NAVAL AVIATION NEWS

37th Year of Publication

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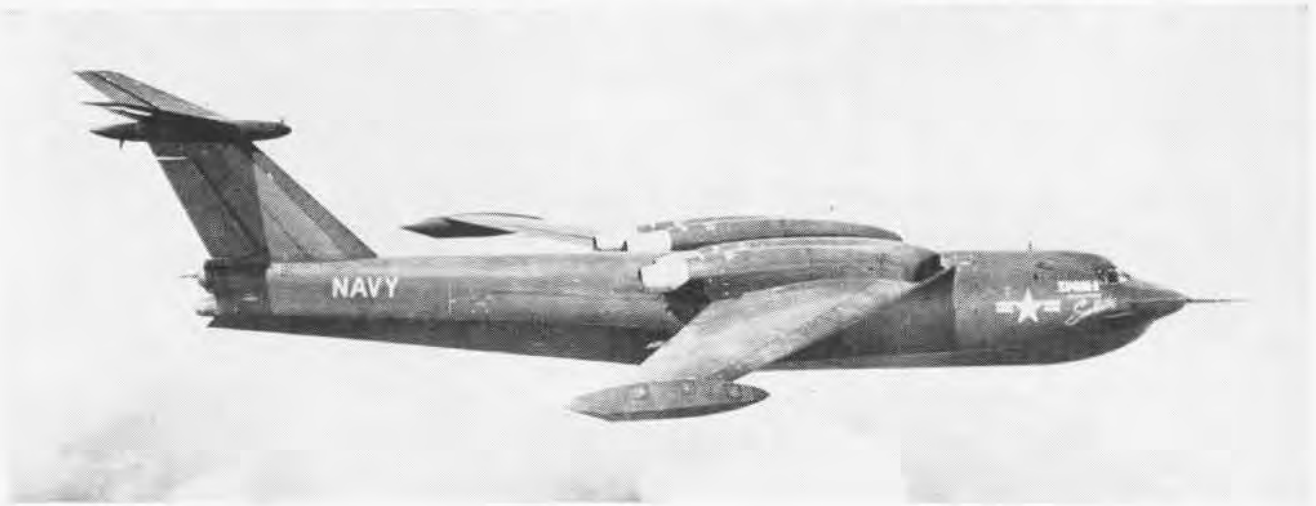
★ THE NAVY'S NEW SEAMASTER ★



★ **Flight tests of the new Martin 600 mph multi-jet, water-based XP6M-1 SeaMaster signalled successful application of jet power to large seaplanes. It can carry a 30,000-lb. payload, and was designed for minelaying, photo-reconnaissance.** ★

RESEARCH TO REALITY

EVERY time a pilot straps on an airplane preparatory to defying the laws of gravity, every time a crewman dons a parachute and survival gear, every time the ground technicians use a piece of equipment to test or repair aircraft, it is a safe bet that they are doing their job better, and that their equipment is safer, more efficient or more comfortable because of the existence of the Naval Air Development and Material Center.

Slightly over one year old, the NADMC is located at Johnsville, Pennsylvania. Its first commander is RAdm. Selden B. Spangler, USN. Technically in command of the aviation research and development activities in the Fourth Naval District, Adm. Spangler in fact directs a vast complex of laboratories, facilities, and stations that have their fingers in practically every minute detail of aircraft, airborne equipment and guided missiles that are or will be in use in the U.S. Fleet.

Frequently the part played by this scientific complex is well concealed either because of the classified nature of much of the work that goes on there or because the credit for the development is assigned to the manufacturer. But a little research will reveal that almost every piece of aeronautical equipment put into service in the fleet has had the NADMC touch somewhere along the line.

Included in this intricate command structure are four principal subordinate commands: Naval Air Development Center at Johnsville, Naval Air Material Center at Mustin Field, Philadelphia, Naval Air Turbine Test Station at Trenton, N. J., and the Naval Air Publication Facility at Naval Supply Depot, Philadelphia.

Adm. Spangler's background as a Naval Aviator and aeronautical engineer fits him well to direct the Development and Material Center. As a Naval Aviator, he qualified aboard the Navy's first aircraft carrier *Langley*. He was then as-

signed to the first ship built as a carrier, the *Saratoga*, and rode through the first carrier landing aboard her. On the engineering side he did his post-graduate work at MIT and served two tours in BuAer: one as Director of the Power Plants Division and one as Director of the Maintenance Division. At one time he directed the Navy's largest overhaul activity at Alameda and was once top man in what is now one of his most important subordinate commands—NADC.

The scope of activity within the NADMC ranges through the full spectrum of aeronautical problems from dreamy-eyed excursions into the future of space ships and earth satellites to the practicality of nuts and bolts that make up the hardware of the offensive and defensive weapons.

Naval Air Development Center

ONE OF the most frequently asked questions is, "What do you actually do at a development center?" The answer could run into volumes. In its eleven-year history, the Development Center has itself done a good deal of developing. In 1944, the Navy took over the properties of the Brewster Aircraft Corporation and began to operate the Naval Aircraft Modification Unit as a branch of the Naval Air Material Center. The tasks assigned to the new-born NAMU were threefold: development of guided missiles and target drones and the prototype and production line modification and conversion of service aircraft.

At the end of WW II, the need for a modification unit vanished and the NAMU became the Naval Air Development Station. It was an independent facility dedicated to research and development in aeronautical fields.

By 1949, the NADS had greatly expanded. Many research activities were moved from other parts of the country to Johnsville. In August 1949, the activity was given its present name and its scope and responsibility were enlarged with a corresponding expansion of space and personnel force. Three general fields of aeronautics were encompassed in the original Naval Air Development Center: electronics, armament and pilotless aircraft.

Since 1949, other R&D functions have been assigned to NADC until today it comprises eight areas of scientific study and application. These scientific projects are carried on in eight separate laboratories or departments housed in more than a million square feet of modern building floor space. The entire center, now under the command of Capt. J. A. Haley, occupies more than 751 acres of Bucks County real estate and includes an airfield, three hangars and the office and laboratory buildings. Over 2300 military and civilian personnel carry on the work of the center that is so vital to our National Defense. The results of their studies and practical applications of scientific principles are available to BuAer, the fleet and Navy contractors.

NADC SCIENTISTS, ENGINEERS HELPED DEVELOP "EYES" OF EARLY WARNING CONNIES

EDSD The Engineering and Development Services Department, directed by Cdr. G. S. Parrett, is the pioneer organization of the Naval Air Development Center. Its primary function is to perform research and development studies, and design, engineering and prototype work in the field of target drones, special aircraft and guided missile systems and related equipment. It is further responsible for providing engineering and fabrication services for other laboratories of the Naval Air Development Center. Many a scientific fact has been known for many years, but it is up to EDSD to put those facts to work in the evolution of brand new concepts or the improvement of the existing methods of flying and fighting. It also conducts testing programs to determine the performance and reliability of equipment.

The EDSD is equipped with a complete fabrication shop manned by experts who can manufacture anything from a complete guided missile or aircraft down to the finest part of the most delicate instrument. The extensive engineering and mechanical force in the shop form a group that changes the incomprehensible formulae of the scientist into usable hardware. They

change theory into practice. In short, they make science go to work.

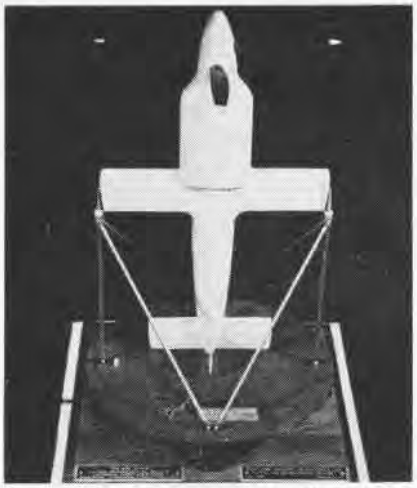
Significant among the successful projects of the EDSD was the development of the F6F pilotless aircraft that were used, loaded with thousand-pound bombs and guided by television, to attack Red lines of communication in the Korean action. These obsolete *Hellcats* actually functioned as guided missiles. A great deal of effort has been devoted to the successful development of techniques for the underwater launching of guided missiles.

Another contribution of this laboratory was the development of the mockup and of the small scale flying demonstration model of the first vertical take off fighter. The feasibility of the VTO idea was originally explored at NADC, and it was NADC's design proposal which ultimately provided the basis for development contracts for Convair's XFY *Pogo* and Lockheed's XFV.

These are but a few of the projects that occupy the time of the scientists and engineers. They work, mostly under a veil of secrecy, on the aircraft and the weapons of the future.

AEEL

When a Lockheed WV-2 keeps her lonely vigil off the shores of the continental United States, or ranges far ahead of the fleet, she is an electronic, multi-eyed sentinel that gives to our defenses those few precious hours warning of imminent enemy attack. Credit for her protracted "vision" goes to the scientists and the engineers of another of the laboratories of the Naval Air Development Center, the Aeronautical Electronic and Electrical Laboratory.



NADC HELPED DEVELOP THE POGO AND XFV

The AEEL was established as a component of the NADC in 1947. Its physical growth started immediately, for it absorbed the Aeronautical Radio and Radar Lab, Naval Air Magnetic Lab, the Aviation Electrical Test Group of the Naval Research Lab, and the Naval Research Field Station at Boston, Massachusetts.

The primary mission of the AEEL is to assist BuAer and industry in providing naval aircraft with modern electronic and electrical equipment. The laboratory is a necessity for the continued preliminary study, investigation and engineering of electronics. So fast has been the development, so broad the scope of this relatively new science that it would be impossible to dictate requirements to the industry without first determining what surprising new capability can be proved feasible. The seemingly endless applications of electronics makes it mandatory that the AEEL be staffed by scientists who are not afraid to dream a little and engineers who make those dreams come true. Men of vision, electronic "vision", literally.

The scope of the lab, with Capt. Grayson Merrill as director, is broad. Interest is divided under the sea, on the sea and over it. Radar, radio, electrical, missile control and guidance, undersea warfare are some of the areas in which it helps to solve the Navy's problems.

Among many other fields in which the AEEL has pioneered is the field of piezoelectric ceramics. This is the science of taking certain ceramic or pottery-like materials and, by shaping them and exposing them to high voltage, rendering them capable of emitting electrical impulses when disturbed by pressure or vibration.

AEEL has been experimenting with a mineral known as barium titanate. It is shaped in relatively simple moulds to a cylindrical form. A coat of silver is applied and then the cylinder is exposed to thousands of volts of electricity. The internal composition of the ceramic piece is so changed by this process that it becomes sensitive to minute pressures and gives off electrical energy when disturbed. These ceramic transducers become the heart of sonar and other underwater detection devices.

It takes a keen mind and a lively imagination to visualize what are the new wonders that will be produced electronically. There is a concentration of that kind of mind and imagination at the Aeronautic Electronic and Electrical Laboratory at Johnsville. Keen minds that probe the future and come up with the answers.

FILTERING MATERIALS FOR CERAMICS CAST

CERAMICS SILVER-COATED FOR ASW 'EARS'

ISOTOPES USED IN STUDYING SHIELDING

ARMS LAB WORKS ON DEVELOPMENT OF FEED MECHANISM FOR AIRCRAFT TURRET GUNS

AAL Military aircraft were built with one purpose in mind —to fight. As the aircraft improves and advances, so must the ordnance systems which are its weapons. With the advent of jet aircraft into the fleet, the need for research into advanced armament became critical. Since no commercial facilities for this kind of study existed, it was necessary for the Navy to undertake comprehensive studies in the field. The Aircraft Armament Laboratory of NADC was established in 1946 to meet this particular problem.

The AAL started in 1946 as a research and development laboratory. Later its function was changed to development only. But through the changes its mission has remained relatively constant. That mission is so broad that it encompasses practically every facet of design, test and evaluation of every kind of projectile.

The AAL, presently under the direction of Cdr. Hamilton O. Hauck, is responsible for the development, design, alteration, construction, installation, flight testing and actual range firing of all naval air guns, missiles and rockets. Above all, theirs is the task of peering into the future to design and develop entirely new systems of naval air ordnance, to adapt new developments to naval warfare; in short, to do everything to keep the armament program ahead of the high speed development of modern jet aircraft.

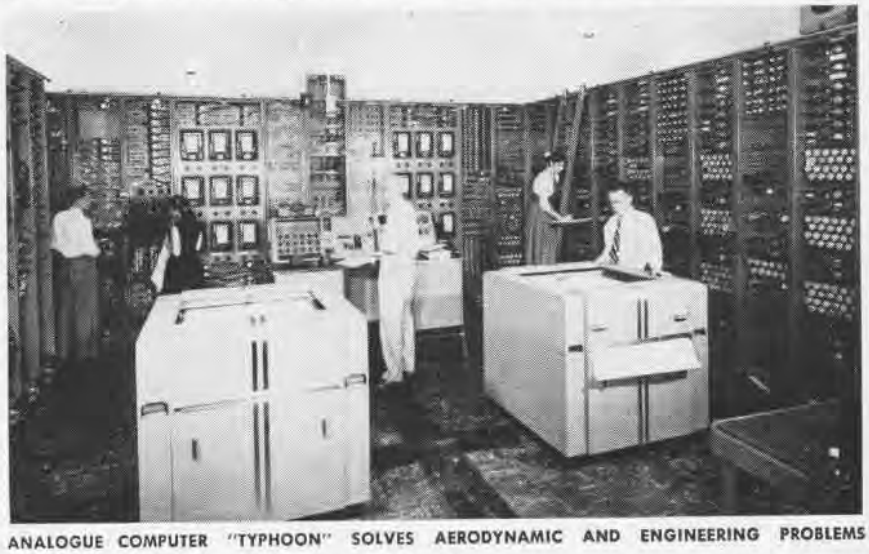
The AAL works with scientists, with the Bureau of Aeronautics and with ordnance and airframe contractors. The problems it studies are not limited to the development of armament alone, but also with fitting the lethal hardware into the weapons system for tactical use.

Gun mounting, for instance, is a new problem with each new aircraft that is added to the Navy's arsenal. Guns must be located where their weight will not effect the flight characteristics on the aircraft. Explosive gases must be properly vented. Lubricants must be developed that will permit the guns to operate at extremes of temperature. Bomb and rocket release and detonation devices must be foolproof. These and myriad other related problem areas are under constant and careful study by the AAL.

ACL Until a few years ago, scientists were hindered in their search for new knowledge by the fact that it was virtually physically impossible to make all of the computations necessary to prove or disprove theories evolved from then known facts. They were overcome by sheer arithmetic. They solved their own problem by developing giant computers, impossible before the advent of the electronic age.

The Naval Air Development Center was no exception. In the summer of 1950, the NADC formed its Analytical and Computer Laboratory. This new facility, now under Cdr. I. K. Blough's direction, went into business in a big way with the largest electronic analogue computer in existence,—*Typhoon*, so named, no doubt, because it is ready to cope with a veritable tidal wave of numbers.

Electronic Computers, sometime miscalled "Brains", are of two varieties—digital and analogue. The digital computer is, in effect, a gigantic adding machine, solving the problems fed to it by an astromical number of additions, many of which are retained, for use at the exact moment they are required, in what is usually called an electronic memory. The analogue computer is infinitely more complex;



ANALOGUE COMPUTER "TYPHOON" SOLVES AERODYNAMIC AND ENGINEERING PROBLEMS

set up to solve difficult differential equations in an infinitesimal fraction of time that would be required for the pencil and paper method.

Typhoon, built by RCA for the Navy, makes airplanes fly and missiles shoot them down long before the first order is placed for the first sheet of aluminum for the first prototype model. The ACL, working with industry, saves millions and millions of dollars in proving that the gleam in the eye of the scientist can or cannot be turned into a practical piece of hardware that will add to the arsenal of the Navy's weapons.

Here is how a typical problem might work. A guided missile contractor has an idea or a requirement from the Navy that will accomplish a specific mission in the destruction of enemy aircraft that might possibly attack our forces. The scientists who conceived the basic design of such a missile reduce all of the projected data about the missile to a series of (to the layman) completely unintelligible formulae. Listed in sequence along the edge of a huge sheet of paper, these mathematical equations represent everything that is planned for the projectile—speed, power plant, wingspan, length, drag, length of time in flight, and a hundred other details of aerodynamics.

Personnel of the Analytical Computer Lab translate these formulae into electronic circuits that can be fed into the *Typhoon*. It may take six weeks to two months to relate the mathematics to electrical circuits. When this has been done the electronic circuits are fed into *Typhoon*. This probably will take another six weeks. Each circuit must be tested individually to work out the particular formula that it represents.

The characteristics of the missile are in the machine. The flight pattern of the plane it is pursuing is in, the flight time of the missile is set at, let us say, one minute. The big moment has arrived. The missile is about to fly — electronically. The switch is thrown and one minute later the results of the flight are graphically displayed on paper.

By simulating flight conditions *Typhoon* can fly a missile or an aircraft on many flights at the merest fraction of the cost of one test flight.

LARGEST HUMAN CENTRIFUGE INVESTIGATES HUMAN BARRIER, EFFECT OF "G" FORCES

AMAL Man overcame the so-called Sonic Barrier in 1947 when the first plane buffeted its way through the speed of sound and the first human raced into the unknown and became super-sonic. We are now making our first assault upon what has come to be known as the heat barrier—the speed at which friction of atmosphere will make now known metals unsuitable for aircraft and missile construction.

But there has been developing along with the advanced speeds of aircraft another kind of barrier, less discussed but no less important—the Human Barrier. Since the inception of the science of aeronautics, man has had to accept environments in which his body was not created to exist. He has risen to altitudes far beyond the tolerances of the flexible human system. He has invented the artificial aids that he needs to maintain life and consciousness and alertness. Now with the inception of really high speed flight the problem of high acceleration or "G" forces looms larger than ever.

Rapid changes of direction in an aircraft subject the human body, designed to operate under the influence of its own weight or the pull of one "G", to forces beyond the capacity of the body to withstand without damage. The injurious effect of acceleration is the product of the amount of "G's" and the length of time they are exerted on the man. Now we need to know how much a pilot can stand. For how long? In what position—sitting, standing, prone or supine?

