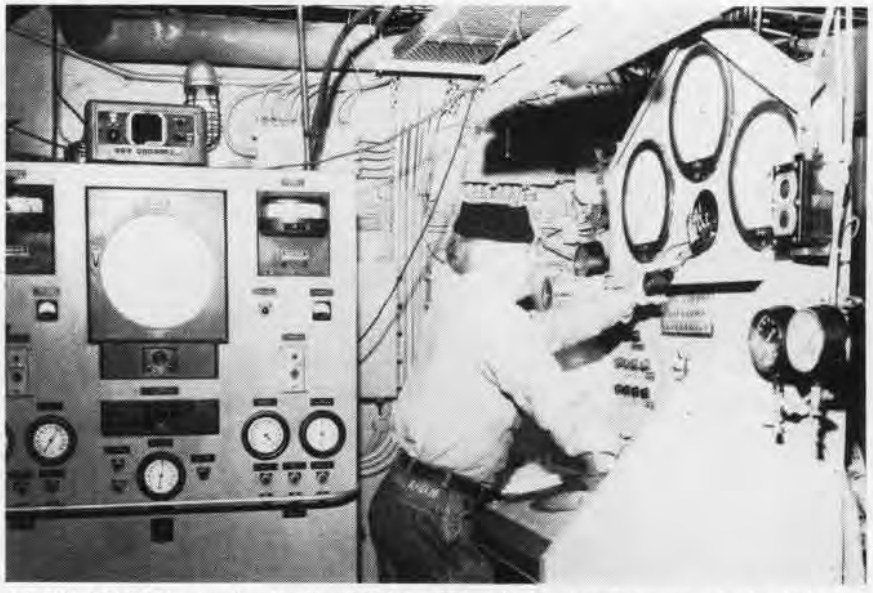
The CalTech group after the war became the nucleus of the Naval Ordnance Test Station, China Lake, Calif. Dr. Lauritsen served as first chairman of the NOTS Advisory Committee and has continued his committee membership except during 1956 and 1957.

Dr. Lauritsen helped formulate the plans which led to the establishment of the Office of Naval Research. From 1946 to 1957, he was a member of the Nuclear Physics Advisory Committee of the Office of Naval Research.

● For the six-months period ending 31 December 1957, the reenlistment rates on the USS Randolph (CVA-15) were the highest of any carrier in the United States Atlantic Fleet.

CARRIER LAUNCH SIMULATED

CAT BOILER *is lighted. It takes 1½ hours to produce 600 lbs. steam per square inch.*



AT THE CONTROL *console, H. V. Callahan, AB2, checks steam pressure of the boilers in preparation for firing an A3D-1. The actual test firing is done at the deck edge control.*

A "GONE CAT" with a crazy push is Patuxent River's steam catapult. Located near Electronics Test, the "cat" tests aircraft launching gear for carrier use.

Above ground, the catapult looks extremely simple, but below, there is a maze of chambers which house steam mechanism and recording gear.

In a test, the airplane is secured to the shuttle by a bridle. With plane at full throttle and launching valves open, the steam hits directly twin pistons to which the shuttle is attached. The plane accelerates to 168 mph in less than three seconds.

The shuttle assembly, exerting 1700 lbs. pressure, is stopped by water. On the piston's forward end are spears which enter the water chamber and stop the shuttle within five feet.

The launching valves are shut, exhaust valve is opened, and the steam pours out. Shuttle and pistons retract immediately.

Thirty seconds after firing, the "cat" is ready for another launching.

IN LESS THAN *three seconds, this A3D-1 Douglas Skywarrior travels 168 mph from a standstill as the steam cat hurls it forward. Once the aircraft is launched, the catapult is made ready for still another launching in only half a minute, and the tests go on continuously.*

LETTERS

SIRS:

While reading your November 1957 issue of *Naval Aviation News*, I noticed in the story of "Navy Bermuda Flying Club" that squadrons VP-45, VP-47 and FASRon-102 were mentioned.

If you have the information, what happened to VP-49 and FASRon-111?

W. R. Clarkson, ABC
USS Ticonderoga

† COMNAVAIRLANT probably wishes he could move squadrons about from one place to another with the same ease that we have—we slipped, but good! Squadrons based at Bermuda in September '57 were VP-45, VP-49 and FASRon-111.

