

NAVAL AVIATION

NEWS



39th Year of Publication

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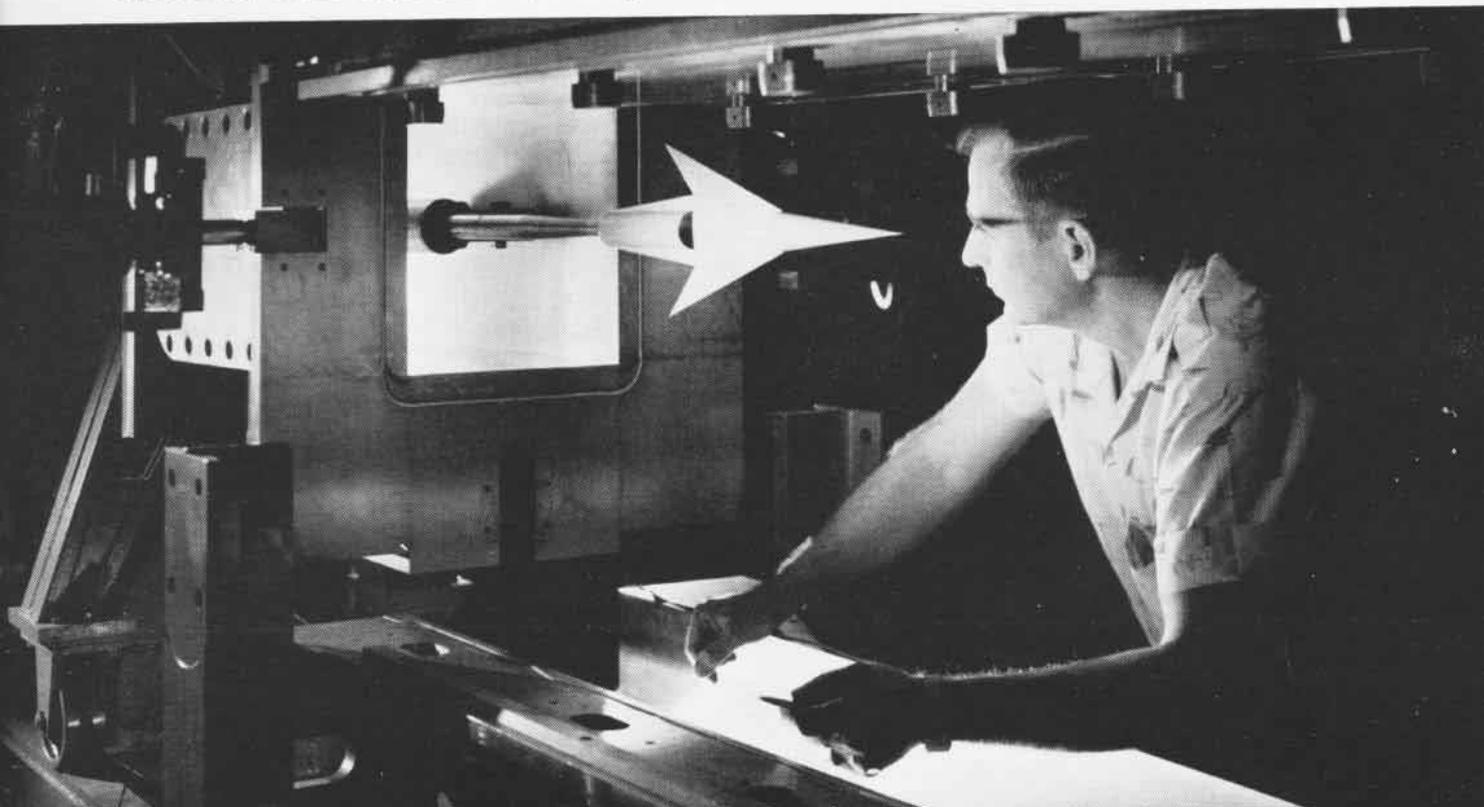


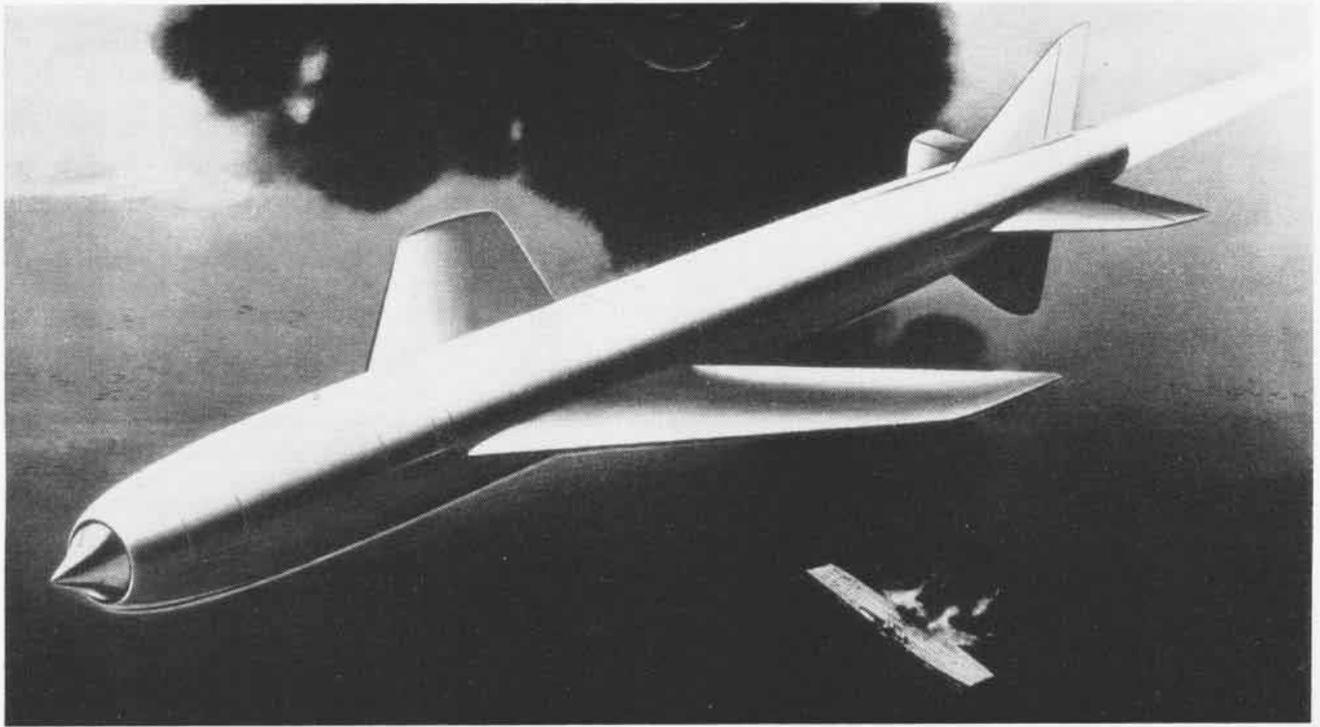


SHAPE OF THINGS TO COME

With man's capability for supersonic flight a fact, scientists at NACA's Lewis Laboratory in Cleveland, Ohio, seek the key to hypersonic

flight. Wind tunnel models of advanced designs are subjected to air streams $3\frac{1}{2}$ times the speed of sound; simulated altitudes up to 30 miles.





MAGIC IN A 'LITTLE BLACK BOX'

EDWARD HENRY "Butch" O'Hare, a fighting Irishman who had already earned fame and the nation's highest military decoration by single-handedly routing a nine-plane bomber attack on the *Lexington* in 1942, gave his life pioneering a better way of finding and killing the enemy.

He led the first night fighter attack ever launched from a carrier at sea, and he failed to return from a night engagement in November, 1943. This flight opened up a new technique.

The tactics and doctrine, as well as the equipment he used on that pioneer flight, would be considered primitive by today's standards. A torpedo bomber equipped with radar that could determine the distance and bearing of a bogey (but not its altitude) led a group of fighters to an intercept point.

When the bogey's stack flares were visible, the fighters broke off from parent TBM and went in for the kill, firing into the visible exhausts of the enemy. The initial attack was successful but Cdr. E. H. O'Hare was missing in action and declared dead.

Radical changes in equipment, tactics and doctrine have been made in the 14 years since Butch O'Hare disappeared. Most significant among the changes has been the almost profound evolutions in the field of airborne electronic equipment.

Let's speculate on the mental reactions of a pilot who has been separated from Naval Aviation for the past 14 years, since the middle of World War II, but who now desires to qualify as pilot of a carrier fighter plane.

Say he goes aboard a carrier and looks into the cockpit of a *Crusader*, a *Demon*, a *Skyray* or a *Tiger*. Would he be able to grasp what lies before him or would he turn frustrated from the complex instrument panel and abandon the idea?

Let's be realistic and say the hypothetical pilot recognizes his human limitations as they have been influenced by the passing of time and that he's decided to thoroughly brief himself on all advances that have been made in aviation since 1943. In *one* 1957 trade magazine, he would have learned from the ads that:



F6F HELLCAT WAS PIONEER NIGHT FIGHTER



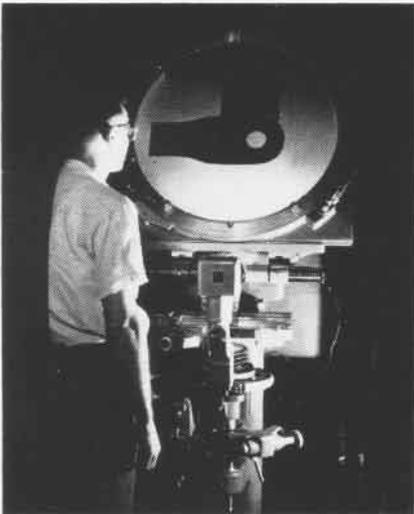
DESIGN ENGINEERS FEED FACTS AND FIGURES INTO A COMPUTER

return to carrier or base after he has completed his mission. Individually or collectively these advertisements overshadow any Buck Rogers reading future pilots might have read in the late Twenties and early Thirties.

Common denominator for most of these Little Black Box ads is the relationship of the product and its manufacturer to the military establishment. One of the government agencies most concerned with the advances in electronics is the Avionics Division of the Bureau of Aeronautics.

There, in the "W" building behind Main Navy on Washington's Constitution Avenue, Capt. W. E. Sweeney supervises a team of electronic experts whose routine problems would tax the imagination and credulity of the very pilots who will, before long, be using the products of their work. Their department is as modern as its title, which fuses the words *aviation* and *electronics*.

The Avionics Division in BUAEER was organized in August, 1956, to insure better and smoother control of work and research that go into building and equipping better weapons systems for the Fleet. It is responsible for all aspects of



JOHNSVILLE AEEL ENGINEER MAKES STUDY



ELECTRONIC EQUIPMENT GETS CHILL TEST



ELECTRONIC WORKBENCH IN COLD CHAMBER

COMPANY A makes a little black box that permits a Navy interceptor to locate the enemy, close with him, bring rockets to bear and destroy him within a matter of seconds.

Company B says that "Science fiction in electronics often turns out to be fact" and supports the phrase by citing that it has designed and constructed 9000 miles of scatter communications circuits in the last six years.

Company C mass-produces such instruments as altimeters, accelerometers, gyros and other instruments to provide our airplanes with better navigation, detection and kill capability than was thought possible in 1943.

Company D specializes in Tacan, Vortac, VLF, HF, VHF, UHF, Radar, ECM, and other alphabet entities essential to combat capability.

Other manufacturers describe their contributions to national defense through "hot stuff," IR, weapons control radar, search radar, indicators, countermeasures, airborne sonar, data processing equipment and a maze of other developments geared to seek, find and kill an enemy and at the same time increase the odds on the American pilot's safe

research and development which concern electronic fire control, weapons launching, communications, and navigation equipment used in naval aircraft and guided missiles. Major support is provided by other bureaus, especially BU SHIPS which furnishes radio and navigation equipment, and BU ORD which supplies weaponry.

The avionics engineers' job begins when the aircraft is conceived. Results of their work are best recognized after it has been delivered to the Fleet and put into action. Each plane has special capability: the kill of an enemy in the case of a fighter, attack plane or missile; the location of an enemy force by a scouting plane; the rescue of a downed airman by a rescue plane; the detection and destruction of a submarine by an ASW plane; the spotting in time of an unfriendly aircraft by a barrier plane. Whatever the plane's mission, it is just as dependent on Avionics as it is on the man at the controls.

When a new airplane, missile, helicopter or blimp is in its design stage, electronics enters the picture. Facts and figures are fed into a digital computer to learn whether or not

the very concepts of the design are sound. Later the embryo aircraft's mission profile (potentials of climb, altitude, range, descent, etc.) is analyzed by an electronic computer. Facts so gleaned are used in designing a wind tunnel model.

Other electronic measuring equipment is used in the wind tunnel tests to determine precise information that will be applied to the actual-size model of the aircraft. Oscillographs, time-measuring devices and drag-measuring instruments are used to test the airplane's likely performance and the information derived serves as a basis for the larger laboratory scale-size test model of the airplane.

Again, electronic devices test deflections, strains, drags, temperature and environmental extremes of the first test model while other electronic instruments measure and test the various pieces of equipment that will be fitted into the aircraft as it progresses from idea to reality.

While the aircraft is being constructed, automation equipment, such as automatic profile machines that cut figures in metal from the engineer's diagram with the most minute accuracy, is used. X-ray and other electronic instru-

An Aircraft Systems Manager in BUAER coordinates and monitors to make sure all line divisions prepare contributions to the overall specifications for a new plane. There is an Aircraft Division project officer for each type of aircraft, and there is an Avionics counterpart to that man, as there is a counterpart for Power Plants and Structures.

All airplanes, regardless of armament or mission, carry three basic elements of electronic hardware: communications, navigation and identification equipment. The specific type of electronic equipment obviously varies with the mission of the aircraft. This is where weaponry enters.

National security forbids publication of exact capability of electronic equipment, such as the range of the radar, the intricate workings of the identification equipment and the wirings of the fire control equipment. It boils down quite simply to the fact that the Avionics Division, through its coordination of Navy and industrial research must provide equipment that will permit the plane to fulfill its mission, be it search, attack, intercept, anti-submarine, early warning, rescue or any other task it may be assigned.



AT'S LEARN MAINTENANCE OF GUN TURRETS



AG AND BLACK BOX SEEK OUT HURRICANES



AIRBORNE ELECTRONIC GEAR GETS A CHECK

ments are employed for inspection of parts. They include electronic thickness gauges which measure exacting components with utmost precision.

Finally the aircraft is completed and it is time to install instruments to measure its performance in test hops. Electronically operated cameras, telemetering devices, strain gauges and fuel measuring devices are installed.

Simultaneously, on the ground, theodolites and electronic ranges test speeds, take-off characteristics, climb and descent rates and flight behavior in general.

Before all this, however, Avionics has planned what will go into the aircraft in the way of equipment for navigation, communication and weaponry. The entire airplane—airframe and power plant combined—has been tailored for the particular weapons and instruments that will enable it to meet its mission.

When the Operational Requirement for the airplane is first determined by CNO, BUAER avionics engineers check to see what the operational requirement will mean in the airborne electronic equipment the airplane will require.



NAESU ENGINEERS WORK IN RADAR TEST ROOM ON FIELD TRIP



BLACK BOXES SIMPLIFY WORKLOAD OF THESE AEW NAVIGATORS



INFO RECEIVED FROM AIRBORNE PLANES IS PLOTTED IN CIC

THE RADIO equipment must be of such range that the pilot can maintain contact with his carrier or base whatever the distance his plane will fly, no matter whether he's attacking a submarine just over the horizon or an enemy striking force a thousand or more miles away.

By the same token, his identification equipment has to be so good that he can tell the "good guys" from the "bad guys" *in time* and incidentally be, himself, identified as a friend. His navigation equipment has to be so reliable that he can get back to his ship or base in whatever weather might arise, and whether or not he had to use evasive tactics. He may also be assisted by a flight programmer or "gas saver" which directs him over an optimum flight profile to get him back with sufficient fuel to make an additional pass at the carrier if necessary.

The very best available equipment is installed in new planes, then when it is perfected, better equipment is added. Take communications separately, for example.

Today's pilot has a push-button system that sends prepared, coded messages back to the ship automatically. The pilot gets a query from the carrier on his position. He pushes a button and the computer electronically tells the radio where the plane is. The radio then sends a predetermined code signal on one of 1750 channels in the ultra high frequency band or the pilot may communicate on one of 43,000 channels in the high frequency band.

Navigation equipment has made almost unbelievable strides. Tacan, the tactical system, provides range within a half mile or half of one percent of the distance, and a bearing within one degree. (This is a remarkable evolution from the early WW II system that gave pilots a bearing within 15 degrees and forced them to interpret an audible code signal to learn what sector they were in.) Modern planes require this extra degree of accuracy as well as the increased range. Airborne Tacan homing equipment, plus its land or carrier-locked counterpart, is most important in marshalling (stacking) and let-down after the mission is completed.

Further aiding the navigation process is long range Doppler automatic navigation equipment. Doppler is an electronic process of looking at the surface with special radar and letting a little black box interpret the signal that bounces back to the radar. It gives range, drift and ties in with the compass to give bearings. An avionics engineer used this common analogy to describe the Doppler principle:

You hear the beep of a train whistle as the train passes. It increases from high to low pitch as the engine passes and gets further from you. If you knew the range of the whistle's pitch, you could figure its speed arithmetically since the speed of radio waves is a known factor. The black box does this automatically as the jet plane speeds over the seas.

Tacan weighs 70 pounds; Doppler approximately 275. The weight will depend on the size and mission of the plane, since parts of the equipment may be adapted for a change in aircraft or mission. This adaptability, of course, reduces logistics, expense and training.

So much for communications, identification and navigation equipment. What about weaponry?

The fire control system may use part of Doppler, an autopilot, a ballistic computer, and navigational equipment to take the pilot to and from his mission. The instrument board must provide a display, so that the pilot can evaluate the results of his attack. This can be done with a cathode ray tube system like television, an optical system, or a combination of the two, electronically linked. The fire control system may also have radar, infra red and other techniques for detecting and tracking.

