

NAVAL AVIATION

NEWS

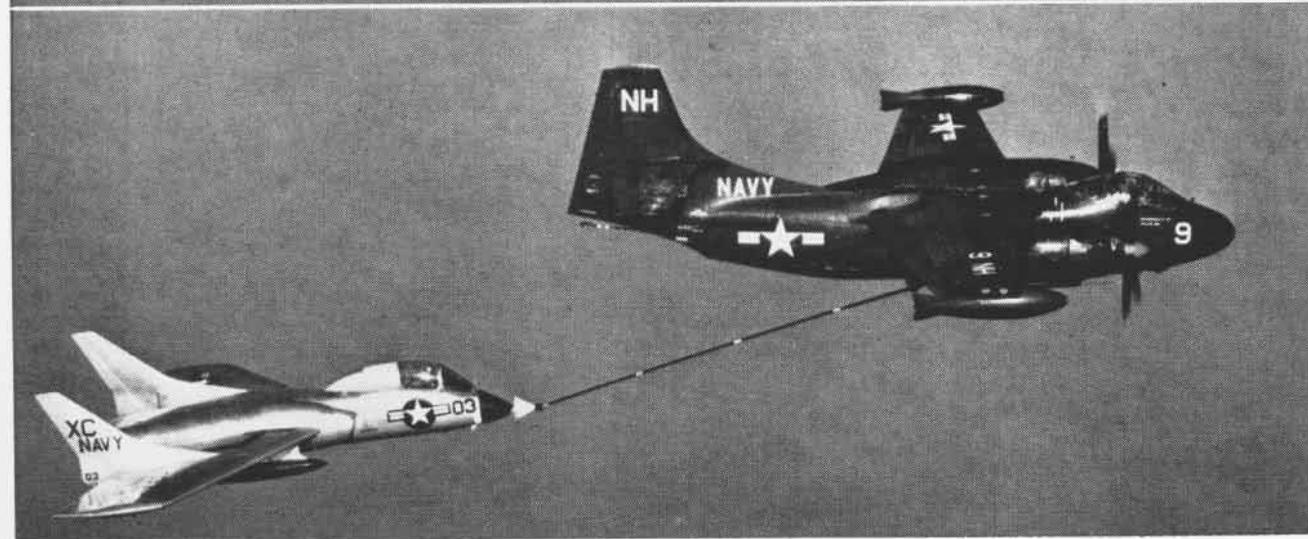
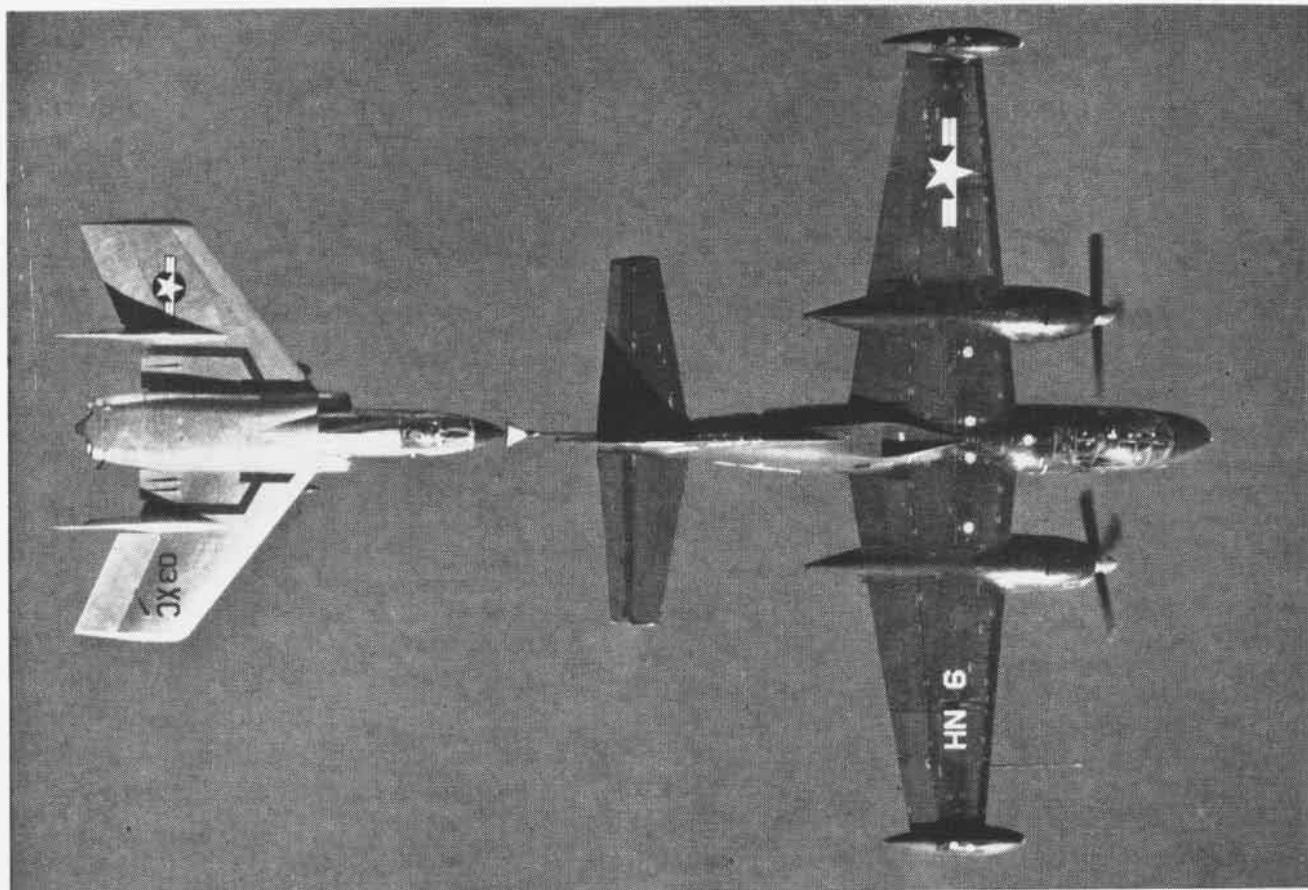


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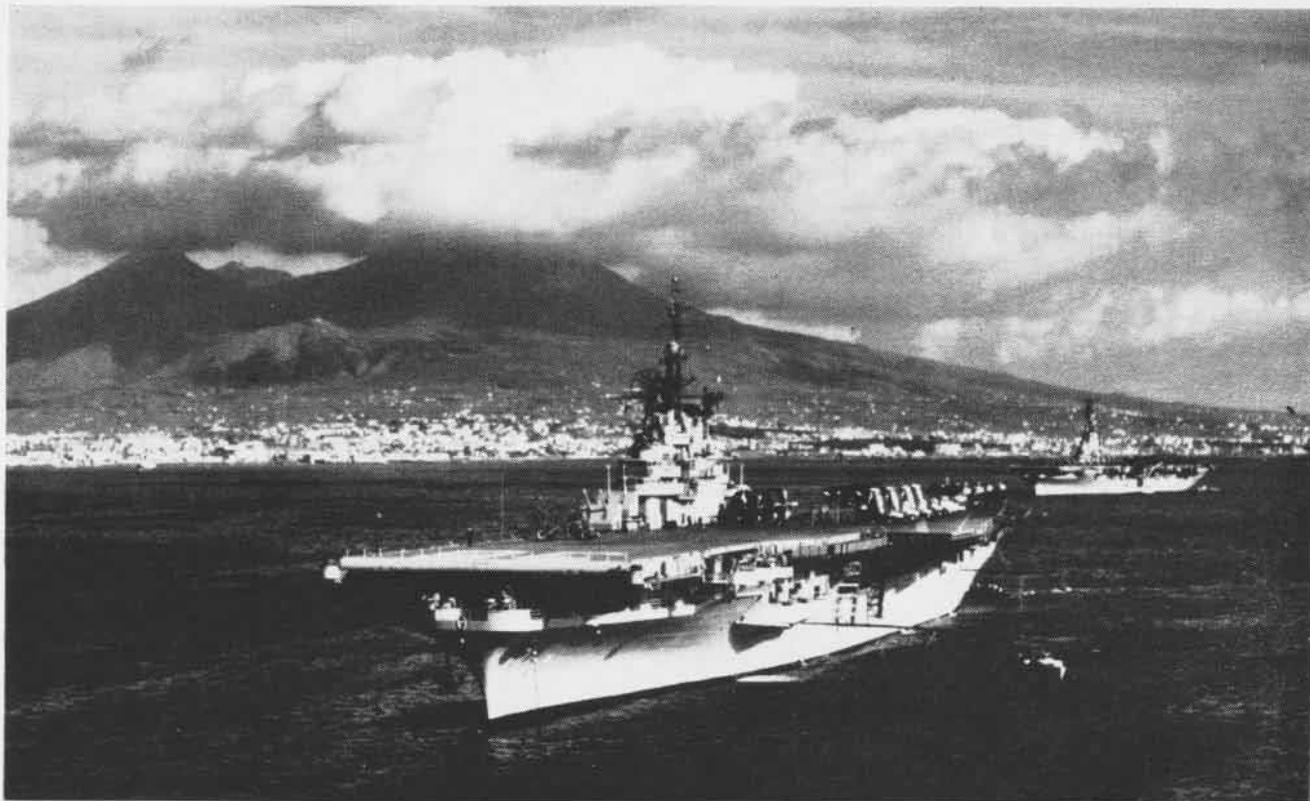


HOSENOSE GETS A DRINK

SOMETHING like an architect's plan and elevation presentation, these aerial views of an F7U-3 *Cutlass* being refueled in flight by a VX-3 *Savage* make an interesting illustration of this fairly recent technique. Military im-

portance of in-flight refueling has been demonstrated numerous times by extended non-stop flights, formerly impossible to accomplish. Research to improve such techniques for jet fighter planes is currently being

done by VX-3, based at NAS ATLANTIC CITY. Pilots say that the procedure is quite simple, and that the operation becomes routine after the first two or three practice tanker rendezvous, but it's still spectacular.



SUBMARINE KILLERS

NATO COUNTRIES GET A FIRST LOOK AT S2F US NAVY'S ALL-IN-ONE SUB KILLER PLANE

TO ANTI-SUBMARINE Squadron 26 went the honor of giving the NATO countries their first look at our new submarine killer airplane.

Embarked in the angled deck carrier, the USS *Antietam*, VS-26 accomplished a full-scale deployment in the Mediterranean area, flying the Grumman S2F aircraft.

The Norfolk based "Ready Squadron" is not the first squadron to deploy with the new aircraft; VS-23 went aboard the USS *Princeton* with their S2F's in the winter of 1954 for a six-months tour in the Western Pacific. But the 54 officers and 250 men of VS-26 knew the pleasure of being the first to range over "Mare Nostrum" in their snub-nosed deadly little killers, and of putting the lethal beauties through their paces

for the edification of our friends in those parts.

Wherever the angled-deck *Antietam* anchored in the entire Mediterranean area and opened up the ship to visitors, hoards of eager spectators, who swarmed aboard at every opportunity, evidenced their interest in the compact, twin-engine craft.

Among the more-than-casually interested visitors to the "Flying A" while she was in Naples were the men attached to the *Hr. Ms. Karel Doorman*, Dutch light carrier, also a visitor in that historic Italian port. As the Netherlands fliers and VS-26 men exchanged visits, the Dutch pilots, ASW men themselves, made no effort to conceal their admiration for the *Antietam*, and their envy of the squadron's powerful new planes.



STEADY is the word, as the S2F's are loaded on board USS Antietam, readying for cruise.



THE ANTIETAM slowly moves away from Quonset Point pier, bound for a three months cruise to the Mediterranean. Ship's company, and men of VS-26 can still hear, "Till we meet again."

NO STRANGER to the countries of the North Atlantic Treaty Organization, VS-26 was revisiting many ports of call, as the *Antietam* progressed along its itinerary in the Mediterranean. In 1952, VS-26 had taken part in the operation in which all 14 NATO countries had been engaged. *Operation Mainbrace*, which had involved extensive land, sea, and air maneuvers in the North Sea, had been a scene of some of VS-26's outstanding performances in the hunting and killing of 'enemy' submarines. Ranging far afield in the TBM's they were flying at that time, the squadron had visited many Mediterranean cities as well as the North Sea towns. And so, such ports as Algiers, Naples, and Genoa were like old friends to the Sugar How squadron. Conversely, the SH on the planes' tails was not a letter combination being seen for the first time in those parts.

Interested military men of various nations got a closer look at the S2F's in action at Naples when a detachment of four planes operated out of the Naples airport, Capo di Chino. Working at qualifying, four pilots recently reported in to the squadron were being checked out on 'day bouncing' on the beach.

Designed as an all-weather plane, and furnished with the latest navigational and weather equipment available, the S2F's had ample opportunity to prove themselves capable of operating under severe weather conditions. Almost from the time the "Flying A" weighed anchor in Quonset Point, the cruise was plagued with bad weather.

Squadron Skipper, Cdr. C. A. Shipman had set a goal for the outbound voyage—the qualifying in night carrier landings of all pilots new to the S2F's and the re-qualifying of all 'veteran' pilots who had already made their required eight after-dark S2F carrier landings, but were getting refresher work-outs. The goal was reached, but not easily. Nor was it with the assistance of the weather. Rather, it was in spite of it. Securing of operations when high seas made launching aircraft impossible left an uncomfortably slender margin for accomplishing this goal.

Of considerably less importance operationally, but none the less of great interest to the personnel concerned were the restrictions on liberty because of unfavorable weather

conditions. With boating secured, liberty parties were often unable to get to the liberty towns from the ship anchored out in the harbor. Visits from the townspeople in the Mediterranean ports were also reduced from the numbers entertained under better conditions.

The squadron unhappily recalls the Genoa experience; true to the Navy custom of having a party for orphans in towns visited, the *Antietam* had planned a big affair for the Genoa orphans. Invitations out, games planned, extra ice cream made—then came the storm! The *Antietam* cast off and put out to sea to ride out a storm that left in its wake much damage to shipping remaining in the harbor. And the Genoa orphans were dressed up with no place to go!

Since the S2F performs the work of two planes—the AF-2W hunter, and the AF-2S killer, it is jam-packed with electronic detection equipment, and carries a full load of modern ordnance.

Because of the highly technical nature of anti-submarine warfare, the four S2F crew members must be well-trained, experienced men. Before a pilot can be qualified as first pilot of an S2F, he must have almost three years flight experience, including a full year of theory and practice in the S2F. Added to the required knowledge of ASW tactics and all-weather techniques, the pilot must make 48 day and 32 night FCL's before taking an S2F aboard ship. After that must follow 28 carrier landings, including the eight night landings.

Only slightly less advanced in his training, the busy copilot serves as navigator, and radioman, and he operates the powerful searchlights with the pistol-grip type controls installed immediately to his right.

Directly aft of the compact cockpit, the radarman and Magnetic Airborne Detection Operator (MADman) are engaged in the operating of their intricate equipment, centering around the retractable radar dome and the "Barber pole," the MAD gear. The radarman also evaluates signals from the Sonabuoy listening devices, which are ejected from a special housing aft of each engine. The MADman's job is also a listening operation. Additionally, these two men are qualified to handle the ordnance aboard the plane.



FUELING of aircraft aboard ship is necessary, but long job. Planes like S2F need many pounds of gas for their long-range ASW flights.



LCDR. R. L. Hughes, one of Royal Canadian Navy men training with VS-26 in S2F operation and maintenance, gives pre-flight briefing.



ORDNANCEMEN load homing torpedo. Fitted with dummy warhead for exercises, but no explosive charge, torpedo can seek out, strike sub.



CONTINUING the pre-flight work, crewmen arm the S2F with rockets that add to the lethal power of this hunter and killer airplane.



AS THE HUB slides into place, mechs have about finished another engine change. Fast, thorough work kept these planes in 'up' status.



ANGEL of Mercy, first to take station, and last to return, sets down on Antietam's deck after all planes have safely come aboard.



THE FLIGHT Deck Officer has given him the take-off signal and now he's accelerating those two powerful engines for his deck launch.

In addition to such firsts of VS-26 as, first squadron to receive the S2F's, first squadron to take them to the Mediterranean, there are other firsts of the squadron. Not premeditated, but the "Ready Squadron" take pride in their accomplishment. During some of their early carrier qualifications—on the *Valley Forge*—a pilot suffered one engine failure on take-off, about 75 feet from the end of the deck. With no choice, the pilot did what he had to do—and got the stable S2F into the air. About half a year later, another VS pilot successfully set his S2F down on the *Antietam*—on one engine. Added to this was the fact that this landing was made at 0300.

Anti-submarine warfare has developed into a mighty muscle in the Navy's powerful air arm. Flying day and night in all kinds of weather, the anti-submarine squadrons are our Navy's counter to the under-water menace. Designed to hunt down and destroy any type of enemy submarine, this carrier-based dual purpose airplane is successfully training for its part in any anti-submarine warfare.



IN ECHELON formation, these S2F's range far and wide over the broad Mediterranean as they make their all-weather, day and night patrols.

In exercises they 'track down submarines and destroy them'. Thus the Anti-Submarine planes constantly train to keep sea lanes open.

LESS THAN a month before embarking upon their deployment, the Squadron had completed their first big workout with the S2F's as an operating unit of the fleet. The 34-day *Operation LantFlex* proved to be an excellent training period for the squadron.

Operating over waters extending from Greenland to the North Carolina Capes in an exercise that was not 'canned', VS-26 made nine kills of 'enemy' submarines. VS-26 prizes the commendation received from RAdm. Fitzhugh Lee, Commander Carrier Division 14 for this record: "Hunter-Killer Group Four had a long, tough job in *LantFlex* 1-55. It did that job well for 30 days in weather ranging from hot to freezing and good to terrible. Through it all, the work of the USS *Antietam* and her air group was outstanding.