In 1949 there was added to the facilities of the Naval Air Development Center the Aviation Medical Acceleration Laboratory. Here personnel of the Navy's Medical Corps conduct investigations with the use of a human centrifuge to define the limits of human tolerance to acceleration. Their interest runs also to the effects of high "G" forces applied to various parts of the body.

The centrifuge at AMAL, the world's largest, can produce forces up to 40 "G"—forty times the weight of the man who is being tested. The cockpit or gondola of the centrifuge in which the subject is placed is at the end of a 50-foot arm which is rotated by a giant 4,000-hp electric motor. Volunteers are whirled in a variety of positions at speeds that will produce the desired acceleration while the scientists study the effect of the "G's" on their bodies. The work of AMAL now under Capt. H. G. Shepler, will guide future aircraft, pilot equipment and safety device design.

APEL Since nations first adapted the aeroplane to the business of waging war, one of its most important uses has been for reconnaissance. It is axiomatic that you can see more from the roof than from the sidewalk, so navies and armies started looking *over* the enemy.

True, you could see more, but the old human equation entered the picture and the effectiveness of aerial reconnaissance was limited by the accuracy of the "guestimate" of the returning observer. How acute his vision, how retentive his memory, how accurate his estimate—these were the question marks of aerial observation. Equip the observer with a camera and the record of what he saw becomes undeniably accurate and available for detailed study by trained interpreters. Out of this necessity grew aerial photography.

That this science has developed from the "Brownie Snapshot" stage is due in no small measure to the Aeronautical Photograhic Experimental Laboratory at Johnsville. The APEL performs research, development, evaluation and test of photographic equipment prototypes including aerial cameras, camera control systems, aircraft installations and photographic interpretation devices. It also provides aerial, motion picture and still photographic services for the other laboratories and departments of NADC.

The ten-year-old Photo Experimental Lab, now under the direction of Cdr. J. S. Leffen, faces many problems as it keeps up with the jet age. A recent project provided fleet photographic units with a high shutter speed, rapid picture sequence aerial camera specifically designed for low altitude, high speed photo missions. In this camera, the roll film is actually moving while the shutter is open to compensate for the movement of the aircraft over the ground, thus preventing blur on the finished film. This device was manufactured by APEL by redesigning an existing aerial camera rather than by building a new piece of equipment thus saving an incalculable amount of money.

Only by constantly developing photographic equipment that can keep up with tomorrow's aircraft can we depend upon sure, accurate intelligence.

NADC DEVELOPED 'COPTER CAMERA MOUNT

APEL ADDED 1/800TH SEC. SHUTTER TO CAMERAS OF F2H-2P FOR LOW-LEVEL PICTURES

AIL So long as the Navy uses piloted aircraft, that long will it be necessary to take into consideration the old Latin proverb "Errare humanum est." Impossible as it is to make the human perfect, his probability of error can be notably reduced by making it easier for him to do the right thing. This is of concern to another of the laboratories of the NADC—the Aeronautical Instrument Lab.

Anyone who has seen the cockpit of a modern military aircraft knows the maze of instruments that are ranged on the panels in front of, above and below and to each side of the pilot. It is rapidly getting to the point where it is virtually impossible for one man to read, interpret and act upon the flood of information which is communicated to him by aircraft instruments. In this era of faster-than-sound aircraft it has become the task of the AIL to make it possible for the Navy pilot to assimilate all of the information he needs to fly and fight his plane in the briefest possible time.

AIL is constantly searching for new and better ways to simplify the pilot's job by changing the size of instruments, relocating them for easy visual reference or regrouping them according to their functions. Theirs is a never-ending pursuit for more accurate and more easily understood gauges. When you realize that a pilot must keep track of engine instruments, flight gauges, gunnery and bombing indicators, navigational aids, radios and radar it is a wonder that young men are accepted as Naval Aviation Cadets with anything less than two pairs of eyes.

The Aeronautical Instrument Laboratory now under the directorship of Capt. P. G. Holt develops and tests flight and engine aircraft instruments, automatic control equipment to provide the Navy with the latest and best means of meeting varied combat or defense conditions.

Jet, helicopter, and conventional aircraft are assigned the laboratory in order to determine specific answers for use by the development and test engineer. The list of laboratory test equipment includes many unusual special devices, among which are tem-

perature and vibration machines covering a broad frequency spectrum and electrical analog computing equipment utilized as a flight simulator.

A shop, capable of manufacturing prototype models with the precision necessary for instrument work, executes the designs made as result of development. Current projects include development and test of pilot's dead reckoning position indicator, and the design, fabrication, and installation of experimental instrument panels in jet aircraft.

Aviation history was made at the AIL on 23 September 1950 when a helicopter controlled completely by an automatic pilot made its first successful flight. This was a result of the work of the Aircraft Instrument Laboratory in the rotary wing field.

AUTOMATIC DEAD RECKONING NAVIGATOR "PADRE" GIVES THE PILOT A CONTINUOUS FIX

AWRD The newest member of the NADC family is the Air Warfare Research Department, whose job is to study the missions and tasks of naval aviation. This department, under the present directorship of Mr. Fred Gloeckler, is divided into three main divisions, the first of which considers the missions that the Navy must accomplish by the fleet defense, amphibious operations, undersea warfare, land-based attack, etc.

The second division considers the current advances and future trends of science to predict design trends; and the final division performs operation studies of naval air weapon systems and their employment determining as far as possible by this means anticipated losses, chances of success, and cost of operation in the Fleet.

Thus AWRD recognizes first the job to be done; second, the means to do it; and third how efficiently the Navy can anticipate carrying it out.

NAS The Naval Air Station, Johnsville, Pennsylvania is home for the Naval Air Development and Material Center and for the Naval Air Development Center. Over and above that, the NAS, commanded by Cdr. C. H. Franklin, is charged with the highly important responsibility of maintaining and operating the more than 50 aircraft assigned to the several laboratories and departments of the development command.

When it is realized that this number includes most World War II types plus a representative number of modern jets and helicopters, it is easy to see that the maintenance and logistic problems of the air station are tremendous. A modern airfield with an 8,000-foot runway appropriate for jet aircraft is now a feature of Johnsville.

The Air Station is additionally responsible for all housekeeping and heavy maintenance functions and for the administration of all military personnel and Center communications.

Truly, it can be said when pilots and crewmen don their gear and man their planes, everything that they touch in, on and about their aircraft, at some time had the touch of the Naval Air Development Center somewhere in its research, design or development, a "touch" that has paid off in economy, safety and efficiency.

This answers the question, "What goes on at a Development Center?"

VARIETY OF PLANES MAKES JOHNSVILLE AIR STATION UNIQUE

BUSY NAS JOHNSVILLE FURNISHES HOME FOR NADMC AND NADC

GRAMPAW PETTIBONE

How Are Your Nerves?

On his fifth flight in an FJ-2, which was also his first section tactics flight, a pilot took off and climbed to 35,000 feet. His section leader attempted to get him to fly in a parade formation, but he seemed very reluctant to fly in close and kept dropping back during gentle turns.

During one of the turns, the section leader lost sight of his wingman entirely. After a gentle left turn for a few minutes waiting for the wingman to join up, the section leader called for a position report. The wingman answered that he was over such and such a point at 30,000 feet. The section leader instructed him to orbit until he joined him.

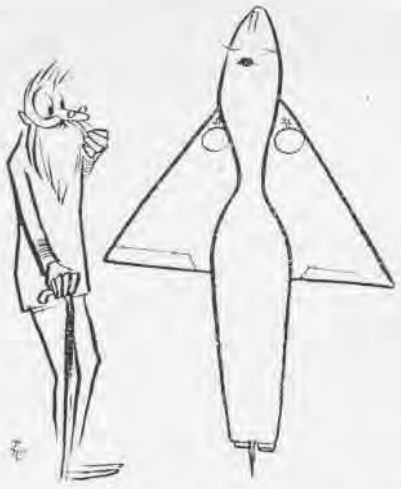
Upon arriving over the point, the section leader did not sight his wingman. He requested a long count from his wingman and received an ADF bearing toward the southwest, which, if correct, would put the wingman about 20 miles away over another point similar to the point the section leader was circling.

The section leader headed for the second point and upon arrival received a call from his wingman that his hydraulic alternate system light was on. The section leader advised him to check his flight control system selector switch to be sure it hadn't been accidentally moved out of the normal position. This transmission was rogered for in a highly strained and nervous voice. This was the wingman's last transmission.

Observers on the ground first became aware of the FJ-2 when it passed through the sound barrier on its way down. Just prior to contact with the ground, the aircraft appeared to start levelling out and actual contact was made in a 10° nose down attitude. The pilot was fatally injured.

Grampaw Pettibone Says:

This one was a pure and simple case of anoxia. The pilot was on 100% oxygen for one hour and 12 minutes, not to mention the fact that he was wearing a borrowed helmet which was too large and a borrowed oxygen mask, small size. At least, all the evidence points to anoxia as the immediate cause of the accident.



But there is more to this story than meets the eye. This pilot was nervous and high strung from his first airplane ride. He lived with it day and night, but his luck just ran out.

Sure, we all get nervous now and then. But I am not talking about the tightened up feeling you get when checking out in a new model aircraft or making that first carrier landing or making a let-down IFR low on fuel. I am talking about the kind of nervousness that makes you lose sleep, gives you the "shakes," makes you smoke weeds by the carton, and even forces you to report to the sick bay for a belly ache like this lad did three days before his accident.

This was his second trip to the pill parlor in five days, the first trip because of inability to clear his ears and breathe freely. He knew he couldn't make the grade, yet he was grasping for the least excuse to stay out of the air without loss of pride. Pride is what forces us to keep going when we know we are living on borrowed time. It's a real killer, because there is not much protection a man can or will give himself from it.

In my opinion he was the type of pilot who needs someone to tell him he is in the wrong business. There may be others like him who are sticking it out. Much can be done to discover and weed out this type of pilot by commanding officers, the senior pilots, and the flight surgeons. The "Buddy" business is fine at a beer muster or in the ready room, but when men's lives and expensive equipment are at stake, you have to be realistic about situations like this.

Strictly Nonsense

A pilot of an AD-4L manned his aircraft one night, cranked up, and taxied to the warm-up area. He completed his pre-flight run-up and mag check and requested clearance for take-off. He was cleared to take-off position where he applied power and commenced his take-off run. As speed increased the aircraft began to swerve to the left. The pilot attempted to correct this with rudder, but was unable to move the rudder. Even right brake was ineffective.

Realizing that he could not straighten the aircraft out, the pilot added full power and pulled back on the stick in an attempt to become airborne and clear the obstacles in this flight path. The aircraft leaped into the air and crashed on its left wing about 75 yards from the point of take-off. By the time it stopped, the only thing left intact was the cockpit and the wing stubs.

The pilot escaped with minor injury. An inspection of the wreckage showed the rudder batten and both pitot covers attached.

Grampaw Pettibone Says:

Great #?!$%&°#@??)($!!! The next time you want a close shave,

son, take my advice and head for the nearest barber shop!

I guess it's possible for a pilot to strap a flying machine on his back some dark night without checking for battens. After all, a man gets in a hurry now and then, and the battens are seldom, if ever, left on. I can even see how a pilot might taxi to the warm-up area without discovering the battens. When there is no wind blowing it takes no rudder and very little brake. But there comes a point where a little common sense can compensate for a lot.

I like to think of this point as being similar to the last service station for 150 miles on a desert highway. Five miles before reaching the station you are hit in the eyes by several signs. They read:

"Last stop for gas—5 miles ahead"

"If you think you can make it—good luck"

Now if it takes gas to run a car you wouldn't try crossing a desert on an empty tank, would you? Of course not! When it comes to flying, you wouldn't think of taking off without checking the controls, would you? Of course not!

My aching ulcers! How anyone can try to avoid the inevitable by taking a chance on the obvious is beyond me.

The Accident Board had the sure solution — ". . . that the individual pilot responsibility inherent in accepting an aircraft for flight be re-emphasized, and that unrelenting vigilance be maintained to insure both ground and flight personnel are constantly and acutely aware of the absolute necessity of conducting a scrupulous pre-flight inspection."

Let's have no more of this nonsense!

MEMO FROM GRAMP:

No pilot is any better than his last landing.

First Things First

Upon completing the eighth FCLP landing, a pilot in an S2F commenced his take-off run. At an altitude of about 100 feet, the port engine lost power and the port propeller appeared to be windmilling. The pilot diagnosed the trouble as starboard engine failure and immediately feathered the starboard prop. The aircraft lost all power necessitating a forced landing in a grassy area adjacent to the runway. The plane rolled through the grass, cleared a drainage ditch, hit an embankment, and flipped over on its back. Both pilots were injured, and the aircraft was a complete strike.

The pilot stated, "I started a clearing turn to the left and noticed immediately a considerable lack of power. My first impression was that I had lost my starboard engine and without checking either engine instruments or warning lights, I acted on this impression and feathered my starboard propeller. I immediately experienced a total loss of power and assumed I had lost my port engine also. Had I taken a few seconds to check my instruments, I believe this accident could have been avoided, with probably a single-engine landing the only result."

Grampaw Pettibone Says:

Let's just hold on a minute, Bub! First things first, you know. If, Heaven forbid, you should find yourself in the same situation again, and you start looking at engine instruments first, you'll probably be right back in the boondocks with another airplane wrapped around you. One hundred feet in a turn on single-engine calls for some pretty quick action and the first thing to do is advance BOTH throttles and level off! When you have it trimmed up and are sure you are able to maintain airspeed and altitude, THEN look for the engine that needs securing.

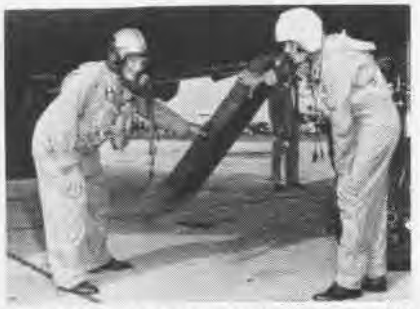
A young b'ar hunter said once, "Be sure you're right, then go ahead." This covered a lot of territory back in the days when a split second decision was a matter of ducking a tomahawk. But it sure ain't fittin' for aviators. Such a course of action requires time for a little reflective thinking, and you don't find many cases where a pilot can take the time after trouble hits.

"Know what to do in emergencies," is about the dullest sounding piece of advice I can give, but it sure covers any situation you can name.

CNO JETS TO DISTANT DATES

When Adm. Arleigh Burke was recently confronted with the problem of meeting afternoon commitments in both New York City and Chicago on the same day, he decided to kill two birds with one stone. As CNO, he will make many decisions involving the use of jet-powered aircraft, so he determined to get a participating acquaintance with this form of speedy transportation, and thereby carry out his exceedingly tight schedule.

After a luncheon with the Navy League of New York, he boarded a Douglas A3D *Skywarrior*. One hour and ten minutes later, he deplaned at NAS Glenview.



CNO BOARDS A3D SKYWARRIOR IN NEW YORK

He was met upon arrival by VAdm. A. K. Doyle, CNAT, RAdm. E. P. Forrestel, ComNine, RAdm. D. V. Gallery, CNAResTra, BGen. A. F. Binney, ComMART, and Capt. W. R. Hollingsworth, CO of NAS Glenview.

An awaiting HUP-2 expedited his arrival at Meigs Field in downtown Chicago, where he attended a reception in his honor, arranged by Mr. Carl Stockholm, President, Navy League of the U. S. Following the reception, Adm. Burke attended the Armed Forces Benefit Football Game, where he presented the General Eisenhower Trophy to the most outstanding player of 1954's Armed Forces Benefit game, Frank Gifford of the New York Giants.

The following day, Adm. Burke again boarded the A3D and flew to NAS Pensacola. After a brief inspection of the headquarters of the Naval Air Training Command, he wound up the two-day whirlwind of activity with an address to the officers and cadets attached to the Command.

70 MINUTES LATER, ARRIVES AT GLENVIEW

USMC Unveils New Gear

Guidance System Proven In Korea

The Marine Corps has announced the development and use of a new Radar Guidance System for close air support. This equipment, referred to as the greatest forward step in close air support of ground troops since this technique was developed, was battle-proved during the Korean War.

The system is the first practical method of conducting all-weather air support operations yet devised, the Marine Corps report stated. Henceforth, Marines going into combat will have close air support on a round-the-clock basis.

The system does not require any special equipment in the attacking aircraft. It is guided to the target and makes the bomb release by voice command from the forward observation post where the equipment is installed.

Although the gear used in Korea was mounted in trucks, newer equipment under development will be light weight and cased for helicopter lift.

NACA Reactor Site Selected

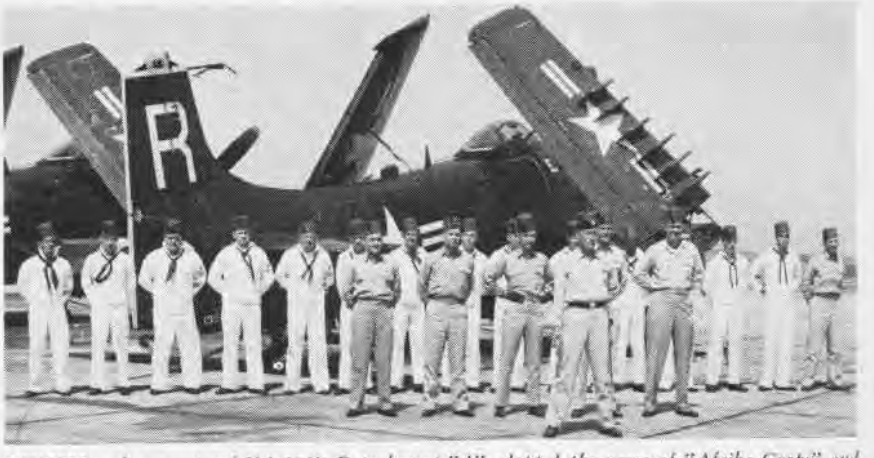
Research Reactor to be Built in Ohio

The site for NACA's $4,500,000 nuclear reactor has been selected. Dr. E. R. Sharp, Director of NACA's Lewis Flight Propulsion Laboratory, revealed recently that the facilities for use in the study of problems related to aircraft nuclear power plants will be on the northern part of the Plum Brook Ordnance Plant near Sandusky, Ohio.