Weapons as such have followed the evolution from guns and bombs to the point where now we have rockets, atomic bombs and nuclear warhead guided missiles. Also included in the arsenal are homing torpedoes, replacing the old non-homing type, and a large variety of influence mines.

Regardless of the weapon or weapons used in a given airplane, electronics plays a most important part. Take the nuclear warhead missiles and bombs which must be tied in with the system. These weapons must be checked out before take-off and be constantly checked during flight. This is done by an electronic system.

The system even tells a pilot when to drop, which is perhaps the best chapter in the little black box story.

The pilot knows where he's going, what he's carrying and how he intends to launch his payload when he gets there. He feeds initial information into the appropriate black box. During the flight the black box tells him where he's going, how fast he's moving, and with the least bit of interpreting, what his ETA over the target should be.

He reaches a check point and takes bearings which confirm he's on course. Maybe the target is still 20 or 50 miles away. Logic says take a straight line to the target,

but sometimes bogies get in the way or ground batteries start opening up before he gets over the target. So he is forced to use evasive tactics.

The black box actually "thinks" for him at this point, taking his evasive action into consideration and then telling him how to get back on course, or even putting him exactly over the target for the drop according to his mode of attack!

Up to the very last minute, avionics is playing its part. The bomb becomes more and more reluctant to leave the airplane as speeds go up. Actually, this is a mechanical and aerodynamic problem, so a mechanical explosive kicker is used to release the bomb. But even that kicker is electronically activated so that the kicker will fire at exactly the right split second in advance of the drop position to make allowance for the mechanical time delay.

With these advances in electronics, it might be presumed that the problems have all been solved, that Avionics is on top of the game. This is far from true.

Major problems are costs, increased aircraft speeds and manpower training.

Avionics is fighting costs by attempting to standardize electronic increments wherever possible, and by a reliability program that provides better working equipment for a longer period of time. There is only one answer to increasing speeds in airplanes and that is increased performance in electronic equipment, say the experts. This gives Avionics engineers full-time employment.

So far as manpower training is concerned, they are trying to have the equipment so automatic that the pilot can feed known factors into the little black boxes before take-off, thus leaving the pilot free to deal with matters that defy automation in flight. The biggest problem is in the training of maintenance men.

Where the average domestic television set has 22 tubes, there are thousands of tubes in a modern combat plane, making the equipment difficult to master. Here's where the reliability program enters the picture—providing better equipment that requires less maintenance. Also, simplified maintenance procedures have been effected to put less burden on the already busy maintenance man in the fleet.

So far as the high altitude effect on electronic equipment is concerned, the problem has largely been solved by pressurization and temperature control. Otherwise there would be a serious problem of electric arc and ensuing fire hazards in high altitudes with their rarefied atmosphere.

What about the contention that "Avionics is the bottleneck in the battle of Airframes, Power Plants and Avionics?" This question was raised before Dr. L. H. Glassman, armament technical assistant to the Director of the Avionics Division in BUAER, and Mr. J. M. Brearley, electronic technical assistant to the division director. Between them they have 42 years of formal education and 44 years of experience in aviation.

"It's true, but there are reasons," they explained. "We in Avionics are breaching many new frontiers—actual break-throughs in the arts, sciences and techniques of electronics. We must meet such problems as that posed by the newest submarines which do not leave a wake nor show their periscopes for days on end. This presents an enormous problem and requires increased research and effort, taking many years.

"Take 1943 radar. A pilot had 15 or more seconds to see and identify his target, initiate and complete his attack before he overshot his target.

"With today's Mach 2 speeds (1325 knots at sea level), the airplane has moved one-sixth of a mile—about two city blocks—before the pilot's brain can tell his eye to blink. He may have only three seconds or less to see and identify his target, then initiate and *complete* his attack before he overshoots the mark. Obviously the pilot cannot do this unaided. Avionic equipment must perform these functions for him.

"Furthermore," they continued, "you can't develop equipment that can provide human judgment. Manned attack aircraft will be with us for some time to come. And the little black boxes which enable the pilot to make a precise attack must be within the mental grasp of the pilot to use and the mechanic to repair.

"After all, man is the only thing in the plane that can think. Whatever machinery is put in the little black box, it can only interpret what is first put into it by man."



TV-2 CONTROL PLANE BRINGS REGULUS, RADIO CONTROLLED JET TARGET DRONE, TO A SMOOTH, PARACHUTE-BRAKED LANDING



GRAMPAW PETTIBONE

Master Plumbers

Two transport pilots on a two-hour, round-robin flight one morning had just let down from 7000 to 1500 feet when the starboard engine of their SNB-5 sputtered and lost power.

The pilot decided to land immediately on a 1200-foot grass landing strip adjacent to the south shore of Long Island Sound. Because of a power line near the runway threshold, the pilot made a high approach, and then, realizing he would overshoot the short runway, commenced a waveoff.

Power was added, the gear was retracted, and the *Beechcraft* climbed momentarily, then slowly lost altitude. A power-on ditching was made straight ahead in the edge of a fog bank about 1000 yards off shore in Long Island Sound.

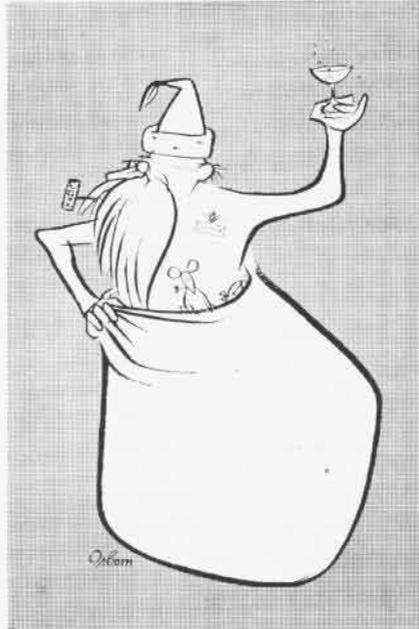
The pilots left their floating aircraft and climbed onto the port wing where they remained until the *Beech* sank about five minutes later. After five minutes afloat in their life jackets, they were rescued in a small motor boat. The copilot was uninjured; the pilot suffered a small cut when his face struck an unidentified component in the cockpit as the aircraft lurched to its watery halt. *Neither of the pilots had utilized his shoulder harness.*



Grampaw Pettibone Says:

Great balls of fire! How two experienced aviators—one with over 7,000 Navy and 3,000 civil hours and the other with over 4,500 Navy and 600 civil flight hours—could so completely plumber this one is beyond me.

From the first indication of engine malfunction to the time the aircraft was ditched, neither pilot could tell the accident board how much manifold pressure was obtainable from either engine. Both pilots thought the prop controls were pushed forward to the low pitch position; however, neither could remember the RPM reading on either engine. Nei-



ther had noted fuel pressure readings. The board listed the following possible causes of the engine malfunction:

1. Carburetor icing resulting from a letdown from 7,000 to 1,500 feet with low power settings at a time when the spread between temperature and dew point was very narrow and the relative humidity was very high.



2. Failure to return the mixture controls to full rich during the let-down.

The CO of the parent NAS in his forwarding endorsement on the accident report stated, in part: "It is realized that the pilot was operating under an emergency situation; however, the fact remains a Naval pilot with his background and experience failed to give the board information to substantiate anything more than partial power loss on one engine. According to the operating charts, statistics, and past performance this aircraft at the indicated gross weight at the time of the emergency should have, with proper procedures on the part of the pilot, maintained flight characteristics which would have permitted the pilot to return to a suitable operating field and land safely.

"Inasmuch as the pilot was an experienced multi-engine pilot, it might be deduced that the decision to land immediately was the result of a psychological situation wherein all previous training was forgotten, or a lack of respect for the situation, as well as possibly a feeling that he was capable of a spectacular handling of an emergency."

Memo from Gramp

The following was taken from the Medical Officer's Report of a recent fatal A3D accident:

"None of the crewmembers was wearing flying gloves. In a non-fatal fire of this type, it is possible that gloves would make the difference between a functioning hand or a badly burned functionally useless hand. All crewmembers should be encouraged to wear their gloves on all flights.

"Dog tags are issued for identification purpose. None of the crewmembers on this flight were wearing theirs. In the event of an aircraft accident, especially if any burns result, it may be mandatory to give blood. Blood type information is readily available on the dog tags and may be a substantial aid to the medical officers."

It's a matter of common sense. A word to the wise *should* be sufficient.

Dear Grampaw Pettibone:

Gramp's recommendation (in the July issue) that pilots make "wet dry runs" in helicopter hoists from the water came too late to teach our squadron anything new. Taking advantage of the handy St. Johns River, the *Hell's Archers* of VA-104 immersed all of their pilots in the river and hoisted them all by helicopter.

Led by ComCVG-10 and the squadron CO, 28 pilots and ground officers completed the dunking exercise, including a "Frogman" departure from a crash boat, flotation by Mae West and G-suits, and the pickup by NAS JAX chopper. After being lifted into the helicopter, each pilot took over the job of hoisting the next person. The whole idea was conceived back in June by the Squadron Survival Officer, and the event was covered by local newspapers and television.

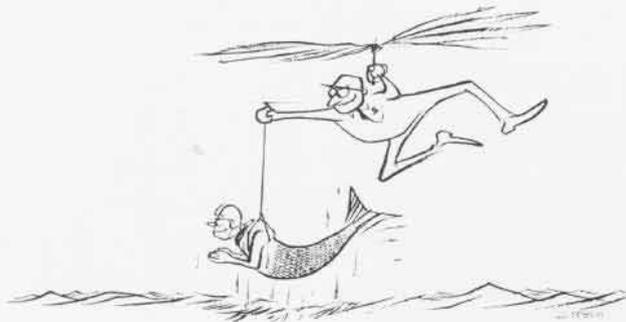
The *Archers*, Navy "E" winners last year, fly the AD *Skyraider*, and, after reforming at Jacksonville in February, commenced the extensive training required by an 88% turnover in pilots. We'd like to capture that "E" again.

—LCDR, USN, XO, VA-104



Grampaw Pettibone Says:

You'd get my wishes for best of luck, but you sound like an outfit that knows you have to make your own luck. A personnel turnover problem like you've had makes intensive and extensive training in all phases of operations downright mandatory if the squadron is to pull its weight in keeping the Navy combat-ready. Let's hope all squadrons tackle their problems with the kind of foresight and enthusiasm you have.



Rules for Longevity

The following rules by MAG-11 of MAW-1 are considered of sufficient merit to warrant wider dissemination than that afforded by the wing's *Aviation Safety Bulletin* where Gramp first saw them:

1. Blessed is he who maintaineth a constant vigilance from his cockpit, for he bringeth not his wingman into forceful contact with other aircraft, which jackerth up insurance rates.

2. Rejoiced is he who keepeth a close check on the weather at the field, and stumblieth not into reduced visibility unprepared, for he is a pleasure to fly with.

3. Reviled is he by his fellow birdmen, who maketh an unorthodox entry into the pattern unannounced for he endangers their longevity and incurreth the wrath of tower operators.

4. Blessed is he who entereth the break at a conservative speed and crawleth not unheralded up the tail pipe of the one ahead and causeth him unnecessary pucker.

5. Beloved is he by all who counteth the birds ahead and loseth not sight of any; and who concerneth himself not with evil schemes to place himself on the runway before the one ahead of him.

6. Respected is he by the farmers who flyeth his approach according to Standard Operating Procedures and spoileth not the season's crop by employing his machine as a high speed reaper.

7. Revered is he by the Safety Officer who initiateth his own early wave-off and maketh not four-minute milers of the construction workers with his unseemly maneuvers.

—MAJOR, USMC

Aviation Safety Officer



Grampaw Pettibone Says:

Appreciated be they who abideth by these words. It is not enough that wisdom be set before us, it must be made use of, for broad is the way that leadeth to destruction.

Gramp's Lament

Sufferin' sâilfish, I've been spun in! Pearl Harbored yet!

After years and years of peerless preparation of these pages of piloting prudence, my private secretary and gal Friday has headed for the hinterland, leaving me with a couple hundred AAR's, a broken down typewriter machine and an old dusty grammar book. (See page 34.)

Now don't git me wrong, I'm not askin' thatcha ease off the paper barrage—jist show a little patience please and keep yer shirt on while waitin' for my hunt-and-peck answers to any of yer queries. Yuh see, they never taught touch typin' back at good old Public School Number 102.

NANews Price Raised Effective Date is January Issue

With prices in every field going up, *Naval Aviation News* must regretfully join the procession. Subscribers are going to have to pay the new rate \$2.50 a year if they live in this country. There is a charge of \$.75 additional for foreign mailing. A single copy costs 25 cents, instead of the old price of 20 cents. But even at that, NANews is still a bargain.

While the effective date is the January issue, the subscription rate is now in effect, since any orders received during the month of December do not take effect until the next month.

Basic Instructor Honored Stephenson is Instructor of Year

Ltjg. Larry A. Stephenson of VT-13 has been named Saufley Field's Outstanding Flight Instructor of the year. From January through August he flew 699.1 hours without an accident. Of these, 577.8 were syllabus flight hours in the rear seat of a trainer, instructing a student aviator.

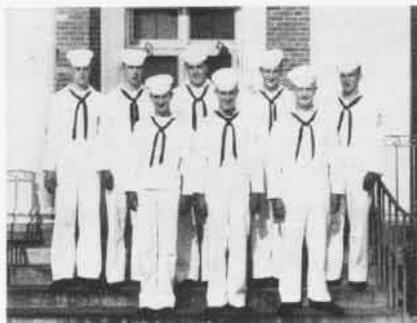
In addition to instructor duties, he is also the squadron navigation officer.

Eight-Man Graduation Held Training Device Men End Course

Informal graduation exercises for eight men who completed a course in the operation of aviation training devices, were held at NAS PENSACOLA. Capt. Langdon C. Newman, MC, USN, spoke of the diligence of the class.

The course instructs training device operators in the techniques of using such machines as the Dilbert Dunker and the Link trainer.

Capt. Newman awarded completion certificates to L. R. Hall, J. A. Downham, M. E. Conboy, W. L. Nowman, D. B. Rothgeb, Ivan C. Young, G. D. Kucera, C. D. Kearns. All are TDAN's.



EIGHT TRAINING DEVICE MEN ARE READY



VETERAN of 39 years Naval service and resolved to do 50, Otto Keller, ADC, reported to Corry Field for duty in the operations department on his sixth tour at Pensacola.

HU-2 Heads for Antarctic Unit Embarks for 3rd Straight Year

Units of Helicopter Utility Squadron Two, NAS LAKEHURST, have deployed to the Antarctic for the third year in a row to take part in *Deep Freeze*.

One group was ferried south in the icebreaker *Glacier* in September. The other was embarked in the *Westwind*.

HU-2 helicopters will provide ice-pack reconnaissance for the icebreakers as they transit the pack ice to reach coastal bases. Upon arrival at the science bases, helicopters will perform utility service, including the shifting of personnel and cargo.

Corpsman Delivers Baby Helicopter Used in Unusual Role

A hospital corpsman was rushed by helicopter from NAS NEW ORLEANS to an isolated lighthouse near the mouth of the Mississippi River. There he successfully delivered a baby to a Coast Guardman's wife.

The Coast Guard, stationed at the Naval air station, had received an emergency call from the lighthouse and immediately launched a helicopter.

Lt. Nick Ivanovsky, the pilot, flew M. M. Cupples, HM1, to the scene allowing him to make the difficult breech-birth delivery for the wife of C. R. Smith, BM1.

Cupples was assisted in this, his first delivery, by a practical nurse. The mother and baby were flown back to New Orleans in the same helicopter and turned over to Dr. Robert Marks, Chief of Obstetrics at the Public Health hospital. The copter landed on a baseball diamond at the hospital.

Dr. Marks, the New Orleans obstetrician, said, "A breech birth is more difficult. The Navy man did fine."

50,000th Approach Made Norfolk GCA Unit 12 Celebrates

"Navy 17255, this is Navy Norfolk GCA. I have you in radar contact 14 miles west of the airport." So began another routine Ground Control Approach, but a milestone for GCA Unit 12. "You are approaching glide path, you are slightly below glide path, you are on glide path, you are over touch-down. I wish to congratulate the pilot on having just completed the 50,000th approach."

Capt. H. P. Burden, Commanding Officer, NAS NORFOLK, was the pilot of the R4D coming in for a landing. Terry L. Bragg, AC3, talked down the plane through the thick overcast.

GCA Unit 12, now under the command of LCdr. Frank R. Romeka, was commissioned in January 1947. It was the top IFR Unit in the Navy last year and claims to have handled more planes by radar during low visibility in 1956 than any other similar Navy Unit.

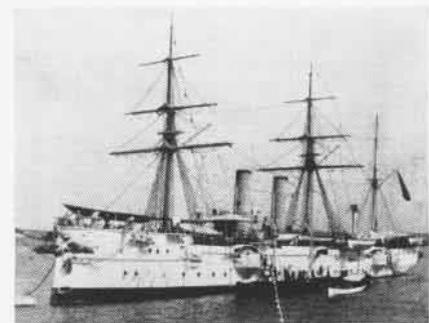
After the 50,000th landing, appropriate cake-cutting ceremonies were held in the NAS Operations Building.

Station Ship is Retired Served 45 Years at Naval Academy

USS *Reina Mercedes*, barracks ship at the Naval Academy for the past 45 years, has been retired from Naval service. Her decommissioning in November will save approximately \$300,000 during the next two years.

This relic of the Spanish-American War has been called the "fastest" ship in the Navy because she remained so fast to her moorings. *Reina Mercedes* came to the Naval Academy in 1912 to replace the USS *Hartford*, Adm. Farragut's flagship. Since then she has served as station ship continuously except for brief overhaul intervals.

The *Reina Mercedes* was once commanded by Fleet Admiral Halsey.