"All hands contributed", RAdm. Lee continued, "but special credit is due VS-26 for a fine job in the face of many difficulties attending the introduction of a new and complex plane into fleet service. To all hands, well done."



ONLY seconds after his tail hook has engaged the arresting cable, No. 17 will come to a dead stop, and hookmen can disengage the hook.



THE EXERCISES have been completed, the squadron has made a good record; the cruise is over. And now the best is yet to come—home.

The Antietam nears home shores, and Anti-Submarine Squadron 26's Sub killers' engines tick in chorus as they warm up for the fly away.



AMBASSADORS of a proud nation, and of a proud service, this illustrious ship, her men and her machines, while they maintained the

freedom of the seas, have added to the dignity and to the power that represents America to our friends who live beyond these seas.



GRAMPAW PETTIBONE

The Fundamentals

An F2H-4 pilot entered the pattern for FCLP at approximately 300 feet and 200 knots. He was indicating 3,100 pounds of fuel. After breaking at the upwind end of the runway, he lowered the landing gear. On the downwind leg he lowered the flaps, retracted the speed brakes and reached the 180° position at 250 feet and 125 knots. From here on, we'll let the pilot tell it.

"I continued about 300 feet past the 180 before commencing my turn with 25° bank. Upon approaching the 90° position, I had 120 knots. I noticed the plane beginning to settle, so I immediately jammed full throttle and leveled my wings, but the plane continued to settle so just prior to hitting the trees, I pulled my nose way up and then went through the trees for what I thought about 200 yards in what seemed like a straight glide.

"Upon impact with the ground, the aircraft broke into pieces. I believe I blacked out for a second. When I came to, I saw the plane was on fire so I knew I had to get out even though my back hurt. I climbed out the port side without bothering to unfasten anything other than my seat belt. I walked, chute and all, about 50 feet from the plane where I lay down in the dry river bed. I was picked up by helicopter a few minutes later."

The aircraft was completely demolished by impact and fire, except for the cockpit, and the pilot sustained a fracture in the lumbar vertebrae.



Grampaw Pettibone Says:

Jumpin' Jupiter! This lad must have been thinking pure thoughts all week to get out of that one alive! According to the LSO, the aircraft appeared to be settling at the 90° position in a cocked up attitude. Since this is expert testimony, it doesn't take much to figure out what happened.

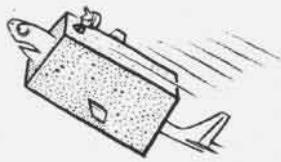
With 3,100 pounds of fuel and 125 knots airspeed at the start of the turn, the pilot simply didn't have enough power on to maintain altitude. Instead, he pulled the nose up, which only caused the plane to decelerate more rapidly. When he realized he was settling, he two-blocked



the throttle and levelled the wings. But he failed to lower the nose to or slightly below the horizon. In this condition he might as well have been flying a nine-ton block of cement, and the plane did just what a block of cement would do. It kept right on going down.

What really gets me about this accident is that the pilot seemed so sure of his altitudes, airspeeds, power settings, and even the angle of bank in each turn. The only thing he didn't seem to know was what the airplane was doing. Possibly he was feeling things out on his first pass by flying with his head in the cockpit with a quick glance outside now and then to maintain his pattern. This system, known as mechanical flying, is an unsafe practice during FCLP and carrier landings.

My advice to this lad the next time he flies is to take his flying machine up to a safe altitude, get it into a landing configuration, and practice square turns at slow speeds for about an hour. With a little concentration he'll learn three things which may or may not come as a surprise: (1) He'll start concentrating on ATTITUDE, which is one of the most important factors in a successful approach. (2) He'll find he can regulate altitude with the throttle. (3) He'll discover he must add throttle going into a turn to



The wing loading of a Brick

maintain lift and reduce throttle coming out of a turn to prevent acceleration.

The biggest mistake anyone can make on a carrier approach, especially when first learning the business, is to turn into the 90° position with excessive altitude and reduced power, then decelerate to the desired altitude and airspeed. Attitude, altitude, and airspeed MUST be stabilized by the time the plane reaches the 180° position and from there on in to the "cut," it is only a matter of slight corrections. In a jet, the time it takes to wind up to 100% power may spell the difference between making the field and making the woods. If you start your turn with above 80% power, you are in good shape. If you start from below 80%, you sit there and hope.

These are only fundamentals, but too many pilots are neglecting the fundamentals and dropping high priced airplanes into the trees at the 90° position. Some of the more fortunate ones are still with us and are now firm believers in the gospel. You lads who figure the only way to learn is by experience are absolutely right. But this includes the experience of instructors, senior pilots, and the less fortunate pilots who believed in learning the hard way.

This flying game was pioneered many years ago, and one of the first discoveries was that if you need airspeed to get her off the deck, you need airspeed to get her back on. If you don't think that still holds for modern airplanes, take one up to 20,000 feet and simulate a landing. At least, you won't have to pick yourselves out of the woods or a hole in the ground to learn that the fundamentals are just as sound today as they were 50 years ago.

Dear Grampaw Pettibone:

One might think arthritis or hardening of the arteries would have caught up with you by now. But here's the old Doc who can look back on three solo hops in the N2S and three more in the N3N on floats, still feeling fit and I hope this finds you the same. Regardless of the scores you're pulling on the Schneider now, your columns are as saucy and savvy as they were that day in flight deck control when I laid your latest diatribe aside to watch the Kamikazes.

There's one idea I'd like to have you pass along to the team if you will. The airport atmosphere today reminds me



glad to
hear
that we're
still
cutting
the
MUSTARD!



Gramphaw Pettibone Says:

You said a mouthful, Doc! If there's one thing we need more of in this flying business, it's an appreciation of the Flight Surgeon. He's the lad we all like to call upon to pick the pieces out of a ten foot hole and tell us why it happened.

But how many realize that a lot of those ten foot holes wouldn't exist if the "Doc" could get to the pilots *before* they goofed? He is just as much a part of the accident prevention team as the Safety Officer is: Like the man said, "A team without its star players is strictly second rate."

By the way, Doc, what are they doing for ulcers these days?

MEMO FROM GRAMP:

Going into a spin is like stepping out on your wife. You might get away with it, but if you don't, bub, you're in hot water!

Cause or Effect?

A pilot of an FJ-2 noted a fuel gauge malfunction while on a GCI flight. He was advised by his section leader that they would return to base. A normal pattern entry was made and the flight broke for an approach. The section leader landed on the right side of the runway.

As the wingman approached the 90° position at about 500 feet, his sink rate became excessive. He attempted to check this by elevator control and an increase in power from 75 to 80%. At the 45, the sink rate had not decreased so he added full power. The aircraft continued to settle and munched into the ground about 1800 feet short of the runway on the main landing gear. The right gear collapsed and the aircraft continued on the right wingtip and left gear for about 2000 feet where it stopped near a taxiway. The pilot was uninjured.

He stated, "It is my opinion that this accident could have been avoided by my applying full power more quickly after I noticed the rapid settling of the aircraft in the approach and also through my having a more thorough understanding of the thrust-drag characteristics of this type of swept wing aircraft at slow airspeeds relative to changes in attitude alone."



Gramphaw Pettibone Says:

Thunderin' Thundermugs! Here's another line of thinking that could stand a slight readjustment. More accidents are



prevented or avoided by the pilots' knowing enough not to get into a situation than by taking reflex action *after* a situation develops. In cases where they have the knowledge and still get into trouble, it becomes a matter of lack of application (sloppy flying in some circles). Like the fella said who landed wheels up, "This wouldn't have happened if I had lowered my landing gear."

The question is, why didn't he lower his landing gear? Could it be he didn't know the airplane wasn't going to lower it for him? Or did he just fail to give it any thought at all?

Most accidents are effects of some action taken or not taken. Such things as under-shoots, wheels-up landings, etc., are not actually causes of accidents but *types* of accidents. The type is derived by going from cause to effect. The basic causes go back to the measure of familiarity with equipment, training, and supervision. If we know that accidents occur because of a lack of any or all of the three above, that's where we must concentrate our efforts in preventive action.

Now this lad admitted he was a mite short on understanding of the thrust-drag characteristics of the FJ-2. To me, that is the cause of the accident. He failed to use enough power soon enough to prevent settling into the ground, which is simply the effect of not knowing the thrust-drag characteristics. But having the fact brought home forcibly that he was short on knowledge, not to mention the runway, is a rather expensive way of learning something, and it can be downright fatal.

The most valuable investment in the world is the investment of time. Invest a little in learning all about your airplane and you'll have the causes of accidents whipped. The effects will take care of themselves because you'll know what to do when you have to do it, not after it's too late to be done. The old saying, "better late than never" can fit a lot of situations, but it doesn't stop many landing accidents.

of the stories they used to tell about why they pinned wings on the flight surgeon. Seems as how the early cloud busters considered themselves a new branch on Darwin's tree, and no earth-bound sawbone could tell *them* when they shouldn't fly or things they couldn't get away with while defying gravity. So the doctor got checked out in the flying business and the awesome aviator began to learn some *physiology* ("the organic processes and phenomena, collectively, of an organism or any of its parts; as, the *physiology* of the jellyfish or of the thyroid gland"—Webster).

Now the talk's of tail pipes, swept wings, boundary layer control, and such. Once again, old sawbones "jest don't understand." Well, I wish you would let the boys know that the doc has some answers. In jenny or jet, they're the same old arteries, glands and brain cells. Any really hot naval aviator will agree that it takes brains to saddle up the new stove pipes. And bringing 'em back alive requires that the pilot know as much about himself and his physiological gear as he does about all those buttons on the dashboard and aerodynamics. Send 'em around to see me!

Your faithful servant,
Surg





'OUR SIGHTS ARE SET TO WIN A DEW JUG'

New Squadron for Airlant VF-84 Commissioned at NAS Oceana

A new fighter squadron, VF-84, has been commissioned as part of ATG-182 at NAS OCEANA with Cdr. J. W. Ellis assigned as commanding officer. Originally designated as VA-86, the squadron was re-designated a fighter outfit at the ceremonies.

As wives, relatives and friends of squadron personnel listened, Cdr. M. J. "Mike" Hanley, Commander ATG-181, read the orders commissioning the squadron then turned the reins over to Cdr. Ellis, who directed that the first watch be set.

LCdr. J. Ferris, squadron XO, dropped in on the staff of NANews and said, "Even though we have eight new ensigns fresh from aviation training, we have our sights set on one of your Dew Jugs."

Cdr. L. W. "Lew" Chick, formerly of CNO's Aviation Detail, assumed command of ATG-182 in August.



WINNERS of outstanding performance ratings, Jeanne Schilling, Angeline Zucal, and Pa-caunla Dowell, employees of NAS Denver were recently honored for their fine work.

Crew Taxies P5M 80 Miles Seamanship Studies Pay Dividends

Lt. J. E. Garlitz, plane commander of Flight Crew 3 of VP-48, recently completed a correspondence

course in Basic Seamanship. It was lucky for his crew that he did, for a few days later, after a forced landing at sea, he was able to bring his plane and crew home safely by taxiing on one engine for 80 miles.

Garlitz and his crew were on a routine patrol mission when his *Marlin* experienced engine trouble, and he set the big plane down in the Inland Sea near Shimonosaki Straits. Garlitz quickly organized an OOD watch which was subsequently manned by himself and other pilots aboard.

The OOD's, LCdr. H. P. Mitchell, Ltjg. G. J. Roush, and Ens. K. H. Bertelsen, along with the crew, managed to accumulate nine hours and 24 minutes "sea duty." To keep from



GARLITZ WAS GREETED BY VP-48's SKIPPER

going around in circles under the power of one engine the plane was steered on a straight course with the aid of one of two rear hull hydroflaps. These hydroflaps act as a rudder when opened separately, or as a brake when opened together.

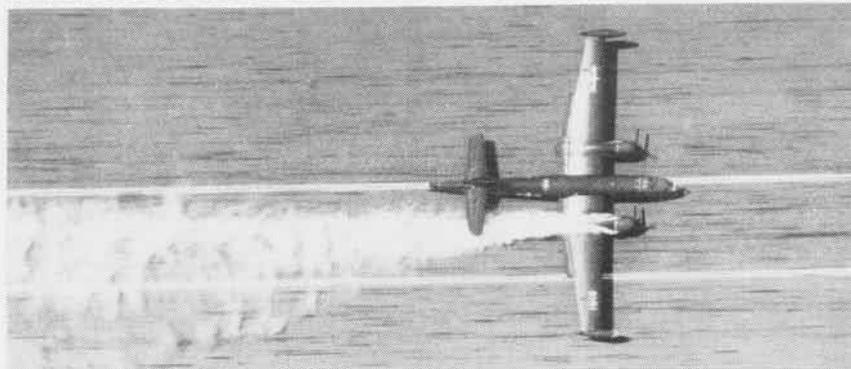
Other crew members were: R. H. Moreau, AD1, M. L. Sammons, AD3, D. R. Erickson, AT1, C. J. Czajka, AT3, G. U. Greamer, AT3, E. P. McNerney, AT3 and W. C. McCallister, AOAN, Cdr. J. C. Young skippers VP-48.

Corry Gets Face-lifting Runways to be Re-surfaced at NAAS

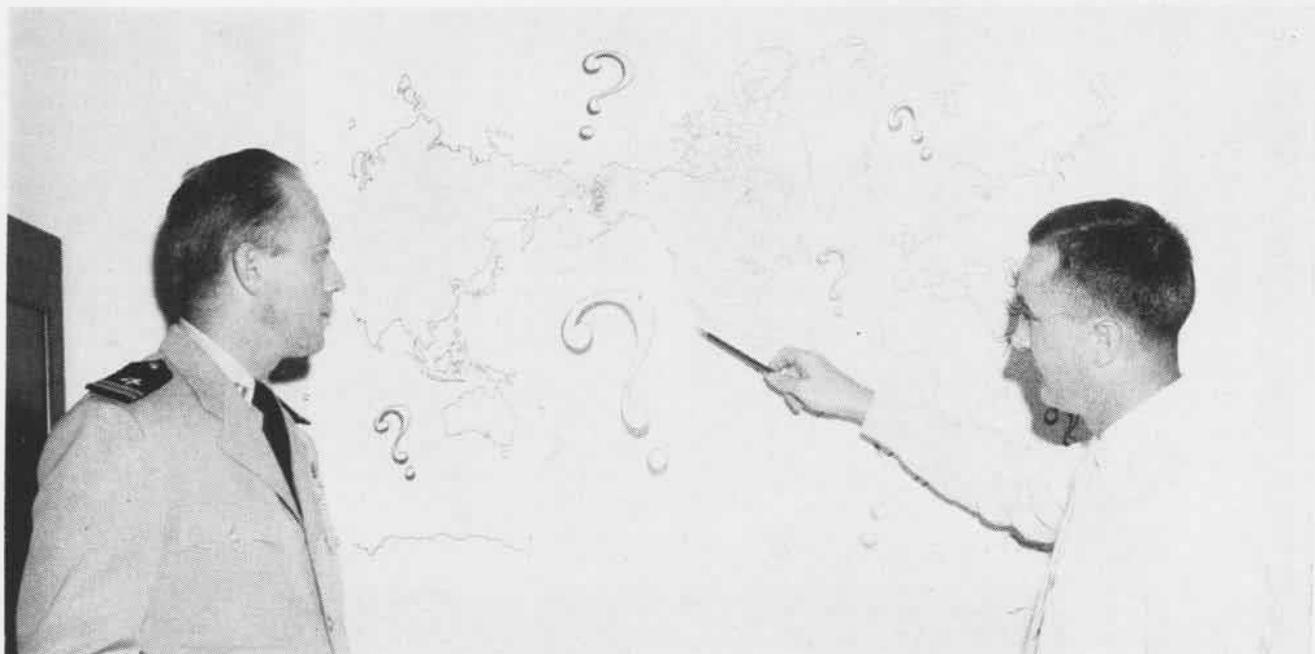
Corry Field's runways are being improved. Construction work includes the re-surfacing and proper drainage of runways at both East and West fields.

Corry's East field is closed and all flight operations are being conducted from the West field. As soon as work is completed on East field, similar work will begin on the West field.

New runway lighting fixtures are also being installed on both fields.



GOOD TRAINING pays off, especially in an emergency. When a P2V, piloted by LCdr. A. L. Schirmer, of VP-16, developed engine trouble shortly after take-off at NAS Jacksonville, the pilot made a perfect emergency landing and extinguished the fire. Lt. L. C. Warren, of VC-62, was over the scene with loaded cameras, and made the spectacular photos of the barrowing incident.



MR. B. C. BYRNES, HEAD OF GEOMAGNETICS BRANCH, POINTS OUT REQUIRED SURVEY AREAS TO LT. W. C. HITT, PROJECT OFFICER

PROJECT MAGNET TO SURVEY OCEANS

NAVIGATING a plane or ship from point to point may seem a comparatively simple task to the layman. Of course, compensating for such things as wind drift or ocean currents tends to complicate matters, but if a compass heading is maintained, he might assume that the destination will be reached eventually. But there is a big, big navigational pitfall to be avoided. The magnetic compass may be as much as 35 degrees off in temperate latitudes and as much as 180 degrees off near the magnetic poles.

Anyone who has been exposed to navigation is familiar with magnetic lines of variation, that is, the broken lines on maps and charts which are the guides to compass corrections. The earth's magnetic field is constantly changing. To keep up with these changes, an almost continual survey is necessary. Such surveys are relatively simple on land surfaces, but over vast expanses of water the job requires special equipment. Realizing this, in 1951 the Navy Hydrographic Office established an airborne geomagnetic survey program. Designated Project *Magnet*, this survey program had as its mission the gathering of data for the preparation of all navigational charts.