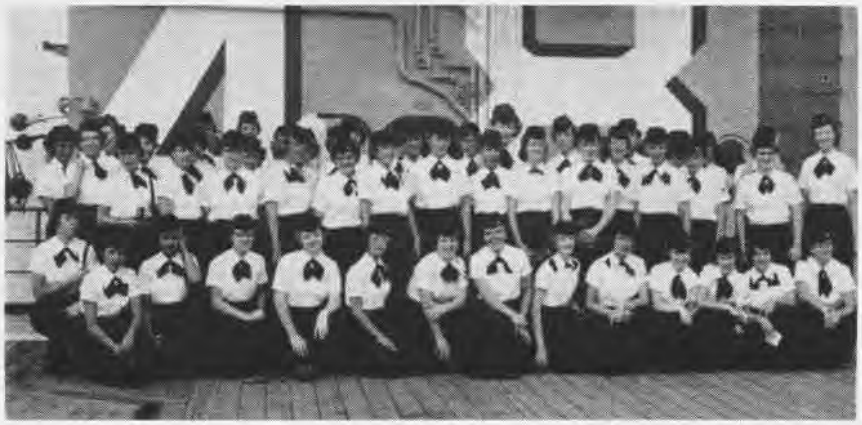
After a thorough study was made of 18 possible locations, the Plum Brook site was chosen. During WW II, the Plum Brook Ordnance Works manufactured high explosives. The Department of the Army agreed to relinquish 500 acres of this property.

The safety aspects of the facility will be considered by the AEC. Elaborate safeguards will be designed into the reactor to insure against possible danger to personnel working at the facility and to residents of the area. These safeguards include precautions against nuclear contamination, both of drainage water and air currents passing over the facility.

According to Dr. Sharp, "The performance capabilities to be realized from harnessing nuclear energy for aircraft propulsion would be nonstop flight to any point on the face of the earth and return."



OFFICERS *and crewmen of VA-175's Detachment "A" adopted the name of "Afrika Corps" and bought new headgear, the fez, to correspond to the title. They have been operating out of Port Lyautey while the rest of the squadron was deployed aboard the Coral Sea in the Mediterranean.*



IN CELEBRATION *of the 13th Anniversary of the WAVES, Capt. J. S. Long, CO of the USS Saipan, invited 120 Florida WAVES, in two groups, aboard for a day's cruise. Among the events of the day's operations aboard the Saipan, witnessed by the WAVES, were carrier qualifications by Naval Aviation Cadets. Capt. Long and his executive officer, Cdr. K. E. Wright, both gave official welcomes.*

Habitability Is Stressed

Living Conditions to be Improved

The Navy is giving priority to the improvement of living conditions for Navy personnel afloat and ashore.

A Navy-wide instruction from the office of the Secretary of the Navy points out that "the Navy is an employer competing in a labor market which appears likely to be tight for some time to come. Adequate living conditions must be provided to promote re-enlistment in the Navy."

The instruction goes on to point out that the Navy "is competing . . . for married men with a high degree of intelligence, accustomed to a high standard of living, in an era of peacetime prosperity . . . It is the policy of the Department of the Navy to consider adequate living conditions ashore, and a high degree of habitability afloat, to be a peacetime military requirement. This does not mean lush living or 'molly-coddling'; but it *does* mean that people should not be asked to continue living in many cases under substandard conditions."

The instruction warns officials not to propose new facilities unless plans at the same time are made to house personnel and their families.

Ready, but Not Called For

Uses Dummy to Maintain ASR Skill

The radar picket destroyer, USS *O'Hare*, has served by waiting. During a continuous period of fleet operations since her commissioning in 1953, neither the *O'Hare* or her helicopter assistant has been called upon to rescue a downed naval aviator. It has been necessary for the *O'Hare* to use dummies to maintain her efficiency.

The DDR's schedule has included a three-month shakedown at Gitmo, a month as plane guard for fledgling pilots learning to make carrier landings of the USS *Monterey*, a five-month tour in the Mediterranean with the Sixth Fleet and various Atlantic Fleet operations out of Norfolk.

The *O'Hare* has operated with carriers *Midway, Wright, Bennington, Coral Sea*, and others.

The destroyer was named in honor of LCdr. E.H. "Butch" O'Hare, an outstanding naval aviator in night fighter tactics, who was lost during the Gilbert Islands operations in 1944.

THE 500TH *landing of the FJ-3 Fury aboard the USS Bennington was logged recently by VF-173's Ltjg. J. A. Handley. The squadron was one of the first outfits to get the FJ-3 for service.*

Ione Sure Was Prejudiced

15 Baby Girls Born During Storm

The 107-mph gusts of Hurricane Ione blew the Stork in for an emergency landing at MCAS CHERRY POINT, according to Capt. George B. Ribble, senior medical officer.

The doctor reported that during the height of the storm and the period immediately following it, 16 babies were delivered at the U. S. Naval Hospital aboard the air station. With a capacity of 22, the nursery had a population of 25, so three of the latest arrivals had bureau drawers for cribs. The babies were born during the period which started with the beginning of Hurricane Ione and ended at noon September 20th.

Hurricane Ione showed a definite prejudice for members of her own sex since 15 of the 16 babies born in her storm path were girls.

XC-7 Steam Cat is Tested

S2F-1 is First Plane Launched

A modified version of the C-11 steam catapult has been successfully tested at

RADM. DUERFELDT, CDR. SHEPHERD LAUNCHED

NATC PATUXENT RIVER. Dubbed the XC-7, the new piece of equipment hurled, for the first time, an YS2F-1 into the air, with Cdr. J.T. Shepherd at the helm. His co-pilot was RAdm. C.H. Duerfeldt, Commander Naval Air Test Center.

The XC-7 is an improved version of the C-11 steam catapult presently in use aboard six fleet carriers. The USS *Forrestal* has both the C-7 and C-11 catapults.

The XC-7 differs slightly from the C-11 steam catapult in that its stroke is extended to 250 feet. The stroke of the C-11 is 211 feet.

A second plane, an F4D *Skyray*, was launched shortly after the S2F with LCdr. F.T. Stevens at the controls.

ROARING *its defiance to the sound barrier, this powerful J-57 afterburner spurts flames from its exhaust as raw jet fuel is fed into it during tests.*

A 'KICK' IN THE TAIL

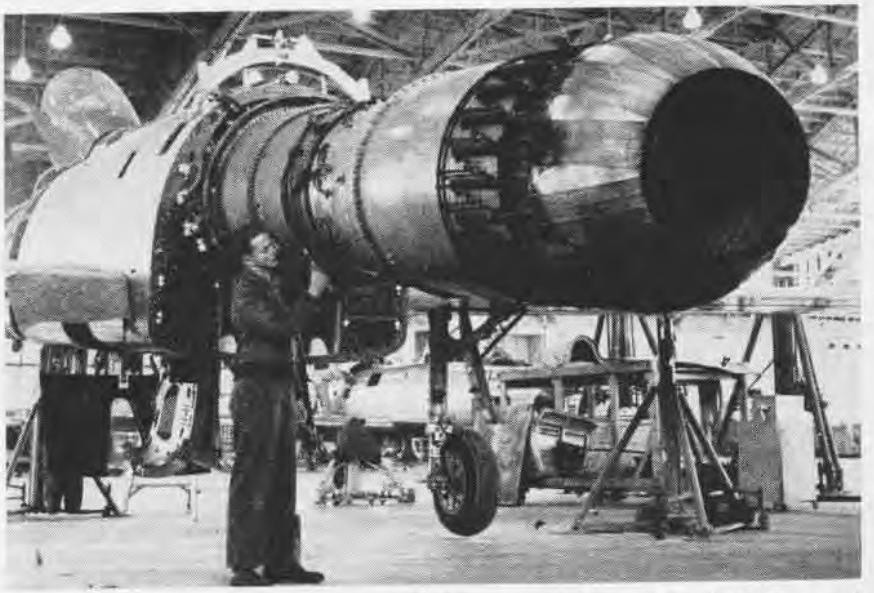
THE "Kick in the Tail" that helps some of America's jet-powered aircraft to ram their way through the sound barrier in level flight is an afterburner. And until a jet engine is designed and produced that will reach upwards of 20,000 pounds thrust, without a substantial increase in the aircraft's weight, the afterburner will remain the means of attaining level supersonic flight.

An afterburner is basically a ramjet type engine attached to the rear of a conventional gas-turbine powerplant. It is about the same diameter as the engine, and when additional thrust is required, the pilot merely feeds raw fuel into the jet's exhaust stream where it is ignited.

Military requirements demand that aircraft be capable of rapid take-offs from a runway and quick accelerations to high altitudes; and that they be able to fight effectively in rarefied air at 45,000 feet and over. The afterburner that supplies these tremendous bursts of power is the indispensable "extra" in jet fighter operations.

With the use of an afterburner, and under certain conditions, thrust of a jet engine can be increased by as much as 90 to 100%. In static thrust tests, some jets have been able to achieve from 40 to 50% additional power.

Design and construction of the first afterburner were undertaken by Pratt & Whitney just after the J-42 centrifugal-flow jet engine was being perfected and made ready for production. This experimental model was



THE PRATT & *Whitney J-42 afterburner is the forerunner of this one being installed on a jet fighter. One of the aircraft industry's first successful afterburners was the J-48's tailpiece.*

THREE *pieces of stainless steel alloy are used in the construction of P&W's jet afterburner.*

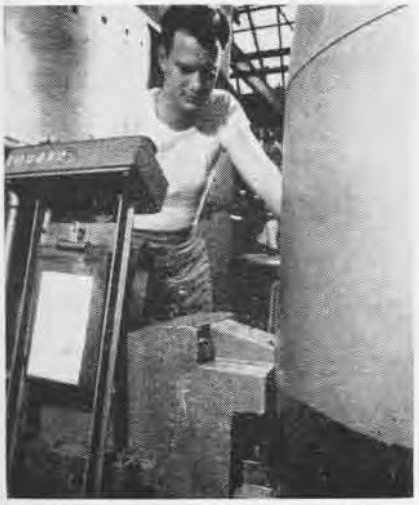
A WORKMAN *fuses the three pieces together on a welder. This process is called butt-welding.*

ADDITIONAL *strength for the afterburner is obtained by corrugating the stainless steel alloy.*

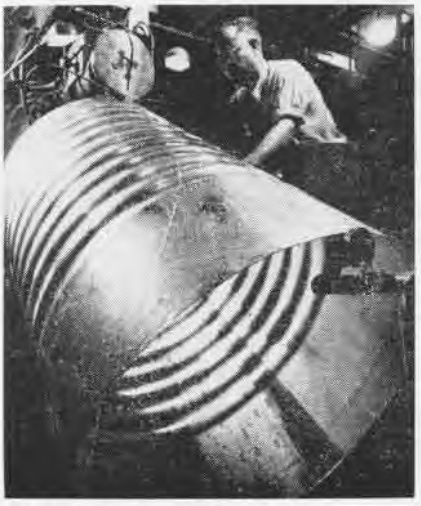
WITH *a metal pattern clamped into place, electric shears cut the sheet to the required size.*

THE PROPER *diameter for the afterburner is obtained by passing sheet metal through roller.*

TIME-SAVING *multiple electrode spot-welder joins two of the J-57 afterburner components.*



HOLES *to fasten rear section to the front are punched by this powerful punch press at P&W.*



RIGIDITY *in the afterburner section is obtained by welding a flange with a seam-welder.*

PNEUMATIC *pistons are being installed that will regulate the aperture located in the rear.*

VITAL *fuel manifold is then installed which will feed fuel into the air stream of the jet engine. Ignited fuel provides extra thrust.*

OTHER *essential parts of the J-57 afterburner are components of the iris. These stave-like parts control the tail pipe diameter.*

AN OUTER *liner is lowered into place for use in combatting jet's extremely high temperatures.*

modified and used as a basis for the design of a more advanced afterburner which was used on the J-48 centrifugal-flow jet engine. Success of the J-48's afterburner was evident in the F-94.

The expanded techniques and methods employed in the development of this afterburner greatly enriched the entire field of jet engine technology. Of no small benefit was the welding process used in its construction. The resultant rugged, heat-resistant characteristics had a definite effect on the advancement of jet engine manufacture.

With the development of the model used on the J-48, a solid basis of experience was obtained. Its basic design has been again modified slightly and is now incorporated in the proven J-57 axial-flow turbine, which powers the speedy F4D *Skyray* now under test.

THE IRIS *support assembly is one of the most intricate pieces of the J-57's afterburner.*

THE BOLTING *and wiring into place of the rear section of the afterburner is directed at attaining the maximum structural strength.*

THE COMPLETED *afterburner is installed on the J-57 axial-flow jet turbine. This addition will greatly augment the engine's thrust.*

Navy and USAF Cooperate

Navy Pilot Accepts an AF Plane

Two incidents occurred recently which demonstrated the cooperation between the Navy and Air Force. At McDonnell Aircraft's St. Louis plant a Navy pilot, Lt. J. W. Hamilton, "bought" the first production model of the F-101 *Voodoo* fighter interceptor for the Air Force. Halfway across the world at Sangley Point, P.I. an Air Force pilot, Lt. Clarence Shivers,

HAMILTON ACCEPTS F-101 FROM FISCHER

USAF, arrived to give familiarization hops in the TV-2 to Navy pilots.

Hamilton, who serves with BAR St. Louis as security officer, test-flew the *Voodoo* and gave the thumbs-up sign to William Fischer, foreman of McDonnell's flight inspection division. The plane was accepted by Hamilton under a liaison exchange agreement between the Navy and AF.

In the Philippines, Lt. Shivers arrived from the 6200th Air Base Group at the request of Cdr. G. "S" Richey, CO of FASRon-119, for the purpose of checking pilots out in the TV-2 which the squadron had just received.

One of Shivers' first co-pilots was RAdm. H. H. Goodwin, ComNavPhil, and a Naval Aviator since 1929.

Lt. Shivers was the pilot of one of the AF T-33's which were used by scientists in the Philippines for their study of the sun's total eclipse.

Italians Complete Course

Six Graduate at NAS Jacksonville

Six Italian Navy chief petty officers have successfully completed more than 14 months of training and familiarization in naval aviation electronics.

THE ARMY'S XV-3 *convertiplane, developed by ARDC and Bell Aircraft, made its first successful flight recently with Bell's chief helicopter test pilot, Floyd Carlson, at the controls. The XV-3 is a tilting rotor type convertiplane, designed to combine the preferred performance features of the helicopter and airplane. The convertiplane was taken to an altitude of 20 feet.*

Their certificates show they have completed the Aviation Electrician's Mate School Class B course at NATTC.

The group was carefully selected by the Italian Navy for their electrical engineering skill. Frank Merdagio, AE3, acted as interpreter for the group and remained with the Italians throughout their stay at the school.

'Copters to the Rescue

Navy/Marines Aid Flood Victims

Navy and Marine Corps helicopter pilots and fleet and shore-based personnel working in coordinate action rescued more than 730 persons in the flood disaster areas of Pennsylvania and Connecticut.

Two hundred forty-nine persons in the Ansonia and Derby areas of central Connecticut owe their lives to the dogged determination of Lt. Giuseppe Bello of HS-3. Bello was at Bridgeport to pick up a helicopter for his Weeksville-based squadron when word was received on the flooded conditions. He and others volunteered their services, and immediately began rescue flights.

Not to be left unmentioned were the efforts of three NATC, PATUXENT RIVER helicopter test pilots who were at Bridgeport flying the XHR-1. LCdr. W. C. Casey, Maj. R. L. Anderson and LCdr. R. H. Bowers, flew helicopters with Sikorsky pilots all day and rescued people trapped in tree tops, roof tops and high ground.

Bowers flew an HSS-1 that had just come off the assembly lines at Sikorsky's plant. He rescued a young mother and her infant child on his first rescue hop.

Anderson, flying an HRS experimental 'copter equipped with floats, met some difficult situations. He had to hack through rooftops as the flood waters tore them to pieces. He rescued five or six people.

Casey, in an HSS-1, had his ups and downs also. His biggest troubles were caused by TV antennae. They hampered his rescue attempts until he solved the problem by settling the HSS-1 into a maze of them, then flew his helicopter back and forth until the undercarriage bent them over. The downwash of the rotors completed the job for him.

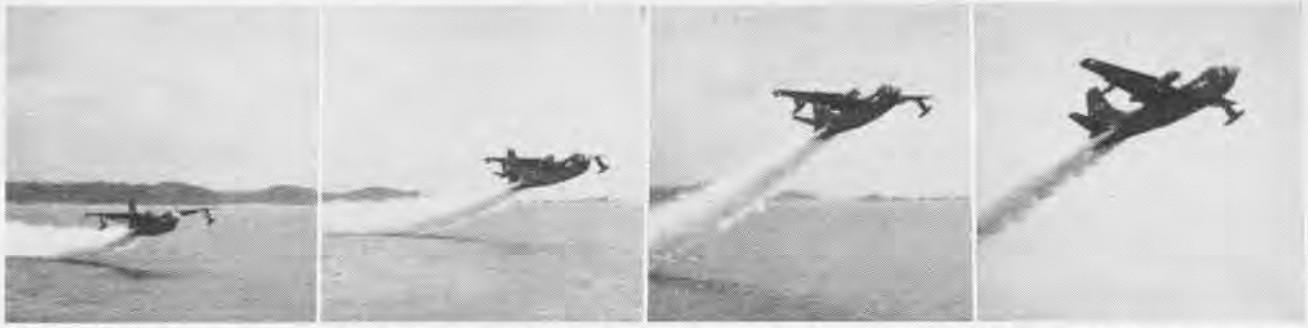
A dozen Marine copters from MCAF NEW RIVER, N. C. also joined in rescue operations. They are attached to Marine Helicopter Transport Group 26. Operating from a National Guard base in Connecticut, the Marines flew medical supplies to isolated areas, rescued marooned men, women and children, airlifted emergency generators to hospitals and carried food to the flood victims.

Eight of the helicopters were from HMR-261, commanded by LCol. D. McFarland and four were from HMR-262, skippered by Maj. William Voss. Col. McFarland directed all eight.