ANNAPOLIS LANDMARK IS DECOMMISSIONED

Schools Named for Heroes Navy Brothers, Admiral Honored

The names of five enlisted U. S. Navy brothers and a Navy admiral, all heroes of WW II who lost their lives in the Battle of Guadalcanal have been given to schools in Yokosuka and Admiralty Heights, Japan.

At the Yokosuka dependents school, "The Sullivans School" is named in honor of the five Sullivan brothers who lost their lives aboard the cruiser USS *Juneau*.

The school at Admiralty Heights to be known as the "Daniel J. Callaghan School" is named in honor of RAdm. Callaghan who lost his life aboard his flagship, the USS *San Francisco*.

Special programs at both schools included student participation and the unveiling of plaques with inscriptions of the schools' new names.

Adm. Burke Tours Pacific Memorial Earns CNO's Support

Adm. Arleigh A. Burke, Chief of Naval Operations, paused in Hawaii to give his support to the proposed Pacific War Memorial on or near the sunken battleship USS *Arizona* during his October visit of Pacific Fleet activities.

"Once completed," the Admiral said, "the memorial will be a fitting tribute to those who fought and died here in defense of their country."

Admiral Burke said he had a "very personal interest" in the *Arizona*, because he had served in the battleship for five years (1923-28). It entombs 1102 men who died in the ship Decem-



MEMORIAL SPONSORS GREET CNO IN HAWAII

ber 7, 1941, when the Japanese struck.

"The dedication of Admiral Nimitz, Governor Quinn, Delegate Burns and Admiral Stump in behalf of this memorial is indicative of the deep sense of reverence the Navy and its friends have for the men of the *Arizona*," he said. Proposed Pacific War Memorial legislation, which has passed the House of Representatives of the U. S. Congress, permits the raising of funds and making of plans for such a project.

Admiral Burke's Pacific tour included conferences with Admiral Felix B. Stump, Commander in Chief, Pacific Fleet, and talks with Navy and government officials in Japan, Korea, Formosa and Okinawa.

He conferred with VAdm. W. M. Beakley, Seventh Fleet Commander, aboard the cruiser, USS *Rochester*, and the carrier, USS *Bon Homme Richard*.

● The control surface—about the size of an office desk top—of one U.S. guided missile is strong enough to support six automobiles.

Rocket Boosts Regulus II Simulated Submarine Launching

In a simulated submarine launching at Edwards AF Base, the Navy used for the first time a rocket booster for the 11-ton, 57-foot, supersonic surface-to-surface weapon, *Regulus II*.

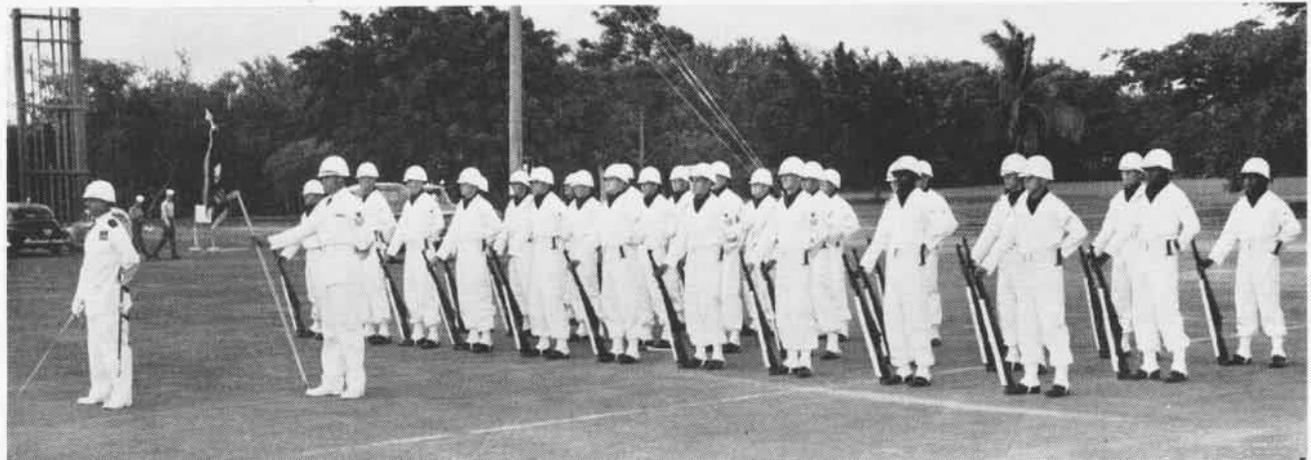
The Navy missile roared into the sky from its launching platform in the Mojave Desert, performed a series of pre-selected test maneuvers, and was then landed intact.

Though the firing on 13 November was the first attempt to "shoot" the missile with a rocket booster, the Mach 2 plus *Regulus II* had flown before, racing down the Muroc dry lake bed at tremendous speed to get enough life under its stubby, razor-thin wings to become airborne.

Built with recovery capability, as were the *Regulus I* test missiles, one *Regulus II* has already flown as many as six times.

A successor of Navy's currently operational *Regulus I*, the *Regulus II* is destined to go aboard submarines such as the Navy's first nuclear-powered missile submarine, USS *Hallibut*, now being built.

Submarine launching of *Regulus II* fits the weapons system concept referred to by the President in his November 7 address: "The Navy has in both oceans submarines which can rise to the surface and launch in a matter of minutes, a missile carrying a nuclear warhead, and submerge immediately—while the missile is guided to a target hundreds of miles away."

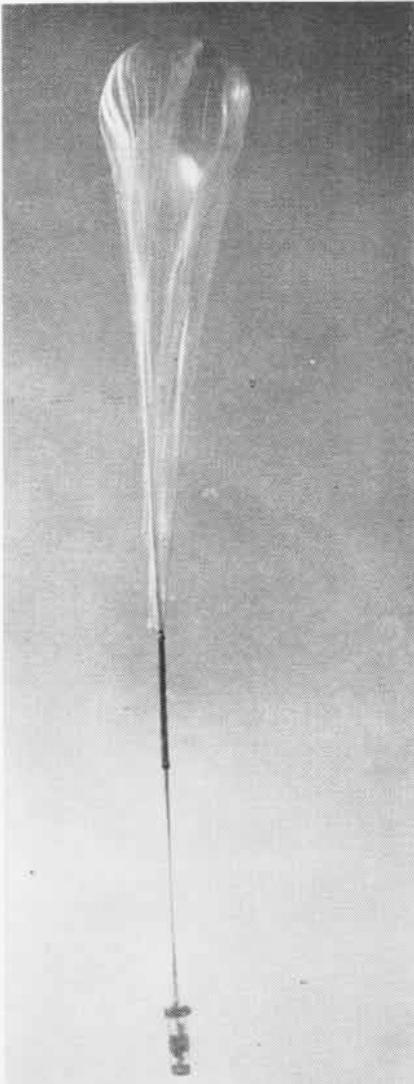


NAVAL AIR STATION, Barber's Point, unveiled the first concrete results of "Operation Bootstrap" when a crack drill team, composed of Air Station Bluejackets, passed in review at a regular inspection. Operation Bootstrap is a self-improvement program, mainly volunteer,

which is designed to improve morale, discipline and esprit de corps. The all-volunteer drill team was reviewed by RAdm. W. H. Leaby, CO, Pearl Harbor Naval Shipyard, and RAdm. L. B. Southerland, Com Fleet Air Hawaii and Airborne Early Warning Wing, Pacific.

FROM 16 MILES HIGH

MAN SHOOTS THE SUN



STRATOSCOPE balloon, .002 inches thick, takes to the air with instrument package trailing.

EVER SINCE Galileo trained the first telescope skyward, man has been trying to get a better look at the sun. Until the autumn of 1957, he was repeatedly frustrated because the layer of gases and dusts in the earth's atmosphere caused the sun to twinkle when seen through the most powerful telescope just as it appeared to blur when photographed.

By combining a motion picture camera with a 12-inch telescope and sending the package higher than 80,000 feet in an unmanned Navy balloon, scientists obtained the best pictures of the sun that have ever been recorded.

Twice the balloon was launched, and twice the camera and telescope fell safely to earth by parachute after recording 8000 exposures of the sun at one-second intervals. During the first flight in September, the telescope was aimed directly at the center, or core, of the sun. In the succeeding flight, launched in October, the telescope was tilted to focus on the sun's outer rim.

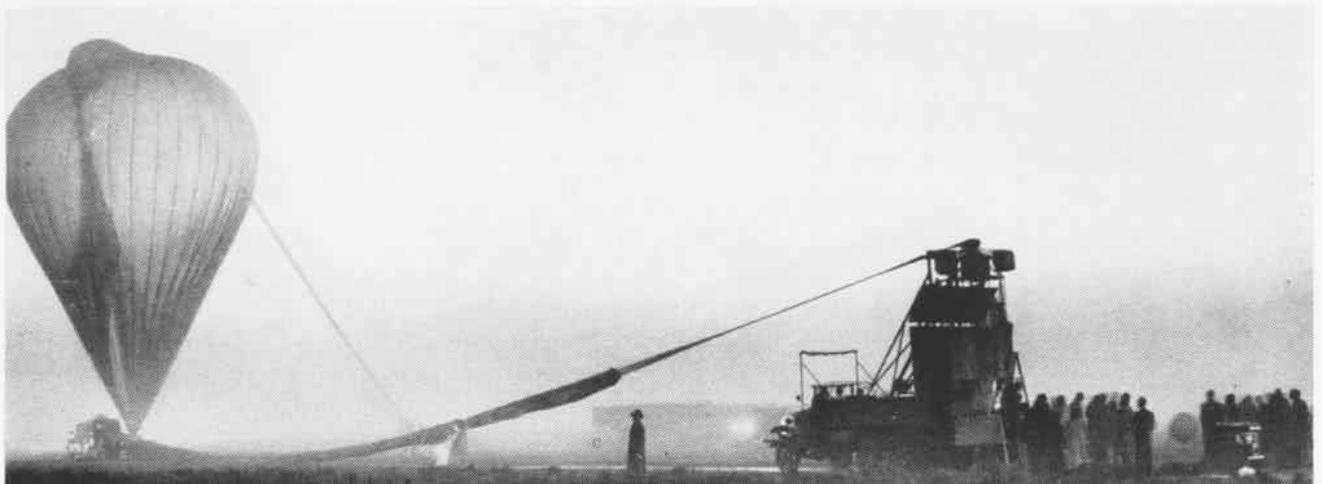
Dr. Martin Schwarzschild, chief project investigator, and his immediate superior, Dr. Lyman Spitzer, Jr., both

of Princeton University, described the flights in Washington. Perhaps more important, they described the significance of the flights as they relate to man's constant search for knowledge of his universe.

The photographic balloon launchings were made for the Office of Naval Research under the code name Project *Stratoscope*. A test flight was made in an unmanned balloon to check the accuracy of the pointing control and to learn whether the platform was stable enough to keep the telescopic camera absolutely still. It was.

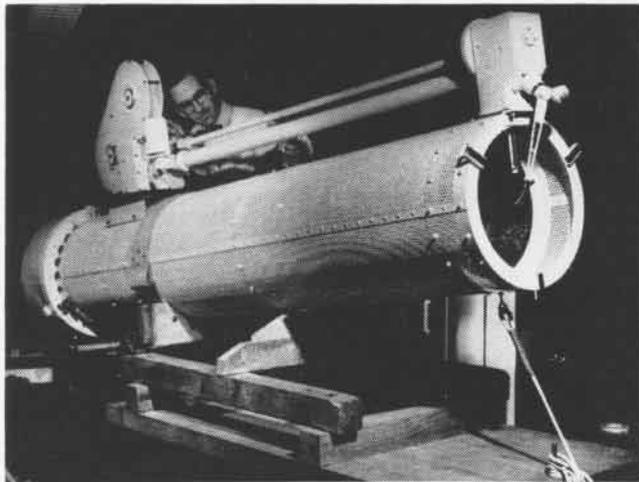
Dr. Schwarzschild said an unmanned balloon was used for the photographic flights because a fidgeting man might have "rocked the boat" during exposures. Manned balloons have been used for environmental studies, cloud observations, and will be used for a future astrophysical flight.

The first photographic flight was launched September 25 from the General Mills Flight Center at New Brighton, Minn., to photograph the sun's center. An automatic pointing control, sensitive to light, caused the telescope to train directly on the sun.

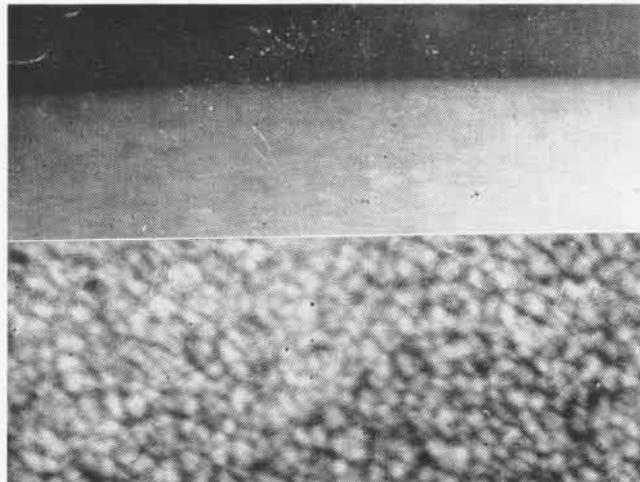


FOG SHROUDS the last-minute preparations for launching the Stratoscope balloon from a wheat field in Minnesota. When fully inflated,

General Mills-designed balloon will raise the instrument package high enough above earth to obtain the best pictures ever made of the sun.



BARREL OF 12-INCH telescope is 9.5 feet long. Here an engineer checks the installation of camera on the outside of the telescope.



COMPOSITE PHOTO shows sun has a clear line of definition at edges (top). Light areas in bottom shot show gas masses at sun's core.

After the camera had recorded its 8000 photographs, the telescope-camera package was parachuted to earth. Study of the pictures, clearer by three times than any that could have been taken from the best earth-bound telescope, showed turbulent sun eddies, areas of local hot gas storms, solar flares and other valuable scientific clues.

The same telescope and camera were re-launched October 17 from Huron, S. D. This time the mechanism of the training instrument was set to photograph the sun from a point midway between the sun's center and rim, out to the rim, then back to the same midway point.

Dr. Schwarzschild termed that flight an "outstanding success." He found that the actual edge of the sun is sharp, rather than a gaseous mass without clear definition. The sun's turbulent eddies could be studied from a more glancing angle in contrast to the head-on view secured earlier. Since the atmosphere at the sun's edge is not quite as deep as it appeared in the core photographs, the latter photos were superior for studying atmospheric temperature and their fluctuations. Estimated temperature at the sun's center is 14 million degrees, Centigrade.

Significant as they were, these two observations were merely the first in a series of high-altitude celestial studies. The next step, expected to occur during the summer of 1959, may involve the launching of a 36-inch telescope attached to a television camera which will relay pictures to earth.

Some time in the future, the Prince-

ton scientists said they hope to launch a six-inch telescope weighing only a few hundred pounds in a satellite that would remain aloft to orbit the earth for several decades.

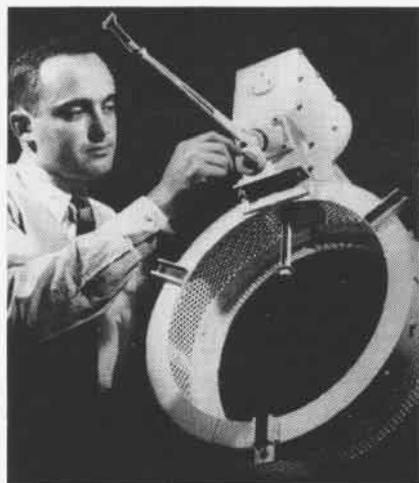
The purpose of sending a satellite vehicle aloft will be to get above the ionosphere to take pictures of solar gases that cannot be photographed in exact detail from 80,000 feet.

The physicists emphasized that their studies do not have immediate military significance; that they were strictly in the interest of pure science and long-range research. They said, however, that their findings could very likely have an influence on military studies in the future.

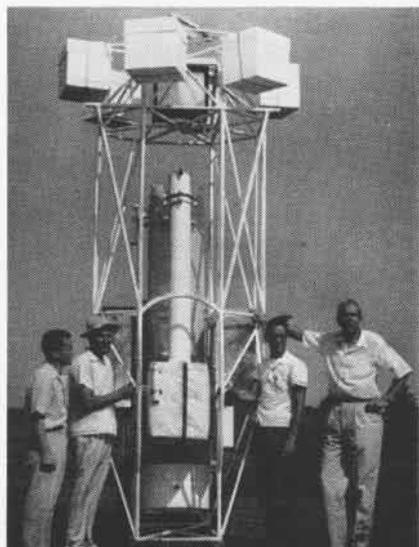
For example, their observations might allow man to understand the movements of gas masses on the sun for a sufficient period to permit the charting of gas movement patterns. Such solar gas movement, when tied in with the magnetic fields of the universe, might help man to overcome problems of radio communications which at present are being disrupted by aurora and sunspot activity.

Other possible applications of their study could be a better understanding of weather, gravity and various geophysical sciences affected by the sun. They might even lead to a way of controlling the extent of thermonuclear explosions and the fallout after such weapons are exploded.

The very techniques and instrumentation used to launch unmanned photographic balloons might prove helpful in military studies, they said.



PERKIN-ELMER engineer checks 35mm. camera assembly attached to outer base of telescope.



DR. SCHWARZCHILD, engineers Nidey, Robique and Beson stand beside the telescope-camera.

TRAINED TO 'STRIKE BACK'



THE USS SARATOGA was one of the many big carriers in Strike Back. From the Royal Navy, there was the Ark Royal, the Eagle, and the Bulwark. U. S. ships included the Forrestal, Intrepid, Tarawa, Essex, and Wasp. Tactical Command ship was USS Northampton (CLC-1).

THE STORY of *Strike Back* is not the story of one ship, but of many. But in order to see something of how a great international exercise is conducted, one ship—in this case, the USS *Saratoga*—is used as an example.