Ocean magnetic surveys have been made before. The first such survey was carried out by Edmund Halley, the British astronomer, more than two and a half centuries ago. In command of the *Paramour*, he made several voyages in the Atlantic Ocean to measure magnetic declination (variation) and the results were embodied in his chart, "Lines of Equal Variation" for 1700. It was the first isomagnetic chart ever published based on observed data. By 1840, ocean magnetic surveys were successful in measuring the intensity, or strength, and the dip, or inclination, of the field, in addition to the variation.

In 1909, the *Carnegie*, a non-magnetic ship especially constructed for the Carnegie Institution of Washington, started the first of her seven survey cruises. Before her destruction by fire in 1929, the *Carnegie* had sailed almost 300,000 miles in all oceans from 80° North to 60° South. The data acquired by these surveys were of inestimable value to mariners, and are still the basis upon which considerable portions of the world magnetic charts depend.

Magnetic airborne detectors, developed during WW II for the detection of submerged enemy submarines, made possible the first practical airborne magnetometer. Before the war's end, a magnetic airborne detector had been modified for geophysical prospecting by incorporating means for measuring relative values of the total intensity of the earth's magnetic field.

By 1949, further research by the Naval Ordnance Laboratory, under sponsorship of the Office of Naval Research, had developed an airborne magnetometer capable of measuring the direction of the field as well as its intensity. But it had one serious limitation. Owing to its construction, it could be used only in areas where the dip of the earth's magnetic field exceeds 45 degrees, thus excluding its use over a considerable portion of the earth.

In addition to this limitation, the complex computations required to interpret the information obtained by the first device gave many possible avenues to error. It did, however, establish a practical approach. Consequently, ONR and the Hydrographic Office sponsored the development of a universal magnetometer, the Vector Airborne Magnetometer, Type 2A (VAM-2A). It was designed and constructed by the Naval Ordnance Laboratory, and has been used by the Hydrographic Office in its survey program.



PROJECT MAGNET FLIGHT CREW AND GND TO BE USED IN SURVEY

The VAM-2A, unlike its predecessors, permits a direct reading of dip, intensity, and magnetic heading, without requiring extensive computations. The total intensity-measuring inductor, mounted in gimbals, is continuously oriented parallel to the earth's magnetic field by a servo system. Its orientation is precisely measured, thus establishing the direction of the field with respect to the frame of the detector mechanism. But vertical and heading references must be established.

The detector mechanism is suspended as a pendulum in order to establish its own vertical reference. Heading reference is determined by celestial observations. A counterweight on the pendulum offsets errors caused by rotation of the earth, and aircraft oscillations are minimized by automatically averaging the angular data over a period of approximately two minutes.

The magnetic field of the aircraft itself presented an additional problem. This field was reduced considerably by removing as many magnetic parts of the aircraft as possible or re-fabricating them with non-magnetic materials. In addition, the electrical system was modified so as to minimize magnetic fields caused by direct currents.



LCDR. F. S. CARD, PILOT; CAPT. J. B. COCHRAN HYDROGRAPHER

Still another measure was taken: a magnetic field was created at the inductor, which was equal in magnitude and opposite in direction to the aircraft's field. As the aircraft's magnetic field is subject to change, the compensation is checked by periodic swinging of the plane over points of known magnetic field.

Preliminary approximate compensation is determined by analyzing data obtained from ground and air swings of the aircraft, and final compensation is done during an airswing by a trial-and-error method. The currents through the coils and the position of the induced compensators are varied until a complete swing yields results on each heading which are constant within an acceptable range.

ANOTHER important function of the ground and air swings is determination of the lubber's line error of the survey equipment. This error is present because the reference lines of the detector and the sextant used to determine true headings are not precisely parallel. After the compensation has been completed, the difference between the true variation and the measured variation is the lubber's line error.

Since the true variation at the swing point is known, the error can be readily determined. As the mathematical correction for this error is a simple addition or subtraction, no attempt is made at precise alignment of the two instruments involved.

Precise time, essential to accurate surveys, is kept by a 24-hour electric clock and by two electric timing devices which control the angle averaging circuits. The time is marked on the record charts every five minutes. In addition, the recorders themselves keep accurate time since their chart drive mechanisms are powered by electric clock motor. In order to operate properly, these timing devices must be fed alternating current whose frequency is rigidly controlled. Set initially from radio time signals, the clock and timers are accurate within 0.8 seconds in 24 hours.

Accuracy of the variation computation is dependent upon the accuracy with which the position of the aircraft is determined, and accurate positions are required to plot all data. These positions must be provided for each five minutes of flight by the aircraft's navigators, who must also navigate the aircraft as precisely as possible along a predetermined track. In past surveys, two navigators have been assigned to the operating crew of the plane, and both men worked full time during a survey flight.

The navigators use a combination of dead reckoning, celestial fixes, loran, and radar to determine position. Most of the survey flights are made at night to permit precise celestial fixes. The survey specifications call for positions to be accurate within five miles and, although no precise checks are possible, it is felt that this accuracy has been attained on many of the flights made to date.

The first task assigned Project Magnet was a survey of the North Atlantic Ocean from 25 degrees N. to the Arctic Circle. In order to obtain optimum coverage of the area, a survey plan was drawn up which consisted of a system of equally spaced, parallel tracks. A track spacing of 200 miles was chosen because this spacing would yield results entirely adequate for charting purposes and allow the survey to be completed in a reasonable length of time.



HYDRO OFFICE GEOPHYSICIST EXPLAINS OPERATION OF VAM-2A



HYDRO CHIEF ENGINEER MEDINA, CAPT. COCHRAN VIEW SEXTANT



LTJG. R. R. CARON, LT. H. L. WILSON AT NAVIGATOR'S POST



G. F. HINTON PROCESSES SPECIAL DATA GATHERED BY PROJECT

The maximum length of the tracks was limited by the range of the survey plane, a P2V *Neptune*, to about 2200 nautical miles. This allowed excellent coverage of the area. The flights were made at altitudes of from 9,000 to 13,000 feet, but occasionally it was necessary to fly as high as 20,000 feet in order to top weather. The results were accurate well within the limitation prescribed by survey specifications.

The first survey task comprised approximately 60,000 nautical miles of track and required about a year to complete. FASRon-102 operated and maintained the aircraft used. The survey was occasionally delayed because of weather as well as the need for maintenance and repairs to the aircraft. Several tracks had to be re-flown because of the aircraft's inability to top unforecast weather or because of mechanical difficulties. Had it not been for these delays, the survey could probably have been completed in four months.

Just after the first survey was finished, the P2V went into overhaul, and another aircraft was requested. Experience had shown that the ideally suited aircraft for this work is a long-range, pressurized, cargo plane, capable of cruising at altitudes of from 20,000 to 30,000 feet. With

this in mind, an R6D was recommended for future survey operations, but since an R6D could not be made available at this time, an R5D was assigned to the project. This plane provides more space and a greater range than the P2V, but its altitude limitations are the same.

Two new pieces of equipment have been installed which should increase the accuracy of future surveys. One of these is a recently developed automatic navigator, which should take quite a strain off the human navigators and increase position accuracy. The other device is a periscopic sextant which is automatically levelled. This will replace the sextant used to determine relative bearing. The new sextant is basically a Kollman type to which means have been added for maintaining it in a vertical position at all times.

As soon as all modifications and installations have been made, the calibration and magnetic compensation flights will begin. Once this is done, the survey program will again be underway. Repeat surveys are planned to maintain the accuracy of geomagnetic data throughout the world.

If Project *Magnet* progresses as planned, it is bound to contribute to the sum of man's knowledge of the earth's magnetic field and will yield valuable data for navigators.

Proving the Pressure Tank British to Define Accuracy of Tests

At the Royal Aircraft Establishment, Farnborough, six more *Comet* 1 fuselages—making eight in all—are about to undergo pressure testing in the water tank. Tests will provide a method of determining the average life of a number of production fuselages and help to assess the safe life of future pressurized airliner designs.

It is believed that the *Comet* fuselages will help to determine the accuracy and limitations of the tank test. The test was devised to simulate the effect on aircraft structures of pressurized flight at high altitude (35,000 to 40,000 feet, where there is a difference of about eight pounds per square inch between the air pressure inside and outside the cabin) and to determine whether cracks, when they occur, tend to spread quickly or slowly—the difference between explosive decompression and a small crack that can be repaired.

The tank measures 160'x20'x20' and contains some 300,000 gallons of water. Testing is done in three minute cycles during which the pressure inside the fuselage is raised to more than eight pounds per square inch and lowered again. During this time hydraulic jacks under the wings apply twenty "gusts", each being the equivalent of a 10 fps. gust in actual flight.



ADM. A. W. Radford, Chairman of JCS and SecDef C. E. Wilson stand in doorway of Army helicopter during the recent Operation Alert.



BRIARD (R) SHOWS OFF HIS 'WIRECUTTER'

Ordnance Problem Solved Enlisted Man Makes Wire Cutter

Ingenuity on the part of a Canadian Navy enlisted man, now on exchange duty at NAS NORFOLK with VS-26, has solved an ordnance problem in ASW work with the *S2F-1* aircraft.

The inventor is Kerry P. Briard, Leading Seamen Aircraft Ordnance-man, Second. He designed and installed a wirecutter on the plane's leading edge as a pre-cautionary device against malfunction of the "pigtail wire", an electrical connection between the electrical circuit of the aircraft and the propelling charge of the rocket motor.

Originally designed to break away from the "pigtail plug" on firing, the wire has frequently failed to break connection, resulting in replacement of the igniter receptacle and the plug. Briard's wirecutter, placed adjacent to the plug, will easily cut the wire should the plug become inoperative.

With the wire wrapped around the cutter, tension is placed against the sharp edge creating an instantaneous cut. This effectively prevents the igniter receptacle from shearing off and the plug from shattering.

Navy Accepts First R4Y-1 Convair Delivery Made in July

The first of a substantial number of R4Y-1 tri-purpose aircraft has been delivered to the Navy by Convair. Unnamed as yet, the new plane can be modified to serve as a cargo carrier, passenger liner or litter bearer.

The R4Y-1 has a reinforced plastic covered flooring of extruded magnesium capable of supporting a load of 300 pounds per square foot. Tie-down rings attached to the flooring will each withstand 5,000 pounds strain. A 10-foot cargo door on the left side permits the use of a crane or fork lift.

As a personnel transport, the new

plane can carry 44 passengers in removable upholstered seats which can be faced either forward or aftward. The seats are interchangeable with those used in the Navy's *RAY Trade-wind* seaplane transport. Military bucket seats also may be installed.

As an evacuation transport, the R4Y can carry 27 litter patients. Its payload of 12,000 lbs. can be flown at a maximum speed of 314 mph or at a cruising speed of 284 mph at 20,000 feet. Two 2400-hp engines power R4Y.

Seaplane Gunnery Training Gives Double-Barrelled Efficiency

Peak efficiency at minimum costs is the "order of the day" every day for seaplane squadrons attached to FAW-14 at NAS SAN DIEGO. Gunners must be trained thoroughly to man the twin 20mm tail turrets in the Navy *Marlins*.

Use of a munitions, ordnance and rearming trainer makes it possible to evaluate thoroughly a gunner's aptitude and ability by means of an infrared scoring device.

Any situation that might arise during the firing of the actual turret can be simulated in this trainer. Malfunctioning guns, hank fires, failure of the electrical circuits, etc., can all be "worked in."

Gunnery training at San Diego is a direct responsibility of FAW-14 which is commanded by Capt. A. S. Hill, USN.



THE DAY that RAdm. D. T. Day retired from the Navy, his son, Marine 2nd Lt. Douglas Day, above, completed first solo flight at Whiting Field. The Admiral is also a pilot.

VPP-876 SHOT CITY AND CNO APPROVED



JON Clendenin, PH3, 'gets the feel' of his equipment before departing on photo mission.



FRED Rogers, Jim Williams, Carl Wheaton, (l to r), are laying sections of the 'big map', a 12 foot mosaic of the city of San Francisco.



PHOTOGS of VPP-876 on annual training duty at NAS Oakland, get refresher briefing on use of Speed Graphic. Bob Geiss gives the word.



ALWAYS film must be loaded before photo mission. V.P. Iacona secures magazine on K-17.

RESERVE Photographic Squadron VPP-876 kills two birds with one stone. Undertaking as wide a range of missions as their A-19 viewfinder-equipped SNB-5P's permit, the squadron combines training missions required by their syllabus together with actual photographic projects.

Most ambitious project, a 12-foot mosaic of San Francisco, made by VPP-876 and Air Wing Staff 87 on two-weeks active duty training at NAS OAKLAND, is on exhibit at the California Academy of Sciences of Golden Gate Park, where it has been viewed by thousands. It is to be made a permanent part of the San Francisco Examiner Museum of Photography.

In a commendatory letter to the CO NAS OAKLAND, CNO said: "The initiative and industry displayed in the preparation of this mosaic are considered to be commendable and connote a high degree of operational readiness."



SQUADRON exec, LCdr. Guy, gives Totman and Jarrett final briefing on areas to be shot.

Data Processing at Pt. Mugu Machine to Help Guided Missile

The Naval Air Missile Test Center, Point Mugu, now has a high speed machine to process data collected during the launching and flight of guided missiles.

The electronic wizard, called the IBM 650 Magnetic Drum Data Processing Machine, will be used primarily in the reduction of missile flight and wind tunnel data to forms which can be used by project engineers. From the raw data collected during testing, the 650 will produce a history of all measurable performance characteristics of a missile. Such factors as thrust, velocity, position at a given time, acceleration, and response of control surfaces, will then be interpreted to provide information for subsequent tests.

A 650 combines an advanced "memory" device and a stored program feature to become a powerful "electronic assistant" to management for engineering requirements. The two most significant features of the machine are its ability to check the accuracy of its answers and its magnetic drum "memory."

The installation is one of the first on the West Coast.

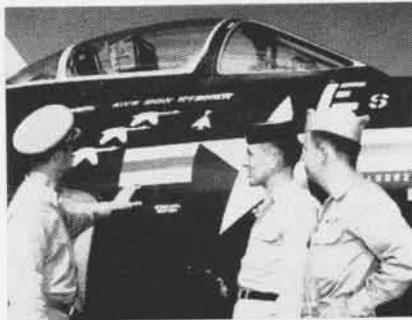
VP-57 Wins Safety Award Both Grampaw, CO Are Pleased

ComAirPac's Annual Aviation Safety Award for patrol squadrons belongs this year to VP-57. The trophy award was presented to Cdr. C. N. Shane, squadron CO, by Capt. R. R. Johnson, ComFAirWhidbey, in the name of VAdm. H. M. Martin, ComAirPac.

The trophy itself remains at the North Island headquarters of Adm. Martin, but the squadrons designation has been added to the list of recipients.

The squadron accumulated 10,148 accident-free hours during 1954 while deployed to a forward area and completing a full training cycle.

In addition to winning this new award, VP-57 has also been awarded the ComAirPac Safety Award for the third quarter of 1954 for 3,671 accident-free flight hours. Letters of congratulation have been received for the fourth quarter 1954 and the first quarter 1955 for 2,351 and 998 accident-free hours respectively.



THE NAVY'S champion bird-catching jet is examined by Cdr. R. H. Benson, CO of VF-63 (1), AF 1st Lt. B. B. Hardy and LCdr. R. H. Morris aboard the Essex. The Cougar has sucked three geese and one seagull into its intake.

Aero Dictionary Compiled NACA Acts on Defense Requirement

Preparation of an up-to-date dictionary has been undertaken by the National Advisory Committee for Aeronautics. The work was initiated as a result of an official request from the Department of Defense.

The project is being carried out under the direction of an experienced lexicographer, Dr. Frank D. Adams. The new dictionary will be the first such publication by the NACA since the 1941 edition of "Report No. 474, Nomenclature for Aeronautics," originally issued in 1934.

Basic aim will be to reflect the best current usage of those terms peculiar to aeronautics or having a special significance when used in aeronautical literature. Preferred usage of terms will be indicated, but well-established usage which may be considered less desirable will also be included.

Target date for publication is 1957.

Two New VF's at NAS Jax VF-62 and VF-102 Join ATG-202

Two new fighter outfits have been commissioned at NAS CECIL FIELD rounding out the four squadrons necessary to form an Air Task Group. Originally commissioned as attack squadrons, VF-62 and VF-102 were redesignated at the commissioning ceremonies. The two new squadrons will become part of ATG-202.

Cdr. Robert F. Regan will skipper VF-102, and LCdr. Irving A. Robinson is acting CO of VF-62. Cdr. H. J. Badger is CATG-202.

VF-62 will fly F9F-8 Cougars and VF-102 will fly the F2H-2 Banshees.

NAS Niagara Men Praised Crash Crew Aids Air Force Fliers

Five NAS NIAGARA stationkeepers have received letters of commendation for the heroic role they played in aiding an Air Force pilot and crewman escape from a burning F89-C *Scorpion*.

The plane, making a landing at the Niagara Falls Municipal Airport, undershot the runway and burst into flames upon impact.

Cited for their actions as members of the NAS crash crew which responded to the mishap were: J. F. Wolfgang, SN; B. F. Gerritz, SN; R. F. Young, BM3; D. R. Nito, AN; C. C. Jones, DC2.

The commendation stated: "On June, 1955, as a member of the station's crash crew, you contributed to the successful escape of the pilot and crewman of the Air Force F89-C, which crashed and burned on landing at the Niagara Falls Municipal Airport. Very probably your instantaneous response and aggressive attack on the flames in the vicinity of the cockpit saved the lives of the pilot and crewman."