IFR-IQ?

When will a pilot, en route under IFR, establish contact with Approach Control?

Answer on Page 40.



TAKING TIME *out from the assigned task of patrolling the Far East defense periphery, a P5M-1 Martin Marlin attached to VP-40, puts on a JATO demonstration for military and civilian observers near Okinawa. The Marlin's R-3350-30WA powerplants are augmented by the 4,000 pounds thrust generated by the four JATO units. This set of sequence photographs was taken from the USS Philippine Sea.*

AirLant Awards Battle "E"

Ten Ships/Squadrons Recipients

Ten ships and squadrons of COMAIRLANT have been selected to receive the coveted Battle Efficiency "E" award. The ten were chosen as being the most outstanding in their class in exercises, inspections, and overall performance.

The overall performance of a unit is based on its safety record, utilization, special assignments and evaluation reports.

The ten who will be permitted to fly the Battle Efficiency Pennant are: the *USS Randolph; USS Midway; USS Valley Forge; USS Duxbury Bay;* VS-27; VF-22; VF-43; VA-105 and VF-72, which has been re-designated as VA-72. At the time of the awards, commanding officers of the units were: Capt. J. C. Renard; Capt. R. D. Hogle; Capt. L. W. Williams; Capt. H. E. Born; Cdr. W. E. Rouse; LCdr. J. C. Davis; Cdr. J. R. Dierker; Cdr. S. W. Forrer and Cdr. C. F. Naumann respectively.

VC-7, flying AJ-2 *Savages* out of Port Lyautey, was the only composite squadron to win the "E". Cdr. T. T. Guillory is the commanding officer.

Although the *Randolph* and *Midway* tied for first place in the heavy attack carrier class, both will be permitted to fly the Battle Efficiency Pennant in recognition of special achievement.

AFTER BEING *out of service eight years, the USS Lexington (CVA-16) sails out of the Puget Sound Naval Shipyard, Bremerton, Washington, where she recently completed 22 months of modernization. She heads for her initial sea trials after a conversion which included the hurricane bow, angled deck and steam catapults. Home port for the big carrier will be San Diego.*

BuAer's Sullivan Retires

Noted Airborne Equipment Expert

The Navy's senior civilian expert on airborne equipment has retired and has accepted a position in private industry. He is Mr. James E. "Sully" Sullivan of Washington, D.C.

A captain in the Naval Reserve, his career began in 1920 when he entered the Naval Academy from New Hampshire. In 1924 he was ordered to duty with the Fleet as an ensign. After a year at sea, Sullivan resigned his regular commission and transferred to commissioned status in the Reserves, where he was very active. He was for several prewar years the Commanding Officer of Washington's Naval Reserve Battalion, and received a SecNav Reserve Special Commendation for that outfit's state of readiness at the outbreak of World War II.

From 1928 to 1940, he was engineer-in-charge of developing aeronautical materials and equipment for the Bureau of Aeronautics. In 1940 he returned to active duty and headed the Equipment and Materials Branch of that bureau. Following WW II and his release from active duty in 1946, he became Director of the Airborne Equipment Division, a post he has held to this time.

He is responsible for many significant advances in the development of safety equipment, aircraft materials, mechanical systems, visual landing aids, instrument and navigation devices, and holds the Legion of Merit and a SecNav Commendation for his outstanding work.

Capt. Sullivan has spent 27 of his 35 years of service to the U.S. Navy in the Bureau of Aeronautics.

MITSCHER FIELD DEDICATED

With the naming of Mitscher Field, Miramar, Admiral Marc A. Mitscher once more joined the other immortals in Naval Aviation. Bill Moffett, Henry Mustin, Spuds Ellyson, Cash Cecil, Chevvy Chevalier, Robert Saufley, Kenneth Whiting—these were some of the men in whose company "Pete" Mitscher began his career in naval aviation. And they are the men in whose company his memory now lives.

Any story of Admiral Mitscher, however short, is a story of naval aviation. He was one of the first 13 students at Pensacola, where, in November 1915, from the deck of the *North Carolina*, he witnessed the world's first successful catapult shot from a ship underway. From the beginning, he was on hand for every important step forward in naval aviation until the day he died.

The name of Marc Mitscher is synonymous with carrier aviation. This taciturn, wizened man in a long-billed cap sitting high on the flag bridge of his ship, led his carrier task forces over the Pacific from the Marshalls to Tokyo, dealing death and destruction to the enemy.

From the B-25 raid of Tokyo, launched from the deck of his brand-new *Hornet*, to the last days and nights of combat, made nightmarish by Kamikazes, he had driven ceaselessly for the extinction of the enemy fleet.

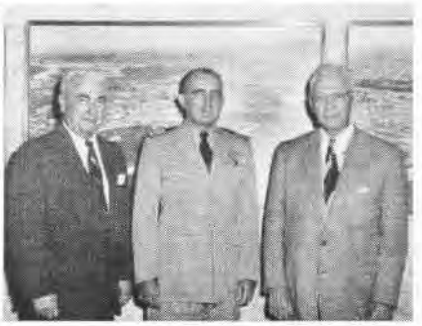
To the thousands of Navy men to whom Mitscher was only a name during WWII, he was the personification of the greatest naval striking weapon in history—of the fast-carrier task force, that he himself had forged.

This complete air admiral, this man who devoted his life to flying, this brilliant tactician who never hesitated to strike was, in his strange way, filled with a deep understanding of men. To his staff and the pilots who flew for him, this pilots' *pilot*, this pilots' *admiral* was a beloved and respected leader, second to none.

PERPETUATING *the memory of a man whose deeds made history, the Navy has named NAS Miramar flying field 'Mitscher Field'. Dedication ceremonies in observance of this event have been held.*

PIONEER *flyer Mitscher in Curtiss AH-2 type 'baling wire-plumber's tape' flying machine.*

POWERFUL *team in Pacific was Air Admiral Mitscher, and surface Chief of Staff Burke.*



COMMITTEEMEN *Henderson, Mills, Pfefferkorn, collected funds for commemorative plaque.*

LET'S LOOK AT THE RECORD

The Top NavCad Lauded

Edens Receives Outstanding Award

NavCad Allen R. Edens has been awarded the Outstanding Student Award for NavCad Class 12-55. Capt. J. P. Monroe, Acting Chief, Naval Air Basic Training, made the presentation to Edens during graduation ceremonies of the class at NAS Pensacola.

Edens is now at Whiting Field where he is taking primary flight training.

VP-47 Arrives at Iwakuni

First to Deploy with P5M-2 Marlin

The P5M-2 *Marlin*, a long range patrol plane, has been introduced to the Far East by VP-47. The squadron recently arrived at NAS IWAKUNI as relief for VP-48 in flying patrol missions along the Far East defense periphery.

After record breaking flights from California to the Hawaiian Islands, VP-47 spent three weeks at NAS FORD ISLAND preparing for the flight to Iwakuni. While at Ford Island, the squadron entered its Operational Readiness Inspection with an aircraft availability of 100% and maintained it throughout the exercise. At the conclusion of its ORI, the squadron received one of the highest marks yet given to a P5M squadron.

The Hawaii to Japan flight was led by Cdr. J.W. Lawyer, squadron CO, who was met on arrival at Iwakuni by Capt. J.I. Bandy, ComFAW-6, and Cdr. J.C. Young, skipper of VP-48.

Montgomery Hits 200 Mark

Boastwain's Chair Transfer Champ

LCdr. John A. Montgomery, the Sixth Fleet's air defense officer, is one Naval aviator that still flies "by the seat of his pants."

In the past 22 months he has racked up over 200 transfers at sea by highline, helicopter and motor whaleboat. He's a "100-mission man" in the boatswain's chair and has accumulated an additional 100 transfers by helicopter and whaleboat.

His transfers between the ships of the Sixth Fleet were required for observation, inspections, instructions and Fleet air defense exercises. Highline transfers have been accomplished by day, night, in all kinds of weather and between all types of ships. Not once has he been dunked.

MONTGOMERY CLAD IN HIS TRANSFER BEST

His record was made known the day he left the staff for a new position with VW-2 at Patuxent River.

THE 70,000th *arrested landing aboard the USS Philippine Sea was logged recently by Ltjg. W.G. Offerman in an F9F-6 Cougar. The carrier is in the Far East with the Seventh Fleet.*

THE FIRST *five Aviation Officer Candidates to fly the regularly scheduled jet flight for AOC's at NAS Olathe are pictured here with the pilots who flew them. From left to right are: John Kinnish, Charles Goodman, Lt. B. H. Shepherd, Kansas City AOC Officer, Cdr. J. B. Cain, CO of JTTU, Olathe, Don Malone, Lt. Richard Farisso, Robert L. Simpson, Ltjg. John Bangma and Curtiss Cutting.*

VP-1 Sets Flight Record

Logged 1457 Hours While at Naha

A new flight time record for P2V type aircraft has been set by VP-1, NAS WHIDBEY ISLAND. The old record set by VP-26 while deployed at Keflavik, Iceland, of 1,320 hours has been bettered by 137 hours.

VP-1 made the new record of 1,457 hours while deployed at Naha, Okinawa, last January and in March tallied 1409 hours.

Another mark for VP-1 was made last May when the squadron landed at Whidbey after a 16,000 mile flight. This flight made them the first patrol squadron to circumnavigate the globe.

Cdr. I.A. Kittel was skipper of the squadron when the records were made.

DESIGNED *to carry new and larger antisubmarine weapons, the Navy's S2F-2, powered by twin R-1820-82 Wright engines, is shown in flight over Long Island. The new hunter/killer airplane is rapidly being integrated into Fleet use. The enlarged torpedo bay was built into the port side to accommodate the new weapon. To compensate for the S2F-2's increased weight, the tail surfaces have been increased.*

THE OLDEST *and youngest of 150 persons evacuated from Hurricane Connie-threatened Salterpath, N. C., 84-year old Mrs. Laura Smith, and 4-month old Christine Willis, found refuge at MCAS Cherry Point from the danger.*

VMA-121 Logs a New High

Flight Hours Put Unit Out Front

VMA-121 personnel in southeast Korea got their dander up recently and may have set a new flight time record for the AD *Skyraider*. In a friendly feud with personnel of VMA-251, VMA-121 men set a 2,000-hour mark to be reached in the month of August.

By the 23rd, their goal had been reached. Then crewmen, mechanics, specialists, and even the squadron office clerks decided to concentrate their efforts on a record. Eight days later when all the flight time had been compiled, VMA-121 had logged 2556.4 hours.

This established a new Wing record, and it may be a Navy-Marine record for the AD. To reach this total, squadron pilots logged 1066 landings and take-offs, 234.6 night flying hours, and 217.5 instrument hours.

The unit is skippered by LCol. W.H. Rankin, who logged the greatest number of hours during the month. His total was an impressive 144 hours.

THIS CREW KEPT #13 AIRBORNE 144 HOURS

New Outfit Sets a Record

Unit Wins "Aces Award" for July

An all-weather training unit at Memphis, ATU-105, has been awarded CNAVanTra's "Aces Award" for July. The unit, under the command of Cdr. G.A. Miller, flew 1,471 accident-free hours to win the coveted safety award.

The new Advanced Training Command activity at NAS MEMPHIS receives student pilots direct from basic training at Pensacola. During the 12-week course at Memphis, the student is given an all-weather instrument syllabus in the T-28 and jet transition in the veteran TV-2. Upon completion of this course, he is sent back to Pensacola for further jet training in the F9F *Panther jet*.

The training activity is made up of ATU-105 and ATU-205, under the over-all command of Cdr. J.G. Williams. Cdr. C.C. Sanders skippers ATU-205, the jet unit of the activity.

Navy A4D Breaks Record

Lt. Gray Sets World Speed at Muroc

The Navy's newest and lightest jet attack airplane, the Douglas A4D *Skyhawk*, set a new world speed record October 15 for the 500-kilometer closed circuit course.

Piloted by Lt. Gordon Gray, the midget carrier-based attack plane posted an average of 695.163 mph over the closed course of 310.685 statute miles at Edwards AFB, Muroc, California.

In making the run, the Navy jet eclipsed the old record by over 45 mph. The previous best mark for the measured course was 649.46 mph established by Maj. John L. Armstrong, USAF, in an F-86H *Sabre Jet* on 3 September 1954, at Dayton, Ohio.

The *Skyhawk* made the run carrying a normal load of JP-4 fuel without benefit of external tanks, and completed the run with fuel to spare.

The *Skyhawk's* time of 695.163 mph was established under formal regulations of the Federation Aeronautique Internationale of Paris, France, and the National Aeronautics Association, which represents the F.A.I. in the United States.

Lt. Gray, test pilot from NATC PATUXENT RIVER, set the new time by circling a special 100-kilometer closed course five times. Laid out over the rugged Mojave desert, the route was marked by 12 red pylons with special smoke and mirror signals aiding the pilot at each 30-degree turn. Since the record was established by flying around a nearly circular course, the new record does not reflect the maximum speed capabilities of the aircraft.

IT'S DONE WITH MIRRORS

IN F7U-3P *Cutlass, here making touch and go mirror landing, Lt. J. H. Cover, VX-3, shot pilot's-eye view of a landing aboard a carrier (on facing page) using British-developed mirror landing system. U.S. Navy pilots are enthusiastic in their approval of the mirror.*

THE FAST moving FJ-3 was in the landing pattern for a let-down on the *Bennington*. A nice 25-knot breeze was clipping right down the angled deck of the "Big Ben", and the Landing Signal Officer was standing in his accustomed place on the LSO platform. The situation appeared to be normal.

Now the *Fury* was in his final turn. He crossed the ship's wake, losing altitude, and was lining up on the center guide strip of the angled deck. The LSO still stood in his place, watching intently, but he made no move to raise his arms from his sides. It was now evident that he was not using his paddles.

Over the edge of the deck, with proper landing speed, altitude and attitude, the *Fury* roared in a constant sinking approach. With hook down, and holding steady, he flew onto the deck and jolted to a stop as he caught the number three wire.

And the first landing was successfully completed on an American carrier using the "deck landing mirror sight", a new system of landing aircraft at sea, accomplished by using a combination of mirror and colored lights. This new development is an innovation in carrier aviation that, for the safety element involved, is thought by some to have possibilities of the same magnitude, even, as the angled deck and the steam catapult.

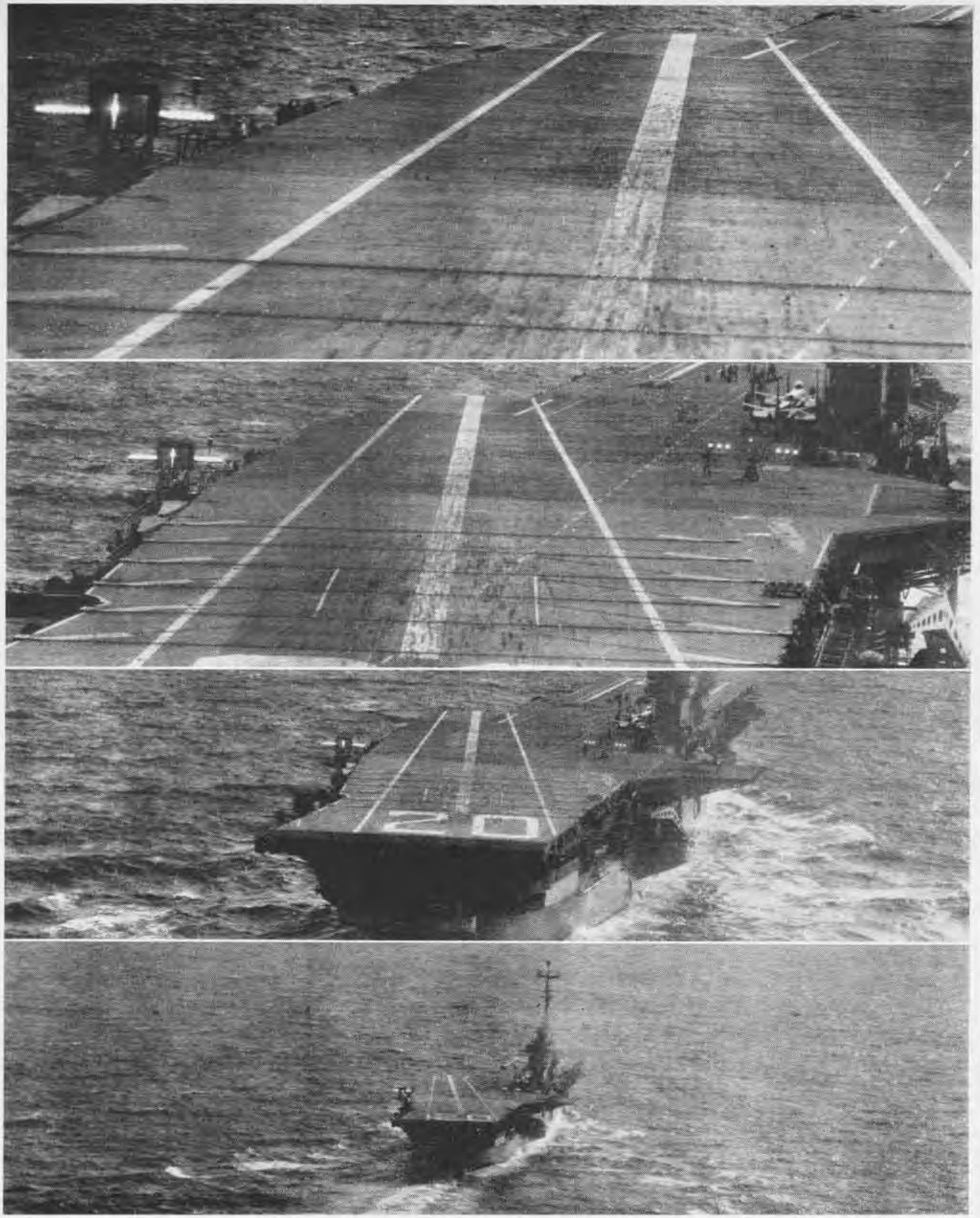
This new landing system consists of a line of landing lights called "source lights", located far aft on the port side of the angled deck; and banks of green "datum lights", on each side of the four-by-five-foot mirror mounted farther forward on the same side of the deck. The amber-colored source lights are beamed forward, but are shielded from the pilot approaching from astern. These lights are picked up and reflected aft by the mirror, mounted on a platform extending out over the port side.