At the direction of Supreme Allied Command Atlantic, the sea arm of the North Atlantic Treaty Organization, Exercise *Strike Back* brought together

a gigantic fleet of carriers, battleships, cruisers, destroyers, submarines and oilers. There were ships from the navies of Canada, The Netherlands, France, Norway, the United Kingdom and the United States.

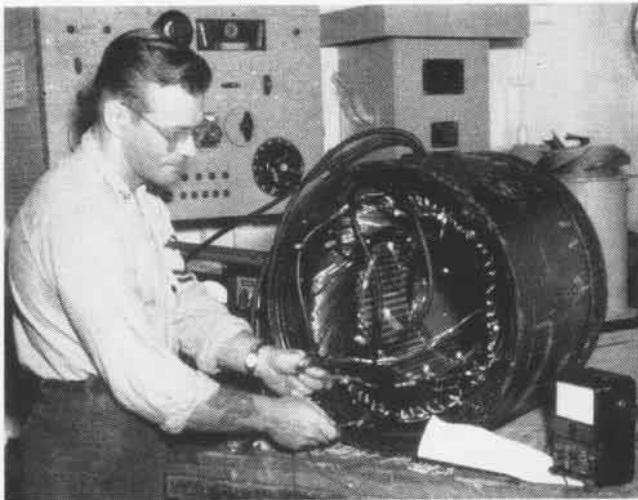
VAdm. Robert B. Pirie, Commander of Striking Fleet Atlantic, at the end of the exercise, praised the cooperation between nations, the readiness of

the NATO fleet, and the efficiency of the individual fighting man.

"So far as the striking fleet itself is concerned, I cannot say too much on the improvement in readiness that comes from the close and amicable cooperation that exists between the Royal Navy and the U. S. element in this rigorous and realistic exercise. We know how to work together."



DESTROYERS played an outstanding role. In addition to general purpose DD's, ready for all kinds of offensive work. There were radar pickets, DDE's, and guided missile carriers. A frigate, once called "Destroyer Leader," provided Screen Command communications.



EVERY MAN on the *Saratoga* did his part. Here Robert T. Kosik, EM2, tests continuity of field coils on a main fuel booster pump motor.



THERE'LL ALWAYS be a Bosun, and here an ancient rating in modern garb, Harold Hatne, stands at his refueling station in bangar bay #1.



A FLEET TODAY requires all kinds of machinery for repair and maintenance. L. W. Aiken, Jr., MR2, is a skilled metalsmith on the *Sara*.



CDR. R. J. WITMER, squadron skipper, is proud of VF-101 record: in three days of Exercise, Grim Reapers flew 61 sorties, 93.7 hours.



AN ARMY travels on its stomach, so does a Navy. Thomas S. Wynn, CS1, is a Navy cook that believes in putting on a good "spread."



CDR. JOSEPH A. Lovington, CO of Fighter Squadron 61 aboard *Saratoga*, leads his hard biting team of pilots that flies the "Jolly Roger."



ROYAL NAVY'S cruiser, HMS Sheffield, at right, fuels from a U. S. fleet oiler. At left, U. S. destroyer Dickson takes on needed fuel.



REFUELING WAS an essential part of NATO operations in the North Atlantic. Here USS Ware, DD-865, is refueled alongside the Saratoga.



AIR POWER requirements for NATO's Exercise Strike Back were met by such outstanding airplanes as the A3D (flying past the Sara), the F3H Demon (ready on the catapult), and the F4D Skyray (lower right).



IN RECENT YEARS, helicopters have efficiently provided all kinds of special transport, and Strike Back used them to great advantage.



THE ALLAGASH prepares to refuel the Saratoga. The big ship takes on 700,000 gallons of fuel oil, 200,000 of JP fuel, and 60,000 aviation gas.



CDR. M. DUVAL, French Navy, and **Cdr. Darley**, RN, watch **RAdm. C. S. Cooper**, USN (center), Commander American Carrier Force, check chart.



HANSON BALDWIN, *N. Y. Times*, talks over Exercise with **Adm. Jerauld Wright**, Supreme Allied Commander Atlantic, and **RAdm. Cooper**.



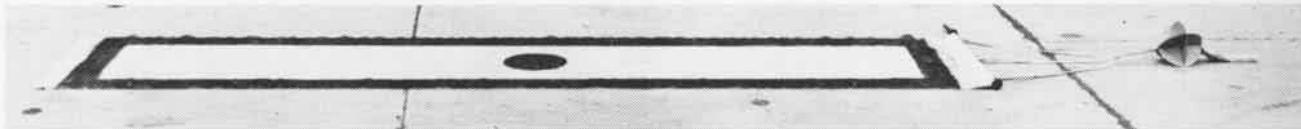
ADMIRAL JERAULD WRIGHT, Supreme Allied Commander Atlantic, listens intently to an explanation of a situation in Exercise Strike Back by **VAdm. Robert B. Pirie**, USN, Commander of the Striking Fleet.



RADM. M. E. ARNOLD, USN; and **VAdm. M. L. Powers**, RN, meet with the press in Scotland before departure of NATO forces on Strike Back.



HEADED FOR a top level conference are **Adm. Wright**, **RAdm. Cooper**, **Capt. R. B. Moore**, skipper of the *Saratoga*, and **Capt. J. L. Conniban**.

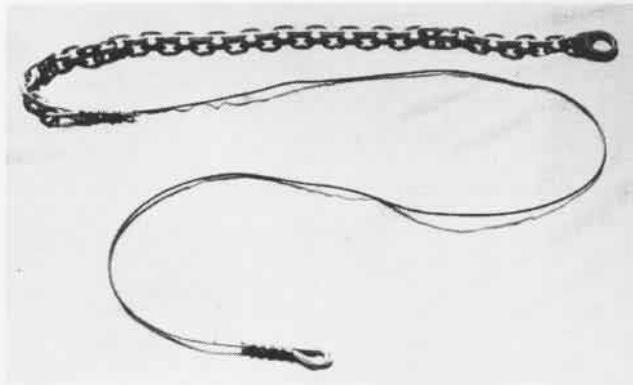


TARGET BANNER, 6'x30' Aero 26B polyethylene, radar-reflective type was towed to supersonic indicated Mach numbers in NATC tests. Ability to withstand high speeds is governed by its limiting Reynold's number. Nylon types had similar durability.

CLAY PIGEONS GO SUPERSONIC



CRUSADER TOW mast, jury-rigged by Armament Test technicians, is attached to F8U-1 catapult fitting. Steel mast has Aero 1A Douglas ejector bomb rack hook for tow; F8U electrical power source for release.



MODEL OF TOW cable rig devised for high speed tow use. Minimum scope of 3500' 3/16" wire cable micropressed to 60' length 5/16" link high carbon chain is recommended. Mk. 8 tow ring is welded to leader.

BY TRADITION and training, the Navy's fighter pilot type has long been an eagle eye of the first water when it came to boresighting a bogey. His legendary ability for advantageous positioning, smoothly executed attacks and an uncanny sense of piper placement did not come about naturally. It was born of Navy Air's singular devotion to the practice of pumping holes through towed targets.

A silent subject of ventilation through the many years, these aerial clay pigeons were generally not towed fast enough to provide realistic targets for supersonic fighters. Attempts by squadrons to conduct air-to-air gunnery practices under conditions simulating actual combat—30-40,000 feet, .9 Mach—resulted in a long run of frayed cables, banners and tempers. The greatly increased speed characteristics of the new fighters like the F8U and the F4D made it imperative that a realistic high speed tow be perfected—using existing equipment where possible.

Apprised of this major difficulty being encountered in the field, personnel of the Armament Test Division of the Naval Air Test Center, Patuxent

River, under the direction of Capt. Stockton B. Strong, undertook a project study of the "Case of the Recalcitrant Clay Pigeon" and initiated a series of tests which in a matter of months led to the successful towing of a standard banner at Mach 1.1 at 35,000 feet. The solution was a matter of jury rigging and the utilization of a known principle—the Reynolds number.

Working primarily with the F8U-1 and the F4D-1, Armament Test technicians and pilots tackled the project from the ground up. Configuration of the *Crusader* as a tow vehicle required the jury rigging of a tow mast of sufficient strength to withstand the drag forces imposed by the cable and banner suspended from it during a drag-off launch and flight at or near Mach 1. The mast, of simple construction and made of structural steel, was attached to the F8U catapult fitting. This position located the device near the airplane's center of gravity and made use of a major strength member. Adaptation of an Aero 1A Douglas ejector bomb rack hook provided a means of securing the tow to the mast.

Attention was then given to the tow

cable. Previous experience indicated that in addition to a requirement for in-flight strength, a means had to be found whereby the high temperatures present during afterburner operation could be resisted. Asbestos covered wire was tried and proved unsuccessful. The answer to this problem was found in the use of 60 feet of chain as a leader for a tow cable with a high tensile strength. The large cross-sectional area of the chain caused it to be blown clear of the hottest portion of the exhaust cone.

Next came the matter of a cooperative clay pigeon. A stock item, the Aero 26B polyethylene, radar-reflective aerial banner target, was ground into the project on the basis of encouraging reports concerning its ability to withstand high speeds above 20,000 feet.

With the method of rigging the target banner to supersonic tow planes worked out, experts then tackled the problem of the tendency of the target banner to destroy itself by fraying and tearing when towed at very high speed. Although a general belief existed that 200 knots indicated was the limiting towing speed for aerial banners at any altitude, the pilots and engineers at

Armament Test believed that they could withstand much higher speeds without destruction.

This capability was quickly confirmed, and a successful tow at supersonic indicated Mach numbers was accomplished at high altitude. Nylon banners demonstrated a similar ability to withstand indicated towing speeds in excess of those generally believed to be destructive. The increased durability of the banner was previously believed to result from a beneficial "cold soaking" effect that is realized in the low ambient temperatures above 20,000 feet. Results at Armament Test, however, suggested that a different influence was at work.

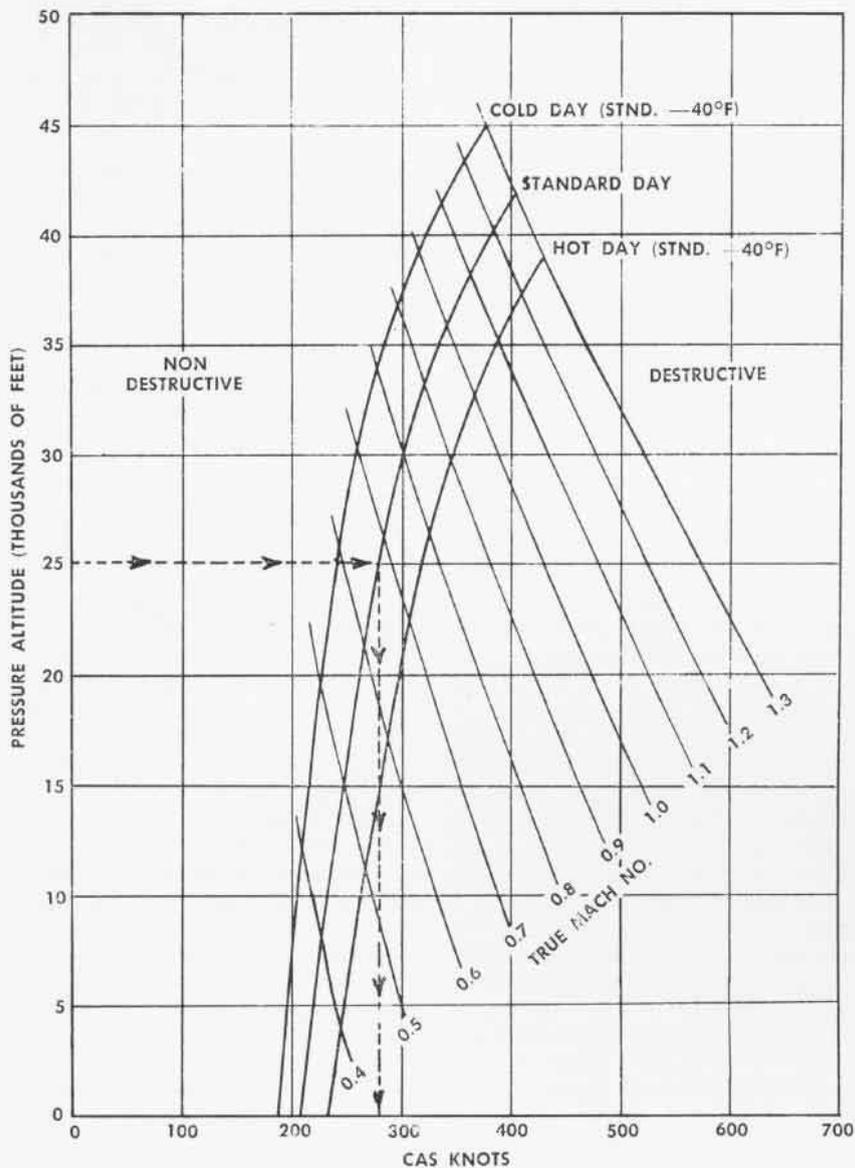
From a series of tow flights made under varying conditions of speed, altitude, and temperatures, a pattern began to show itself in the analyses of successful tows.

The pattern showed that destruction of a target banner invariably resulted when a certain Reynolds number was reached. Reynolds number is a formula used by scientists and engineers in the study of aerodynamic flow over bodies and surfaces. It is especially useful in studies of laminar and turbulent flow conditions.

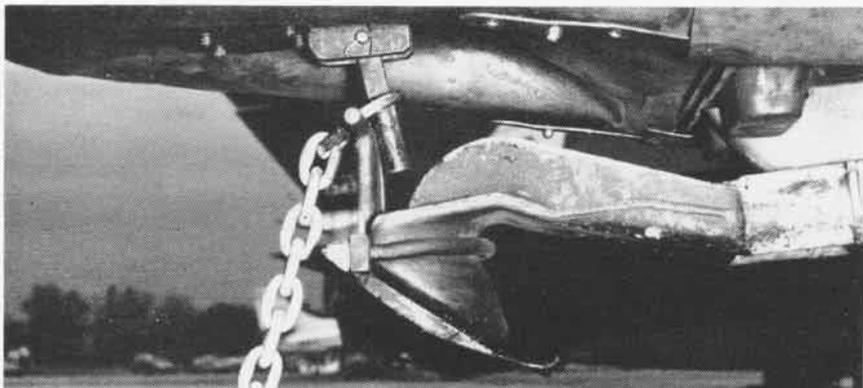
Based on limiting Reynolds number, Armament Test prepared a graph which shows the maximum permissible airspeed at any altitude when towing the 6 x 30 Aero 26B target for hot, cold, or standard day.

Pilot techniques evolved as a result of numerous flights performed at the Naval Air Test Center are, for the most part, standard.

Following afterburner take-off (target banner drag-off), a climb schedule conforming to maximum non-destructive airspeeds of the Aero 26B was



REYNOLD'S NUMBER limitation on Aero 26B banner performance is shown in graph. Example: standard day tow speed limit is less than 280 knots, CAS, .68 true Mach at 25,000 feet.



SKYRAY JURY-RIGGED tow point fitting utilizes tailhook attachment to secure Mk. 8 tow ring, 5/16" chain leader. Described tow rig and banner are recommended for F11F and F3H models.

started and a climb to 20,000 feet made in military power. Thereafter, afterburner was employed until firing altitude was attained. Above 20,000 feet the graph shows that speed can be increased approximately 20 knots for each 5000-foot increment without encountering excessive banner fraying.

Armament Test pilots, flying the FRU-1 and towing the Aero 26B banner with 2000 feet of cable, set up and maintained stabilized flight in military power at .9 indicated Mach at altitudes between 35 and 40,000 feet. This tow speed was found to vary slightly, depending on tow airplane fuel remaining

and the existing ambient temperature. During reversals, afterburner was required to maintain this airspeed.

High target speeds and the restricted G's available at altitude combined to make flat, small angle-off approaches inevitable on a banner booming along at high altitude. Consequently, consideration was given the length of the towline, airplane angle-off the target at time of firing, and the range at which firing occurred.

These considerations were combined into simple safety rules for visual lead pursuit runs. In airplanes with guns aligned parallel with the fixed sight, it was established that towplane safety was adequately maintained if the fixed sight was at least 34 mils behind or below the towplane at time of firing.

In the case of visual lead pursuit rocketry, the pip of a properly used gyro sight was held at least 120 mils behind or below the towplane.

The "Case of the Recalcitrant Clay Pigeon" is not closed completely. A continuing study is being made by Armament Test to further substantiate and refine the scheme of predicting non-destructive towing airspeeds.

However, with the results achieved thus far in the F4D and the F4D by the use of the described equipment, high speed air-to-air weapons training may be conducted now under more realistic conditions. Detailed information regarding specifications and procedures for construction of tow masts, tow points and tow rigs for specific aircraft may be obtained from Naval Air Test Center, Patuxent River, Maryland.



ASST. SECNAV for Finance, James Armstrong, is briefed by LCDr. A. E. Solberg, left, and Capt. L. P. Carver on use of oxygen system, ejection seat before TV-2 flight at Glenview.

FORMER FLEET CHAMP RETIRES

By S. H. Bruck, SN

TREASURES unfolded when an old, dusty and worn scrapbook is opened, are often illuminating and, at times, staggering. So it is in the case of Maurice Sieuw, Chief Aviation Structural Mechanic, U. S. Navy, Retired.

December 15, 1911 is not a date that will go down in the annals of history as a momentous one, yet it is the date that, in a small Belgium town, Maurice Sieuw was born. He was destined to serve the United States of America in times of peace and war, to be a leader of men, an asset to the country he adopted, and one of the most colorful personalities to ride the ships of the United States Navy.

The year 1921 brought the small, thin, Belgian youth to the shores of America and the metamorphosis that occurred during the next eight years was not really spectacular. Yet in 1929 there emerged a man in blue, a member of the U. S. Navy, as American as the hot dog.

The scrapbook is opened, and the age-yellowed clippings from worldwide newspapers take the reader on a journey from New York to San Francisco; from Japan to England; from victory to defeat and back to victory again.

In 1930 aboard the battleship *Maryland*, a short, 118-pound, 18-year-old youth by the name of Maurice Sieuw signed an application to participate in the fleet boxing tournament. That was the beginning; the end was not even in sight.