Capt. Hays R. Browning, station CO, presented the award during a personnel inspection of all hands at the station.

XF-84H Makes First Flight AF Turboprop Fighter Flew in July

The Republic XF-84H experimental turbo-prop fighter, which is believed to be the fastest single-engine propeller driven plane ever built, made its first flight July 21, 1955 at the Air Force Flight Test Center, Edwards AF Base, California, the Air Research and Development Command has announced.

Designed for use as a flying test bed for supersonic propellers, the XF-84H is expected to attain even greater speeds when fitted with an afterburner.

The first flight of the XF-84H was made at an altitude of 20,000 feet for a period of 35 minutes by Republic Test Pilot Henry G. Beard, Jr. It is designed for a service ceiling of over 40,000 feet.

The sleek new experimental fighter combines the advantages of propeller-driven planes with the speed of lightweight modern jet engines. The turbo-prop engine permits a fighter aircraft of the XF-84H type to operate over targets for reconnaissance or to remain in an area to act as an interceptor.



FIREPOWER SHOW FOR MIDSHIPMAN

THE BIG show was on! There was smoke in the sky, fire on the water, and a deadly blue jet coming in low for a strafing run. Trrrt, trrrt, trrrt went the jet's guns, and the target in the water pitched violently.

Annapolis Academy midshipmen were getting a vivid idea of the power and variety of Naval aerial ordnance. The demonstration was being put on at the Naval Air Test Center, Patuxent River. In two groups, one in June and one in July, 440 Second Classmen watched Naval Aviation in action.

The show began with a bang when three FJ-3 *Furies* climbed to an altitude of nearly 35,000 feet, then dived through the sonic barrier. The crowd on the edge of the Armament Test Boat Basin heard three booming, sky-filling explosions.

One spectacle followed another. Lt. W. S. Peterson flew past in a *Cougar* and flipped a photo-flash bomb in the sky—"a bomb bursting in air."

As an FJ-3 finished a fly-by and was performing figure eights in a vertical climb to 15,000 feet, an F9F-5 came stealthily from behind a clump of trees in the distance to plop two 120-pound Napalm tanks in the Bay directly in front of the onlookers.

About 10 seconds after the tanks had dropped below the water level, the jelly-like Napalm burst upon the surface and slithered over the crests and troughs of the chopping waters violently ablaze.

The F7U-3M *Cutlass* was the last plane to center its guns on an imaginary enemy. After discharging 32 3.75" rockets at the target, Ltjg. R. F. Dreesen swooped low over the waters just outside the seawall of the boat basin and fired three distinct bursts.

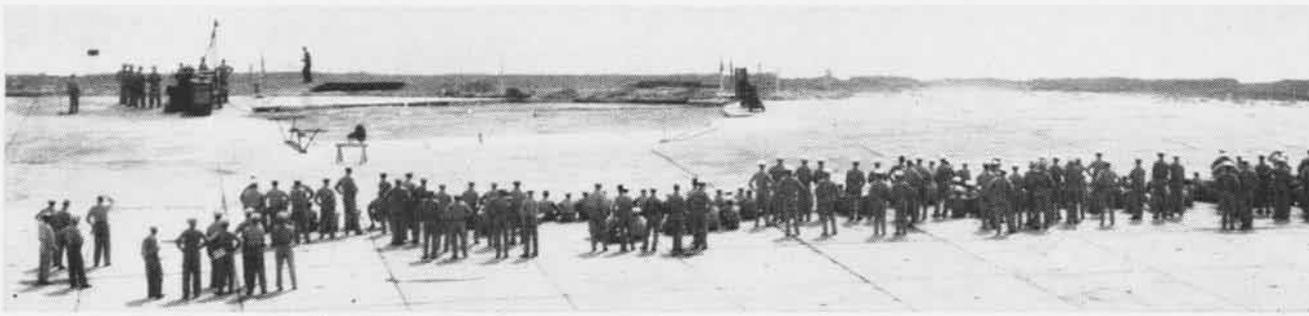
Then came the grand fly-by. First in line was the F4D *Skyray* followed by an A3D. Six days before, this very

A3D had nearly broken the transcontinental speed record in a flight from San Francisco to New York. Breezing along after the A3D came the S2F, retracting its MAD gear and radar antennae as it passed.

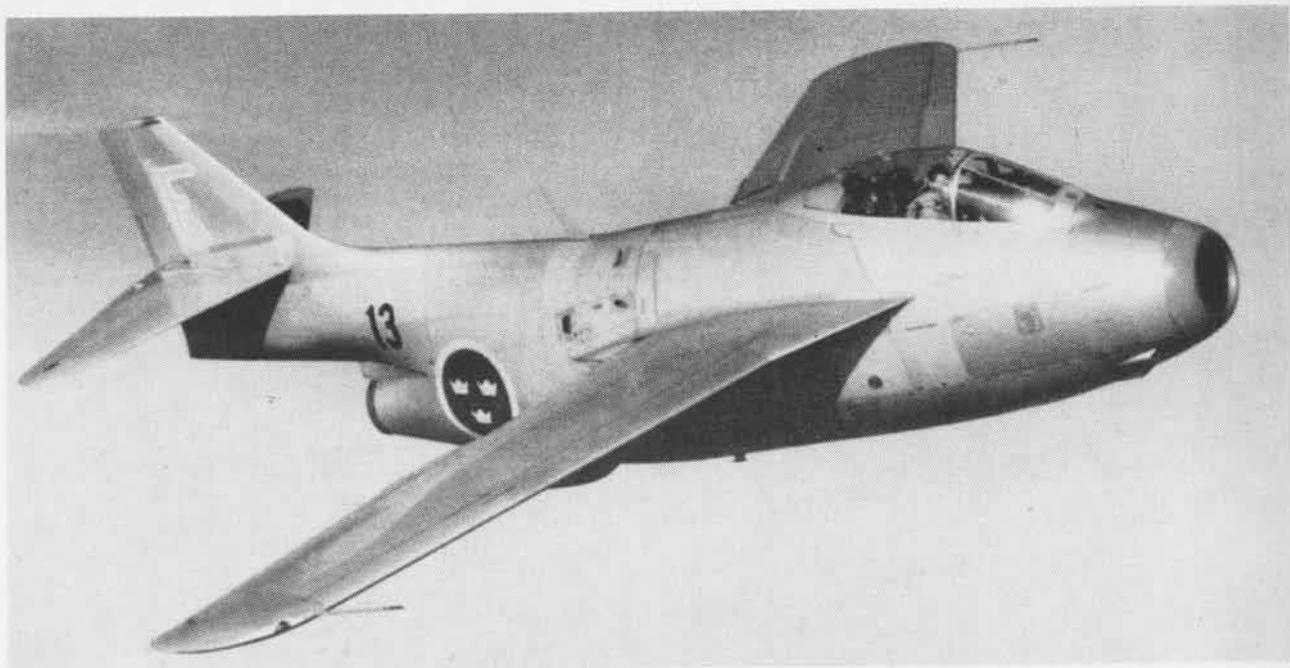
The HSS-1 clattered by. As it pulled out of the line of flight, a T-28 piloted by LCdr. D. W. Henderson flashed by, doing aerobatic "Cuban eights." As if in competition, a T-34 appeared next and promptly proceeded to fly upside-down and perform other hair-raising maneuvers.

Then an F9F-8 piloted by Cdr. R. D. Greer was refueled by an AJ *Savage* with Lt. F. H. Doolin at the controls. After that there was a P2V-7 *Neptune*, two *Skyraiders* and an HUP-1 in the parade. The helicopter showed how it could "rescue" a survivor from a life-raft.

All agreed it was "a great show."



ANNAPOLIS MIDSHIPMEN AND THE PUBLIC CHEERED AS PATUXENT RIVER PUT ON AIR SHOW TO DEMONSTRATE NAVAL FIREPOWER



SWEDISH FIGHTER HOLDS A RECORD

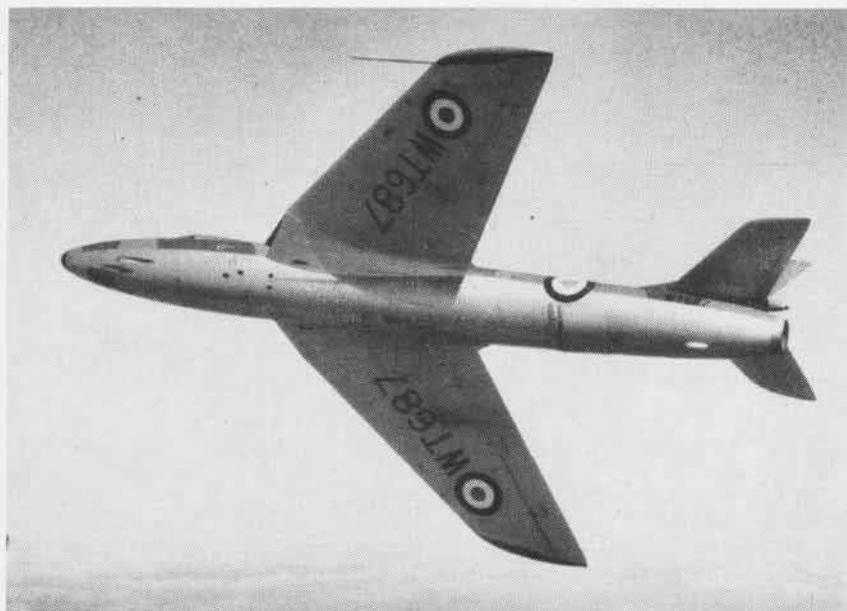
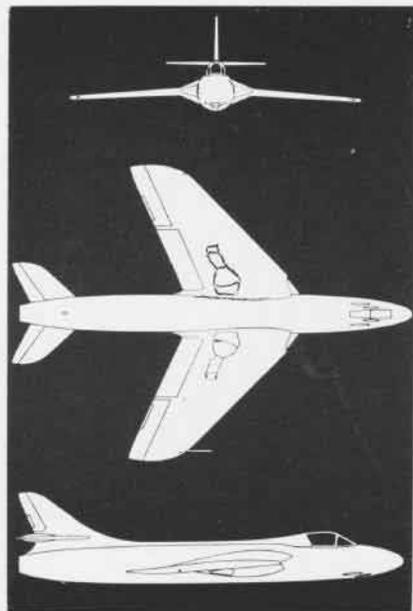
This Swedish-built fighter holds the present international speed record for the 1000-kilometer closed circuit distance at 560 mph. The J-29 is, from a design standpoint, a barrel with a swept wing and a short boom supporting the tail. The wing is shoulder-high on the fuselage and fairs forward at the root. The horizontal tailplane is formed like an arrow pierced by an angular, squared off vertical fin. The span of SAAB-29 is 36 feet; the length is 33 feet, five inches.





BRITISH HUNTER ANOTHER CHAMPION

The Hunter, swept-wing, supersonic fighter, set a world speed mark in 1953 of 727.6 miles per hour. Its dominating feature is the large, round, untapered fuselage with a prominent dorsal 'spine' from the smoothly faired cockpit to the sharply raked tail. The wings, showing marked cathedral are mid-mounted on the fuselage and do not begin their full sweep until outboard of the wing root intakes. The span is 33 feet eight inches, and the length 45 feet three inches.



Two VA's Commissioned VA-46 and 176 Are Put in Service

A Navy all-jet attack squadron and a conventional prop attack squadron were recently commissioned at NAS CECIL FIELD. The jet attack outfit was designated VA-46, and the prop outfit was tagged VA-176. Capt. R. O. Greene, Chief of Staff, ComFAirJax, spoke at the commissioning ceremonies.

LCdr. E. F. Ternasky assumed duties as acting CO of VA-176 as did Lt. C. L. Marshall of VA-46. Marshall was relieved the following day by the squadron's CO, Cdr. Clifford McDougal. LCdr. Ternasky will hold the reins of VA-176 until Cdr. J. M. O'Brien arrives to take command.

VA-46 will fly the F9F-5 *Panther* until they receive the swept-winged F9F-8 *Cougars* later this year. VA-176 will fly the AD-6 *Skyraider*.

NAS CECIL FIELD will be home-port for both of these new attack squadrons.

Sailor Rebuilds 5 Planes First Plane was a Smashed Aeronca

R. W. Wiseman, ADS, an NAS WHITING FIELD sailor has a unique hobby. He buys smashed airplanes and rebuilds them in his spare time. His hobby has led to the purchase of five crashed or disassembled aircraft.



WISEMAN MAKES FINAL CHECK ON THE N25

The first airplane re-worked by Wiseman was an almost demolished Aeronca, which he found in a cornfield. He bought that one for \$150, spent an additional \$550 and after 13 months labor had it flying. He has acquired 1200 hours of flight time some of which was spent in crop dusting.

Wiseman's pride and joy is his fifth plane, a Boeing-Stearman N25 pur-

chased from a local salvage dealer in a disassembled condition. He worked five months in the station hobby shop getting it into flying condition. Capt. Paul Masterson, station CO, granted him permission to land the plane at South Field. He disassembled it and started from the wing-tips to give it a complete overhaul.

In June, he took off for Pensacola, where he will install a new engine.

Wiseman gained his experience in aircraft in Baltimore where he worked in exchange for a few hours of flight instruction at a GI flight school. With 650 hours in single-engine aircraft, he has made two forced landings because of power failure.

MAW-3 Shifts to El Toro Seven Units Involved in Big Move

The Headquarters and Headquarters Support Group of the 3rd MAW will shift homes this month from MCAS MIAMI to MCAS EL TORO. Two attack squadrons and one transport squadron will remain at Miami as a detachment of AirFMFLant.

Elements of the Third Wing involved in the move are: Headquarters, Third Marine Aircraft Wing; Headquarters and Headquarters Squadron Three; Headquarters and Maintenance Squadron-37; Marine Air Repair Squadron-37; Marine Air Base Squadron-37; Marine Photographic Squadron Three and Marine Air Control Squadron Nine. These units will come

under the operational and administrative control of the CG AirFMFPac immediately upon their departure from Miami.

The commanding general of the Third Marine Air Wing is BGen. W. G. Manley.

Pilot Has Narrow Escape Oxygen Saves Life as Plane Sinks

An oxygen mask has been credited with saving the life of another pilot. The incident occurred as Cdr. J. J. Davidson, XO of VC-3, was making a high-speed, off-center landing on board the USS *Sbangri La* in June.

Davidson made his approach and set the jet down on the angled deck. The tail hook engaged a wire but on the pull-out, the arresting gear engine two-blocked and the tail hook parted. Braking action proved fruitless, and the jet slid over the port side.

He remained in the cockpit until the ship had passed him although he was submerged an estimated 10 to 12 feet. No difficulty in breathing was noticed for his mask was intact and his oxygen was on 100 percent.

Davidson unbuckled his shoulder straps and parachute, stood up in the cockpit and freed himself from the oxygen mask and tube and the radio cord. He inflated his life jacket and surfaced only after the hull of the ship had passed.

Davidson floated for about 10 seconds before the ship's helicopter picked him up wet and sore, but uninjured.



THE EXPERIMENTAL water-based jet fighter, the XF2Y-1 Sea Dart, begins a high speed taxi run on San Diego bay during tests of the single hydro-ski landing gear technique. Other Sea Darts built by Convair have used twin skis. The Sea Dart is powered by twin J-46 turbojet engines.

LET'S LOOK AT THE RECORD

100 Days Without "ACOG"

Barin Field Beats Its Own Record

Personnel at NAAS BARIN FIELD have set what is believed to be an all time record for number of days without "Aircraft on ground" in the Basic Air Training Command. This adds up to a record of 100 days without an aircraft being grounded for lack of a spare part.

The previous record held by Barin was 14 days. This achievement was celebrated in the Aviation Shop Store for personnel of Supply and Maintenance. Capt. M. W. White, Barin Field CO, praised the work of the men and then asked that efforts be made to break the 100-day record.

The command is now shooting for "365 days with no ACOG's" at Barin.

O&R Wins Safety Laurels

MCAS Sets Industrial Safety Record

The Navy's Industrial Safety Record has been established by the O&R Department at MCAS CHERRY POINT. The new mark, 3,965,000 man-hours without a lost time accident between 11 June 1954 and 22 April 1955, exceeds the previous record held by the O&R Department at NAS PENSACOLA by 409,000 man-hours.

The new record entitled Cherry

Point's O&R Department to SecNav's annual Industrial Safety Award Plaque. This award was presented by BGen. F. C. Croft, CG of Cherry Point, during a change of command ceremony in which Col. P. J. Fontana relieved Col. E. E. Bard as OinC of the O&R Department.

Col. Bard held his post as OinC of the O&R Department for two years. He has been reassigned to become chief of staff of the 1st Marine Air Wing.

VP-47 Transfer in 52 Hours

10 Marlins Make Move in 2 Flights

The first division of VP-47 flying the "T" tail P5M-2 and commanded by Cdr. John W. Lawyer, arrived at NAS PEARL HARBOR after what is believed to be a record-making flight for seaplanes from NAS ALAMEDA. The first division composed of five *Marlin* seaplanes had an average crossing time, take-off to buoy was twelve hours and four minutes.

The fastest time was established by LCdr. E. P. Palm, veteran seaplane pilot who, it is believed, has established an all time westward Pacific crossing for seaplanes. LCdr. Palm's time from take-off to buoy was twelve hours and four minutes.

The second division of VP-47 *Marlins* led by the squadron's execu-

tive officer, Cdr. E. W. Dailey, made an average crossing time of 12 hours and 50 minutes, missing the favorable wind conditions that occurred the preceding 24 hours.