The concave aspect of the mirror centers the reflection of the source lights so that it appears as one elongated spot, called a "blob of light" by the British, or "the meatball" by our own Navy flyers.

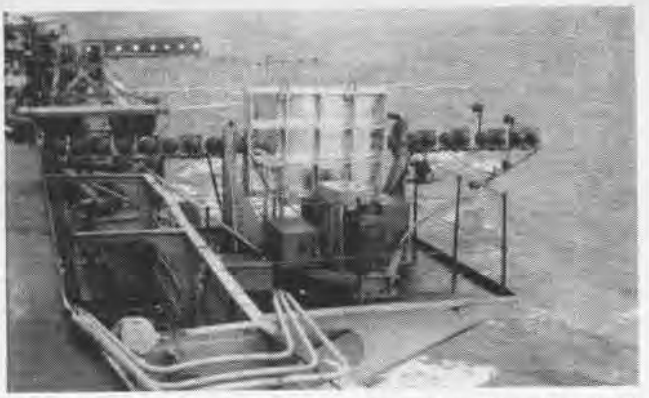
From the center line of the mirror the row of 14 high-intensity green "datum lights", seven on each side, shine toward the stern. Highly visible, these lights can be seen much farther than the LSO can, by day or by night.

CDR. R. G. DOSE, *VX-3 CO, sets his FJ-3 down in a perfect first landing aboard the Bennington, using 'deck landing mirror sight'.*

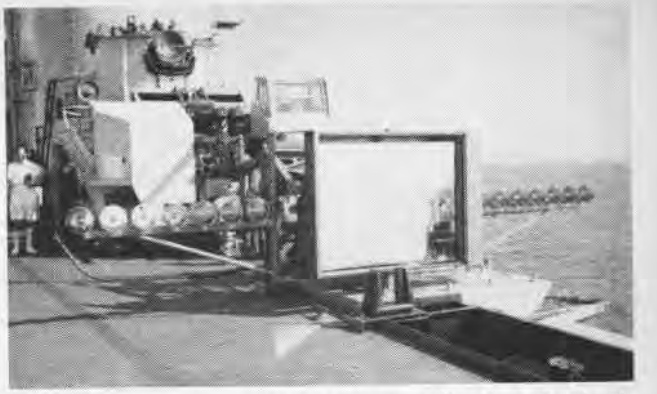
BRITISH *Cdr. Goodhart, mirror landing system designer, and Capt. P. Foley, 'Big Ben' CO, congratulate Cdr. Dose upon first mirror landing.*



THIS PILOT'S-*eye view, shot by a pilot as he made a mirror system landing on the Bennington, shows the proper positioning of source light on the mirror for ideal approach. To quote, "Push over, slant down onto deck, power on until you hit deck and feel hook, then cut!"*



REAR VIEW *of Albion's port side mirror gives interesting details of construction. Note brilliance of 'source lights' located aft.*



CLOSE-UP *shows mirror sight installed on Albion's starboard side. Pioneers in system's development, British tested mirror three years.*

ONE PILOT on a night landing, recorded seeing the lights while still seven miles out.

In landing operation, the pilot picks up the lights as he makes his final turn. Approaching the flight deck, he centers the blob of light on the mirror. By the position of "the meatball", he immediately knows if he is high or low. If he deviates too much, either high or low, the light goes off the mirror altogether, and the watching LSO presses the wave-off button. Red lights on the lateral borders of the mirror start flashing in the pilot's eyes. He firewalls the throttle, takes the wave off and comes around again.

The pilot makes no attempt to judge his horizontal coordinate by the lateral position of the blob in the mirror. Instead, in the initial stage of his final approach, he lines up with the center guide line on the deck. Once he has correctly aligned the indicator lights, the image in the mirror indicates whether his glide path is proper for a safe landing. He must control the speed and attitude, however. Holding constant, he continues his let-down until he has engaged the arresting gear. Or, as the pilots say, "Put the meatball in the looking glass, and you've got it made!"

In the early days of jet landing tests, 1948-49, at NATC PATUXENT, Test Center men foresaw the necessity of decreasing reaction time and distance involved in increased landing speeds of these faster aircraft.

To reduce the delay, and element of human error present in the old system of "approaching plane to LSO-LSO to pilot-pilot correct his error," these foresighted men, realizing that the pilot needed a direct reflection of his errors and necessary corrections, experimented with various light landing systems.

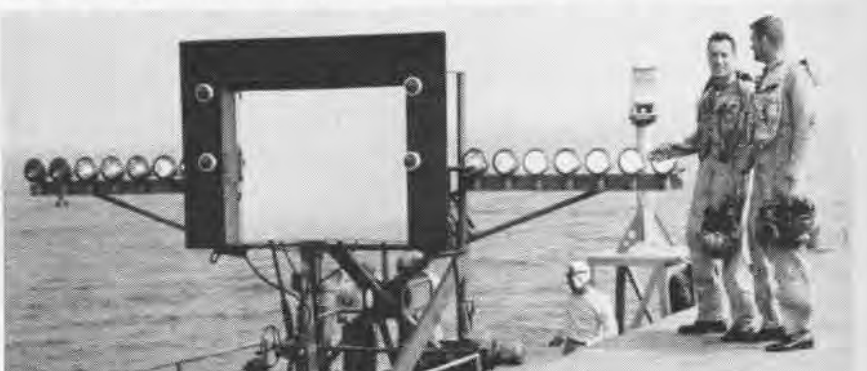
Cdr. H. N. C. Goodhart, R.N., exchange pilot at the Center at the time, was exposed to this thinking and these experiments. Back in England, he was on his own. He was convinced that the pilot needed a reflection, or mirror image of his approach—and he did something about it.

Obviously, a reflection of the approaching plane would not be visible for any considerable distance. There had to be quick and accurate signals that the mirror could reflect to the pilot, literally with the speed of light. And there was the answer—a light reflected by the mirror to indicate the proper approach for a landing by these new, speedy planes, with side banks of lights to furnish the reference signal.

Initial tests of the system on land indicated its practicability. Shipboard usage required considerable modification and additions. For one thing, the need to compensate for the pitch of the ship resulted in attachment of a gyro-stabilizer, linked to the mirror. More recent trials aboard the British carrier, HMS *Albion,* have seen the installation of a reserve mirror and set of lights on the starboard side. The USS *Bennington* initially installed both a port and starboard mirror system.

British pilot approval has been echoed in the enthusiastic acceptance of the American flyers who made the initial U.S. Navy shipboard tests aboard the *Bennington.*

Consensus of VX-3 and VC-4 pilots who made exhaustive tests of the system are expressed in their comments: "With the high landing speeds of present jets, we must have immediate presentation to the pilot of his approach condition. The interval of time that a pilot can follow LSO signals is too short, and getting shorter each year. The mirror allows you 10-12 seconds to set up a proper speed, altitude and attitude. You know where you're going to land on each pass, and it places control of the plane in the hands of one person instead of two. I'm sold!"



CDR. VESCOVI, *VX-3 Project Officer for mirror test, discusses datum lights focusing with his CO, Cdr. Dose. Note wave-off lights in border of gyro-stabilized, highly polished aluminum mirror.*

FLEET UNITS QUALIFY

TWO ATTACK squadrons are the first fleet type units to qualify pilots in day and night carrier landings using the British-developed deck mirror landing system. Flying AD-6 *Skyraiders*, the 20 pilots of Jacksonville-based VA-105, led by Cdr. S. W. Forrer, copped the first place for the "prop" squadrons just before the *Bennington* left for the West coast, steaming thousands of long miles around So. America's Cape Horn.

VA-36, skippered by Cdr. L. A. Menard, also boarded the *Big Ben* early in September with their F9F-5's for five days of 'car-quals'. During that week of operations, the *Panther* pilots won the title of first jet squadron to complete the day and night landings with the 'meatball and looking glass'.

These two squadrons are a part of Air Task Group 201, every pilot of which day-qualified with the mirror before the *Bennington* departed from the Atlantic. The detachments of composite squadron pilots, assigned to ATG-201, also completed their night qualification, *sans* LSO.

Capt. Paul Foley, commanding officer of the *Bennington*, expressed his satisfaction with the mirror qualifications: "I consider Air Group evaluation successful beyond expectations."

ATG-201 is composed of Fighter Squadron 13, who fly the swept-wing F9F-8 *Cougars*, of VA-36 and 105, and of detachments from VC-4, flying F2H-4 *Banshees*, from VC-12, in AD-5W's, and from VC-33, who fly AD-5M's. The Air Task Group is joining the *Bennington* on the West coast, from where they will go to the Pacific for extensive operations with the fleet.

PILOTS *of VA-105 chalked up another first to add to their already impressive score. This unit, flying prop planes, was first to complete qualification with the deck mirror landing system.*

CVA Fetes a Plank Owner

Navy Commissions USS Lexington

When the USS *Lexington* (CVA-16) was recommissioned at Puget Sound recently, a plank owner was sitting on the speakers stand. He's Thomas W. Reese, EMC, who has spent better than one-quarter of his 21 years naval service aboard that ship.

Reese's connection with the *Lexington* began in February 1943 when, as an EM2, he helped commission the old *Lex* (CV-16) at Quincy, Mass. Five years, two advancements, and innumerable battle victories later, he aided in the moth-balling of his ship at Puget Sound.

The carrier's new skipper, Capt. A.S. Heyward, Jr., honored Reese personally at a reception in the wardroom following the recommissioning ceremony.

PLANK-OWNER REESE AND CO, CAPT HEYWARD

The following day, Reese celebrated his birthday aboard the *Lexington* and remarked: "This makes six birthdays that I have observed on board."

The *Lexington* has just completed 22 months conversion in the Navy yard at Puget Sound, where an angled deck and the steam catapult were installed.

Students to get DAR Award

Outstanding Four to be Honored

The four outstanding students of NAVanTra each year will be presented an award by the Texas Society of the Daughters of the American Revolution.

The award, made known in a letter to RAdm. C.D. Glover, CNAVanTra, from Mrs. Felix Irwin, state regent, will be approximately $50. It will be presented to the outstanding student in each of the four branches of training at NAS CORPUS CHRISTI multi-engine (sea), multi-engine (land), jet and single engine-prop.

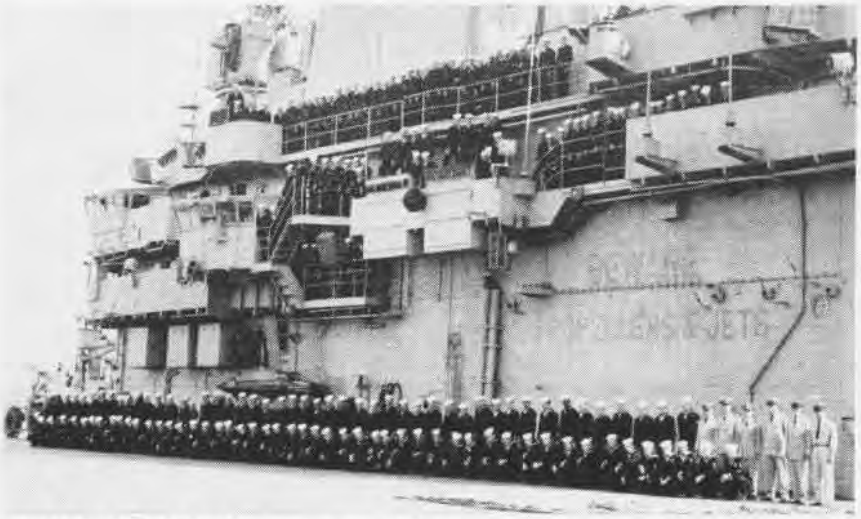
To qualify for the award a student must be designated a Naval aviator during the fiscal year for which the award is to be given. Both student officers and aviation cadets are eligible.

The first of the prizes will be given at the annual inspection of NAS CORPUS CHRISTI in January or February.

A YEAR *of successful ASW operations by VS-32 aboard the USS Leyte (CVS-32) was terminated by landing of plane 6, piloted by Lt. M. L. Gurley, totalling over 3,000 safe landings.*

Weekend Warrior NEWS

GROUND *handlers of VP-871 grab bow lines of the ZSG-2 and "walk" it to its mooring mast.*



LINING *the flight deck and superstructure of the Kearsarge are the 235 members from the 85-day Accelerated Training Program at Oakland. Some of the men had never been aboard a carrier.*

Airship to Train Oakland Reservists

VP-871 based at NAS OAKLAND is the proud owner of a ZSG airship which promises to become a familiar sight in the Bay area. The airship will be permanently assigned to the air station.

The airship requires an air crew of ten, a ground crew of 40 enlisted men.

Kearsarge is Host to Weekenders

Some 235 Naval Air Reservists in an 85-day training program at NAS OAKLAND spent a week aboard the *Kearsarge*. Flown to San Diego in R5D's, the Reservists boarded the carrier to perform regular duties in aerial photography, aerology and aviation mechanics.

Spokane Combines Reserve Training

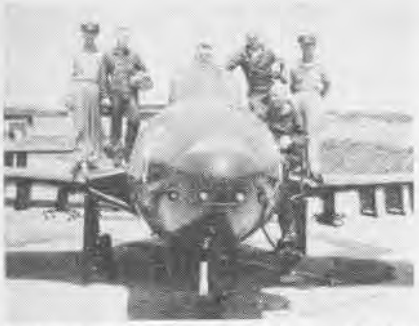
Three Reserve squadrons, one Marine and two Navy, have completed an extensive 48-day training cruise at NAS SPOKANE. The squadrons—VF-901, VF-902 and Sub-Unit VMF-216—compiled an enviable 1459.9 hours in ten F9F-6 *Cougars* to round out their training.

The squadrons split their daily training sessions into two parts. The first shift started work at 0400 and secured at 1300. The second picked up their gear at 1300 and finished at 2200. This system allowed each pilot a maximum amount of flying time in the jets and other aircraft. It was during this time that 15 pilots made the transition from prop to jet aircraft.

The station Maintenance Department, which consists of 66 men, worked around the clock with night check crews in order to keep the aircraft flying during the cruise.

PREPARATIONS *for the afternoon launch are made with line crews standing by with starter units. Pilots achieved maximum flight time by working two shifts during the 48-day training cruise.*

RESERVIST *Brown of Wing Staff 90 shoots movies of pilots and crews with their Cougars.*



THIS *Cape Girardeau, Mo., unit was the first to check out in TV's, F9F jets at St. Louis.*

Stiff Training for AAU-923

The "Weekenders" from AAU-923 have completed two weeks of intensified jet operational training at NAS ST. LOUIS. Headed by acting CO, LCdr. C. H. Brune, the six pilots and ground officers and seven enlisted men completed their training while familiarizing themselves with the F9F *Panthers*, TV-2's and the reliable old AD *Skyraider's*.

These Cape Girardeau, Mo., reservists meet once a month at the Municipal Airport at Cape Girardeau and then spend their two-weeks duty at NAS ST. LOUIS.

VP-791 Wins Kisner Award

The James B. Kisner Trophy has been awarded to VP-791 at NAS MEMPHIS. The squadron beat out seven other reserve air outfits in the Memphis area by tallying a score of 67.3% for the year. VR-791 was close behind for second place with a score of 67.2%.

The trophy was presented, for the first time since its establishment, to Cdr. Alan Washington, squadron CO.

VP-791 CO *accepts trophy from Cdr. Kisner as NARTU Memphis CO indicates his approval.*

The award is named in honor of Cdr. Kisner, whose patriotic service exemplified the ideals of Naval service, and whose enthusiastic participation in the Naval Air Reserve set an outstanding example for others to follow.

Cdr. Kisner was severely injured in 1954 when he chose to stay with his burning fighter plane rather than abandon it over an open playground where children were gathered.

As a result of this heroic action, he was awarded the Navy and Marine Corps Medal and placed on the medical retired list.

He had served as CO of VF-791 from the time it was commissioned in 1946 to the time of his accident. He led squadron through two years in Korea.

MEMBERS *of AWS-67, VA-671 and VR-671 turn out for survival training at NAS Atlanta*

No Attendance Problems Here

When AWS-67, VA-671 and VR-671 schedule a survival training program at NAS ATLANTA, GA., they have little trouble getting members to attend.

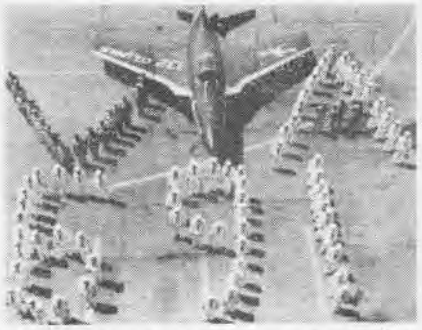
These fellows turn out in force, shuck clothes, don bathing suits and really "get (wet) with the program."

Dallas Graduates Trainees

The largest group of young naval airmen trainees to be graduated aboard NAS DALLAS were presented certificates recently by the station CO, Capt. D. A. Sooy. One-hundred forty men received awards and presentations in Nimitz Hall.

After the ceremonies, the graduates escorted their visitors on a tour of the station. Refreshments were served in the General Mess at the conclusion of the morning activities.

A number of the reservists have elected to go on active duty with the regular Navy while others will be assigned to air reserve squadrons.



CLAD *in their "weekend" best, officers, chiefs and enlisted men of VA-691 line up for photos.*

VA-691 Completes Transition

The "Warriors" of VA-691 turned out in force recently at NAS COLUMBUS for a celebration. Every man jack of the outfit lined up in front of one of their F9F-6 *Cougars* for a photo.

They claim that VA-691 is the first VA squadron to complete *Cougar* transition in the Naval Air Reserve Training program. LCdr. W. C. Vey is squadron CO.

O'Malley Hits 10,000 Hour Mark

LCdr. Bob O'Malley of AAU-733 stepped from his plane recently at NAS GROSSE ILE and was met by as pretty a receptionist as you could find anyplace. She was Miss Sally Smith, the Queen of Wyandotte for 1955, and she was on hand to greet and congratulate O'Malley on attaining his 10,000th hour in the air.