Sieuw climbed to fame over the hordes of contenders he beat. One after the other in a never-ending stream they were carried out of the ring. Sieuw was rapidly becoming a contender for the All Navy Crown.

The scrapbook tells all. From headline to headline appears the name of Maurice Sieuw—"The fighting gob," "That battling, bombing Bluejacket," "That sailor boxer."

In June, 1935, a leading American newspaper carried these words: "The audience didn't know it, but they were now to be treated to perhaps the greatest contest ever boxed in this much heralded Jeffries Barn between Maurice



SIEUW GETS PARTING GIFT FROM SKIPPER

Sieuw, that battling, bombing Blue Jacket, and Al Salazar."

Two Jeffries Barn trophies resting on Sieuw's mantle are sufficient explanation to the outcome of that fight.

In 1937, a Las Vegas sports writer wrote: "Maurice Sieuw, sailor boxer of the Pacific Fleet, showed the fans the artistry of the Navy."

The years went by—'36, '37, '38—and with each new year came new honors for the Belgium-born bombshell. In 1939 Maurice Sieuw retired from the ring.

He had captured the Heavy Cruiser Crown, the Pacific Fleet Crown, the Golden Gloves, and the crown to crown all crowns, Sieuw was All Navy Champ for three consecutive years.

He fought 353 times and lost but 14 bouts. He was never knocked out.

Perhaps even more impressive than his boxing record is Chief Sieuw's Naval record which was closed October 3 when he finished 28½ years of active Navy duty at NAS Glynco.

The short, ruddy complexioned, blue-eyed chief of Airship Squadron Two has served on 17 naval vessels, ranging from sub chasers to carriers, from mine sweepers to battleships. He has spent 22½ years at sea in eight rates.

● A rocket ship, an interceptor airplane with a rocket motor as its main power plant, has made its initial flight in England. Known as Saunders-Roe 53, it uses a rocket engine designed for liquid propellant and auxiliary jet engine to gain range at cruising altitude.

LET'S LOOK AT THE RECORD

VX-6 Logs Record Flight 3 Planes Reach Antarctica Oct. 1

Three Navy planes of VX-6 landed at McMurdo Sound October 1 to begin *Operation Deep Freeze III*. They reached Antarctica two weeks earlier than any other plane which had made the flight from another continent.

Cdr. Harold G. Hanson landed an R5D at 1700 Antarctic time and was followed 21 minutes later by Cdr. Vernon J. Coley, squadron commander, who flew a P2V *Neptune*. Cdr. E. J. Frankiewicz landed an R4D-8 at 1800.

The three planes left Harewood International Airport at Christchurch, N. Z., at 0500. Their cargo included 550 pounds of personal mail for the wintering-over crews at the seven American Antarctic bases erected in support of the International Geophysical Year.

Crewmen and passengers of VX-6 planes were the first outsiders the men at McMurdo Sound had seen since an icebreaker left there March 12 at the end of *Operation Deep Freeze II*.

Another 'First' Claimed AD-6 'Tanker' Used in Refueling

What is believed to be another "First" for Oceana-based squadrons was achieved on 10 October when pilots of jet squadrons in Carrier Air Task Group 182 and Air Group Eight "plugged" in to a refueling hose trailed by a new AD-6 "tanker" for its first fleet inflight refueling qualifications.

In the past, the large AJ tanker aircraft has been used. Now, with the development of the smaller and more versatile AD buddy tanker, the Navy can operate more efficiently at sea where carrier deck space is worth more per foot than Miami's gold coast.

Pilots qualifying were: Cdr. A. G. Russell, CO, LCdr. W. P. Kiser, and Lt. J. E. Pope, all from the CATG-182 staff; Lt. E. R. Seymour, Ltjg. G. R. Baumann, and Ltjg. R. F. Weimorts from VF-81; Ltjg. C. A. Mehldau and Ens. J. W. Lee of VA-76; and Ltjg. W. K. Rhodes of VF-82.

New Safety Record is Set Low Accident Rate Praised by CNO

The Chief of Naval Operations has commended Naval commands for setting a new record low in major aircraft accidents during fiscal year 1957. For the year ending June 30, naval aviation records disclose a rate of 3.06 accidents per 10,000 hours flown.

The previous low of 3.3 major accidents per 10,000 flight hours was set in fiscal 1956. These figures show a definite downward trend in the number of aircraft accidents in the Navy over the past ten years. Despite the advent of higher performance and more complex aircraft, improved safety equipment and more rigorous training of aviation personnel have reduced the accident rate from 6.7 in fiscal 1948 to the present 3.06.

A goal of 2.9 accidents per 10,000 flight hours has been set for FY 1958.



GAY, AD1, ANSWERS INSPECTOR'S QUERY

VR-24 Rated Outstanding Wins Top Praise 4th Year Running

Fleet Tactical Support Squadron 24 at Port Lyautey, Morocco, has received its fourth straight Outstanding rating as the result of an annual administrative inspection by Commander Fleet Air, Eastern Atlantic and Mediterranean.

During the same period in which the Moroccan-based squadron earned four top ratings at inspections, it won two consecutive CNO Aviation Safety Awards. It has maintained a re-enlistment rate above the Atlantic Fleet average for the last four six-months periods.

The squadron has logged 22,000 accident-free flight hours in the last two fiscal years. In one month, its planes logged 269,000 flight miles, the equivalent of 10 times around this terrestrial globe.

VR-24 is commanded by Capt. R. C. Knowles. Its job is to provide air logistic support to U. S. Naval forces in the European-Mediterranean areas.



FIRST LANDING party of sailors ever put ashore by helicopter, according to CVS-45, races across the deck of the Valley Forge to board an HR2S. It was also the first time the HR2S had operated from a carrier. The exercise was held October 14 off Cuba. A heli-

copter squadron of MAG-26 from New River moved aboard the Valley Forge for carrier training. Vertical envelopment of a land area by helicopter-borne assault troops is a routine operation for Marines, but landing parties of sailors had always gone ashore in ship's boats.

*Joy
to the
World*



When what to my wondering eyes did appear . . .



All is calm, all is bright 'round you Virgin Mother and Child



'Tis the season to be jolly!

God rest ye Merry, Gentlemen!



Oh come, all ye faithful, joyful and triumphant.

*From Naples to Norfolk, from Japan to Jersey,
the men of U. S. Naval Aviation pause in the
midst of busy schedules to share the joy and
spirit of Christmas with the tots of the world.*



Santa Baby

BRITISH AIRCRAFT ON PARADE



WESSEX IS FIRST PRODUCTION COPTER WITH FREE TURBINE POWER



FIVE-PLACE HELICOPTER CAN BE CONVERTED TO AIR AMBULANCE



BRISTOL 171 BRINGS UP 'SURVIVOR' IN SCOOP NET SEA 'RESCUE'



BRISTOL 173 WAS BUILT FOR RESEARCH OF TANDEM-ROTOR DESIGN



MK. VII WHIRLWIND WAS DESIGNED SPECIFICALLY FOR ASW WORK



SAUNDERS-ROE 'SKEETER' CONVERTED TO AIRBORNE AMBULANCE



HERON MK. 2 IS 17-PASSENGER TRANSPORT



GLOSTER AIRCRAFT'S TWIN JET JAVELIN SHOWN EQUIPPED WITH FIRESTREAK MISSILES

Rotary wing design is growing increasingly popular all over the world. While production is not large in Britain, there is a lively interest in the field of helicopter development.

Westland, for example, is now totally committed to rotary wing development. Their current effort includes the Widgeon, the Whirlwind, the Wessex, and the Westminster.

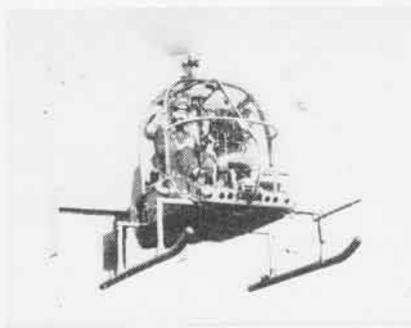
The Bristol aircraft company is developing a twin-rotor design for the RAF. Fairey Aircraft has an experimental copter with a tip pressure jet system for driving the rotor.



GANNET, AN ANTISUBMARINE AIRCRAFT, IS USED BY ROYAL AND AUSTRALIAN NAVIES



ROYAL NAVY HAS SELECTED THE FIRESTREAK AS STANDARD ARMAMENT FOR SEA VIXEN



THIS IS FAIREY ULTRA LIGHT JET COPTER

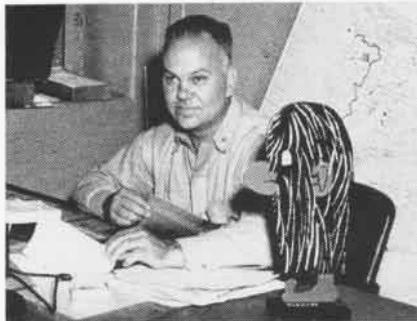


HAWKER HUNTER IS SHOWN WITH AUXILIARY, DISPOSABLE FUEL TANKS HUNG ON WINGS

VQ-2 Gets New Safety Idea Safety Violators Earn Clod Award

Latest gimmick designed to embarrass pilots into observing good safety habits is the "Clod," now being awarded to erring pilots of Electronic Countermeasures Squadron Two in Morocco.

"Don't be a Clod!" has come to have a tangible meaning to squadron pilots since Ltjg. G. K. Dickson, safety offi-



CLOD WAITS AWARDING TO NEXT VIOLATOR

cer, and Ltjg. J. C. Bergquist, legal officer, pooled talents to create Clod, the essence of ignominy.

The plywood figure of disgrace rests on the desk of the recipient until he or the safety officer spots another offender.

The first Clod citation read: "... For Clodish Achievements while participating in an aerial flight, (Pilot's name), following a landing of a P4M-1Q aircraft at the Naval Air Facility, Naples, Italy, did, with utter disregard for standard operating procedures and handbook information, secure both his reciprocating engines while on the runway, thereby losing all brake pressure.

"While taxiing on jet engines alone, having failed to energize the emergency braking system, he did leave the paved area, fortunately rolling to a stop in a grass field short of the general aircraft parking area; thus contributing materially to the general confusion on the parking line and in the aircraft.

"His devotion to Clodish Activities was in keeping with the eight-ball traditions of the United Clods. . . ."

12,000 Hours in the Air LCol. Hobbs Racks Up Grand Total

Veteran Marine Aviator, LCol. Ralph H. Hobbs of the Third Marine Aircraft Service Group at MCAS El Toro, has completed 12,000 hours fly-



MGEN. ENNIS CONGRATULATES LCOL. HOBBS

ing. When he landed his R5D transport, MGen. Thomas G. Ennis, commanding general of MAW-3 was on hand to congratulate him.

LCol. Hobbs, a Marine since 1929, has been flying since the early thirties. He has flown almost all the Corps planes from the old O2U-1 *Corsair* to the modern transports.

He is stationed at El Toro where he is in charge of the Marine Wing Service Group R5D Transport Training.

College Program Changed Age Limit is Raised to 30 Years

The Navy college plan offering qualified enlisted men a free four-year education in engineering has been modified by the Chief of Naval Personnel. The age limit has been raised from 25 to 30 years.

The program enables enlisted men to advance several pay grades while enrolled and upon graduation offers assignment to a new Navy engineering field as a warrant or ensign.

Deadline for receipt of applications for the 1958-59 year program is 31 December 1957. Applicants chosen will attend Purdue University or the

University of Washington at Seattle.

Training includes courses leading to an engineering degree and ultimate assignment in one of the Navy's new, advanced fields such as digital computers, advanced fire control systems, advanced armament (including nuclear weapons) and nuclear propulsion.

All ratings are eligible to apply. Assuming a man is serving in pay grade E-4 at the time of his selection, he will be advanced to E-5 at the time of registration. After college enrollment, he will be advanced to E-6 on satisfactory completion of the first year of college.

Advancement to pay grade E-7 follows satisfactory completion of the second year of college or fulfillment of minimum service requirements for advancement. All advancements are contingent on the approval of the Commanding Officer of the NROTC unit.

Complete details on eligibility are enumerated in BUPERS Inst. 1510.69B.

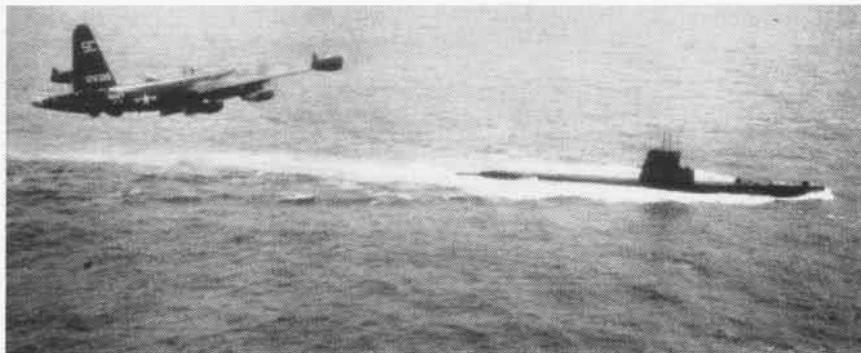
Terriers for Kitty Hawk CVA-63 to be Armed with Missiles

The *Kitty Hawk* (CVA-63) will be the Navy's first aircraft carrier to be armed with *Terrier* guided missiles.

Installation of *Terrier* handling and launching equipment, plus incorporation of improved facilities for handling of aviation fuel, may delay the completion date of the 60,000-ton carrier.

Kitty Hawk is the fifth of the Navy's *Forrestal*-class attack aircraft carriers. The fourth, the *Independence*, is scheduled to be commissioned in the fall of 1958.

The USS *Constellation*, the sixth carrier of this class, is scheduled to be commissioned in the middle of 1960.



PILOTS OF VP-4, stationed at U. S. Naval Air Facility, Naha, Okinawa, and skippered by Cdr. G. S. Clute, operate with other Fleet units in the Western Pacific. The squadron has been at Naha since August 1956. Three typhoons hit shortly after VP-4's arrival, but that did not keep the squadron from carrying out its commitments from other bases. RAdm. Paul D. Stroop, Commander, Fleet Air Wing One, has praised VP-4's efficiency. The pilots fly P2V-5 Neptunes.

COUGAR GOES TO CHASE FIELD



FIRST FAMILIARIZATION FLIGHTS TAKEN IN TANDEM F9F-8T TRAINERS

STUDENTS USE CONVENTIONAL COUGAR FOR COURSE COMPLETION

YOU'RE IN *Cougar* country these days if you happen to be in the vicinity of the Naval Air Training Command's advanced jet training base, NAAS CHASE FIELD at Beeville, Texas. The newest Grumman trainers, the F9F-8T and the F9F-8, assigned to Advanced Training Unit 223, have replaced the F9F-2 *Panther* series in the syllabus. This marks the first time students have received advanced training in high performance aircraft.

To Class 15 Charlie of the Beeville base went the honor of being the first student group to receive training in the sweptwing aircraft. The class consisted of Ensigns G. A. Applehof, R. B. Lowe, L. D. Mann, G. D. Northcutt, E. E. Steinbrink, USNR, and 2nd Lt. W. W. Mackey, USMCR.

Chase Field is part of the Naval Air Advanced Training Command. After

13 weeks of instruction in instruments, formation flying and night familiarization, the students enter the final stage of flight training. For the last eight weeks, they concentrate on tactics and weapons delivery. The *Cougar* is used during this phase. After the indoctrination flights in the twin-seated version, designated the F9F-8T, the course is completed in the conventional F9F-8.

The F9F-2 *Pantherjet* will be gradually phased out of the program. The newer Grumman plane, with its supersonic speed and sweptwing characteristics, will permit newly graduated Naval Aviators to join the fleet with advanced flying proficiency. By implementing such training procedures, the Navy is providing high performance pilots whose transition time in the fleet will be held to a minimum as they tackle the F8U, F3H or F11F.



ENS. STEINBRINK WAS FIRST TO TRY 8-T



GROUND TRAINING IS GIVEN CLASS 15C BY VAN PETTEN, AMT



RADM. R. S. CLARKE, CNAVANTRA, CLIMBS ABOARD AN F9F-8T

CONWAY AWARD GOES NORTH AGAIN

THE BIG SILVER bowl, known as the Edwin Francis Conway Trophy, which is emblematic of top proficiency in the U. S. Naval Air Reserve Command, has been claimed for the second straight year by Naval Air Station Minneapolis, Minn.

The trophy, one of the oldest continuous awards for aviation achievement, was donated anonymously to the Navy Department 22 years ago to perpetuate the memory of Lt. Edwin Francis Conway, Commanding Officer of Floyd Bennett Field, New York, who was killed in a 1933 plane crash.

In addition to the Conway Trophy, four Weekend Warrior units attached to the Twin Cities air station were honored as recipients of Noel Davis Trophies for outstanding efficiency in squadron operations.

Another annual award, the Chief of Naval Air Training Command Trophy which is presented to the station showing the most improvement in the Reserve Training Command during the competitive fiscal year, went to NARTU LAKEHURST commanded by Capt. James W. Condit.

Twelve organized Naval Reserve



PLEASED skipper, LCdr. Langton, makes it 3 in a row for VS-872 as Noel Davis winners.

Squadrons were named winners of Noel Davis Trophies, awarded each year to the squadron judged the most efficient of their types.

The Noel Davis Trophy was given to the Navy in 1927 by Harry Guggenheim, a former Naval Reserve aviator, in memory of LCdr. Noel Davis, who was killed in an attempted trans-Atlantic flight. Inspections and examinations of operational records during the competitive year determine



CONWAY TROPHY shines in the sun as Capt. E. M. Morgan, CO of winning NAS Minneapolis, and RADM. H. H. Caldwell, CNARESTRA, salute the color guard passing in review at inspection.

which squadron of each type will receive the award.