The ten aircraft assigned were all based at NAS PEARL HARBOR within 52 hours after the Commanding Officer departed NAS ALAMEDA. All aircraft were ready for operations within an hour after their arrival with the exception of one aircraft which required five hours for cleaning of the fuel system.

NAAS Breaks Flight Record

2,729 Students Complete Training

NAAS WHITING FIELD has broken all previous station flight records by graduating 2,729 student pilots in the primary phase of flight training.

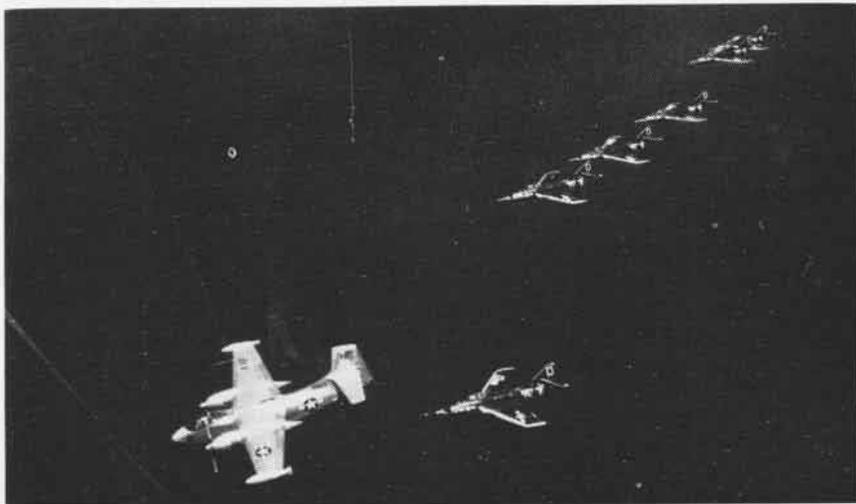
In completing the syllabus, student pilots flew 255,082 instructional hours in the SNJ trainer. This is equivalent to 1,236 trips around the world in the SNJ. During this time flight instructors flew 130,987 flights with students and were aloft for 180,432 hours.

This record was accomplished in 160 flyable days during fiscal 1955. The previous record was established in 1954 when 2,722 student pilots flew a grand total of 240,857 syllabus hours.



ENSIGN L. R. Holmes is the 5,000th student aviator to hit the net in a simulated bailout at NAAS Whiting Field since the trainer was completely rebuilt in March of 1954.

● NAS MIAMI—Another Marine "first" was scored by Maj. Frank E. Autrey, VMF-142, when he was the first Weekend Warrior in the Miami area to check out in the F9F-6 *Cougar*, recently released to Reserve units to replace the World War II-weary F4U *Corsairs*.



VF-121 IS the first F9F-8 squadron to qualify all its pilots in air-to-air refueling, according to NAS Miramar. The Pacemakers commanded by Cdr. R. E. Rhodes worked with AJ Savage tankers from VC-6. The squadrons timed their rendezvous perfectly off the coast at San Diego, Cal.

FAMOUS SHIPS OF THE LINE

THE USS *TICONDEROGA*



IN WW II, the *Ticonderoga* in a brief but active career blazed a combat record in World War II worthy of her distinguished predecessors.

The first *Ticonderoga*, a 350-ton schooner, cost the young American Republic \$12,000 when she was launched in May 1814. Fighting with other famous forbears of modern ships, she set precedence by capturing the British sloop *Chubb* in the Battle of Lake Champlain.

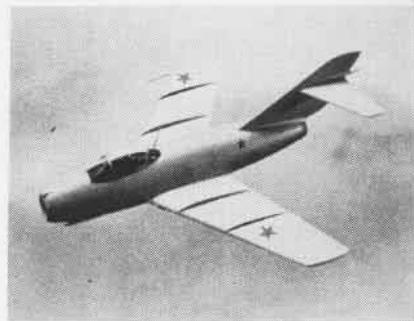
Ticonderoga number two was the first steam vessel of the United States to circumnavigate the globe. In a career spanning 1863-1881, she cruised off the coast of New England to protect our fishermen, took part in the bombardment of the Confederate Fort Fisher, spent three years with the European Squadron and two with the South Atlantic before sailing on her round-the-world voyage.

The third *Ticonderoga*, a German merchant ship seized in the port of Boston at the beginning of WW I, was outfitted as a U.S. naval transport. On a fateful voyage in September 1918, she engaged in a gun duel with a U-boat at close range for nearly two hours. In spite of a gallant fight, the *Ticonderoga* could not avoid the lethal torpedo and she sank with 214 lives lost.

The attack carrier *Ticonderoga*, fourth ship to carry the name and tenth of the famed *Essex*-class carriers, was commissioned at Norfolk 8 May 1944. Capt. Dixie Kiefer, Commanding. Six months later, she reported to Commander Third Fleet and joined "murderers row" of Task Force 38 at Ulithi. This formidable force had just emasculated the Japanese Navy in the Battle for Leyte Gulf.

Her combat career began on 3 November 1944 with the carrier force on a high speed run on Luzon to launch fighter sweeps over the airfields and bomber strikes on shipping in Manila Harbor. Three fast moving months of action came to an abrupt halt for *Ticonderoga* on 21 January 1945 when she was put out of action by five kamikaze pilots. She returned to fight again in May, finishing out the war with the Third Fleet off the shores of Japan.

After a brief tour with Magic Carpet following the war, *Ticonderoga* was decommissioned. In January 1952 she went back on active service for four short months and then went into the yard for conversion. On 11 September 1954 she was recommissioned and is now with the United States Atlantic Fleet.



NAMES of two Russian military aircraft have been changed recently: *Butcher* (Il-28) is now *Beagle*; *Falcon* (Mig-15) is *Fagot*. *Beagle* is shown above; *Fagot* fighter is shown below.

Mayport Becomes an NAAS To Bolster Jet Complex Facility

The Navy's installation at historic old Mayport—a strategic point since 1562 when the French Huguenots landed at the mouth of the St. John's River—has come into its own. On July 1, it was commissioned a Naval Auxiliary Air Station. Capt. J. S. Thach, CO of NAS JACKSONVILLE, read the orders completing the Navy's jet complex in that area.

VAdm. Thomas S. Combs, DCNO (Air), in the principal address stressed the importance of Mayport as the final link in the Navy's presently planned fleet aviation centers. Two such locations are on the Pacific Coast; three, including Mayport, on the East Coast.

"With seaport facilities such as this one at Mayport," Adm. Combs said, "we have securely joined training operations afloat and ashore. We then can train carrier pilots in the exacting skills of their trade and can develop the degree of coordination in squadron and group tactics which mean maximum effectiveness."

Upon the act of commissioning, Cdr. W. H. Horton took command.



A NAVIGATIONAL sunline is shot by NavCad O. E. Tessmer from the crown turret of a Navy P4Y Privateer based at NAS Hutchinson, Kans.

In Defense of Human Eyes Still as Good as Radar Equipment

Fleet Air Wing 14 recently concluded a series of exercises that have proved that human eyes are as effective when looking through a port-hole as they are when glued to a radar scope.

In these exercises, alert aircrewmembers, while using all available detection devices, made visual contact first on either close-in surfaced subs or periscopes. During the years of research for higher and higher powered radars for anti-submarine detection, not much reliance was placed on anything as quaint as "looking out the window."

But the keen eyes of an alert lookout appear to be returning to style as emphasis is being placed on visual detection in anti-submarine warfare. As a matter of fact, this particular phase of anti-sub warfare is finding its way into the design of new aircraft. Take, for instance, Grumman's *seafury*,

which has the greatest forward vision of any previous carrier based ASW aircraft.

The studies also discovered that smoking seriously hampers the eyesight of aircrewmembers. At low level of illumination, the total effect on vision from only three cigarettes corresponds to that of an altitude of 8,000 feet. The overall effect on some people smoking 20 to 30 cigarettes a day raised the carbon monoxide concentration in the blood to a point where the ability of the blood to carry oxygen was reduced to the degree normally found at an altitude of 12,000 feet.

With the old fashioned eyeballs coming back into style for sub hunting, aircrewmembers might better suppress the urge for a quick cigarette until after the de-briefing sessions are completed.

Classroom in the Clouds BEA Inaugurates Unique Service

The British European Airways has inaugurated a unique service for making Britain's younger generation air-minded while at the same time adding to their education.

The airline suggested to schools in the area of Birmingham that their students might like to fill empty seats on their passenger feeder service to London at reduced rates. The 175-mile round-trip cost ten shillings (\$1.40).

The experiment was so successful that other schools, learning of this novel service, requested that they be included. Last summer the airline carried 75 school parties totalling 1,125 children.

Students in the flying classrooms learn not only geography, but also science, history, and mathematics.



THORN EXAMINES HAT AND MONTUNO JACKET

Naval Aviator is Honored Panama Award to CO of Coco Solo

The government of the Republic of Panama recently awarded its National Decoration of Vasco Nune de Balboa to Capt. William A. Thorn, CO of the Naval Station, Coco Solo, C.Z. The medal is for the grade of commander.

Thorn was lauded for "outstanding relations of friendship and solidarity with Panama."

The presentation took place in the home of the Governor of the Province of Colon, the Honorable Jose M. Gonzales.

Capt. Thorn, a naval aviator, was also presented a genuine Panama hat and a montuno jacket.

Almost Parallel Careers One Trails Other by Just One Year

The closely paralleled careers of two Navy Captains continued recently when Capt. R. M. Pray relieved Capt. I. J. Schwartz as CO of the seaplane tender USS *Orca* at North Island.

Capt. Schwartz's career began in 1927 when he entered the Naval Academy. Capt. Pray became a midshipman the following year. Schwartz graduated in 1932, Pray in 1933. Then in 1935, Schwartz received flight training at Pensacola. Pray was designated a naval aviator in 1936.

Capt. Schwartz's first major command came in July 1954 when he assumed command of the *Orca*. The *Orca* is the first major command for Pray, and once again he is exactly one year behind Schwartz.

Capt. Schwartz is due to report to the Armed Forces Staff College as Senior Naval Aviator Instructor.



THIS NORTH American-built Navy FJ-4 Fury has shed the traditional seagoing Navy blue for a two-tone gray and white coat. The color scheme, gull gray top and glossy white bottom, extends from air scoop to tail pipe. Powered by a Curtis-Wright J-65-W-4 turbojet, the Fury is capable of speeds in excess of 600 kts. It may serve as a carrier of external weapons.

FASRON-11 HAS VITAL ROLE AT ATSUGI



WITH SNOW covered Mt. Fujiyama as a backdrop, eight FASRON-11 aircraft fly in formation near their home base at NAS Atsugi. Squadron is maintenance mainstay to Far East-based squadrons.

FASRON-11, based at NAS ATSUGI, plays a vital part in supporting the Navy's attack carrier striking force. Keeping carrier-based aircraft in the Far East in top flight condition is its important task. During critical periods, off-duty hours are forgotten in order to meet deadline commitments.

Skipped by Cdr. James E. Little, the squadron maintains a reserve of first line fighter aircraft in a combat-ready state.

Aircraft are added to this pool directly from the United States and

from carrier groups who are leaving the Far East. A FASRON detachment at Oppama, Japan, receives the state-side airplanes, de-preserves them and makes an acceptance check before delivery. The planes are then barged to Kisarazu AFB where another FASRON 11 unit pre-flights them and makes any needed adjustments before their flight to Atsugi.

Cdr. R. T. Chastain, head of maintenance department, is responsible for keeping the pool of aircraft ready for the Fleet. Pool aircraft are carefully

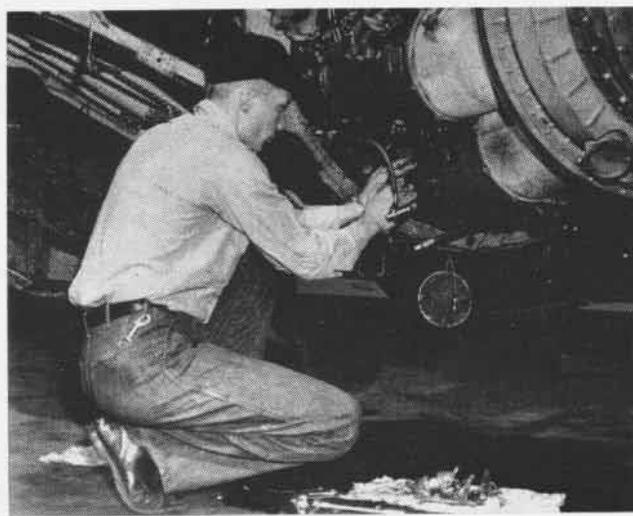
checked on the ground and flown every six to ten days to test performance. Some of Cdr. Chastain's force are Japanese mechanics supervised by squadron personnel.

Every 30 flight hours a jet or prop engine is partially disassembled and inspected. Every 120 flight hours, the aircraft is inspected down to the last rivet.

Before docking at Yokosuka, the carriers frequently fly their aircraft to Atsugi. There maintenance personnel, representatives from ComFAirJapan, and the squadrons meet to work out special problems. Since the in-port time is often limited to a few days, all hands pitch in to complete the work on time.

The squadron's electronic shop, headed by R. W. White, RELE, is one of the most complete in the Far East. Work spaces and tools are available to carrier crews for testing and repairing all electronic equipment.

Chief Machinist J. C. Bollheimer supervises all work done on engines. Chief Gunner Roy Payne, the squadron's ordnance officer, makes space and tools available to visiting squadrons for essential repair work. The airframes officer, Chief Machinist Harry Baker, oversees the repair and maintenance of hydraulic and fuel systems, landing gear struts and mechanism.



MAINTENANCE is a continuing process with FASRON-11. Here Albert Oblendorf, AD3, performs work on the engine of an F9F-5 Panther.



A CHECK against structural failure and repairs to the tail assembly of an F9F-6 Cougar is made by J. Carmichael, AM3, (r) and M. Paster.



MARINES from MCAS Miami joined townspeople of Opa-locka, Fla., to turn town into Arabian village. MSgt. Callman was sheik.

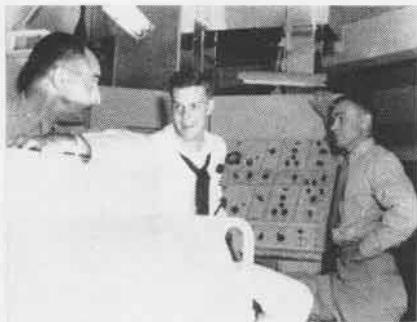
Ex-Hitler Youth a Marine Dream of American Life Realized

At MCAS EL TORO, M/Sgt. Ernest G. Schoening, serves now as a navigator in Marine Transport Squadron 352. His granduncle sponsored his coming to the U.S. after the war and made a dream come true.

Born in 1926, Schoening was a Hitler Youth when he was ten because it was necessary if his father was to remain a German official. The father is still listed as missing in action.

Young Schoening served for six months as a submariner near the end of WW II. Some time after the war was over, he came to this country, and received his citizenship papers in December 1953. He had joined the U.S. Marine Corps in July 1952 while awaiting his naturalization papers.

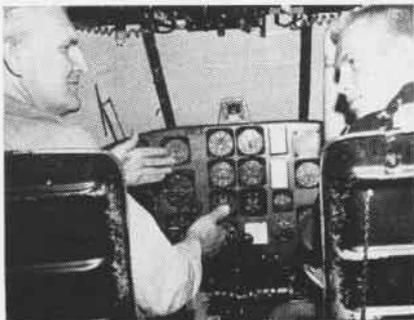
The sergeant, a Korean War veteran has three ambitions. He wants to bring his mother and sister to this country. He would like to attend either the University of Minnesota or UCLA when his duty is over, and he wants to continue as a Reserve in the hope he may one day receive a commission.



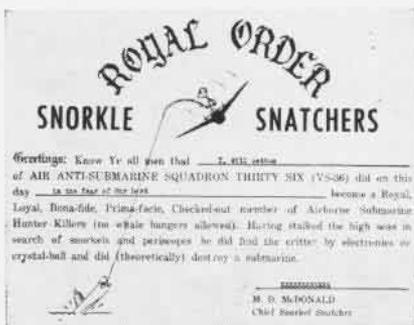
MIG-KILLERS, LCol. J. F. "Jack" Bolt, (r) and Maj. A. J. "Rocky" Gillis get a run-down from L. K. Hall, (l), on the 2F23 jet instrument trainer recently installed in the Pentagon. The new gear is the only Navy jet trainer in D.C. area.



A MARINE pilot, member of VMF-122 explains the FJ-2 Fury to four French Naval Air Cadets on board the USS Coral Sea. The Frenchmen boarded the big carrier at Cannes, France.



CAPT. C. A. Bond (L.), Professor of Naval Science, Michigan State, takes his last flight in a Navy plane with NavCad-to-be Milton Vescelius. The Captain is retiring after 34 years with U.S. Naval Aviation.



AVIATION units doing anti-submarine work might be interested in VS-36's "Snorkle Snatcher" cards which have had an excellent reception in the Norfolk area.

Jet Stream Is Harnessed MATS/AWS Conducted Joint Study

Fast winds associated with the jet stream that meanders across the Pacific have been harnessed for use by the Military Air Transport Service. A test project conducted jointly by MATS and the USAF Air Weather Service produced new techniques that will greatly extend aircraft's range and decrease flight time.

An AF Stratofreighter burned up



RADM. J. S. Russell, Chief of BuAer, congratulates Mr. H. J. Stambagh, catapult expert, and presents him a gold pen in recognition of his 50 years service with the federal government.

the airways in February 1954 by flying from Tokyo to Honolulu non-stop in nine hours, nine minutes. Assisted by the jet stream, the C-87 travelled a distance of 3,900 miles at an average speed of 426 mph. Thereupon, MATS and AWS decided to conduct a study to determine whether these high fast winds could be used in transport operations. The project was dubbed Operation Tailwind.