O'Malley has been flying since 1930. As a civilian, he accumulated a total of 1800 hours.

When not flying with the Navy, O'Malley works for the Grand Trunk Western Railroad as a locomotive engineer. He resides in Battle Creek, Mich.

LCDR. BOB *O'Malley and Sally Smith check over his flight log to verify his 10,000th hour.*

JETS OR HARPOONS, RESERVES FLY THEM

CLIFFORD *and Vincent Fischer travel over 200 miles to NAS Oakland to attend weekend drills.*

BY THIS time, the officers and enlisted men of VF-878 have stowed their gear and are back in their civilian jobs in central and northern California. But for two weeks this past season they donned Navy blue and reported to NAS OAKLAND for the annual Reserve cruise.

After reporting aboard, squadron personnel renewed old acquaintances, checked in with the squadron personnel office and set about squaring themselves away for the two-weeks which stared them in the face. Pilots were briefed and line crewmen were given the latest word on jet aircraft, for the personnel were readying themselves to accept and be checked out in the F2H *Banshee* twin-jet fighter plane.

Jet flying wasn't a new concept for VF-878 pilots for almost all of them had completed the transition from the old F4U-4 *Corsair* to TV-1's during their weekend training at the air station.

The really big thing for the 26 pilots assigned to the squadron was the *Banshee* familiarization, a combat-proved plane. To most of the men in the squadron, the *Banshee* was the new look in reserve aircraft for although most had seen this beauty streaking through the skies, few if any had flown or maintained it. Transition from the TV-1 to the F2H came off as smooth as silk, and before long each pilot in the squadron felt as if he had learned to fly in the F2H *Banshee*.

MOODY *and DeJohn connect starter cable to F2H Banshee in preparation for daily launch.*

Station personnel at NAS OAKLAND spared nothing to make the cruise for VF-878 as profitable as possible. Maintenance men pitched in and briefed squadron personnel on the many intricate components of the *Banshee* while station pilots made certain that squadron pilots could take it into almost any situation and make an admirable showing.

There are five Korean war veterans serving with the squadron and their jet aircraft experience was a valuable addition to the training. Cdr. E. M. Wilson ramrods the outfit with the assistance of his executive officer, LCdr. R. L. Clancy. Wilson, a veteran of WW II, is the holder of three DFC's and three Air Medals. Clancy has the distinction of being the only squadron member to wear the coveted Navy Cross.

LTS. R. J. *Inman and J. C. Byas are given TV-1 pointers by jet pilot, LCdr. G. J. Eggleston.*

The 14-day cruise was closed without damage to a single aircraft nor injury to a man.

The squadron's two-weeks at Oakland paralleled that of other squadrons in the reserve program. The cruises keep Reserve pilots and ground crewmen in a state of combat readiness. On the next page, we see VPP-936 on cruise during which they flew the PV-2 *Harpoons* from their base at Willow Grove. In the past, VPP-936 has held their annual cruise's at Willow Grove, with the exception of the 1953 cruise, held at Sanford and the 1955 cruise, held at Jacksonville. These two cruises gave the squadron much valuable training for they flew with regular Navy photo squadrons.

ONE OF *the highlights of the summer cruise for VF-878 was a trip to the bon vivant's capital, Reno, Nev. FASRon-871 personnel accompanied the Reservists for an overnight leave of 12 hours before returning to the task of flight training at Naval Air Station, Oakland, California.*

A CHECK *of an aerial camera viewfinder before a photo mission is accomplished by M. Kersse, AN, J. Hagarty, AN, and J. Smalls, AN.*

WHILE *the squadron is changing to P2V Neptunes, VPP-936 pilots and aircrewmen fly and maintain the PV-2 Harpoon for photo missions.*

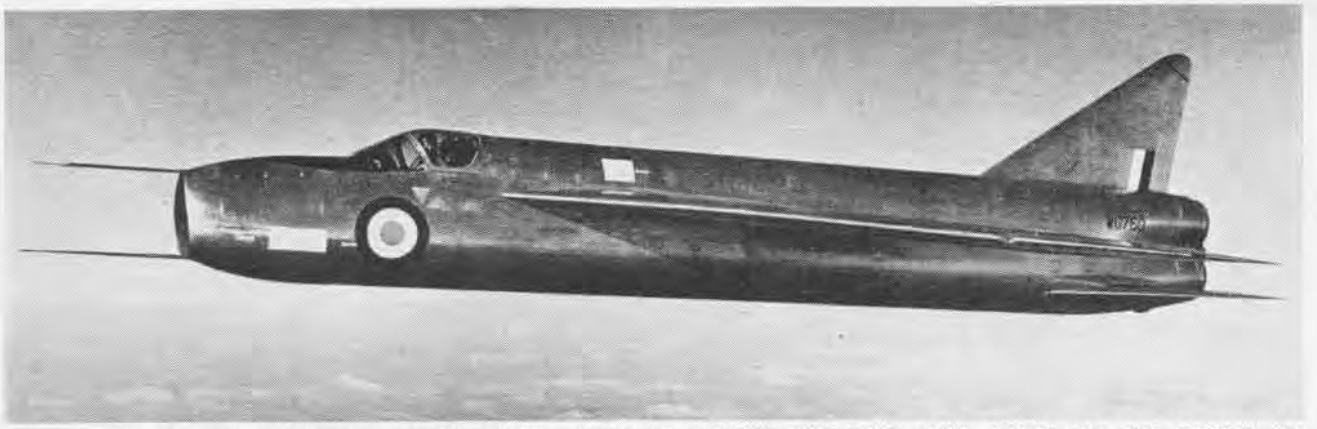
A THIRSTY PV-2 *has its tanks filled for a hop. VPP-936 made aerial survey of Eastern cities.*

FORMER CO, *LCdr. T. Grow, Lt. T. Wamsley prepare for a mission out of Willow Grove, Pa.*

A PV-2 *pilot gives this Harpoon a turn-up as starter (left) and firewatch (right) stand by.*

THE SQUADRON *carries on a strenuous training program for Photo Intelligence Officers, which is directed by LCdr. John Kistler.*

LT. SHINNERS, *LCdr. Kistler, PIC-expert, and Cdr. Arnholt, Squadron CO, discuss flight lines for prospective aerial mapping mission.*



TWIN BRITISH SAPPHIRES MANUFACTURE 20,400 POUNDS THRUST TO ACHIEVE SUPERSONIC LEVEL FLIGHT FOR THE ELECTRIC P.1.

NANEWS COVERS THE FARNBOROUGH SHOW

BRITAIN'S FIRST TANDEM ROTOR 'COPTER

NANEWS had as its representative this year at the Farnborough show in England, Cdr. C. A. Van Dusen, Jr., Administrative Aide to VAdm. R. F. Good, DCNO (Logistics). The show is presented annually in September under the sponsorship of the Society of British Aircraft Constructors.

Covering the acres of static exhibits, while observing closely the in-flight activities, was hard work. With the exception of the picture immediately above, Van Dusen's cameras recorded all others shown on these two pages. Space limitation prohibits printing the full coverage of the latest in British aircraft, but these pictures are representative of those that flew and those on display at Farnborough.

SEAMEW IS CARRIER-BASED ASW AIRCRAFT

AVRO VULCAN IS ONE OF "V" SERIES OF BRITISH JET BOMBERS

FAIREY DELTA 2 IS RESEARCH VEHICLE FOR SUPERSONIC FLIGHT

UNUSUAL VIEW OF THE BRISTOL SYCAMORE

40,800 LBS. THRUST PUSH VICTOR BOMBER

VICTOR HAS HIGH T-TAIL LIKE THE P6M-1

SEAMEW BOASTS EXCELLENT VISIBILITY

FOLLAND GNAT IS LIGHTWEIGHT FIGHTER

VULCAN BOMBER DID SLOW ROLL AT SHOW

LAND-BASED SHACKELTON IS ASW AIRCRAFT

NOSE OF FAIREY DROOPS FOR VISIBILITY

BEVERLEY WAS BIGGEST TRANSPORT SHOWN

FAIREY CONVERTIPLANE WAS EYE OPENER

CONVERTIPLANE DEMONSTRATED ABILITIES

CARRIES 42 MEN, 3 TRUCKS PLUS 12 TONS

Navy/Marine GCA Records

GCA Unit 16 Leads with 85,000

GCA Units throughout the Navy and Marine Corps have logged an impressive one and a half million GCA approaches. The world's record of 85,000 GCA landings is held by GCA Unit 16 based at NAS CORPUS CHRISTI. Owing to the generally good flying weather at Corpus, most of the landings were practice ones.

NAS MOFFETT FIELD's unit holds second place with 66,261 landings. Other units follow in this order: Chase Field, 62,586; Patuxent River, 59,639, holding the IFR record with 6,027 landings; and NAAS KINGSVILLE, 56,550. The total for Marine GCA Units throughout the Marine Corps is 85,934. These scores were tabulated as of last July.

The seaplane approach outfits—Alameda, San Diego, Norfolk, Corpus Christi, Lakehurst and Oppama—have logged 28,903 approaches.

The unit at Corpus Christi is staffed by 16 EM's and three officers. Officer-in-Charge is Lt. E.E. Breaux.

A TYPICAL VIEW INSIDE A GCA TRAILER

CAG-8's Training Program

Program Boosts Flight Proficiency

Top officers of each squadron must be qualified to fly all types of planes in four-squadron Air Group Eight, based at NAS OCEANA. The program was planned by the group commander, Cdr. P.N. Charbonnett, Jr.

Squadron skippers, executive officers, operations officers and LSO's are to be checked out in all types of aircraft in the group. Training started in August. Involved are the FJ-3 *Furies* of VF-61; F2H *Banshees* of VF-82, F7U *Cutlasses* of VA-83, and AD *Skyraiders* of VA-85.

One week is scheduled for the *Skyraider*, one for the *Fury*, and two weeks each in the *Cutlass* and the *Banshee*.

Machine Mops up Runways

Will Make Jet Plane Landings Safer

The problem of flooded airfield runways, particularly dangerous for jet aircraft, has been solved in Britain with the aid of a new device capable of sucking up 500 gallons of water.

The machine has been evolved from the turf-drier used on cricket fields in Britain when "rain stops play." Vickers-Armstrongs, makers of the Viscount turboprop airliner, have placed their order for use at their airfield.

"With this machine," the manufacturer says, "the effects of a bad storm can be eliminated in minutes."

The manufacturer is Climex-Fraser Tuson Ltd. who went into full production some time last September.

DURING *the filming of "Battle Stations" aboard the USS Princeton, Director Lou Seiler, VAdm. H. M. Martin, ComAirPac, and actor Bill Bendix, take a breather in crew area.*

USS HORNET *crew members listen intently as Martin Jung, AEC, conducts Sunday School in the crew's lounge. Jung, who is attached to VF-71, is the son of an Iowa Lutheran minister.*

LCDR. *Dale Klahn, chief Navy test pilot at North American's Columbus plant, briefs Air Force delivery pilots Loftus, Tiffany, O'Kielly and Abbott on characteristics of F-86H Sabre.*

THE ENTIRE *WAVE complement of NAS Oceana admire models of the Cutlass and Cougar. They are (l. to r.) Ltjg. J.E. Horgan, AsstComm-Ofcr, Ens. C.L. Sundean, Disbursing Officer and Ens. M.A. Morelock, Asst. Comptroller.*

AERIAL *photograph equipment was the main item of interest to these Japanese Naval Officers during a recent tour of the photo lab at ComFAirJapan, NAS Atsugi. LCdr. J.T. Griffin, O-in-C of the lab, acted as escort for group.*

THIS ARRAY *of tools, charts and instructions isn't a mechanic's kit, but a display of what VJ-61's Aircraft Accident Investigation team has on hand in the event of need. It was devised by VJ-61's Training Officer, LCdr Glab.*

PAST CO *of VF-24, Cdr. J.M. Thomas (r) offers congratulations to LCdr. W.L. Adams, VF-24's present CO, on receipt of squadron's first FJ-3 Furies. LCdr. M.F. Denmark, XO, looks on.*

GLOBE-TROTTING *members of HU-2 are welcomed home at NAS Lakehurst by Cdr. W. A. Hudspeth, HU-2 CO, after an eight month round the world cruise aboard USS Midway.*

MIDSHIPMAN *D. Grumman, son of L. R. Grumman, builder of Naval aircraft, gets pointers from Lt. H. B. Lobeed, NROTC Instructor, on life jacket use on USS Roanoke.*

A PLUME *of black smoke erupts from the tailpipe of the Navy's XFY-1 Pogo as crushed walnut shells are fed into the intake for cleaning the XT-40-A-14 turboprop engine turbine.*

HUNDREDS *of additional temporary "stingers" were added to the potent hitting power of this Skyraider from FASRon-6, as a swarm of honeybees took residence on its tailhook.*

THE SILHOUETTE *of the USS Curtiss (AV-4) will be slightly changed with the addition of the helicopter landing platform on her forecastle. Capt. B. L. Bailey commands tender.*

Pogo Pilot Builds Plane

New Plane Named the Aeromarine

XFY-1 test pilot and Harmon Trophy Winner, Marine reservist J.F. "Skeets" Coleman is building an airplane. Dubbed the *Aeromarine*, the prototype is being erected at Del Mar, Calif.

Reported to be a high performance private plane that can operate from land or water—or be driven like an ordinary light automobile—the *Aeromarine* will carry five passengers.

With 80 gallons of fuel on board, the new plane will fly 800 miles at a speed of 225 mph. A 215-hp Franklin engine driving a pusher propeller mounted above the delta wing aft of the cabin, will power the *Aeromarine*.

The 2,500-pound plane will be able to lift itself off after a take-off run of only 800 feet. Landing speed is reported to be 57 mph.

Power for land operations will be fed to the two main wheels of the tricycle landing gear from the single Franklin engine. The front wheel will be fully steerable. Wings designed to fold on each side, give the "auto" a width of 65 inches.

Water landings and take-offs will be made on a single, free-floating hydro-ski mounted beneath the plane's watertight hull. The ski, like the landing gear, will be fully retractable.

PISTOL *Packin' Mama might describe Mrs. Bee Davis, Deputy Disbursing Officer at NAS Oceana. She is the only woman Navy employee at the master jet station entitled to sidearms.*

Chief Adopts a Daughter

4-year Old Girl on her Way Home

An adopted four-year old girl of American-Japanese parentage is on the way to her permanent home in Rhode Island. She's Ruth Ann Singdale, adopted daughter of Stewart W. Singdale, ADC, of VF-72, presently deployed in the Far East aboard the USS *Hornet*.

During visits to a Japanese orphanage near Yokosuka, Japan, Singdale got the idea of adopting a daughter. After hurried correspondence with his wife, adoption procedures were started.

The Kobe Eurasian Cottage for orphaned and abandoned children of Japanese-American parentage is supervised by Mrs. Mary Hasegawa. It has been supported by the Submarine Group, Western Pacific since 1953 and during the last two years has found homes for 40 children, mostly with families of American servicemen.

Many crew members of the *Hornet* pay regular visits to the orphanage when the ship is in port and several have also started adoption procedures.

BON HOMME RICHARD IS READY AGAIN

NEW STYLE BONNIE DICK (CVA-31) IS UNDERWAY FOR SEA TRIAL AFTER CONVERSION

THE USS *Bon Homme Richard* is back on active duty! Last-minute entry in the WW II sweepstakes and an outstanding contender in the Korean handicap, the big aircraft carrier is once again in fighting trim.

The giant carrier has spent 30 months under the blow torches and yard workers' hammers for a grand total of 1,144,000 man-days of labor. It was the largest ship project ever attempted at San Francisco.

At recommissioning ceremonies September 6th at the San Francisco Naval Shipyard, her commanding officer, Capt. Lamar P. Carver, described the "Bonnie Dick" as one of the three most powerful men-of-war in commission in the world. "It is hard to believe," he said, "but true, that our ship with her air group has a striking power greater than the entire U. S. fleet in 1945."

Reconditioned, recommissioned, and 5,000 tons heavier, the attack carrier has such new features as an angled flight deck, an enclosed or hurricane bow, strengthened flight deck, elevators with increased capacity, two steam catapults to replace the hydraulic ones, and a revamped flight operations control deck with improved visibility and sound-proofing.

The 42,000-ton *Bon Homme Richard* carries a crew of 3,024 and an officer complement of 383, air group officers and men included. It has a length of 889 feet, 3¼ inches, and a width of 195 feet, 10½ inches. Some 80 to 100 aircraft take off on a flight deck 860 feet long.

The name of the carrier goes back to 1779 when the King of France refitted and rearmed one of his vessels for the use of Commodore John Paul Jones. It was on the deck of the *Bonhomme Richard* during the battle with the British *Serapis* that Commodore Jones, when the fight seemed to be going against him, made history. One of the American crewmen called to Capt. Jones to strike his colors, but he replied, "I may sink, but will never strike." Capt. Pearson of the *Serapis* heard only parts of the conversation and called out, "Quarter, Captain? Are you asking for quarter?" I was then that Capt. Jones replied with his famous declaration: "I have not yet begun to fight!"

Though the battle was won, the *Bonhomme Richard* was lost, and it was not until some 165 years later during WW II that a ship of this name honored its Revolutionary ancestor. The CV-31 (now CVA-31) was commissioned at the Brooklyn Navy Yard 26 November 1944.

After her shake-down cruise and training periods, the *Bon Homme Richard* proceeded on June 4, 1945 with Task Group 30.2 to rendezvous with Task Force 38 in Adm. Halsey's famous Third Fleet for the Battle of Okinawa and other Pacific campaigns.

The "Bonnie Dick" was just in time to be part of the mounting offensive that would spell Japan's defeat. TF 38 was completing the operations in support of the Okinawa campaign, and in the remaining days the "Bonnie Dick" flew CAP and launched day and night strikes against Okino Daito Jima. She then proceeded with the task force to the new fleet anchorage at Leyte Gulf where she remained until 30 June.

From July 10 on, the big carrier was again in action with the Third Fleet. Operations consisted, in general of air strikes and surface bombardments of enemy installations on Hokkaido, Honshu, Kyushu and Shikoku, culminating in the cessation of hostilities on August 15 and the formal surrender on September 2, 1945.