The 1957 Noel Davis Trophy winners (by station) are:

NAS LOS ALAMITOS, California: Air Wing Staff, Large, AWS-77(L), commanded by Capt. Henry A. Stewart; Air Group Unit, Small, AGU-S 771, commanded by Cdr. Charles S. Melvin; and Bureau of Aeronautics Reserve Training Unit, commanded by Cdr. Arthur L. Hockin, from the start of the fiscal year until December 31, 1956, and by Cdr. Bill C. Ames for the balance of the fiscal year.

NAS MINNEAPOLIS, Minnesota: Fighter Squadron 811 commanded by LCdr. John M. Smith; Attack Squadron 813 commanded by LCdr. Leonard J. A. Rasmussen; Patrol Squadron 814, commanded by Cdr. Marcel Carpenter; and Patrol Fleet Aircraft Service

Squadron 815, commanded by Cdr. Raymond G. Glumack from the start of the fiscal year until June 1, 1957, and by Cdr. Cort O. Olson for the balance of the fiscal year.

NAS OAKLAND, California: Anti-submarine Squadron 872, commanded by LCdr. Langton Richards; and Lighter-than-Air Patrol Squadron 871, under Cdr. Rogers P. Emmons.

NAS NEW ORLEANS, Louisiana: Helicopter Utility Squadron 821, commanded by LCdr. Robert D. Blake until September 30, 1956 and by LCdr. Philip E. Brou for the balance of the fiscal year.

MCAS MIAMI, Florida: Transport Squadron 802, Cdr. V. M. Searls, CO.

NAS ATLANTA, Georgia: Auxiliary Air Unit, Large (AAU-L-674), commanded by Cdr. George H. Vanta.

Norfolk Five-Time Winner

Winning first place in educational exhibits at the Virginia State Fair is getting to be a habit for the Naval Air Reserve Training Unit, U. S. Naval Air Station, Norfolk, Virginia. During ceremonies at the Virginia State Fair in Richmond, Lieutenant Governor A. E. S. Stephens presented the first place award to Captain R. S. Rogers, Commanding Officer of the NARTU.

This is the fifth time in eight years of participation in the competition that NARTU Norfolk has been awarded the first place plaque. The



RADM. CALDWELL presents Noel Davis award to Cdr. Carpenter who commands VP-814.

award is presented annually for the exhibit having the most educational value.

The NARTU exhibit presented to the public many of the features of Naval Aviation, and in particular, the Naval Air Reserve training program.

Oakland Air Fair

Pilots of five services, in addition to an unexpected appearance of a squadron of sea gulls, thrilled some 200,000 residents of the Oakland area during an annual observance which featured the Navy's *Blue Angels*.

The Annual Air Fair, jointly sponsored by NAS Oakland and the Oakland Junior Chamber of Commerce, won the JayCee National Aviation Award for the years 1955 and 1956 for the Oakland Chapter.

Military aircraft of the Navy, Marine Corps, Army, Air Force and Coast Guard participated in the five hour show. Fleet Air Squadrons from NAS ALAMEDA and MOFFETT FIELD sent flights of F8U *Crusaders*, A4D *Skyhawks*, AD-6 *Skyraiders*, FJ-4B *Furies* and F9F-8 *Cougars*. They vied with flyovers from the Navy and Marine Reservists at NAS Oakland in F2H *Banshees*, S2F's and P2V's. The fleet squadron from ComFair Alameda demonstrated a mid-air refueling of two *Cougar* jets by an R3Y *Tradewind*. These events, the mock bombing missions, simulated mirror carrier landings and air-sea rescue operations drew repeated ovations from the largest crowd ever in attendance in Oakland.

A large static display gave onlookers a close look at the latest varieties of



PLAQUE for best educational exhibit is presented by Lt. Gov. Stephens to Capt. Rogers.

military and civilian aircraft designs.

One of the surprise attractions of the show proved to be aerobatic stunts performed in a 1939 Waco bi-plane.

However, an unexpected element almost flew off with show honors. With jets zooming overhead, a squadron of sea gulls in perfect formation made a low level pass across the throng, drawing a delighted round of applause.

Los Alamitos Chapel

All hands and their families at Naval Air Station, Los Alamitos, California, agree that the station chapel services have taken on new meaning since the special altar and its floral settings have been installed. Designed and constructed by station and squadron personnel in their off-duty hours, the project is hailed as one of LosAl's most successful and rewarding.

Focal point of the display is a simulated stained glass window, believed to be the first of its kind ever produced. It came to life under the skilled hands of Dick Johnson, YN2, of the Com-

mand Liaison office. He tediously stained, etched, and fitted dozens of pieces of plastic together like a giant jig-saw puzzle. Jim Riley, AM3, assisted in cutting the materials to the varied sizes and shapes.

One large problem was that stained glass windows are leaded between the



COMPARISON of original plans with completed altar by NAS Los Alamitos men who built it.

panes. After many evenings experimenting with various types of material, Johnson chose to use plastic clothesline. Cemented between the plastic panes and properly stained, you can't tell it from the real thing.

The window underway, Dick's sketches for the altar were passed to Clarence E. Doxstater, AT1, who drew blueprints and the final specifications. Carpenter supervisor Bill Krause, DC2, set aside a portion of his wood hobby shop. With the enthusiastic help of woodcrafters who frequent his place, the framing and forming operations of the altar were soon completed.

A couple of Chief Medics named Snodgrass and LeMay happened by and offered to supervise the painting of the structure. Many of the helpers were members of Naval Air Reserve Squadron VR-773 and Navy VS-23.

It was a big day when the window was joined to the altar proper in the station theatre. Then Electronics Technicians Chief Bryan M. Fults and Morgan D. O'Connell, AT2, installed the electrical circuits that so effectively illuminate the stained glass. Especially designed reflective shadow boxes were built and installed by Chief A. J. Cataldo and his metal shop crew, including R. C. Wood, AM3.

Tony Gustave, Public Works sign painter, finished the altar with masterful touches of gold leaf.

The LosAl Officers' Wives Club then voted \$50 for the purchase of suitable candle holders and new altar cloths.



COAST GUARD helicopter prepares to make a simulated rescue of an airman from a life raft. This was one of the demonstrations presented at the Air Fair held annually at NAS Oakland.

R4Q FLIES 4 HOURS ON GROUND

SIX CREWMEN and a senior passenger experienced a most unusual flight during a typhoon. They flew four hours, with debris hurtling around the plane, and they changed heading nearly 200 degrees in an R4Q flying boxcar that never left the runway at Kadena AFB, Okinawa.

Typhoon "Faye" struck the Far East air base in the brief instant that the Marine plane was revved up for take-off and return to NAS IWAKUNI, Japan. Another plane had been launched successfully only minutes before the R4Q tried to take off.

With heavy rains falling, Capt. Robert H. Brown, pilot, tried to line the R4Q down the runway at 0745 but was met with cross winds estimated at 60 knots and gusts of 75 knots. He couldn't turn the aircraft because of the wind's force. His only alternative was to keep the plane's nose headed into the wind, which he did.

Brown and his copilot, 1st Lt. T. E. Llewellyn, kept the plane's power on, adjusting it to the changes in wind velocity.

The crew remained in the cockpit throughout the storm to keep the nose from raising off the ground. Col. Ralph R. Yeaman, a passenger, said debris flew around the aircraft during the entire four hours.

The control tower was evacuated at 0845, so the R4Q crew had no contact with anyone outside the plane until 1130 when the winds finally began to subside.

From 0845 until 1015 visibility and ceiling were rated zero-zero. The pilot was ground flying on instruments the majority of the time. Maximum gusts of 150 knots buffeted the plane between 0900 and 0945 when the typhoon's eye passed within eight miles of the air base.

The pilot rotated his aircraft 10 degrees at a time to compensate for the wind's rotation as he fought to keep the R4Q from tipping. In all, he rotated the plane 200 degrees during the four-hour struggle.

At one time during the plane's rotation, it looked as if two triangular repair stands on the edge of the runway would collide with the aircraft. Two crew members, Cpl. Richard W. Erickson and Pfc. Robert Adamiec, braved

winds of 110 knots to remove the stands.

When the storm subsided to winds of 60 knots at 1130, the aircraft could have gone on its way. The crew, however, spent two hours inspecting the R4Q for possible damage before take-off.

Weathermen at Okinawa had not expected the typhoon to hit for another 24 hours. Winds changed course so rapidly and so unexpectedly at 0300 the island went from typhoon condition three to condition one immediately.

Six Brothers are Marines Two Others Voice Intent to Join

Cpl. James H. "Ski" Halaszynski of USS *Randolph's* Marine detachment is one of six Marine brothers. During 20 months aboard the *Randolph*, he has served as squad leader, Captain's orderly and Corporal of the Guard.

He was named "Meritorious Corporal" when the exam for advancement to corporal was waived in recog-

nition of his outstanding performance.

Four Halaszynski brothers are on active Marine duty, and two are combat veterans now back in civilian life.

Tom, 26, spent 14 months as a sergeant in Korea. Pfc. Dennis, 25, is a policeman after a tour at Cherry Point where he was a mainstay of the base boxing squad.

Pvt. Joe, 22, is fresh out of boot training and attends the Sea School at Portsmouth, Va., in preparation for a Mediterranean cruise. Cpl. Adam, 20, is stationed at Camp Lejeune, ready to go to the Med with the 2nd Division. Cpl. Earl, 19, is a machine gunner at Camp Lejeune.

Two other Halaszynski's are future recruits for the Corps. Johnny, 13, now tangling with fractions and verbs at Centennial Junior High in McKeesport, Pa., has his eye on a Marine career, and brother Bill, 21, expects to join the Corps soon.

Their dad? He's an Army veteran.

Reserve Air Stations Hit Cutback Closes Five in FY 1958

General Navy cutbacks during the current fiscal year will necessitate the closing of five naval air stations and one air facility of the Naval Air Reserve Training Command.

The closures will reduce the number of facilities in the Air Reserve Command organization to twenty-two.

Scheduled for disestablishment during FY 1958 are Naval Air Stations at AKRON, LINCOLN, ST. LOUIS, SPOKANE and NARF HOUSTON. NAS BIRMINGHAM was closed on 1 October.

The scheduled cutbacks are necessitated by limited operating funds, increased costs of new aircraft and reductions of personnel throughout the Navy during the current fiscal year. These factors affect the Naval Reserve as well as the fleet forces and other components of the Navy. As a result of the closings, approximately \$1,226,000 will be available to other Naval Air Reserve activities, and approximately 900 personnel may be reassigned.

Reserve personnel affected by the disestablishment of these activities are urged to continue their active affiliation with the Reserve program by attending drill periods at other naval air stations, participating in Naval Reserve Officers' Schools, and by enrolling in correspondence courses.



CPL. HALASZYNSKI IS ON SECOND MED TOUR

CAMERA REPAIR EXPERTS TAUGHT



INSTRUCTOR SHOWS HOW TO LOAD CAMERA



CAMERA REPAIR WITH MAGNIFYING GLASS



TRAINEE OVERHAULS A RADAR CAMERA

ALMOST EVERYTHING can happen to a camera and usually does. A rough carrier landing, salt water dunkings, spray, and wide variations of temperature and humidity are only a few of the things that can put a camera out of commission.

At NAS PENSACOLA, the Navy's Camera Repair School (Class C) makes sure we will have trained personnel available to keep our cameras ready and clicking. The curriculum includes maintenance and repair of all makes of cameras and related equipment. A course in electronics is included.

In February 1958, and every 19 weeks thereafter, 20 students will be

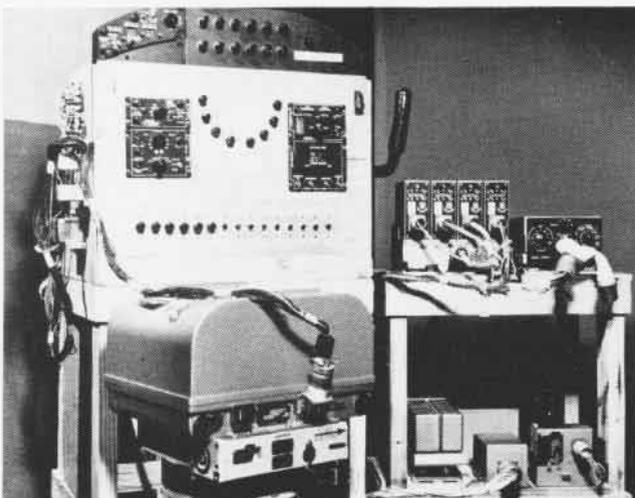
enrolled. Photographer's Mates, Second Class and above (or equivalent Marine Corps ratings) with 18 months obligated service are eligible. Aviation Electronics Technicians, Second Class and above, assigned to photographic duties are eligible to attend Phase Four, a five weeks course. Requests for training in the Camera Repair School should be addressed to the Bureau of Naval Personnel, B2132.

Approximately eight weeks of the course are devoted to electronics systems of image motion control, automatic exposure control, and camera sequence timing. Some complicated mechanisms contain as many as 247

parts in a unit the size of a Mason jar lid, a study in compactness.

With the invasion of electronics into the field of photography, cameras are progressively more complex. The day of the \$2000 camera and the 50 cent part to repair it has passed. Photographic equipment today comes as high as \$28,000 per single unit. Only an expert is able to keep it in action should it require repair.

Graduation from the Camera Repair School does not mean that a man is qualified thoroughly, but it does mean he has a solid foundation. Practical application and experience will make him truly qualified in this special field.



MOCK-UP OF F9F COCKPIT IS USED DURING ELECTRONIC PHASE



TRAINEE OVERHAULS A GRAPHX SHUTTER USING TRAINING AIDS

Stratosphere is Studied Unofficial Altitude Record is Set

Two Navy observers reached an altitude of 84,300 feet and stayed at that ceiling for three hours in the last of a series of scientific observations and experiments that comprised Project *Stratolab* (NANews Feb., 1957). The flight established an unofficial altitude record for a two-man gondola.

Among the *Stratolab* experiments were cosmic ray measurements in which a special gamma telescope was used for the first time. The two Navy men, Mr. Malcolm D. Ross of the Office of Naval Research and LCdr. M. Lee Lewis of BUAEER used the telescope at ceiling to observe the sun as a possible source of gamma primary cosmic radiation.

The information obtained may help to determine the origin of primary cosmic rays which never reach the surface of the earth.

The observers also collected four samples of the air in the stratosphere at varying altitudes. The samples, of 50 quarts each, provide scientists with the most complete vertical collection of stratospheric air ever collected.

Star observations were made to determine the altitudes at which stars could be seen during daylight. In addition to other measurements of light, air and heat in the stratosphere, the flight supplied further aeromedical data to add to the information obtained in the first high altitude flight, 76,000 feet on November 8, 1956.

Navy Accepts New Trainer TT-1 Pinto Has Many Jet Features

The first production model of the TT-1 *Pinto*, a primary jet trainer designed to make a jet pilot out of a youth in one aircraft, has been accepted by the Navy.

After formal acceptance by LCdr. P. W. Kerr of the Bureau of Aeronautics at Dallas, the *Pinto* was turned over to Temco's engineering department to undergo a series of ground and flight tests.

Temco was awarded a contract in 1956 for an evaluation quantity of the two-place jet trainer which was designed, built and flight-tested by the company at its own expense. The contract award came after competitive evaluation tests at Patuxent River.

Several engineering changes have made the plane even more rugged and



LCDR. P. W. KERR ACCEPTS FIRST PINTO

dependable than the prototype tested by the Navy, a Temco release states.

Pinto has many features of operational jet fighters, including ejection seats, liquid oxygen equipment, speed brakes, and controls and instrument panels comparable to those on jets the students will fly later.

Top speed of the TT-1 is nearly 300 knots, but it can land at 62 knots. Provided with a jet engine of 920 pounds thrust, the *Pinto* was structurally designed to accommodate higher-powered engines if they are desired.

Teal Flies Successfully Launched from F3H-2M Demon

The Navy's and the nation's first successful rocket-powered target drone, the *Teal*, has made its initial flight at NAMTC POINT MUGU.

In its first flight, the *Teal*, designated XKDT-1, was carried aloft by an F3H-2M *Demon* fighter. The pilot pushed a button at 20,000 feet which launched the drone from beneath the wing of his plane. The XKDT-1 then zoomed away on rocket power, holding a straight course for nearly eight minutes.

Teal was designed to sharpen the aim of Navy fighter pilots. It can operate near the speed of sound at altitudes up to 50,000 feet. Manufactured by Temco Aircraft Corporation at Dallas, Texas, the XKDT-1 resembles a missile in shape. It is about 12 feet long, with a wing span of 58.8 inches and a body diameter of 10 inches.

In addition to becoming the first successful drone of its type, *Teal* was the first drone to be successfully launched from a sweptwing aircraft and the first to fly that duration using solid-propellant fuel.

The swift drone can serve as a target for air-to-air missiles or other defensive devices carried by Navy air-

craft. During the powered phase of its flight, the *Teal* emits flares, making visual tracking possible. Air-to-air missiles coming within a specified distance of the target cause an indication of a hit, although the drone itself is left intact to allow other weapons a chance to fire at it.

Instructor Billets Open Vacancies Exist in 15 Activities

A continuing need for enlisted instructors exists in 15 types of training activities, BUPERS has announced.

Qualifications for instructor duty include an interest in training and a desire to serve as an instructor; leadership ability; ability to work with others; ability to exercise sound judgment; a clear record; ability to speak clearly.

An instructor should also possess good military bearing and deportment; minimum GCT of 55 (scores under 55 may be waived by commanding officers for otherwise qualified candidates); and meet requirements for shore duty.

Assignments are available in Class A, B, C and P schools and functional training activities, recruit training commands, retraining commands, officer candidate schools, NROTC units, honor naval schools, merchant marine academies, aviation schools under CNATTC, fleet training centers, fleet sonar schools, fleet air defense training centers, fleet gunnery schools, ASW tactical schools, submarine school and the Naval Air Mobile Training (NAMT) program.

Candidates for BUPERS instructor duty may submit applications via their commanding officer direct to the Chief of Naval Personnel (Attn: PERS B2134 for general service schools and B2135 for aviation schools.)