The jet stream is a narrow band of extremely high velocity wind that threads its way through the Pacific skies in an easterly direction. Generally it flows north of the great circle routes.

During the test, 233 flights were made from Tokyo to Honolulu and more than 50% were able to over-fly Midway, the mid-Pacific re-fueling point for MATS aircraft. About 20% of those aircraft unable to make the non-stop flight landed at Midway for other than fuel shortage reasons.

Although Operation Tailwind has come to an end, MATS aircraft will continue to over-fly mid-Pacific Midway as long as the jet stream flows.

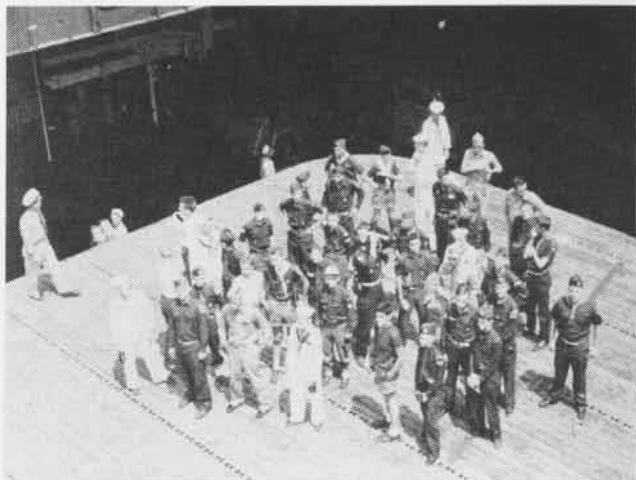


PLANE captains of VF-83, skippered by Cdr. Hal Vita, have established a high standard of Cutlass availability. Five F7U-3's have rolled up a record 139 consecutive flights without having a single "down" discrepancy.

Weekend Warrior NEWS



IN SIX months NARTU Santa Ana gave tours, demonstrations, talks to 434 scouts, Cub, Boy, Sea, Explorer. The latter get blimp flights.



OHIO Explorer Scouts 'getting the works' on Orientation Cruise rode in Navy plane, whale boat, toured Antietam, Norfolk Naval Base, NAS.

Ohio Scouts See Navy, First Hand

Forty lucky Ohio scouts saw more of the Navy in one weekend cruise than many people see in several years.

A part of the continuing Navy-Orientation program for selected groups of young men, jointly sponsored by the Navy and the Navy League, this cruise had as its result 40 more enthusiastic supporters of the Navy, and most especially of Naval Aviation.

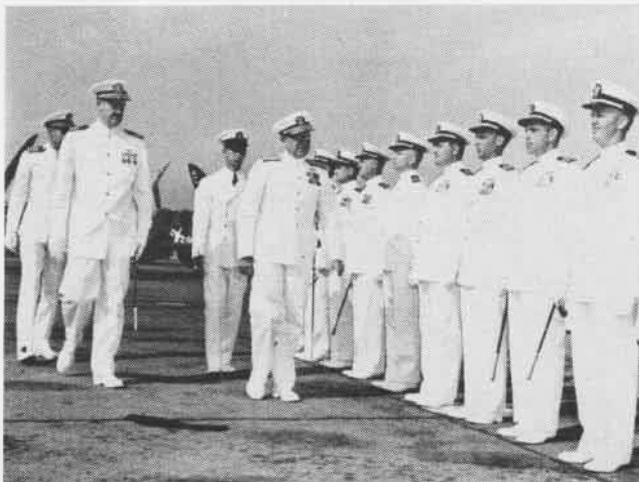
These Explorer Scouts, selected from

three counties around Akron, were airlifted in an NAS AKRON R5D to Floyd Bennett Field, New York. Added to the thrill of the flight, for many the first, was that of having the opportunity of sitting at the controls in the right seat and observing inflight operations.

Quartered overnight and fed Navy chow at Floyd Bennett, the Explorers had another exciting experience the next morning when they were taken in

whale boats out into the stream to board the USS *Antietam* (CVS-36) for an overnight cruise to Norfolk, Va.

Capt. F. E. Bardwell, *Antietam* skipper, welcomed the boys aboard. They were then divided into groups of six and assigned to an *Antietam* sailor, who served as host, guide, guard, and question answerer. There followed a tour of the ship from stem to stern, from bottom to top. This was none of these quickie "50 cent" tours—walk



VADM. T. S. Combs, DCNO(Air), guest inspector of NARTU *Anacostia*, in post-inspection address, commended all hands on their appearance.



CDR. J. D. Lodge returns to USS *Salem*, Sixth Fleet flagship, where he served on annual training duty. Civilian job—Ambassador to Spain.



A. TRAINEN, of VP-831, bought Arab flintlock and fez on weekend flight to Port Lyaupty.

around the hangar deck, ride the elevator up to the flight deck, with one look over the side.

All during the trip from New York to Norfolk, the boys had the freedom of the ship. At night the "new salts" were treated to the nightly "happy hour" aboard the *Antietam*—movies and songs by members of the crew.

It is a thrill even to old hands to round Old Pt. Comfort, with Ft. Wool on the port hand and, passing through the outer anchorage points of Hampton Roads, to proceed to the Norfolk Naval Base docks. To these inland, dry land sailors, these were sights not soon to be forgotten.

Still maintaining the high level of interest was the disembarkation from the *Antietam* and the complete tour of dock area, Naval Base, and the Norfolk Naval Air Station.

Preceding their 1300 take off for return to Akron was chow at the huge Unit "I" Mess Hall at the Naval Base. A meal in this, the Navy's largest General Mess hall was a fitting conclusion to a visit that had been full of superlatives.

Final touch of the entire cruise came back home in Akron, when Cdr. S. T. Bitting, NAS AKRON CLO, awarded each of the scouts a Junior Navy League Orientation Cruise Certificate.

Ordnance Crew Apprehend Invader

When the NAS ATLANTA ordnance crew spotted a young possum in their shop, they impounded him in a 50 cal. machine gun bullet stockade. But this invader seems to like prison fare!



SECNAV Charles S. Thomas, flanked by Capt. D. Sooy, receives arrival honors at NAS Dallas.

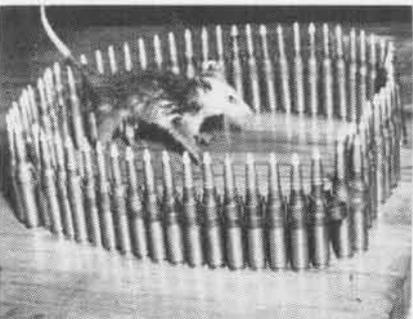
Cheyenne Indian Wins Honors

A recent NAS SAUFLEY "Student of the Week" was as red-blooded an American as one could possibly hope to find. He's a full-blooded Cheyenne Indian named Black Beaver, better known to his fellow students and his flight instructors as Lawrence Hart, Naval Aviation Cadet.

Black Beaver is the first Cheyenne Indian to enter the Naval Aviation Cadet program. He had always been



CAPT. C. B. Gill, former NAS Sand Point CO, is giving his new command a shakedown cruise.



INVADING government property is a stockade offense at NAS Atlanta, Billy Possum learned.



BLACK Beaver, "Student of the Week" is first Cheyenne Indian to be a Naval Aviation Cadet.

interested in flying, and he turned to Naval Aviation after hearing a radio program about Naval Aviation Cadets.

Black Beaver's name is of limited duration. According to ancient Cheyenne tradition, when a warrior returns home, his name is changed. And the new name—"Sky Warrior", of course!

Reserve Squadron Flew New S2F's

Pilots and aircrewmembers of New York's VS-833 were given the opportunity to use the latest Anti-Submarine Warfare equipment when four S2F's from VS-24 at NAS QUONSET POINT came down to NAS FLOYD BENNETT to engage in joint flight operations with the reserve squadrons there.

VS-833 commanding officer, LCdr. R. B. Law, while on two weeks annual training duty with VS-24 earlier in the year, had invited Cdr. L. J. Rientjes to send his new sub killers to New York for the exercise.

During their two-day stay, the VS-24 pilots gave lectures on the latest tactics used in the Navy's ASW program. The reserve pilots were briefed on the cockpit and equipment of the S2F, while the crewmen received instructions on sub-hunting electronic gear aboard the plane.

The four S2F's manned by VS-833 pilots and crewmen, conducted day and night ASW operations. Thus the reservists made use of the anti-sub tactics just learned, at the same time they had the very fine experience of operating the equipment installed in these powerful new submarine killers.



HERO AND PARENTS HEAR LETTER OF PRAISE

Youngster Saves a Life Rescues 5-year-old from Drowning

At MCAS KANEHOE BAY, Hawaii, an eight year-old future Marine has already made a good start on his chosen career.

Young Alexander S. Walker, III, son of LCol. A. S. Walker, logistics officer of MAG-13, recently received a letter of appreciation from Col. Charles H. Hayes, CO of the air station. The letter cites young Walker's heroism in saving a five-year-old girl from drowning in the station's swimming pool on 2 May. She is Shirley Purvis, daughter of Cdr. and Mrs. Theodore Purvis.

Col. Hayes' letter reads in part: "The child accidentally fell into the pool and, unable to swim, had gone beneath the surface at least three times when you, swimming close by, made your way to her side and managed to rescue her. I heartily thank you for this heroic action. Your heroism is in keeping with the highest tradition of U. S. Marine Corps Juniors."

Master Walker credited his training with the Cub Scouts for his being able to meet the emergency, but he frankly admits that "I sure was scared!"

Top Aviation Awards Made Eppes, Coleman Win Harmon Trophy

The 1955 Harmon International Air Trophy has been awarded to Capt. Marion H. Eppes, USN, and to engineering test pilot J. F. "Skeets" Coleman of Convair's staff. Coleman is a lieutenant colonel in the Marine Corps Air Reserve.

The "Aviators" award was given to Coleman for his assistance in development and his testing of the first successful vertical take-off fighter, Convair's XFY-1 *Pogo*. The citation accompanying the award recognized Coleman's "outstanding contributions

to the field of vertical take-off flight, his achievement of more than 60 free vertical take-offs, and his ultimate success in making the first transitional flight from a vertical position to level flight and back down to a vertical 'tail setting' landing."

Capt. Eppes received the "Aeronaut" (lighter-than-air pilot) award for "outstanding achievement as commander of the Goodyear Navy airship ZPG-2 in making a simulated anti-submarine patrol from 17 to 25 May 1954, during which time he and his crew remained aloft for over 200 hours and cruised over 3,000 miles." (NANews, July 1954) This is a world's record for self-sustained, non-fueling flight in lighter-than-air craft.

Harmon Awards, considered top aviation awards, are announced annually on Independence Day. They are named in honor of Col. C. B. Harmon, pioneer aviator and balloonist, who died in 1945.

Mitscher Memorial Slated Field Will Be Named in His Honor

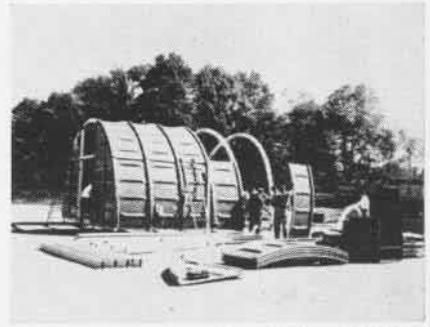
The Navy Department has approved naming the flying field at NAS MIRAMAR "Mitscher Field", in honor of the late Adm. Marc A. Mitscher. A group of Adm. Mitscher's friends in San Diego chapter, Navy League, plans to install a suitable bronze plaque on the field in his memory.

According to an announcement from the office of VAdm. G. R. Henderson (Ret.), Union-Tribune Publishing Co., San Diego, Calif., the plaque will be erected with one-dollar contributions from friends and admirers of this great naval officer.

Committee-in-charge consists of M. C. Pfefferkorn, former President, San Diego chapter, Navy League, Chairman; Capt. D. L. Mills, CO, NAS MIRAMAR; and VAdm. Henderson, Sec'y-Treasurer.

Portable Radar Shelter Permits Rapid Advancing of Forces

A new, lightweight plastic radar shelter that can be transported by air or by truck and set up in less than three hours, has been developed for the USAF. Made of rugged, easily assembled plastic panels, the all-weather radar housing was designed to step up the speed and mobility of aircraft spotting teams. The shelter was developed to permit radar teams to set up an



SHELTER DESIGNED FOR QUICK ASSEMBLY

emergency warning system in a few hours, to dismantle it and move on quickly, and to allow the radar teams to keep up with advancing forces when necessary.

A fully equipped radar operations shelter, together with a smaller auxiliary unit, can be transported by three trucks. A 14-man crew, equipped with only ladders and wrenches, will be able to remove the fabricated sections from the trucks, assemble the shelter, install the radar equipment and connect the shelter with outside antenna and power-generating units within the three-hour period.

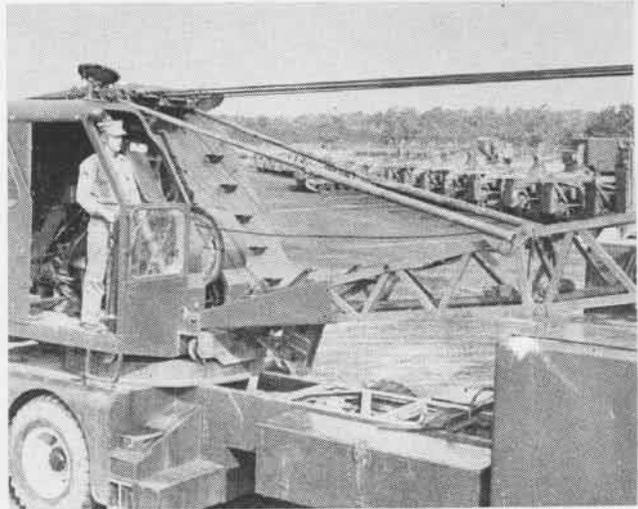
The shelter consists of two arch-shaped structures, made of interchangeable sections. The larger of the two, used to house equipment and personnel, is 32 feet long, 24 feet wide and 12 feet high at the center. The second structure—of the same width and height, but only 18 feet long—will be used for radar maintenance. The shelters are reinforced to withstand winds up to 90 miles per hour.

● The Navy's 2500th AD *Skyraider*, built by the Douglas Aircraft Co., has been accepted by Capt. J. O. Bigelow, Bureau of Aeronautics Representative.

'Copter Design Experiment Side-by-Side Rotors Are Studied

During the Fifth International Conference of SAE, Bell's chief helicopter engineer, Bartram Kelley, advocated side-by-side rotor position of large, twin-engine transport type helicopters. Such a design, Kelley concluded would be most efficient in terms of lift, power, torque and blade weight.

A model study is now being conducted by Bell Aircraft Corporation on a tailless, side-by-side configuration in which the structure between the two rotors consists entirely of a wing-shaped fuselage. No back seat drivers!



SGT. J. L. DAY AND CPL. H. F. SCHAEFER IN CONTROL TOWER

CPL. R. D. BRIGHT OF MOTOR TRANSPORT OPERATES BIG CRANE

WE FURNISH EVERYTHING BUT RUNWAYS

BEHIND the hard-hitting might of a Marine Aircraft Group are a myriad of housekeeping chores, thankless and often taken for granted. The Marine Air Base Squadrons must accomplish many different tasks. Seldom coming into the limelight shared by sister-squadrons, these specialists have developed all the skills and techniques vital to the support of Marine Aircraft Groups in almost every phase of their missions.

Typical of Marine Air Base Squadrons is MABS-24, a part of MAG-24. Its mission is, generally speaking, to provide the necessary air base facilities and services (except airfield construc-

tion) for the Group when on an advanced base, and to supplement facilities when based at an air station.

When operating in the field in support of the Group, personnel of MABS-24 fall into 15 general categories which cover every function from base operations to devine services. In the Base Operations Section are trained men to work in the tower, flight clearance, aerology, air traffic control, radar surveillance, crash crew and fire fighting units.

In the Camp Maintenance Section are the construction, utilities and laundry units. These are the builders, the electricians, carpenters, water supply men, plumbers, laundry machine operators. They are the men who make a habitable camp out of a wilderness.

The Communications Section is responsible for the installation, operation and repair of radio, telephone, telegraph and teletype units.

The Motor Transport Section includes the motor pools, automotive repair, and heavy equipment units. With everything from 20-ton Bay City cranes to jeeps, this section controls hundreds of vehicles.

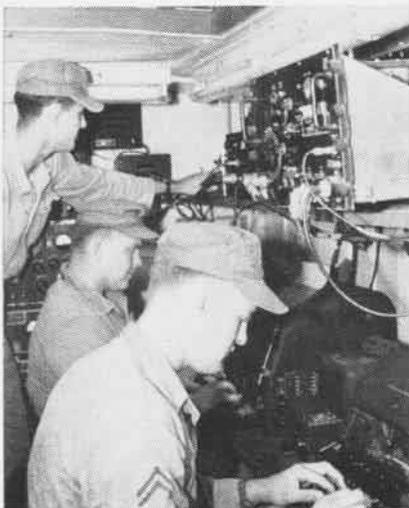
And there is the Food Service Section. In the galley and bakery units are the bakers, the butchers, and the cooks to provide mess facilities.

The remaining squadron sections, such as Headquarters, Camp Security,

Photographic Ready Magazine and Ordnance Disposal, Material and Property, Medical, Dental, and Chaplain, are equally important.

At present, units of MABS-24 are serving, with MAG-24, at MCAS CHERRY POINT, and at MCAF NEW RIVER, N. C. They are continuing to work and train at the same military occupation specialty they would be called on to perform in the event the Group left Cherry Point for an advance airfield.