During this time, the *Bon Homme Richard* sustained no damage from enemy action. The ship's guns opened fire on enemy aircraft only on one occasion. This was on August 9 when a Japanese "Grace" attacked the force and was splashed seconds later. CVG-(N)-91 accounted for a total of ten enemy aircraft, which included two probables.

After four Pacific crossings to bring American troops back during Operation *Magic Carpet*, the "Bonnie Dick" retired to the inactive status at Bremerton, Washington, where she remained until January 15, 1951.

DURING two Korean combat tours, this fast-cruising airfield compiled one of the most brilliant battle scores recorded in the conflict.

Carrier Air Group 102, aboard the "Bonnie Dick", was one of the two all-reserve air groups to see Korean action. It consisted of two squadrons from Los Alamitos, Cal., one from Oakland, Cal., and the fourth from St. Louis, Mo.

In its first mission on 31 May 1951, four F9F's were catapulted for a mission against Wonsan and nearby areas. The group covered the railroad from Wonsan to Singhang, killed over 100 troops on their way to the front and hit a railroad marshalling yard. Three F4U's and three AD's were later launched and these hit the railroad yards of Changhungi and the supply

THIS IS BHR'S HANGAR DECK DURING THE KOREAN CONFLICT

MEN INSTALL ROCKET ON AIRCRAFT PREPARATORY TO STRIKE

dumps at Manchon. In all, 26 sorties were flown.

For the next 17 days, planes of the BHR ranged over North Korea hitting rail bridges, highway bridges, truck convoys, trench and mortar positions as well as warehouses and troop barracks. The ship's planes reached their peak of performance in this initial part of her Far Eastern duty on 6 June when 149 offensive sorties and 11 defensive sorties were flown.

July 6th marked one of the biggest actions of the Korean conflict in which the *Bon Homme Richard* participated.

"Our planes almost leveled Wonsan today as *Bon Homme Richard* and *Boxer* pilots flew a total of 267 sorties," was the way the press reported it. And the raids went on in August, September and October with only brief times out for replenishment.

OPENING up her second tour in June 1952 as flagship of Commander Task Force 77, the *Bon Homme Richard* immediately started making plans for a major strike on heretofore protected North Korean hydro-electric power plants.

On 24 June, the Air Group Seven planes from the *Bon Homme Richard* were combined with those of three other carriers, the Marines, and U. S. Air Force. The target for the BHR attackers was Kyosen #2 hydro-electric plant some 30 miles northeast of Hamhung. Nine AD's, eight F4U's and eleven F9F-2's were launched for the strike. Another strike of six AD's, six F4U's and seven F9F-2's eliminated Fusen #2 plant west of Kyosen. The transformer yard and surrounding buildings were leveled, and Fusen #2 was considered out of commission.

From June to December, the *Bon Homme Richard* launched its offensive. Everything from sampans to hydro-electric complexes, and the capital of North Korea felt the fighting impact of "Bonnie Dick" aircraft.

CVG-7 led repeated attacks on North Korean targets, dealt out destruction of a railroad center, and made continuous and effective attacks upon heavily defended installations on the front lines. She also served as pinch-hitter for the *Boxer* when an internal fire forced her out of the battle.

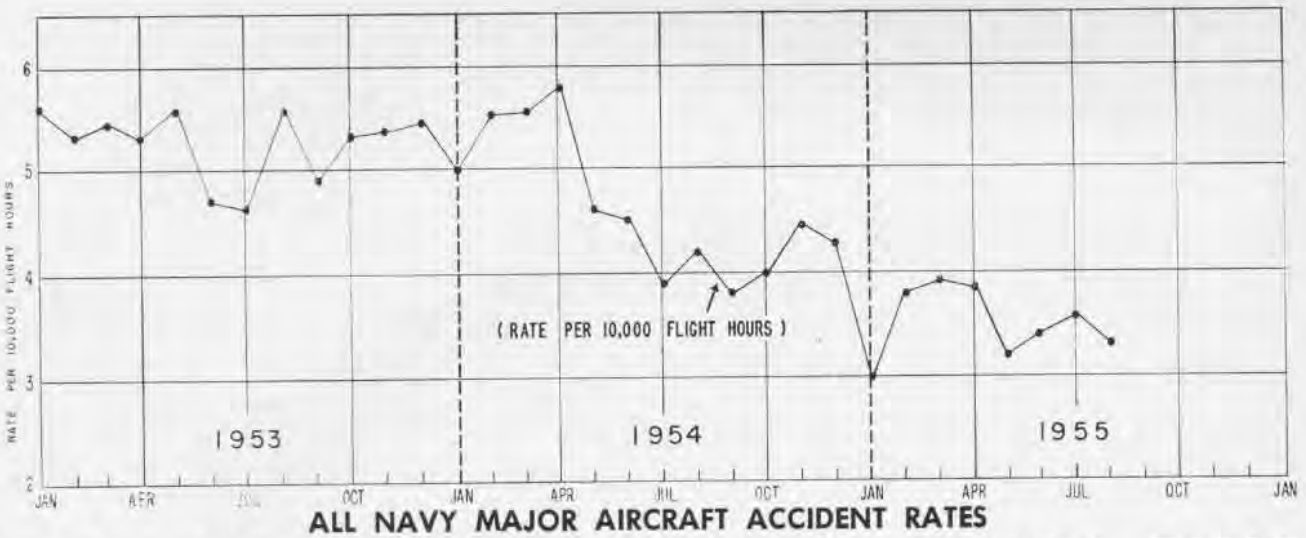
In October, the BHR took part in the "Kojo Amphibious Feint." For four days, beginning on October 12, the carrier's planes blasted important targets in the Wonsan-Kojo area. One of the largest naval forces since WW II hammered away at the area to suggest an invasion. However, when the assault boats which were launched on October 16 arrived some 1000 yards off-shore, they turned back. The whole operation, while causing considerable damage to Communist installations, caused the Reds to divert large numbers of troops and equipment to the Kojo area in the belief that a major invasion was to take place.

For action between 22 June and 18 December 1952, the *Bon Homme Richard* received the Navy Unit Commendation.

She arrived at Alameda in January 1953. Decommissioned on the 15th of May, she went into the San Francisco Navy Yard for conversion.

Now she rejoins the Fleet, ready and able to continue her proud tradition.

IN NOVEMBER 1952, F9F PANTHERJETS DEALT OUT HEAVY PUNISHMENT TO COMMUNISTS



ALL NAVY MAJOR AIRCRAFT ACCIDENT RATES

IT'S SAFER TO FLY IN FIFTY-FIVE

NANEWS readers who are accustomed to Grampaw Pettibone's tirades on the subject of aircraft accidents may find the chart at the top of the page somewhat surprising. Can it be that 1955 is well on its way to becoming the safest year in the history of Naval Aviation? It can indeed. The goal of "3.5 in '55" is well within reach.

The most common measure of safety in military flying is the number of accidents which occur for a given volume of flying. In the Navy and Marine Corps, aircraft accident rates are expressed in terms of the number of accidents which occur in each 10,000 aircraft flight hours. According to the chart above, we are currently experiencing between three and four major damage accidents for every 10,000 flight hours. Eighteen months ago the picture was not so bright—the accident rate line was running well above 5 per 10,000 hours.

This reduction of nearly one-third in the aircraft accident rate has not been a chance occurrence, and it has been accomplished during a period of transition to many new model planes. Unlike automobiles, airplanes are generally safer after they have been in use for awhile. A new high performance military airplane normally has a high accident rate for the first few months after its introduction. Meanwhile the planes that everyone thought were "red hot" three and four years ago have become old and pokey and *safe*. Safe because the bugs have been eliminated and because the pilots have learned a lot about their flight characteristics.

Since the Navy and Marine Corps log well over 10,000 aircraft flight hours a day, the reduction in the aircraft accident rate has saved a surprisingly large number of airplanes and lives. In fiscal 1955, for example, there were 547 fewer major damage accidents than in the preceding year. During the same period there were 168 fewer fatalities. In terms of dollars saved, it is worth noting that each of the squares on the rate chart above is worth close to $12,000,000.

As flight operations spread out over the seven seas and in many countries, it became apparent that some type of organization was required in order that all activities might benefit from the lessons learned as a result of individual accidents. To this end, the Naval Aviation Safety Center was established to serve as a Navy-wide clearing house for safety information. In the past two years, the staff of the Safety Center which is located at Norfolk, Virginia, has greatly expanded. In addition, primary duty billets for aviation safety officers have been established in each squadron and on many staffs.

WITH THE establishment of new billets for safety officers, a school was needed where they could receive brief but intensive training for their new jobs. The University of Southern California was awarded a contract more than a year ago to develop and conduct such a course of training. To date, more than 80 officers have attended the eight week Naval Aviation Safety Officer Course. This program has also been expanded and during the current fiscal year a total of 125 officers will be trained at USC.

The course includes 285 classroom hours of instruction in aeronautical engineering, accident prevention, accident investigation, aviation psychology, aviation physiology and educational methods. The school is open to volunteers and requests are particularly desired from officers who are in the rank of lieutenant and above and due for rotation from shore to sea duty.

As a means of affording high level recognition to the squadrons and carriers which had the most outstanding aviation safety records during the year, the Chief of Naval Operations authorized a system of awards commencing with the fiscal year 1955. These awards, which are in the form of bronze plaques engraved with the names of the winning units, are made on or about 1 October of each year and recognize performance during the previous fiscal year. For a picture of the award and a list of the winners for 1955, turn quickly to the inside back cover of this issue of NANEWS.

FOR TRAVELLING FASTER THAN SOUND

NEWEST of Aviation Training's "Sense" pamphlets, *Swept and Delta Wing Sense*, has just been published. This pamphlet serves as a guide for the men who will be flying faster than the speed of sound in the Navy's latest supersonic aircraft. It provides insight into many of the behavior peculiarities of aircraft built for the excessive speeds, and it is a compact, lively discussion, in airmen's language, of some of the problems that were involved in developing the super jets.

Almost universally, at this mid twentieth-century point, the pamphlet reminds us, speed is the watch-word. More horses, and still more horses have been put under the hoods of all our sleek, many-colored automobiles, raising them into the 100 mph plus class. Stream-lined, fast moving trains have had their velocity rocketed up and up. And in the air travel field, no longer are we satisfied with riding a jet or two. Air travel in these days must be at the speed of sound, or faster!

It wasn't an insurmountable engineering problem to step up the thrust in the throat of these jet buggies so that the airflow over the wings went right up to the transonic rates. And flying at those high speeds was fine, mighty smooth—up to a certain point. When the airflow approached that magic speed, the velocity of sound, then came trouble.

It's no secret that one never gets something for nothing. For every good thing you get, you must give something. That is no truer anywhere than in flying. Even Dilbert knows that. As the aircraft zipped from subsonic to transonic speed, compressibility effects set in with a vengeance, resulting in most peculiar and hazardous performance, shaking the planes, and the pilots. Some of the planes rolled dangerously, while others tucked under into a nose dive.

But that wasn't all. As soon as the aircraft nudged the Mach numbers, drag began to shoot up, completely off the experts' charts. That rise of transonic drag was matching engine thrust, pound for pound. So there the problem was—to step up the thrust so that the airflow was up to, and in excess of,

'TIS BETTER *to learn fine points from Flight Handbook flying plane firmly bolted to deck.*

transonic rates without the accompanying rise of that 'old debil' transonic drag, and the magnifying of the devastating compressibility effects.

The beginning of the solution of this problem was to change the relationship between the speed of the aircraft itself, and of the effective wing velocity, to delay and reduce the transonic drag rise. It amounted to putting the aircraft up into the transonic range, and having the wing *thinking* it was still back with the slowpokes in subsonic! Changing the sweep of the wings did that trick.

And so, aircraft with delta and swept wings were born on aircraft designing boards. Swept and delta wings are today's initial answer to our need for speed and still more speed. (For a continuing answer, see "NACA Uncaps Coke Bottle", Oct. NANEWS) In addition to delay of drag rise in aircraft with these new type wings, tuck under was considerably reduced, and most compressibility effects were minimized. Pilots of operational aircraft are now able to explore well into the region where transonic trouble normally appears.

But we get back to the old saw about getting something for nothing. It's very fine that the new wing configurations delay transonic drag rise and minimize compressibility effects. But they also give certain tricky flying characteristics that any wise pilot will learn inside out before he starts playing footsie with High Mach!

Swept and Delta Wing Sense delineates these, and other, characteristics: In these new planes you make approaches at higher speed than in conventional aircraft of similar wing loading.

Take-off is about the same as in a straight-wing jet—except for one thing. On take-off, *take your time.* Keep her nose down until you're up to recommended take-off speed.

Spin recovery characteristics are something to learn. Some of the new planes are reluctant to spin at all. Others have very poor recovery qualities, or lose more altitude than most people can afford.

Delta winged craft have fairly stable and predictable stall qualities. Not so with the swept-back wings. They make it a little difficult to follow the cardinal principal of stall controlling. This airplane at the stall sometimes has the unhappy tendency of pitching *up*, just when you're trying to keep the nose down.

THERE'S precious little time for action when something goes wrong as you screech along at a Mach 1, plus, speed in your swept or delta wing beauty! There's *no* time for fumbling around making up your mind what to do. You've got to know your airplane, and know all its peculiarities, *beforehand*.

"Before you approach one of these new aircraft, the smartest thing you can do is to make a beeline to the Flight Handbook for the cold dope on each different type."

So advises *Swept and Delta Wing Sense*. Authored and illustrated by the smooth working team of George Foster and Robert Osborn, this latest publication takes perennial fall guy Dilbert through the above do's and don'ts of swept and delta wing flying, and a great many more. All of these add up to safety in flying, and to the saving of men and airplanes.

THE FORERUNNER *of a new 5-place Spanish helicopter, the AC-13A is pictured in flight at Madrid, Spain. The new helicopter does not utilize the classic tail rotor but counteracts its torque action by orientable jets which are controlled by the pilot through two rudder pedals. Powered by a 260 hp Turbomeca engine, the helicopter was designed by French engineer M. Cantinieau.*

VF-71 F2H-3 is "Real Goer"

Second Banshee Produced for Navy

The second F2H-3 *Banshee* produced is still in operation with VF-71. This reliable old jet has logged some 439 hops, totalling 547.4 flight hours. The first *Banshee* is still used by McDonnell as a chase plane in St. Louis.

The *Banshee* has a squadron designation of L-103 and is jealously flown by Lt. Fred I. Adams. Upkeep to this "old hand" is maintained by two VF-71 airmen, O. B. Barnhouse and W. Kirschner, who work long and hard to keep her flying.

The plane's impressive record also includes 176 successful arrested carrier landings and six touch and go carrier landings. These were acquired during carrier qualifications of squadron pilots.

Her flight time would probably be higher but failure of a main landing gear actuator led to a minor accident at NAF LEEWARD POINT. The *Banshee* was "laid up" awaiting parts during the time the squadron was deployed to Guantanamo Bay.

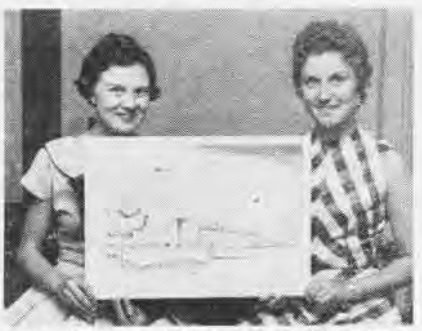
The squadron's affection for the F2H was summed up by Cdr. J. C. Donaldson, Jr., CO, when he said: "She's not much for looks but she's a real goer."

LT. ADAMS AND CREW WITH F2H ON HORNET

Oceana Jet Complex Grows

Maintenance Hangar Contract Let

A construction contract for the erection of a new $2,000,000 maintenance hangar at NAS OCEANA has been awarded to a Norfolk construction firm. The new structure will incorporate over 85,000 square feet of floor space and is the largest single improvement of a four and one-half million dollar expansion program underway at Oceana this year.



GIRLS HOLD DRAWING OF OCEANA HANGAR

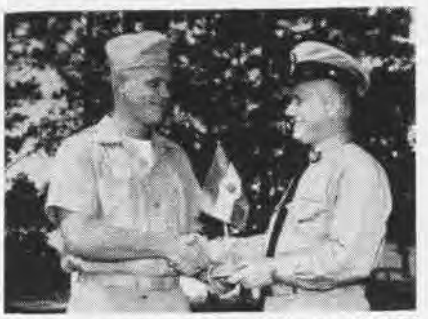
An investment representing 70 million dollars will eventually be made at the air station. Additional improvements scheduled for this year will include the construction of an $850,000 enlisted men's barracks to accommodate 1,376 men; a 150-man BOQ, a gymnasium costing $241,000 and a $392,000 Chapel.

In addition to the above, other facilities already approved for the program at Oceana include a warehouse, supply office, concrete parking area for aircraft, Public Works facilities, and four jet fueling stations each capable of pumping 400 gals. a minute

Dutch Honor Jax CPO Club

Miniature Dutch Flag Presented

The CPO Club at NAS JACKSONVILLE has been honored by the Dutch Naval Air Force. Club manager, W. H. Powell, ETC, accepted a miniature standard, bearing the national colors of the Netherlands, together with the plaque of its Royal Naval Air Force, from CPO Danny de Winter, president of the Dutch CPO Club at Valkenburg, Holland, and currently studying at the AK school at JAX.



POWELL ACCEPTS FLAG FROM DE WINTER

The gift was handcrafted from French silk and elaborately ornamented by RNAF personnel at Valkenburg.

Queen Wilhelmina designated this insignia as the standard for Dutch Naval AF in 1942 while in U. S.

PBM's to Netherlands Navy

NAS Norfolk to Deliver Fifteen

The Netherlands Navy has purchased 15 PBM patrol bombers from the US Navy to replace their old worn out PBY's. Delivery is expected to be completed by 1 October 1956. Twenty-six Dutch fliers have been undergoing indoctrination in operational and maintenance procedures at NAS NORFOLK in preparation for the switch.

The group, led by LCdr. A. Bruinsma, flew the first of the planes to New Guinea after their indoctrination.