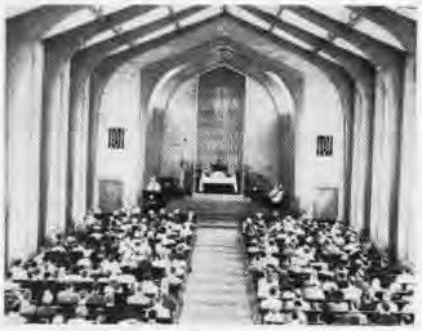
SIRS:

Congratulations on a realistic, descriptive and interesting portrayal of the USS *Alameda County*, (NANEWS, February 1958, p. 1.) Your article was enthusiastically received by all hands.

The crew has recently accomplished what is believed to be the first "do it yourself" biannual overhaul in a foreign commercial shipyard. All functions normally performed by an industrial manager and his staff, such as planning, scheduling, ordering material, supervising indigenous labor, progress reporting, inspection, and acceptance, were accomplished by ship's company. The contract was administered by Naval Support Activity, Naples.

Alameda County was back on the line at least one and a half months early owing to the saving in transit time to the States and back.

Cdr. A. M. Sinclair
Commanding Officer



DEDICATION *of the Chapel of the Good Shepherd at NAS Oceana was held with special Protestant and Catholic services conducted by RAdm. E. B. Harp and RAdm. G. A. Rosso, respectively. Note the wooden buttresses.*

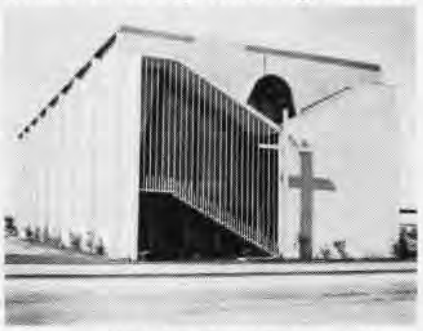
EQUIPMENT *in airborne CIC Training Unit at NAS Patuxent River is studied by Congressman Steven Derounian. Standing are Capt. Edward Callaban, station CO, and Cdr. George Flannagan, the skipper of the training unit.*

Seven Attend New School

Electronics Taught at Brunswick

Seven men from patrol squadrons of Fleet Air Wing Three have completed an eight-week flight communication operator's course at NAS BRUNSWICK, Maine. It was the first of four courses to be offered by the FAW-3 Electronics Operator's School established under Capt. J. C. Toth.

Students learned to transmit and receive code at 14 words per minute, operate an ICS system using proper voice procedure, calibrate the IM frequency meter, and use publications concerning call signs. They also learned correct procedure for coding, decoding and authenticating messages. At the end of the course, students could send and receive blinker at six words per minute and recognize signal flags. They were also trained in airway control procedures.



CIVILIAN AND CHURCH *leaders, including the Director of Chaplains, RAdm. G. A. Rosso, attended the dedication of the $350,000 Airman Memorial Chapel at NAS Miramar. Mr. Richard J. Neutra designed the structure.*

CONTENTS

● COVER

PHOT K. G. Riley made this unusual study of an F8U Crusader from VF-154 just as the aircraft was about to take a wave-off during carquals on the USS Hancock. Mr. Riley has titled the picture "A Shadow of a Doubt."

● SUBSCRIPTIONS

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TIGERS THAT FLY WITH FURY

Tigers of Fighter Squadron 73 graphically display the feat of having every pilot a member of USS Randolph's Century Club. Within the outline of an FJ-3 Fury, the squadron plane, they spell out CVA-15, VF-73 and 100. The locale is the Mediterranean during deployment.

A COLOR GUARD OF DEMOCRACY

The Navy is a fast moving . . . power-packed partner in the greatest Armed Forces Team in history. Supreme on the seas—with mighty naval air striking power . . . stream-lined naval forces patrol the outer edges of the free world—the front line guardians of freedom. The Navy is an action service . . . proud of its important position on the American defense team.

—Admiral Arleigh Burke, CNO

NAVAL AVIATION NEWS

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