Until the candidate's segment of the shore-leave program goes into effect, applications should be submitted on the Instructor Duty Request Card, NAVPERS 1247 (Rev. 6-53).

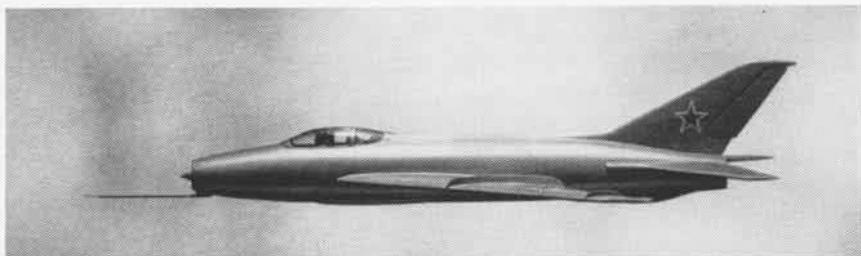
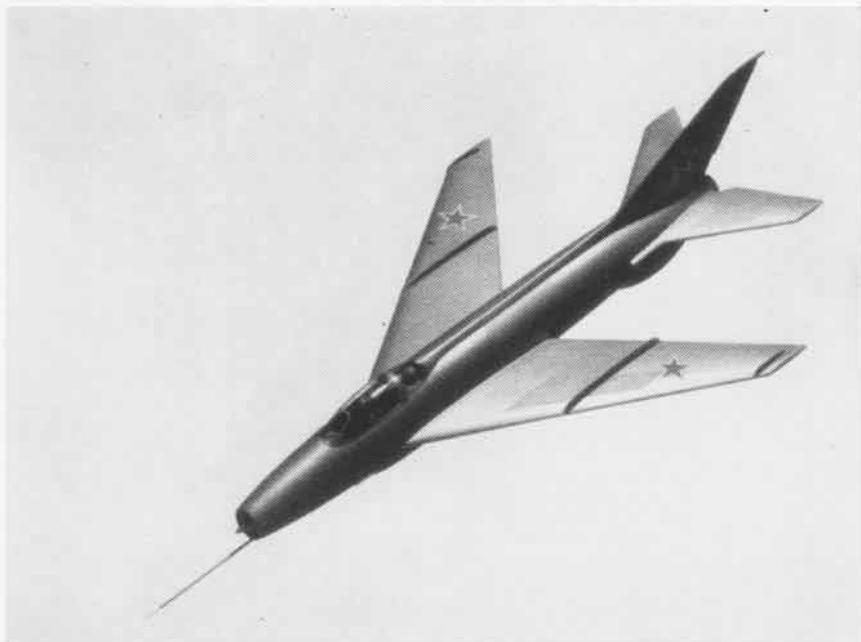
Segment Three became effective 1 October 1957; Segment One becomes effective 31 January and Segment Two, 1 June 1958. Selections will be made on the basis of rotation data cards when the applicant's Seavey segment becomes effective.

BUPERS Instructions 1306.22C and 1306.31B list ratings eligible in the various technical training schools.



FACEPLATE

This Soviet aircraft is a high-performance, single-place, high-altitude, severely sweptwing, jet fighter. Faceplate made its first appearance during General Twining's visit to Russia in 1956. The horizontal stabilizer is swept to match the wing and faired forward on the fuselage. A fairing runs from cockpit to tail and two fins project from the fuselage beneath the tail. Faceplate has a span of approximately 28 feet, and is rated in Mach 1.5 (1000 mph) plus class.





MAKING PLANS for laying out a new route map requires more than a single conference.

COAST AND GEODETIC SURVEY 1807-1957



WORK TAKES the Survey's engineers into remote areas, even to the limits of Alaska.

CELEBRATING its sesquicentennial this year, the United States Coast and Geodetic Survey can look back on 150 years of ascertaining where on earth we are. Plotting its coordinates from coast to coast and from Alaska to the Gulf of Mexico, it has turned out a continuous flow of geodetic information of tremendous importance to the nation. Established in 1807, it was the first technical bureau of the Federal Government.

It has grown in scope, technical efficiency, and public service, so that today it conducts the official basic surveys of land areas and coastal waters of the United States and its possessions. Directed by RAdm. H. Arnold Karo, it is an important bureau of the United States Department of Commerce.

Aeronautical charts are a comparatively recent development; the first series was started in 1930. Today the aeronautical charting activities of the Survey include the compilation and printing of such charts of the United States, its territories and possessions as are required for civil aviation and military use. Navy pilots use them regularly. In addition, such aeronautical charts covering international airways as are required primarily by U. S. civil aviation are compiled and printed by the Survey.

The Survey was the principal source of aeronautical charts during WW II. In 1944, it produced 2,000,000 target charts. To meet the heavy demand, it multiplied its staff and its output. The survey now employs some 2000 people.

Aeronautical charts on issue at the present time total 1530, including 235 standard and auxiliary charts, 1205 instrument approach and landing charts, and 93 radio facility charts. These charts are designed in terms of the jet age, and a staff of highly skilled researchers, cartographers and technicians is required to insure accuracy and reliability.

Today, about 10,000,000 copies of the standard aeronautical charts are distributed annually. In addition, over 43,000,000 of the page-size airport and radio facility charts are issued each year. In business for 150 years, the U. S. Coast and Geodetic Survey has steadily expanded its service to meet the needs of navigation on the land, on the sea, and in the air.



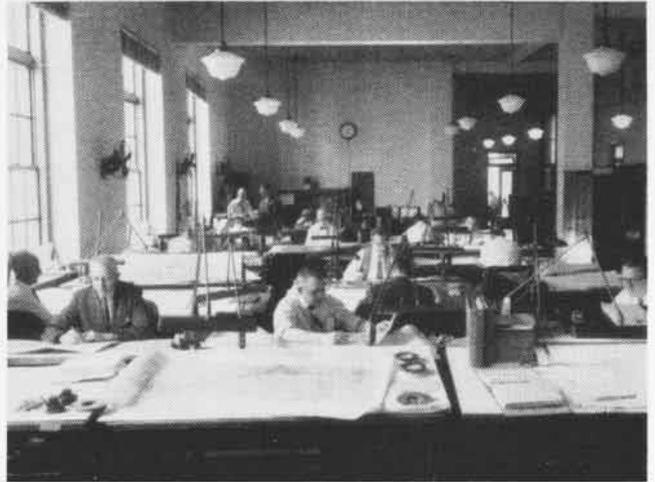
NAS KODIAK, Alaska, serves as important refueling point for Survey photo planes, and is used as emergency base for injured personnel.



THIS NAVY helicopter on the deck of the USS Burton Island helped engineers and surveyors on a special project in Alaskan waters



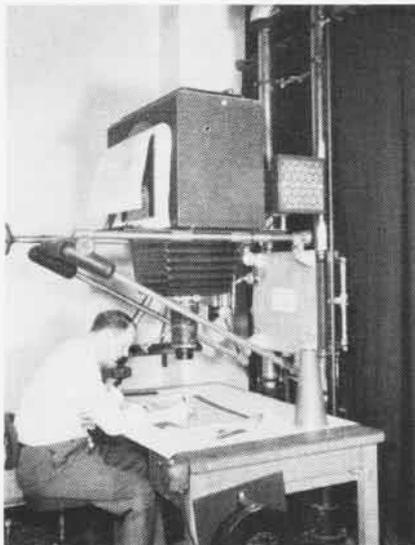
HIGHLY TECHNICAL draftsmanship is required to scribe a nautical chart. Only many years of training make one an adept mapmaker.



IN THE DEPARTMENT of Commerce building, Washington, D. C., scores of professional mapmakers constitute the aeronautical chart branch.



CHANGES to be included in aeronautical maps come in to the Survey office by teletype.



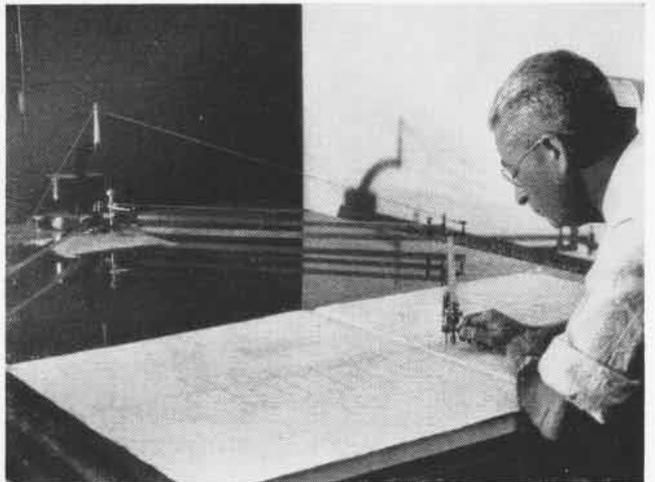
MAP IS reduced to compilation scale on a special projector in Survey chart branch.



WHAT GOES into a single chart? All this carefully checked and verified information.



HERE A CARTOGRAPHER is applying a transparent photographic copy of the land area to the master copy of the aeronautical chart in progress.



THIS SURVEY craftsman is reducing the scale of a recent Corps of Engineers hydrographic survey to the required scale of a nautical chart.

Suggestion Saves \$62,000 A/C Tires Now Recapped Locally

Two members of NAS ALAMEDA'S Supply Department, James U. Meyer, Jr., and Lee A. Pike, have been awarded \$535 for an accepted suggestion on conversion of repairable aircraft tires. Their idea has saved eight Naval air stations an estimated \$62,000.

The men suggested a procedure whereby aircraft tires would be recapped locally on a continuous basis. Previously all activities kept used tires until notified by BuSANDA to recap a specified number. As a result, substantial amounts were scrapped owing to becoming over-age.

BuSANDA reports that the suggestion has saved \$10,000 at NAS ALAMEDA, North Island and Pensacola; \$8000 at Quonset Point, Norfolk and Jacksonville; \$5000 at Corpus Christi; and \$3000 at MCAS CHERRY POINT.

Plastic Shell Case Built Navy-developed Case Goes to Army

Navy scientists working under an Army contract at the Naval Ordnance Laboratory, Silver Spring, Maryland, have developed and tested a lightweight, low-cost plastic cartridge case for artillery shells.

The Army will make operational and cost studies of the new plastic case. If the studies are favorable, the new case will probably replace the traditional brass cartridge case, which has been used for more than half a century, as well as steel cases developed during the Korean hostilities.



CDR. G. W. HALL of Light Photographic Squadron 62 at NAS Jacksonville, supervises Ltjg. R. E. Kunz (right) from West Germany, who is taking training to help him organize the first German Navy Aerial Photo unit.



AT WORK, at play, especially at cbow, Airman George Morgan has called carrier Randolph home for past four years. He says, "I'll stay aboard her till she's decommissioned."

VA-85 Boards Ranger Skyraider Unit First on CVA-61

Attack carrier *Ranger* welcomed aboard its first squadron, VA-85, in October. Classified as a Special Weapons Squadron, VA-85 moved its AD Skyraiders and personnel aboard shortly before the *Ranger's* departure for Guantanamo.

The squadron, which is composed of approximately 100 men, is commanded by Cdr. M. G. Brambilla, Jr. It operates under CAG-18 headed by Cdr. M. D. Carmody.

Primarily self sufficient, VA-85 is fully supported by its own crew. It maintains all aircraft and augments crew activities in loading ordnance and fueling.

VA-85's primary function is the delivery of atomic weapons.

Marine Reorganization Major Changes in Top Level Posts

Gen. Randolph McC. Pate, Commandant of the Marine Corps, recommended redesignation of certain top level billets in the Corps, and these were approved by the President.

The functions of the Assistant Commandant of the Marine Corps and the Assistant Commandant of the Marine Corps for Air have been joined in a single office, to be designated the Assistant Commandant of the Marine Corps. He will hold the rank of lieutenant general and perform the duties of the Commandant during the latter's absence.

The functions of the Chief of Staff, heretofore combined with those of the Assistant Commandant of the Marine

Corps, will be placed in a separate office, that of the Chief of Staff, Headquarters Marine Corps. He will also hold the rank of lieutenant general.

The office of the Director of Aviation, previously held by the Assistant Commandant for Air as a concurrent assignment will be a separate office. This billet will be filled by a general officer. He will be responsible for planning, coordinating and supervising matters and activities pertaining to Marine Aviation.

These changes have been scheduled to become effective 1 December.

Princeton Logs No. 68,000 Pilot Amazed at Landing to Fame

Like any other routine carrier landing, Ltjg. Richard M. Boyd of Air Anti-Submarine Squadron 38, chopped the throttles of his S2F *Tracker* and pancaked on the 888-foot flight deck of the USS *Princeton* (CVS-37). This marked the 68,000th fixed-wing landing since her commissioning in 1945.

What followed made Ltjg. Boyd the most surprised man aboard. It was not until he deplaned that he realized that he had quickly risen—or landed—to fame.

On hand to be the first to congratulate the lucky pilot was the Commanding Officer of the carrier, Capt. J. L. Chittenden, and the skipper of VS-38, Cdr. J. P. Damrow. Co-pilot, Lt. Gordon B. Holcomb, shared the record landing honors.

The *Princeton* is on her sixth cruise to the Far East since the outbreak of the conflict in Korea in June 1950.



LONG ARM of Grampaw Pettibone reaches out in farewell to secretary, Mrs. Edna Gimwright, 16 years with Navy. Capt. E. L. Farrington, Director of Aviation Safety, presents Osborn original of Gramp and "Well Done."

GATOR GETS BOUNCE FROM BOQ



'GET OUT!' ALAMEDA OOD ORDERS ALBERT

A GAPING, wide-eyed Florida alligator was abruptly evicted from the bachelor officer quarters at NAS ALAMEDA after stirring up a minor riot among unsuspecting Navy personnel.

The four-foot monster had given up his swamp dwelling habits of Florida and moved quietly into the officers' quarters where he shared a room with Ltjg. Hal Butts of VP-47.

The scaly, 30-pound reptile was rudely discovered in Ltjg. Butts' shower, quietly refreshing himself after the understandably hard 3000-mile trip across country. Shaken officers took a dim view of his presence.

"Albert is friendly and peaceful," Ltjg. Butts tactfully explained when the alligator was discovered in the shower, "unless he's upset."

With the influx of shocked BOQ officials and bewildered fellow officers who legally share rooms with the lieutenant, Albert was in a snappish mood when LCdr. Ray Kuntz, in charge of the BOQ, explicitly announced, "Albert must go!"

Albert took the news with equanimity, until faced with actual eviction, at which he balked, displayed his eight-inch jaw span and poutingly snapped in two a thick brush handle which was being employed for the eviction.

Ltjg. Butts, who flies seaplanes with VP-17 at Alameda, first met the alligator on his brother-in-law's ranch in Florida near Daytona during a vacation there. Five-year-old Albert made the trip to California doubled up in an

overnight bag and will soon be lolling in the sunshine on a ranch near Monterey, Calif.

"It does get a little crowded in the room," Ltjg. Butts commented on Albert's ouster, "but if he gets too active you just flip him over and put him to sleep. Like this."

Albert hissed at the villainous heave-ho, but Navy officials pointedly noted that tradition is tradition.

NATF(SI) is Commissioned Launching Equipment to be Tested

The Naval Air Test Facility (Ships Installations), a site for evaluating launching and recovery equipment, was commissioned October 1 at NAS LAKEHURST. The 4500-acre site has been under construction for more than a year and is scheduled for completion in 1958.

NATF(SI) is a \$35.5 million project, with one of five jet car tracks for preliminary testing of arresting gear completed.

Tests will determine whether or not the gear is suitable for a given class of carrier before the equipment is committed to a ship.

The facility will insure that when new, increasingly fast, and heavy planes move out into the fleet, carriers' catapults and arresting gear will be capable of handling them.

Present tests feature the use of a jet-powered car which pushes a 50,000-pound deadload down the 5800-foot track at speeds up to 200 mph. When the car is 600 feet from the end of the track, it brakes to a stop, sending the 25-ton load into the arresting gear at the end of the track.

The new facility is commanded by Cdr. R. M. Tunnell and is under the military control of RAdm. S. B. Spangler, CO Naval Air Development and Material Center, Johnsville, Penna.

Lockheed's Navy Contract Development of Polaris Continues

A \$62.1 million contract for continued development of the Navy's fleet ballistic missile, *Polaris*, has been awarded to the Missiles System Division of the Lockheed Aircraft Corporation. The contract extends the work

for this program through fiscal 1958.

According to RAdm. W. F. Raborn, Director, Special Projects Officer of BUORD, the program is going ahead as rapidly as possible. *Polaris* will be the nation's first ballistic missile to be assigned to specially equipped naval ships. Its flexibility and mobility will extend to great distances our defense perimeter. From a few locations in the world's deep water, *Polaris*-equipped ships or subs could cover 90% of the Eurasian land mass.

Lockheed's Missile System Division had previously been awarded a contract for \$20.5 million for initial research, development and testing phases.

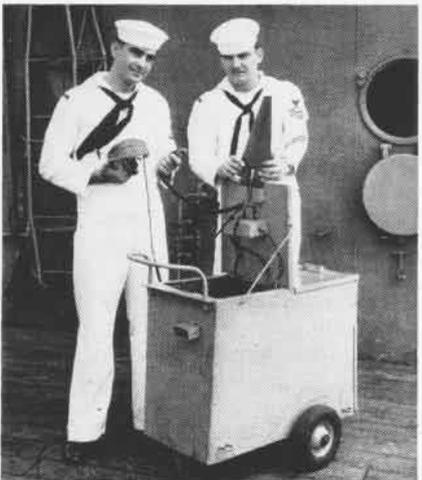
Major firms working with Lockheed on the *Polaris* program include Aero-Jet General, General Electric, Westinghouse, Sperry Gyroscope Company and Massachusetts Institute of Technology.

Portable Rig Designed Emergency UHF Transceiver Ready

When an emergency UHF transceiver was needed aboard the USS *Lexington*, the V-6 Division, headed by LCdr. A. S. Creider, furnished it.

The portable rig was designed by John T. Kezele, AT3, and built by Walter E. Harris, Jr., AM1. Kezele installed the electronic components and cabling. The rig is 33 inches long, 16 inches wide and 27 inches high.