Miniature Radio Developed

Transmits from 50 to 100 Miles

The Air Research and Development Command has announced the development of a new lightweight miniature emergency radio that permits downed airmen to direct their own rescue.

The new set is about half as large and half as heavy as sets presently in use in survival kits. Weighing a mere 15 ounces, the radio has a volume of only 20 cubic inches. Its primary use will be for fighter type aircraft where pilot space is restricted.

The radio can be used in two ways. The downed airman can broadcast his position and information regarding the crash or he can switch it to broadcast a continuous tone signal which rescue craft can home on.

The radio is powered by a two and one-half pound mercury cell battery.

MR. SAM GALLU *(l) is presented a certificate that identifies him as an "Honorary Admiral in the Television Industry" by AsstSecNav Albert Pratt. Gallu is producer of "Navy Log."*

"Navy Log" is Premiered

Television Show to Run 26 Weeks

The new weekly television series, *Navy Log*, was launched recently over the CBS-TV network. Unlike *Victory at Sea*, a documentary series, *Navy Log* will depict dramatized individual exploits and colorful operations of the Navy.

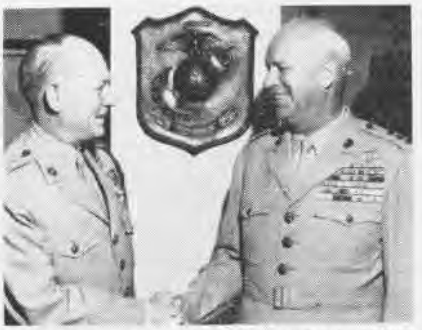
The first photoplay of the series features the Navy minesweepers, *Pirate* and *Pledge*, that were sunk off Korea, and the dangerous assignment of three Navy frogmen detailed to destroy the hulks, thus keeping out of enemy hands any gear still intact aboard the sweepers.

Two programs will be of special interest to Naval aviation personnel. They are the Blue Angels' feature, "Phantom of the Blue Angels" and "Hya, Pam". This is the dramatic story of Ltjg. Tom Hudner's fruitless attempt to rescue ENS. Jesse Brown, negro carrier pilot, who lost his life in Korea. Hudner was subsequently awarded the Medal of Honor.

The series is being produced by Gallu Production of Hollywood, Calif.

Marine Air Head Named

Schilt Becomes Lieutenant General



GEN. SHEPHERD CONGRATULATES GEN. SCHILT

MGen. Christian F. Schilt, holder of the Medal of Honor, has been elevated to the rank of Lieutenant General and named as the new Assistant Commandant of the Marine Corps for Air.

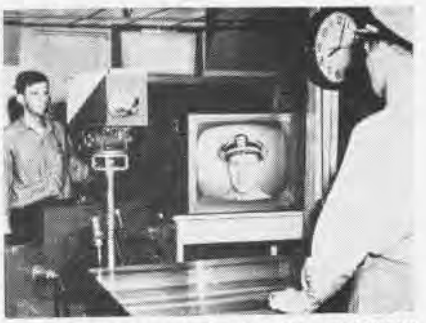
Gen. Schilt commanded MAW-1 in Korea from July 1951 to April 1952 and was awarded the Air Force's Distinguished Service Medal and a Fifth Air Medal for his service.

For outstanding service during WW II, he was decorated seven times.

NATTC Televises Studies

One Instructor for Four Classes

The Naval Air Technical Training Center at NAS JACKSONVILLE is utilizing television to solve a problem. The problem was presented by the large classes of aviation ground officers reporting for instruction and the lack of qualified instructors.



CAPT. DE LONG RUNS TEST ON EQUIPMENT

Previously, four instructors were necessary to handle these large classes. Now the school has set up its own television "studio" and using only one instructor, pipes instructions to four different classrooms simultaneously.

Two portable console televisers were obtained from Training Devices at NAS MEMPHIS and rigged up by Henry Holden, ATC.

Charts, diagrams and materials that are essential to the instructor are assembled in the studio and as the teacher gives instructions to two technicians, results are televised on screens in classrooms.

The two consoles are being used as a master and slave station. The master station is utilized for long-range views and the slave for closeups. According to LCdr. Vincent Annania, Training Officer, the operations have proved successful.

The transmitters are capable of being received on 125 sets in different rooms of the school but only the four-section classes are now being served. Capt. H. C. DeLong is Center's CO.

DESTINED *for use by the USAF's Tactical Air Command, a North American F-100C, an attack version of the Super Sabre, is pictured in flight with external ordnance and wing tanks. The "C" is powered by a P&W J-57-P-7 turbojet engine with afterburner. Packing four 20 mm. cannon in the nose, the F-100C is equipped with inflight refueling gear and a new electronic bombing device.*

CECIL FIELD EXPANDS BASE FACILITIES

FASRON NINE DOES CECIL FIELD MAINTENANCE WORK IN BIG MIRAMAR-TYPE HANGAR

IN 1950 a small auxiliary air station 15 miles west of Jacksonville was scraping along in a "partial maintenance" status. Last July it started its third year as one of the largest and most modern Naval Air Stations in the country. That is the capsule story of NAS CECIL FIELD, southeastern member of the elite family of master jet bases, and the new look it is bringing to Navy air.

NAS CECIL FIELD owes its existence as a master jet base to a plan devised by Capt. (now RAdm. Ret.) R. W. D. Woods in 1949. Capt. Woods' concept outlined in a letter to the Chief of Naval Operations recommended "a long range development plan for basic peacetime aeronautical shore establishments."

It was pointed out that Naval Aviation has grown up at seaport air stations which were being choked to death by trailer parks, drive-in movies, and their own limitations in size. Capt. Woods called for the construction of Master Jet Stations, specifically designed for the operation of jet aircraft, drawing on the seaport station for logistic support and serving as the base for further shore expansion in time of emergency.

The Korean War gave impetus to carrying out the Woods Plan for the expansion of the Navy's shore air establishment. There are now four Navy Master Jet Bases: NAS CECIL FIELD, NAS OCEANA, NAS MOFFETT FIELD, and NAS MIRAMAR, plus two Marine jet complexes, MCAS EL TORO and MCAS CHERRY POINT.

In connection with the commissioning of NAAS MAYPORT which is the seaport facility for Cecil Field, VAdm. Thomas S. Combs, DCNO(Air) said, "The obvious advantage of these complexes is that they combine all the specialties of carrier aviation into an integrated whole, but their most important advantage is that the seaport station permits air units with all their gear to embark quickly and easily in their carrier for extended operations at sea. The operations at these complexes are therefore closely allied to the Fleet."

PATIO OF THE NEW ENLISTED MEN'S CLUB

Cecil Field, covering more than 4600 acres, is dedicated to two jobs: flying the Navy's new high-performance aircraft when they come ashore and caring for those aircraft and the men who operate them. Cecil is as different from a WW II air station as a *Cougar* from a *Corsair*.

THE BASE is building from the foundation up to service the needs of the new jets. Cecil conducts its air operations on three 8,000 foot runways—eventually there will be four, in right angled pairs. Isolated and in flat country, they are tailored for the Field Carrier Landing Practice so important to the training of carrier air groups. Three groups are already flying round-the-clock schedules at the big base.

Coordinating the resulting heavy air traffic is a new type of control tower. It cost $360,000 and incorporates some of the latest VHF and UHF communications gear.

Working under the close control of this tower is Cecil's crash crew. In the process of being reequipped for the crash and rescue problems created by the high speeds and big fuel loads of late-model jets, the Station's crash crew took the first deliveries of the new MB-1 and MB-2 crash fire trucks and the 40-ton MB-1 crane. The fire trucks can pump 18,000 gallons of foam in two minutes, and the crane can move a four-engined bomber at 30 miles an hour.

Maintaining the fleet aircraft at the base is FASRon Nine, a Cecil resident since 1949. The FASRon works in a new $1,800,000 Miramar-type hangar —the big hangar went into service last year and is presently scheduled to receive another barrel to make full use of its shop spaces. Development plans eventually call for another hangar, twin to the present one.

Cecil's new look in air operations has been matched by a new look in living. Much of the multi-million dollar construction program at the base has gone into new barracks, messing and recreational facilities. Already in commission are six reinforced concrete barracks with three more soon to complete. The new barracks are three-

decker featuring separate compartments for petty officers and recreation lounges on each deck—they berth 150 men in four-man cubicles, with big louvered windows giving each cubicle cross-ventilation.

The new barracks line the perimeter of a semi-circular living area, spokes on a giant wheel surrounding what will eventually be a sports and recreation area at its hub. Halving the semi-circle is a mess hall. Completed early this year, it is designed to feed 2,000 men; one of the advantages of the semi-circular plan is that it puts all the barracks conveniently near this mess hall. The galley can run as many as four chow lines simultaneously.

Future plans call for another barracks, messing and recreation area north of the present living area. Already in operation is a $100,000 enlisted men's club designed to service both areas. The air-conditioned club includes a snack bar, TV lounge, pool tables, reading room and a patio for outdoor dances.

Other facilities which have already gone into service under Cecil's construction program are a supply warehouse, a transportation building, maintenance shop facilities, a fuel storage area and a new crash shack. More new construction is on the drawing boards. It includes a chapel, a new BOQ and extensive housing facilties for married personnel and their families.

Training Film Is Available

MG 8261 Ready for Distribution

A new technical training film that shows graphically why fires occur when aircraft crash, and what is being done to control this crash fire hazard, is available for use by air commands throughout the Navy.

Titled Technical Research Crash Fire film No. MG 8261, the 40-minute color film was produced by NACA and made available for Navy use.

Prints are available from any of the following commands: Chief Naval Air Training; NSC, Treasure Island; Damage Control Training School, Philadelphia; All Naval Districts (less SRNC); and from the film libraries at ComSerLant; ComNavPhil; ComNavFE; and ComNavMarianas.

Requests for the loan of the new training film should be made to the activity nearest the unit desiring it.

NEW USE FOR RANGE FINDER

CHIEF BEER ADJUSTS DEVICE HE SUGGESTED

TO IMPROVE visibility measurements in the Alameda area, Emil V. Beer, Chief Aerographer's Mate of the Fleet Weather Central in San Francisco, suggested that a gunnery range finder be used. BUAER borrowed an Army M-7 coincident type range finder for use by the Weather Central.

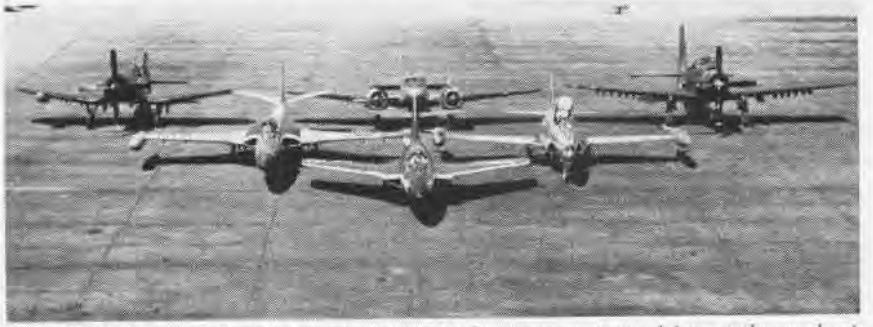
Such a range finder is needed because of the location of Alameda in relation to San Francisco Bay. Normally, visibility is estimated visually by noting which of a number of prominent landmarks, geographical features or similar check points can be seen. Since the distances involved are known, visibility in the various directions can be determined.

With the range finder, the distance to the ships, ferry boats and small craft, underway or at anchor, can be found and these then serve as temporary check points.

Operating the equipment is almost as simple as focusing a pair of binoculars. Two controls, range and centering, are the only adjustments required for a sight. The M-7 elevates to 45 degrees, has a range of 20,000 yards, and accuracy is greater than 98% at 5,000 yards. The adoption of this equipment has proven even more useful than anticipated, and the accuracy of visibility measurements has substantially improved.

Establishing visibility check points at night through obstruction lights, runway lights, etc., is sketchy and inconclusive, under ordinary circumstances, and especially during periods of changing ground fog conditions. By using the astigmatizer attachment on the M-7 for nocturnal sights, the range can be determined without the necessity of identifying the light ranged on. Sighting on clouds, within the maximum range, indicates the cloud trajectory and can be the basis for a short term shower or squall warning for the station. Also, within the limits of the equipment, cloud bases and tops can be evaluated with great accuracy.

BUAER has authorized certain changes which will improve the finder for aerological use. These changes include inscribing airways visibility code equivalents (miles and fractions) on the range finder scale in addition to the yards scale; replacing the present mil scale of angular measurement (azimuth and elevation) to degrees; and constructing aperture waterproof covers.



THE VARIOUS *types of aircraft flown by VC-4's Nightcappers are pictured here at the squadron's home port, NAS Atlantic City. The McDonnell F2H-4, North American TV-2, Chance Vought F4U-5N, Beechcraft SNB and the reliable Douglas AD-5 workhorse, are ranged behind Grumman's F9F-6 Cougar jet. The squadron has the dual mission of all-weather interception and special attack.*

LETTERS

SIRS:

On page 22 of your September issue of NANEWS (FASRon-11), there appeared a picture of eight planes flying by Mt. Fujiyama. These planes are from ATG-1, temporarily based at Atsugi from the USS *Wasp*. The flight was led by ATG-1 Commander, Cdr. D. M. Hizer, and the other planes were the squadron commanders and detachment O-in-C's which comprise the Air Task Group. The photo coverage was by VC-61 Unit HOW.

No doubt the Group appreciates the assistance and cooperation given it while based ashore, but it is only fair to a fine Air Task Group that this error in caption be corrected.

JOHN B. MELTON, JR., LT.

¶ Sorry credit was not given to ATG-1 for fine formation flying with such an assortment of aircraft types. In submitting the material for publication, our source did not so inform us.

SIRS:

The News came yesterday. I don't really see how you people have managed to maintain such a consistently good magazine over so long a period of time. It's very well edited indeed. And extremely useful to people like me.

GEORGE H. FOSTER

Lexington, Va.

¶ Editor: The staff blushed in unison.

SIRS:

The article in the September issue of your magazine concerning the Alameda to Honolulu movement by VP-47 caused a raised eyebrow or so in VR-2. If they are claiming that a 12-hour-and-four-minute westbound crossing is a record for twin engine, or middleweight class, seaplanes, they may be on safe ground. If they are going to go out of their class and take on the heavyweights, that is another story.

A fast look at our logs showed that on 5 Oct 1951, LCdr. E. H. Pelley, in a JRM-2, made the Alameda-to-Honolulu run from take-off to buoy in 10 hours and 49 minutes. We do not know if this is a record, but it is something to shoot at.

A. T. MCKINNEY, LCDR.

IFR-IQ?

According to OPNAV ATC Procedures Section the answer is: "Pilots are requested not to contact Approach Control until over the specified holding point unless directed by ATC to contact Approach Control at a specified time or en route point."

Ref: Suplementary Flight Information, North American Area, 1 July 1955, Page 140.

SIRS:

Thank you very much for the copies of "How Green is your Pasture" (August 1955). I certainly enjoyed it, particularly the first three or four paragraphs of introduction. You hit it right on the button. We're thinking of using some of the article.

W. B. HOLLFELDTER, LT.

BUPERS, Carrier Control Branch

SIRS:

This terminology that so many Naval aviators use—"deferred emergency"—I don't believe in it and I don't think it proper. Either a pilot *has* an emergency or he *doesn't*. How about it?

I've seen the case where a pilot has an engine running rough and he calls in: "Deferred emergency landing, rough engine." The tower asked him: "Do you desire crash equipment standing by?" Now Dilbert doesn't want his pride hurt so he gives a negative. He makes it OK, *but* suppose it had quit? I'm sure the accident board would have had something to say about this "deferred" phraseology.

As far as I know, there's nothing published about deferred emergencies, and it's up to the pilot whether an emergency exists or not and by____ if a landing is going to be anything other than normal; unsure gear check, rough engine, low oil pressure, etc.; it's an *emergency*.

There's too much money and too many lives involved to let personal pride guide a pilot's action when an emergency exists. Am I right or wrong?

R. F. SMITH, LCDR.

¶ Smitty, OP-57 (Aviation Safety) allows as how you are right to a great extent. The possibility of a real emergency developing from a potentially dangerous mechanical or flight situation should never be minimized. OP-53 (Flight Services) put in their two cents worth with an example. If you were comparatively low on fuel and, say were not sure if your gear was extended properly, and your destination was fluttered with heavy traffic, it could well be declared an emrgency until a tower fly-by had accertained a safe gear condition. The term "deferred emergency" is not official phaseology and should not be used in potentially dangerous situations.

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Pictures in the afterburner feature courtesy of Pratt & Whitney aircraft.

● SUBSCRIPTIONS

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

● THE COVER

From directly below, the Martin XP6M-1 shows the extremely slender afterpart of the fuselage.

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SAFETY AWARD WINNERS

JULY 1, 1954 — **JUNE 30, 1955**

The first aircraft units to win the Chief of Naval Operations Aviation Safety Award plaques have been selected for their outstanding safety records and their successful efforts in preventing aircraft accidents. Naval Aviation News takes pride in making this announcement and congratulates the squadrons.

	COMAIRLANT	COMAIRPAC	CNARESTRA
Jet Aircraft Squadrons	VMJ-2	VF-114 VF-151	VMF-123
Single Pilot Prop Squadrons	VA-104	VA-115	VF-692
Helicopter Squadrons	HMR-263	HMR-363	
Dual Pilot Squadrons	VP-7 VP-5	VP-1	VP-921
Aircraft Carriers	USS RANDOLPH	USS WASP	
Special Award	Naval Aviation Safety Center, Norfolk, Va.		

A CHRISTMAS GIFT SUGGESTION

THE giant size of NACA's Langley Laboratory transonic wind tunnel is graphically illustrated by the man pointing to the NANews signature. Installations like this are the birthplace of much aviation news, and the pages of NANews are chock-full of that news. Your friends and relatives are interested in Naval aviation AND news. You can give them a pleasant and lasting surprise at Christmas time. Send names and addresses, with a two dollar check or money order for each NANews gift subscription, to the Superintendent of Documents, Government Printing Office, Washington 25, D.C., and the recipients will be reminded monthly, of your Christmas gift.

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