The wide and varying mission of MABS-24 requires full time cooperation of every one of the 400 men commanded by LCol. G. E. Gray, the CO.



CLOSE QUARTERS IN RADIO-TELETYPE VAN



MABS-24-STYLE PORK CHOPS COMING UP

USCG CADETS INTRODUCED TO AVIATION



HARKING back to the days of sailing vessels, this three-masted bark, the USS Eagle, is used on cadet cruises. To give them additional experience, cadets studied aviation this summer.

CADETS of the U.S. Coast Guard Academy, New London, Conn. are still talking about their summer cruise which took them this year to North Carolina. For most of them it was their introduction to the role of aviation in the Coast Guard and Navy.

Once the Coast Guard was committed to cutters and full rigged sailing ships. The surface of the seas was their province, but now the skies above them require some of the USCG cadets

to elect aviation. The summer cruise this season was not only a respite from the demanding course at the Academy—engineering, gunnery, chemistry, maritime law, etc.—but it also introduced them to a new activity.

One of the Coast Guard's nine air stations is located at Elizabeth City, N. C., central to an area that is rich in the history not only of government but of aviation, and it was this station the cadets visited on their summer trip.

Annually the second year cadets have a varied program which includes assistance in helping indoctrinate the entering class, two weeks at the Coast Guard Receiving Station at Cape May, N. J., a week of introduction to aviation, and time spent on some special project. The class of 91 cadets this year was divided into six sections, and each section went to Elizabeth City in turn.

The introduction to aviation is a definite part of the training all the Coast Guard cadets receive. It is designed to familiarize the cadets with the aeronautical organization of the Coast Guard and provide them with a basic general knowledge of the principles of flight. The cadets also learn something of the relation of Coast Guard aviation to other branches of the Coast Guard and other services.

In wartime, the Coast Guard is part of the Navy, but her fliers wear in war or peace the insignia of Naval Aviators. It is therefore important that USCG cadets get some idea of the kind of careers available in the field of aviation.

Elizabeth City is not far from Kill Devil Hill where the Wright brothers made the first power-driven flight that memorable day, December 17, 1903. On the star-shaped base of the memorial shaft, the cadets stood on historic ground. They saw the same sandy terrain and buffalo grass, the



CADET R. N. Neilson learns something about engine maintenance from J. D. Weber, AD2.



AT MARINERS' Museum, cadets are impressed by lens from Hog Island, Va., lighthouse.



AFTER seeing "The Common Glory" at Williamsburg, cadets have chance to meet actors.



CADETS carefully examine the hoist of a Coast Guard search and rescue helicopter, an HO4S. Pilot sits on right side to operate hoist.



THE COAST Guard cadets are being prepared today in mild climate for tasks like that shown here, rescue of plane crash victims in snow.

windswept stage of the Wright's initial triumph. The contrast of 1955 to 1903 was marked as a Navy *Cougar* or Marine AD on combat maneuvers streaked past the Wright monument on the dunes.

There is so much of the Navy in the North Carolina-Virginia area: the shipyard at Portsmouth, Va., the great naval base at Norfolk and not far away, the Mariners' Museum with its historic guns, figureheads, lighthouse models. Not only aviation, and early records of the Navy, but many great events of early American history are commemorated. There are any number of good tours: Jamestown, Williamsburg, Roanoke Island, and others.

In classes at the air station, Capt. D. B. MacDiarmid, USCG, Commanding Officer and an outstanding author-

ity on seaplanes, had a full program planned for the cadets. There were classes in radio and radar, air search and rescue, instruments, hydraulics and engines. At the end of their indoctrination, there is a careful review and a short examination.

DEMONSTRATIONS were given by parachute riggers, control tower operators, meteorologists, ordnance men and helicopter pilots. Grumman UF-1G's made Jato take-offs and PSM's dropped life rafts and flares.

Overhaul, maintenance and supply of equipment were studied at the USCG aircraft repair and supply base, located at the air station and directed by Cdr. W. W. Vennel. The cadets learned something of the complexities of complete overhauls and far reach-

ing modifications of the rescue aircraft.

Actual operation of GCA systems was observed through the cooperation of the Navy GCA Unit No. 2 commanded by Lt. Stan Sterwen, USN. Unit Two celebrated its 30,000th GCA landing operation last spring.

Something about blimp operations and antisubmarine warfare was learned first hand at NAF WEEKSVILLE where FAW-1 is based under the command of Capt. E. J. Sullivan. Still another unit added to the cadets' information, HS-3, a Fleet Air Detachment under ComAirLant, commanded by Cdr. A. H. Willis.

First meetings are not always successful, but the introduction of Coast Guard cadets to aviation this summer came off effectively. The cadets are sure they will follow it up and fly again.



MISS MARY Brown, guide for Cadets at Williamsburg visit, shows Cadets Jenkins, McAllister and Sheffott operating model of colonial cannon.



CADETS can inspect the brand new paint job of a Grumman Albatross amphibian after complete overhaul and modernization.

F-100A FLOWN BY NAVY PILOT



LT. LAWS, NAVAL AVIATOR, BECAME FLIGHT EXPERT IN USAF'S F-100A SUPER SABRE

WHEN Lt. Walter T. Laws reported to the 479th Fighter Day Wing at George AFB as an exchange pilot in 1954, he had no idea that a long chain of circumstances would place him in an enviable position in Naval aviation circles.

When he first reported, the squadron was flying the F-86F. Shortly thereafter, they received the first of their F-100's. Owing to his background and experience in fighter-type aircraft and Navy jets, Laws was selected by the squadron CO to be one of the four pilots to receive indoctrination in the new plane. After thorough briefing and check-out, Laws became one of the instructor-pilots for the 479th.

Then the F-100's were sent back to the factory for modifications and he went back to flying the F-86F's. When the bugs had been ironed out of the *Super Sabre*, the squadron turned in their F-86's for the F-100A's. Laws was then one of two engineering test pilots remaining in the squadron, and his time was divided between test flying the *Super Sabre* and checking out new pilots.

Then came orders for Laws to report to the GCA school at Olathe, Kansas. The Air Force intervened, re-

questing that his orders to the squadron be extended. He was retained at George AFB to continue his checkout program.

At the present time, Lt. Laws is enrolled in the postgraduate course at the General Line School, Monterey.

Gyron Engine is Flown Full Thrust Reached on First Flight

The first flight of a de Havilland *Gyron* jet engine took place at Aldergrove aerodrome near Belfast on July 7, 1955. For flight experience, the engine has been installed in a Short *Sperrin* four-engined bomber. The *Gyron* is a jet of very high power designed for supersonic flight. It marks a step forward in the development of the gas turbine, combining as it does a very low specific weight with a rugged and simple structure.

Flight of the *Gyron* emphasizes the significance of the mixed-power-plant formula for supersonic flight. This is the combination in one airframe of a high-powered air-breathing jet engine of a special design and a liquid-propellant rocket engine such as the *Spectre*. The rocket, being independent of external oxygen, continues to develop its high thrust even in the

stratosphere; it can be used to maintain the rate of climb at great heights and then to give the rapid acceleration to supersonic speeds.

On the first flight, the *Sperrin* was airborne for 30 minutes. During the test the *Gyron* engine behaved entirely satisfactorily and was opened up to its full flight-approved thrust. Throughout the whole speed range, the engine was notably smooth and tractable.

● Thirty years from now, according to a recent New York Port Authority estimate, six million passengers will enter and leave Manhattan annually by transport helicopters. Helicopters are counted upon to become increasingly popular.

Ellyson Grandson in Navy Enters Class of 1959 at Annapolis

The grandson and namesake of one of the great pioneers in naval aviation is among the 1100 members of the U. S. Naval Academy's newest class—the Class of '59.

Midshipman Gordon Ellyson Abercrombie, 17-year-old son of Cdr. D. W. Abercrombie, ComAirLant Staff, is the grandson of the Navy's first flying officer, Cdr. T. G. "Spuds" Ellyson. Cdr. Ellyson was killed in a plane crash in 1928 during a flight from Hampton Roads to Annapolis.

Ellyson was a man of many "firsts." Not only was he the first Naval Aviator, but he was the first man to pilot



CAPT. SHIELDS AND ABERCROMBIE BY F9F-6

a plane from a catapult launching. He was also the first naval officer to fly the first U. S. naval airplane.

Shortly after his arrival at the Academy, Abercrombie and Capt. Ward T. Shields, head of the Academy Aviation Department, got together and discussed a topic of mutual interest—naval aviation.

Young Abercrombie was recently graduated from Granby High at Norfolk, Virginia, his present home.

TACTICAL AIR SQUADRONS COME OF AGE



TACRONS have all services, except the Coast Guard represented on their staff. TACRon-23 CO (1.) indicates objective to officers.



DURING amphibious landing, a TACRon controls aircraft and air warning function within area. Here helicopters follow a wave to beach.

FROM a hard-working outfit, consisting of "an officer, radioman and card table," in the Aleutians during WW II to a smooth-running outfit known today as Tactical Air Support is the story of Tactical Air Control squadrons, the air staff of Amphibious Task Forces.

The five TACRons are made up of Navy amphibious force representatives and aviation personnel. Each TACRon has a complement of about 18 highly skilled officers and 30 skilled men.

Aboard an AGC during operations, a TACRon maintains officers on watch in the ship's CIC. They work with the ship's company watch officers and TACRon radiomen. They are "the voice, ears and eyes" of the Amphibious Task Force Commander whose responsibility it is to see that Army and Marine troops are placed safely ashore and supported until objective is taken.



KNIGHTS of the H-Table would be a good title of the officers and men of a TACRon who work a table of this shape aboard ship. They handle such sets as traffic, direction and request.



A MARINE helicopter comes in for a landing aboard an LST after acting as air observer.



A CHIEF radioman instructs and drills a class of TACRon radiomen on receiving code.



PHOTO-INTERPRETATION of aerial shots made during amphib exercises is their job.

CIVILIAN SAILORS AID NAVY



TECH REPS STUDY SPECIAL MARLIN FEATURE

A BIG, white-nosed flying boat glides low over San Diego and lands in the bay. It is the Navy's P5M Martin *Marlin*. San Diego-based patrol squadrons under the command of FAW-14 commanded by Capt. A. S. Hill are assigned these aircraft for training and final check-out prior to deployment to the Far East.

A big part in the operation of so complex an aircraft centers around ground maintenance. This is a full time job for a number of personnel trained in the most exacting of technical fields, including the Civilian Technical Representatives.

For all practical purposes, the "Tech Rep" is a sailor in civilian clothes. He receives orders to proceed and report to Naval air installations in all parts of the world, and is available on a 24-hour day basis to render technical assistance and advice when required.

Before receiving his orders to the "fleet," the Tech Rep must have a background of from six to ten years experience in varied phases of the aircraft industry in addition to possessing a through knowledge of the equipments or aircraft he is to represent.

He must serve two "masters": the Navy officials to whom he has been assigned and his parent company. This requires good judgment and a willingness to do his best.

Not one, but a number of Tech Reps are required by the Navy for each type aircraft, particularly an aircraft the size and complexity of the P5M.

Men assigned to the P5M program in San Diego are shown in the picture above. C. E. Moore of the Wright Aeronautical Corporation points to a power recovery turbine of the *Marlin* during a discussion between Tech Reps and LCdr. W. H. Pierson, Maintenance Officer of FAW-14. Participating in the discussion (left to right) are H. E. Anderson, Sundstrand Machine Tool Co., L. J. Renstrom of NAESU, Moore, N. W. Cook, AirResearch representative, F. P. Malatesta, and J. P. Healy of Glenn L. Martin Company, and LCdr. W. H. Pierson.

Time and Labor Are Saved Chief Develops New Technique

Nils A. Dorsch, a chief aviation metalsmith attached to VS-27 at NAS NORFOLK, has been commended by the commanding officer of his squadron for developing a new method of carrying out an aircraft change on the aileron trimtab of the S2F.

The change, which formerly required about 20 hours of work and involved the services of three different shops in the squadron's Maintenance Department, can now be completed in about 15 minutes by just one man.

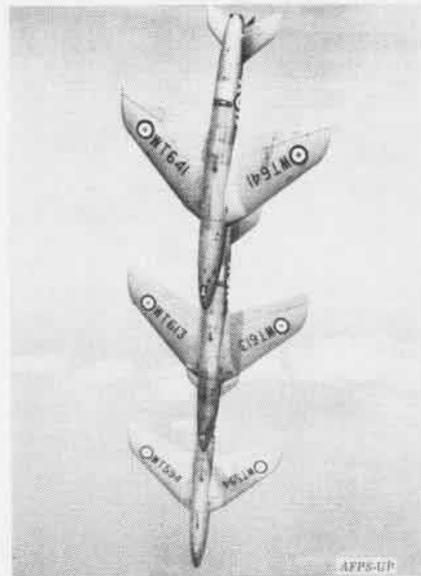
Resulting in a tremendous savings of time and money, the change was accomplished through the use of a simple "jig" which Chief Dorsch designed and put into use. Its method of installation is now available for use throughout the fleet.

In commending Chief Dorsch, Cdr. W. E. Rouse lauded him for his "high degree of zeal, initiative and outstanding devotion to duty."

IFR-IQ?

You file IFR from Point A to Point B (destination) at 3000 feet. Before you take off, you receive IFR clearance: "ATC clears Navy 1234 to B airport to cruise 3000 ft." Weather is 1000/2, well above approach minimums at B. What does your clearance to "cruise 3000 feet" mean?

Answer on Page 36



HAWKER HUNTERS in this tight diving formation look like giant dragonflies heading for water. LCdr. R. E. DeLong, RAF, is leader.

ADIZ Scrambles Practiced 400 Hours Flown in Night Program

The flying Marines of VMF(N)-531 have set something of a record for flight time within MAW-2. In the past four months, the aviators have logged over 1,000 hours per month. Over 400 hours of this monthly total involved missions flown at night.

These night flights train pilots, radar operators and the Navy and Marine ground controllers in the Cherry Point area. On these night missions, one of the squadron's F3D *Skyknights* acts as a bogey or unidentified aircraft flying through the ADIZ. It is picked up on the radar screen of the ground controllers who immediately flash a signal for a scramble by other F3D jets.

Keeping the intruder on the screen, the ground controller vectors the defending jets to the geographical location of the "enemy." Once in the area, the radar operators in the friendly *Skyknights* get their short range radar gear operating. When the invader is located, the pick-up message is flashed to the ground controller. From this point on, it's up to the pilots and radar men of the F3D's to score a "hit."

During daylight hours, pilots and radar operators fly gunnery, tactics, instrument hops and visible air intercept missions. LCol. A. M. Hearn is commanding officer of the squadron.

WHIRLYBIRD FLIGHT IN A HANGAR

A NEW HELICOPTER flight simulator which permits realistic hangar flying has been developed by Bell Aircraft under contract with the Special Devices Center of the Office of Naval Research. It is scheduled for installation at the Navy's flight school in Pensacola where it will provide the equivalent of four hours of primary flight instruction.

Studies of helicopter training requirements have shown that the important cues used in helicopter maneuvers are visual, so the main objective has been to develop a simulator with a non-programmed visual presentation.

As the pilot moves the controls and "flies" the simulator, the scenery projected on a panoramic screen changes just as if he actually were in the air. The equipment is so efficient and the effect so realistic that the student can collide with buildings on the ground and even get air sick.

Maj. Arthur Murray, USAF, who piloted the supersonic X-1A to a record 90,000-foot altitude and who has at one time or another flown nearly every high-speed airplane in the Air Force, had this to say after a flight in Bell's new training device: "I haven't been airsick since I was an air cadet, but after I had wrung the new Bell simulator out for an hour, I wasn't so sure I could maintain that record . . . and we didn't leave the hangar! That's *real* simulation!"

Use of the simulator will shorten the time required for a student to solo and will contribute to the quality and efficiency of the helicopter training program.

The trainer, designated Model 2-FH-2, consists of three main components: a projector, a pilot's compartment and a computer. The illusion of flight over, around and by terrain and objects has been accomplished by a technique called "point light source method." This involves in simple terms, a small, extremely brilliant light projected through a col-



REALISM of the helicopter flight simulator is illustrated in this picture which shows pilot moving in for a landing on a heliport.

ored landscape built entirely in miniature in a six-foot square plastic transparency over the pilot's head. The light is so bright that models of trees, houses, walls and fences stand out in vivid and authentic detail against a wide-view panoramic screen.

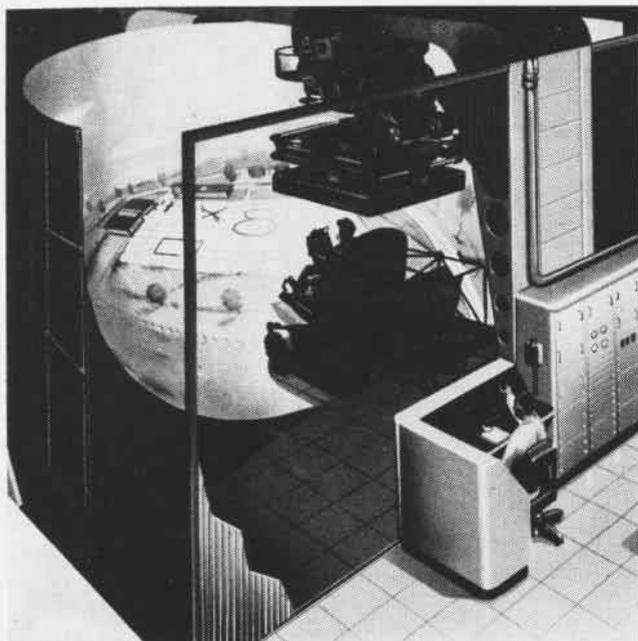
As the student pilot operates the helicopter controls and the terrain and sky move on the screen, he unconsciously becomes convinced he and the helicopter actually are in flight.