When needed, this portable radio is normally used by the LSO on the land/launch frequency. However, by locating it near the island structure and using 100 feet of headphone and microphone extensions, it may also be used efficiently by Primary Fly.



KEZELE, HARRIS AND THE RIG THEY BUILT

FUJI FEELS MARINE 'ASSAULT'



COMBAT-READY MARINES RACE FROM READY STATIONS TO BOARD ATTACK HELICOPTER

SOME 600 combat-clad U. S. Marines of the First Battalion, Ninth Marine Regiment, were landed at a mile-a-minute clip from the Navy's helicopter assault carrier, USS *Thetis Bay*, during the regiment's helicopter landing exercise at Numazu Beach, Japan.

Marines went aboard the *Thetis Bay* three days early to settle down to ship-board life prior to the exercise which was to "determine the feasibility of using helicopters to the complete exclusion of motor transportation in operations ashore."

Before H-Hour, 15 helicopters from Marine Light Helicopter Transport Group 16 took to the air five at a time from the carrier, anchored off Numazu Beach, to circle overhead as the Marines below prepared for the landing.

While helicopters circled above the carrier, Marines in heli-teams of five took their positions at the five ready stations located along the starboard side of the flight deck.

Within three minutes after landing on the carrier, the first wave of helicopters was loaded with five Marines each and were airborne for the flight to the objective area, 12 miles from the ship, at the base of Mount Fuji.

The process was repeated through-

out the morning as helicopters, in waves of five every five minutes, shuttled back and forth from the ship to the objective area. Each trip took approximately 12 minutes to land Marines near their objective.

The *Thetis Bay* was operating in the Far East for the first time. Formerly an escort carrier, the *Thetis Bay* was modified to operate helicopters exclusively. Now commanded by Capt. James R. Compton, it was redesignated CVHA-1 and commissioned at the San Francisco Naval Shipyard July 20, 1956. The ship has a crew of 500 and is designed to carry 1000 combat troops. Maj. Paul F. Bent, the lone Marine officer aboard, is the ship's Air Operations Officer.

Home port of the world's first helicopter assault carrier is Long Beach.

Champ Gets Fast Repairs Drydocks and Undocks in 13 Hours

USS *Lake Champlain* entered and left drydock within 13 hours before departing to take part in NATO exercise *Deepwater*. The ship's bow passed over the drydock sill at 0732 and its stern slid past the same sill at 2036 the same day with all necessary repairs complete. It was a real record.

The usual preliminary of off-loading all aircraft and ammunition before entering drydock was bypassed so that the *Champ* would be able to fulfill its mission in the Mediterranean. Ten feet of water was left standing in the dock while repairs were being made. Two stern tubes required repacking.

The work was completed and flooding of the dock began at 1445, but the *Champ* waited until high tide arrived at 2000 before making her departure.

First Hop of 'Pedalcopter' Experimental Craft at Lakehurst

An experimental "pedalcopter"—the only one of its kind—is being tested at NAS LAKEHURST. It was designed and developed by a U. S. Coast Guard Reserve officer, Charles K. Paul. He has been at work on it for nine years, starting in 1948.

Mr. Paul has been authorized to put his invention through a series of tests and trials at the station on a non-interference, no-cost-to-the-Government basis.

The pedaling apparatus consists of a cockpit complete with a four-horsepower engine, a two-bladed rotor and a free balloon. Its total weight is 750 pounds.

Upon engaging and disengaging the pedaling devices, the pilot allows the balloon to rotate clockwise and the blades counter-clockwise, thereby forcing the torques to counteract each other in flight.

The revolving blades give the craft its vertical lift. Once in the air, the pedalcopter is driven by its engine. Designed to hold one man, the pedalcopter operates on a torque system which gives the craft a means of regulating its direction. The air-cooled gas engine drives the new craft at almost eight miles per hour.

The present model is one of eight Mr. Paul has developed since 1948.



INVENTOR FLIES HIS CRAFT IN HANGAR



MARINE FAMILY IS AT HOME ABOARD KETCH

Marine Aviator Likes Sea Makes Family Residence on Ketch

Maj. Edwin H. Lathrop, a Marine aviator with VMR-353 at MCAS MIAMI, is literally at sea. He moved aboard the 39-foot, two-masted Bahama ketch, "Ask No Quarter," when he decided his wife and two sons were spending more time on the boat than they were at home.

The flying major and his wife were both born and reared on the fishing coast of Connecticut. They purchased the ketch last September.

Les and Scott Lathrop, 11 and 10 years old, have really gone nautical. They have developed into excellent seamen, able to handle the large sailer unassisted, even to bringing it alongside a pier.

On a typical weekend, the Lathrops up anchor on Friday night. They fish and skin-dive for lobster before moving to Key Largo to spend Saturday night. Sunday evening they sail up Hawks Channel, through Biscayne Bay back to the yacht basin in time for Maj. Lathrop to report to his squadron on time for work Monday morning.

"Ask No Quarter" carries 900 square feet of canvas on three sails. It is built along the lines of the old American clipper ships. Sleeping six, it is fitted with a four-cylinder marine auxiliary engine and refrigeration.

RATTC 13 is Commissioned It Replaces GCA at NAS Patuxent

Radar Air Traffic Control Center (RATTC) number 13 was commissioned Oct. 1 at NAS PATUXENT

RIVER, marking an end of a 12-year GCA operation in which 81,236 successful instrument approaches were handled.

Cdr. Leroy G. Norton is officer in charge of the new RATTC. He has 67 enlisted and two civilian air controllers, four RATTC watch officers and an assistant to direct all weather traffic.

On its commissioning day, RATTC issued 23 instrument clearances and provided 43 Precision Final Approaches in addition to handling routine traffic around the airport.

Through the use of TPS-ID long range radar, Patuxent approach and departure controllers will be able to receive inbound instrument traffic at distances out to 100 miles and will monitor approaches to Point Lookout, Meekins Neck and the Patuxent Omni and Low Frequency stations.

Standard separations of inbound and outbound traffic will be accomplished through "handoffs" from approach control radar operators to the medium range.

RATTC incorporates the use of TACAN, a radio aid designed to provide continuous automatic bearing and distance information to pilots within its range; an Instrument Landing System which enables pilots to effect their landings unassisted in inclement weather conditions; Omni and Low Frequency Ranges; Ultra-high Frequency Homer; and Direction Finding equipment. All approaches and departures are monitored from a single room.



PILOT'S SKILL AS DANCER PUT TO USE

'Loss in Rank' a Pleasure Ltjg. Becomes a Dancing Seabee

Ltjg. Joseph R. Schlichter, a pilot attached to VP-6 at NAS BARBER'S POINT, took quite a "loss" in rank recently to become a dancing and singing Seabee Bluejacket for the movie "South Pacific."

Loss? The lieutenant worked side by side with the lovely Miss Mitzi Gaynor in the "Bloody Mary," "Nothin' Like a Dame," and "Bali Hai" sequences.

The production was filmed on the Hawaiian island of Kauai. Schlichter spent 23 days at the shooting location while on official leave.

A graduate of Cornell University, Ltjg. Schlichter worked as dancer and choreographer on college shows.

Ranger Has James Boys No Kin to Each Other or Jesse

The USS *Ranger* has the James boys, Jesse and Frank. Jesse, AB1, is assigned to V-2 Division, and Frank James, CS1, to S-2. While neither of the men can establish any definite kinship, both admit they may be distant relations.

Frank says that his parents and some of his relatives have often spoken of being distantly related to the James boys, and Jesse says that he has heard his uncles and grandparents talk of a possible relationship.

Both men served together aboard the *Forrestal* before coming into the *Ranger*. Frank's home is only 80 miles west of Jesse's birthplace.

Regardless of the men's relationship to the notorious outlaw brothers, they display none of the characteristics associated with them. Frank James has been awarded five good conduct medals, and Jesse has received four.



A PAIR OF NINES engaged in recent NATO exercises in the Norwegian Sea. Here Helicopter Number Nine of HS-3 takes off from the Big Nine, Attack Carrier USS Essex.

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LETTERS

SIRS:

I thoroughly enjoyed a recent article about "Tiny" Hitesman, ADC, Leading Chief of Attack Squadron 55. I was commanding officer of VA-55 when "Tiny" first reported aboard and became our Leading Chief in 1946. His hashmarks and tour of duty must establish an enviable record.

Chief Hitesman is an outstanding example of the tie between the "Old" and "New" Navy. The former heavyweight wrestling champion of the Pacific Fleet is probably still showing some of the younger men how it's done.

I'm certain that many officers and men, formerly of VA-55, join me in wishing "Tiny" many more years of smooth sailing and happy landings.

A. G. "SLIM" RUSSELL
Commander, Carrier ATG-182

PILOT LOGS 40,000TH HOUR . . .

Do you have this man in your flying club? If so, don't hide your light under an acey-ducey board. Let the rest of Naval Aviation know what's going on in your outfit. They're interested! Tell them in the pages of NAVAL AVIATION NEWS.

The NEWS is eager to pass the word about all Naval Aviation units—from ships to one-man life rafts; Naval Aviation personnel from Skippers to Mess Cooks, and Naval Aviation activities from carrier deployment to choir practice.

The answer to the question, "WHADU-YUWUNT?" is "take a look at the magazine and see what kind of stories and pix are getting the ink." This doesn't mean that there is no room for a hot scoop that is entirely different. You will notice that certain things are conspicuous by their absence—and we planned it that way—cakes, change-of-command handshakes, sports and chesecake.

NANEWS can use anything from a seven page feature to a two-paragraph squib. And we love good pix. We always need good

RECOGNITION

Aircraft shown on page 39 are friendly. The twelve FSU-1 Crusaders in formation belong to VF-32, and were engaged in gunnery exercises off Guantanamo Bay, Cuba, when pic was taken.

NAVAL AVIATION

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cover art. Here's an opportunity for you. Put the finger on your PIO and your photographer to keep your outfit in the NEWS. Direct communication is authorized and we're just waiting to get our hot little hands on your story.

'Family-Gram' is Popular Sent out to VP-26's Kith and Kin

Some 300 families and friends of Patrol Squadron Twenty-Six are getting the "ungarbled word" when they receive the Family-Gram sent out from the squadron. The *Little Rascal Squadron*, based at the International Airport, Keflavik, Iceland, as part of the Iceland Defense Forces, is enthusiastic about the Family-Gram.

A mimeographed news letter was prepared by the squadron PIO personnel and signed by the CO, Cdr. C. A. Pierce, Jr. Squadron members were briefed on the fact that the Gram was not to replace personal correspondence, but to supplement it.

A minimum distribution of 60 copies was planned, but the initial reaction was much larger than that. Within 24 hours, over 200 names were submitted and by mail time, 300 Family-Grams were sent out.

The initial reaction from those who received them is—"Send more!"

Engines for Target Drones Navy Places Additional Orders

Additional orders for bantamweight J44 jet engines amounting to more than \$1,300,000 have been placed with Fairchild Engine and Airplane Corporation, Deer Park, Long Island, New York.

The new order calls for an undisclosed quantity of engines to power high speed Navy *Firebee* target drones being built by Ryan Aeronautical Corporation, San Diego, California.

The Navy sponsored the design of the 1000-pound thrust J44 engine in 1947 and since that time, the engine has been manufactured in quantity for the *Petrel* missile, the Ryan KDA and Q2 types of *Firebee* target drones, the Bell experimental VTOL, and for thrust assist in multi-engine aircraft.

A sizeable amount of the new orders is for advanced engineering and testing of the featherweight J44 series.

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● COVER

The A4D Skyhawk is the world's smallest attack plane. Built by Douglas for the U. S. Navy, it is designed to carry and deliver atomic weapons.

● SUBSCRIPTIONS

Naval Aviation News is now available on subscription for a \$2.50 check or money order (\$.75 additional for foreign mailing) made payable to Superintendent of Documents, Government Printing Office, Washington 25, D. C. Single copies are 25 cents each.

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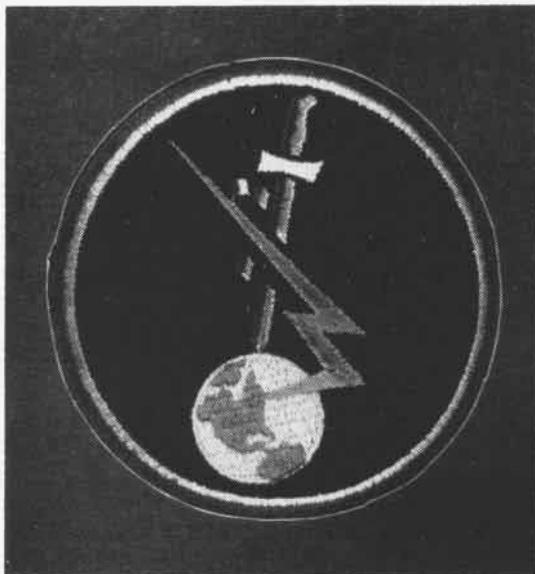
James M. Springer
Art Director

● Printing of this publication has been approved by the Director of the Bureau of the Budget, 12 April 1955.



SQUADRON INSIGNIA

Lightning striking the earth shows the speed with which the high altitude aircraft of VF-84 can destroy an attacker. VA-216's motif stresses the basic weaponry which is the forte of the attack squadron; the four black diamonds on the shield represent a tactical unit. "Can do" is the attitude of Fleet Air Service Squadron 113. The tools used to perform maintenance of carrier planes are shown. The insignia of Fleet Airship Wing 1, headquartered at NAS Lakehurst, signifies operational control of all its assigned ASW and AEW lighter-than-air units.



VF-84



VA-216

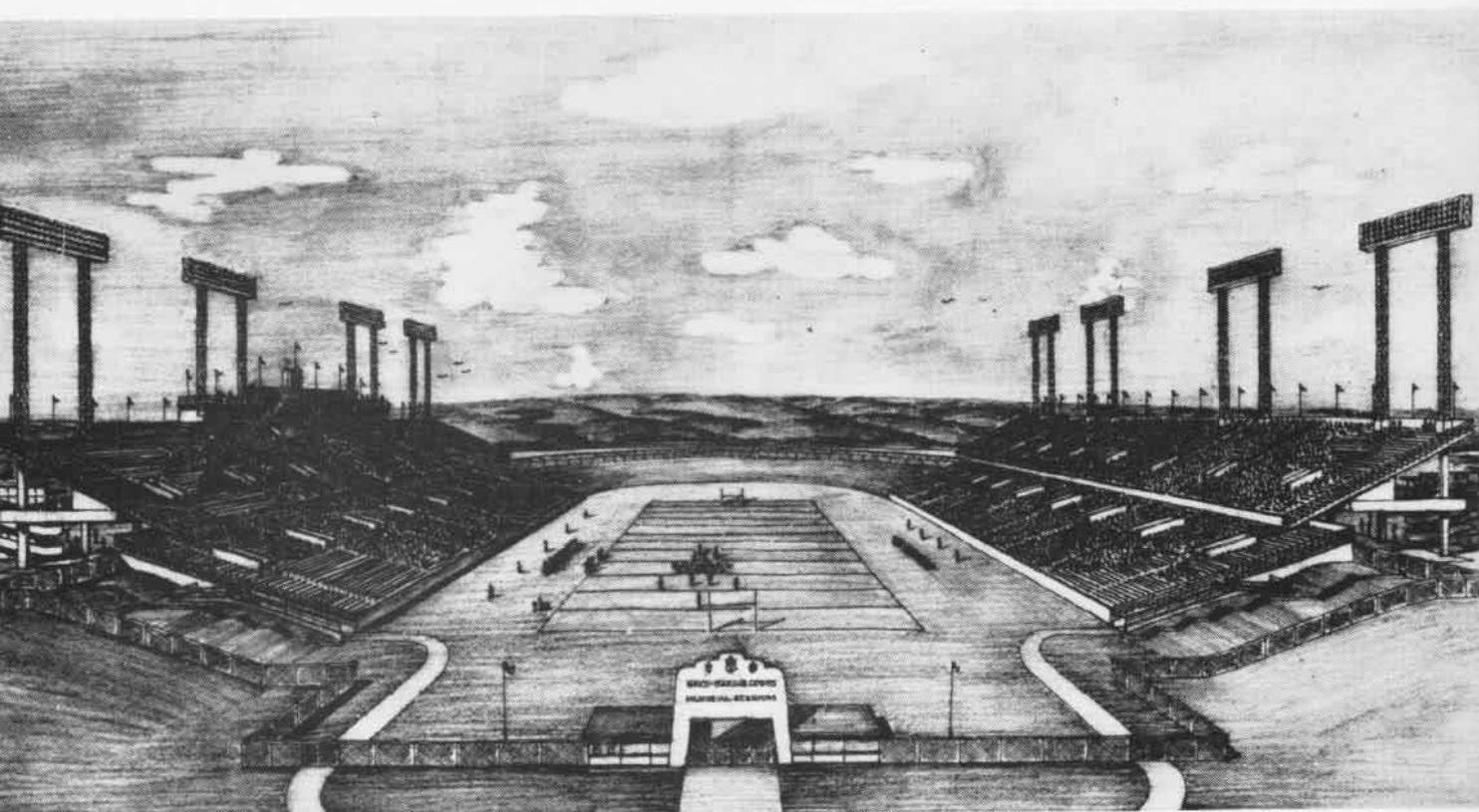


FASRON-113



FASW-1

DEFENDERS OF FREEDOM



MOLDERS OF YOUTH

TO HONOR SAILORS AND MARINES, past and present, there is planned at Annapolis, a stadium which is to be 'dedicated to those who have served and will serve—upholders of the traditions and renown of the Navy and Marine Corps of the United States. May it be a perpetual reminder of the Navy and Marine Corps as organizations of men trained to work hard and play hard; in war, defenders of our freedom; in peace, molders of youth.' Contributions for the stadium may be sent in accordance with local command directives or mailed to Memorial Stadium Fund, P.O. Box 777, Annapolis, Md.

NAVAL AVIATION

NEWS