The pilot's compartment, a replica of an actual Bell Model 47 helicopter, is equipped with dual controls. A standard instrument panel has the usual flight and engine instruments.

From a separate control panel, the instructor can simulate a variety of changes in flight conditions. Fuselage vibration is built in, as are engine and rotor noise, rough air and actual control forces. Wind can be varied as can temperature variations. The instructor can vary the extent of these conditions and can even cause engine failure. This flexibility, combined with most of the other variables found in actual flight, makes for great realism.

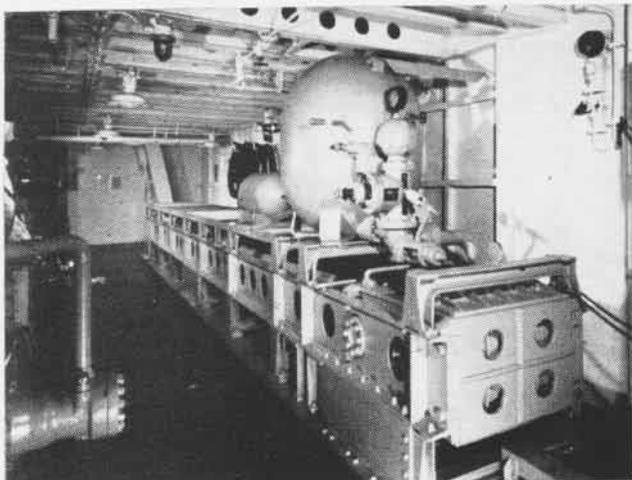
A MILITARY pilot dramatically illustrated the authenticity of the trainer during tests at Bell when he could not bring himself to step out of the cabin while the altimeter registered an altitude of 50 feet. The same pilot, new to helicopters, knocked over several miniature fenceposts and trees and narrowly missed flying to the side of a barn.

Success of the trainer may lead to the development of similar equipment to train pilots in carrier landings, instrument let-downs, aerial combat and strafing etc. in which time, cost and safety in training are factors.

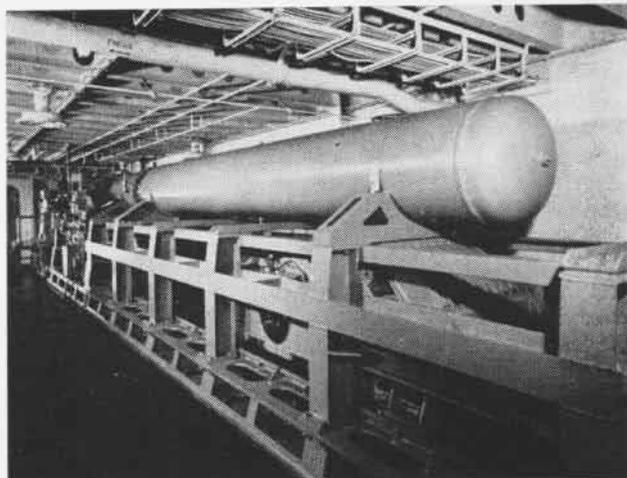


DESIGN of the flight simulator shows pilot "flying" the trainer. Note projectors above his head and panoramic screen in background.

POWERFUL ENGINES ARREST AIRCRAFT



MARK 5 ARRESTING GEAR HALTED AIRCRAFT DURING WORLD WAR II



MARK 7 WAS DESIGNED TO MEET HIGH SPEEDS OF JET AIRCRAFT

LANDING of aircraft on the decks of Naval vessels began in 1911 when Eugene Ely set down his 1,000-pound biplane on a platform hurriedly erected over the after gun turret on the USS *Pennsylvania*. The aircraft was brought to rest after engaging a multiplicity of athwartship ropes at each end of which were attached 50-pound sand bags. Since then, devices for absorbing the steadily increasing amounts of kinetic energy have changed substantially in size, complexity and efficiency.

As aircraft designers continue to make rapid strides in their field, the devices required to launch or recover these aircraft on carriers must be brought up to date. During WW II, carrier operations were conducted with two types of arresting gear known in the trade as Mark 4 and Mark 5.

The Mark 4, dating back to the USS *Hornet*, was being replaced with the Mark 5 at the outbreak of war. Both were the hydraulic ram type, the Mark 5 having approximately twice the capacity of the Mark 4.

Each type was capable of arresting the propellered aircraft of that day. When the Mark 4 was heavily loaded, however, it required abnormal maintenance and upkeep. As WW II continued, the Mark 5 was installed on all but the smallest carriers and did yeoman service.

With the advent of jet aircraft, even the larger Mark 5 arresting gear

was overtaxed. The sudden increase of landing speeds associated with the jet power plant forced the development of equipment capable of handling much higher engaging velocities. Trends in aircraft design showed also the possibility of still heavier aircraft. Arresting gear designers had to attempt to outguess the aircraft men and produce energy absorbing equipment which could remain in existence for ten to 20 years.

The first look into the crystal ball resulted in the design of the Mark 6 which would have been capable of arresting 100,000-pound aircraft. For other than aeronautical reasons, this gear was never produced. Instead, a smaller model, the Mark 7, was built and tested. This gear is currently operating or being installed on attack carriers in the fleet as a partner of the C-11 steam catapult.

Each arresting engine weighs approximately 60,000 pounds. It is capable of absorbing energy by pushing against a column of hydraulic fluid which has only a narrow escape hole and, in the process, it generates the equivalent of 25,000 horsepower. Using wire rope having a static breaking strength of 171,000 pounds, it is capable of arresting an aircraft within approximately 185 feet every 30 seconds all day long.

The test program recently completed on the USS *Hancock* (Project *Steam*) proved Mark 7 gear capable

of arresting all current carrier-based aircraft. The test program also brought to light several possibilities for improvement, and these are being explored at high priority.

The Mark 7 arresting gear is still not the ultimate in recovery equipment. However, it is developed to the highest point it can be without some new way to extend its capacity. To take any heavier, faster aircraft will require additional progress. It is expected that the next three years will open up new possibilities in recovery of aircraft.

Crew Has Hot Time on P5M Engine Change Made at Salton Sea

A maintenance crew from VP-46 and FASRon-110 had a "hot time" recently while changing an engine of a downed P5M at the Navy's Salton Sea emergency seadrome.

The big patrol bomber landed after engine trouble. The crew worked four days in temperatures ranging from 110° to 115° in the shade to put the plane back into the air. According to LCdr. T. E. Smithey, O-in-C of the detail, the temperature got so high that his men stood on wet rags while working on the metal wing surfaces to keep from burning their feet.

A spokesman from the U.S. Weather Bureau stated that it was quite possible that the temperatures on the wing surfaces might have gone to 175°.

Navy Buys Canadian UC-1's Will Take Part In Antarctic Trip

Four *Otter* UC-1 transport-type aircraft, built by the De Havilland Aircraft Co. of Toronto, Canada, will serve with the U.S. Navy during the current Antarctic Expedition. The *Otter*, designed especially for freight and utility transport duties in severe conditions, carries about a ton of cargo and up to 14 passengers. It is of exceptionally robust and simple construction, has large loading doors, and can operate on either wheels, skis, or floats.

Powered by a P&W 600-hp *Wasp* engine, which is recognized as being one of the most reliable piston engines, the aircraft is a completely winterized aircraft fully proved under arctic conditions. The RCAF utilizes the plane for search and rescue missions and for flying in supplies to radar and weather stations in the coldest regions of the world. This type plane was also chosen for Arctic operations in Europe by the RCAF, as well as civil transport in Norway.

The *Otters* will be carried to the Antarctic aboard icebreakers and will operate into the heart of the polar continent, flying men, equipment, dog teams and stores into camps. It will also be used for reconnaissance work.

Chief Develops Method Relubrication Time Efficiently Cut

A new system of relubricating the feeding mechanism of 20mm cannon has been devised by Marine TSgt. Victor E. Farkas, Assistant Ordnance Chief of VMF-114, Cherry Point, North Carolina.



BUORD APPROVES FARKAS' SPECIAL DEVICE



THE USS SHANGRI-LA (CVA-38) enters the channel to San Diego harbor and North Island, her home port. The P5M-1 Marlin shown on her flight deck hitched a ride from NAS Alameda to FASRon-110 for some repairs. The *Shangri-La* is the second angled deck carrier to join the Fleet.

According to Farkas the modification enables an armorer to relubricate the mechanism in about 15 minutes, a job which normally requires four hours to accomplish.

Farkas has been commended in a BUORD letter for his "resourcefulness, initiative and interest" in attempting to overcome a hard maintenance problem.

● The air conditioning system for use aboard the USS Independence (CVA-62) will be the fourth of its kind built for the Navy by the Carrier Corp. of Syracuse, N. Y. Its capacity may be described as the equivalent of melting 2,000,000 pounds of ice in 24 hours.

Runway Heat Measure Gear Devised by Navy Aerologist

A new runway temperature measuring device now used at Pensacola's Forrest Sherman Field was developed by the aerology officer, Cdr. C. H. Talbert for use there.

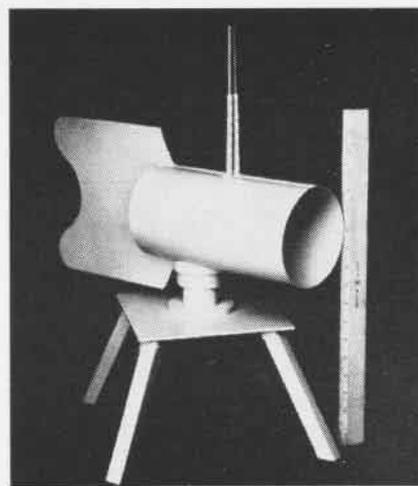
The light, portable temperature instrument allows accurate measurement directly over the runway. This is particularly important in hot climates because of the difference in air density.

The equipment consists of a swivel-mounted pipe with thermometers through the top. A fin allows the de-

vice to weathercock into the wind.

The aerology officer got the idea from a similar device he saw at a nearby AF base, and made a sketch of it for the use of the O&R department at NAS PENSACOLA. The cost amounted to about \$5.00 for materials and \$50.00 for labor.

Using this runway temperature gauge a jet pilot will be able to compute a closer take-off length for his gross weight than was previously possible with the use of thermoscreen temperature, a big achievement.



THIS DEVICE IS PLACED DIRECTLY ON RUNWAY

LETTERS

SIRS:

The officers and men of the USS *Wasp* have read with pleasure and interest your feature article on the subject of this command, contained in the July issue of Naval Aviation News.

May I take this opportunity to thank you for the very fine coverage? A more thorough or interesting article would not have been possible.

R. W. DENBO, CAPT.

In turn, *NANews* appreciates the fine cooperation of the *Wasp* for pictures and special material sent in. We hope other ships and stations will follow suit.

SIRS:

I am a constant reader of *NANews* and I enjoy them very much. It's jolly good to be able to read about the U.S. Navy Air Force seeing that we have not got one in New Zealand. All of our stations have many types of aeroplanes, but there's only three stations with jet planes.

I am 17 years old and I'm in the Royal New Zealand Air Force. I have no particular hobbies, but I like communicating with overseas forces. I would like to get a few pen-friends among your readers in the U.S. Forces.

77836 DAVID T. SMITH

B.E.S., D Flight

R.N.Z.A.F. Station, Woodbourne
Blenheim, New Zealand.

SIRS:

It was good to see the recognition *NANews* gave Al Williams. This article is a nice thing.

ROBERT H. WOOD

McDonnell Aircraft Corporation

Asst. SecNav Logs Time T-28B Flown on 1,150 Mile Trip

The silver T-28B training plane made available to Assistant SecNav for Air, Mr. J. H. Smith, Jr., gets as thorough



ASST. SECNAV SMITH FLEW N2Y IN 1929

IFR-IQ?

According to NAS Anacostia Instrument Training Division, it means that pilot may commence descent at his own discretion. Ref: Flight Information Manual, Vol. 8, dtd. 25 May 1954, page 57.

a workout as many of her sister ships in ordinary use as flight trainers.

For example, Mr. Smith and his assistant, Mr. J. T. Pyle, took off in the two-place trainer for a one-day inspection of the Allison engine plant at Indianapolis and the aircraft factory of North American at Columbus. Boarding the T-28B at Hartford, Conn., they flew to Indianapolis arriving there three and a half hours later.

The two Navy officials left Indianapolis at 1400 and flew the 175 miles to Columbus in about 45 minutes. After touring the North American plant, they took off from Columbus for the return leg of their journey and landed at Anacostia at 1825. The one-day junket involved five and a half hours of flying and covered 1,150 miles.

The plane is also available for proficiency flying to naval aviators associated with Mr. Smith's office and station pilots at NAS ANACOSTIA.

Secretary Smith and Mr. Pyle are both former Naval Aviators. Mr. Smith took his first flight in 1929 in an N2Y.

NATC Re-enlistments High NATTU Leading With 67 Percent

Re-enlistments is proving popular these days, and men are seeing the advantage of naval service. The general trend is indicated by the fact that NATTU led the parade by shipping over 67% of its regular Navy personnel. Ellyson Field came in second with 58 percent.

Other commands in the Pensacola area registered the following percentages: Corry Field 50%, Barin Field 35%, CNABATRA 33%, Whiting Field 33%, NAS PENSACOLA 32%, and Saufley Field 32%.

Wave and Naval Reserve personnel are not included in these statistics.

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● PICTURE CREDIT

Pictures in Coast Guard story furnished by Jack Williams.

● SUBSCRIPTIONS

Naval Aviation News is now available on subscription for a \$2 check or money order made payable to Superintendent of Documents, Government Printing Office, Washington 25, D. C.

● THE COVER

Powered by the Allison J-71 axial flow turbojet engine, McDonnell's F3H-2N points its nose skyward for altitude. The new fighter plane has been delivered to the Navy for NATC evaluations, tests.

● THE STAFF

Cdr. Bart J. Slattery, Jr.
Head, Aviation Periodicals Office

LCdr. William A. Kinsley
Editor

Izetta Winter Robb
Managing Editor

Lt. Moriece Gleason
H. C. Varner, JOC
Associate Editors

Cdr. Samuel G. Parsons
Contributing Editor

James M. Springer
Art Director

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BIRDS I HAVE KNOWN

ORIGINATOR of these cartoons is Ltjg. William Kershner, of VC-3's Operations Department. He has used his ability to draw, coupled with a

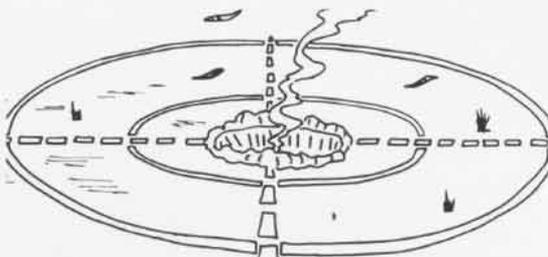
sense of humor, to make VC-3 pilots a little more safety conscious. Ideas were drawn from incidents reported in "Aviation Safety Bulletins."

West California Flatheaded Hillborer



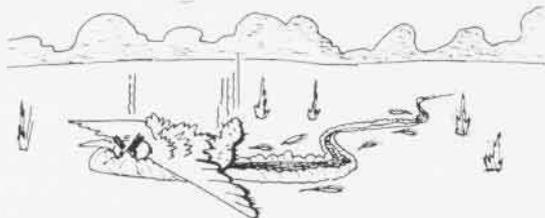
Normally seen on cloudy days, this bird is easily recognized by bright plumage and habit of leaving pock marks in various structures visited. Call—'HELLICANMAKEITVFR.'

Potbellied Hornbilled Targetpicker



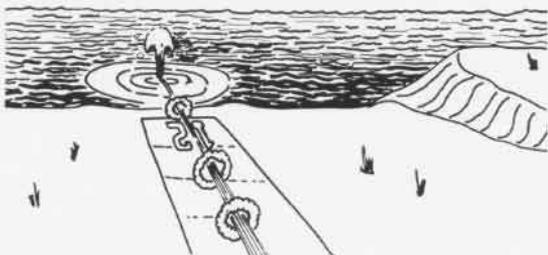
Or 'Browntipped Molebird.' Bird is hidden from view in picture. Targetpicker makes its home in one precise movement, seldom makes second try. Dirt colored. Call—'BULLSEYE.'

Absentminded Shovelbilled Sandpiper



Easily recognized by mud colored plumage and lack of feathers near empennage. Leaves designs near perching site. Doesn't use legs during landings. Call—'WHONEEDSACHECKLIST.'

Hardheaded Redtailed Roadrunner



Or 'E HOTANHIGHUS'. Like Sandpiper, is noted for his odd manner of perching. Also ends up in salt pits, through hangars, outhouses, and odd places. Call—'WHOTHEHELLSFAST.'

Yellow Bellied, Pinheaded Holeseeker



Usually found above an overcast. Recognized by haggard face and gray coloration. Flight usually erratic. Large blood-shot eyes. Call—'WERETHEHELLSTHATLETDOWNPLATE#&*!!'

North American Looping Crane



Male of species is often seen doing intricate maneuvers at low altitudes. Seen above beaches, etc. Shown above shortly after series of maneuvers is terminated. Call—'SEEME WHOOPS!'



CHART YOUR FUTURE CAREFULLY

NAVAL AVIATION

NEWS

The four young men shown above are on a navigational training flight. They are carefully plotting the plane's position and future track to be flown. Just as carefully, they plotted their future life in a respected and interesting profession. Their first important step to becoming Naval Officers and Naval Aviators came when accepted as Naval Aviation Cadets. Start YOUR future now. Ask for details at the nearest Naval Air Station or Navy Recruiting Office.

