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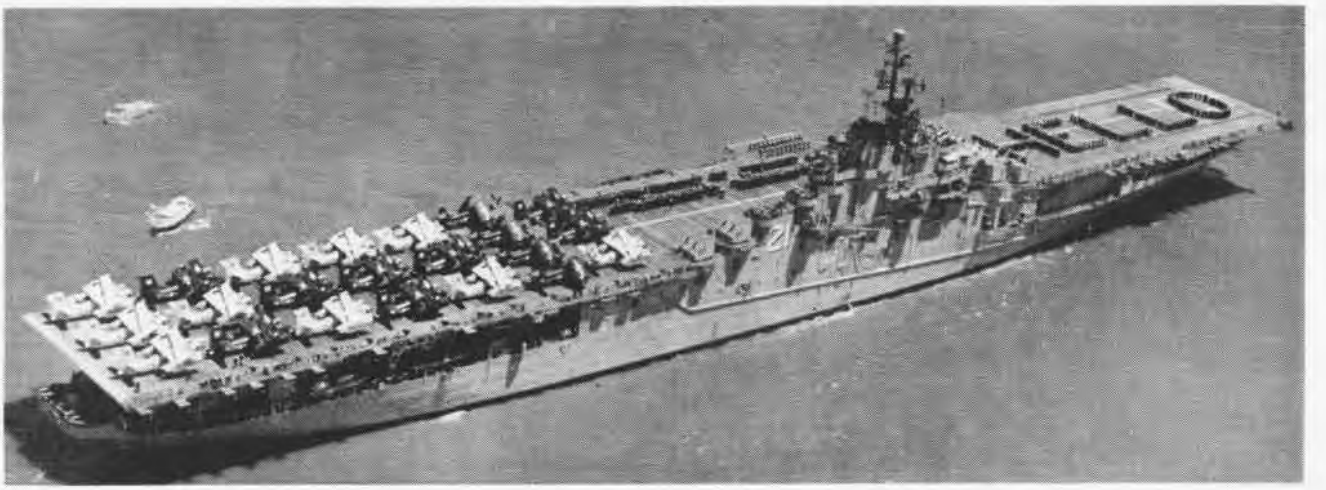
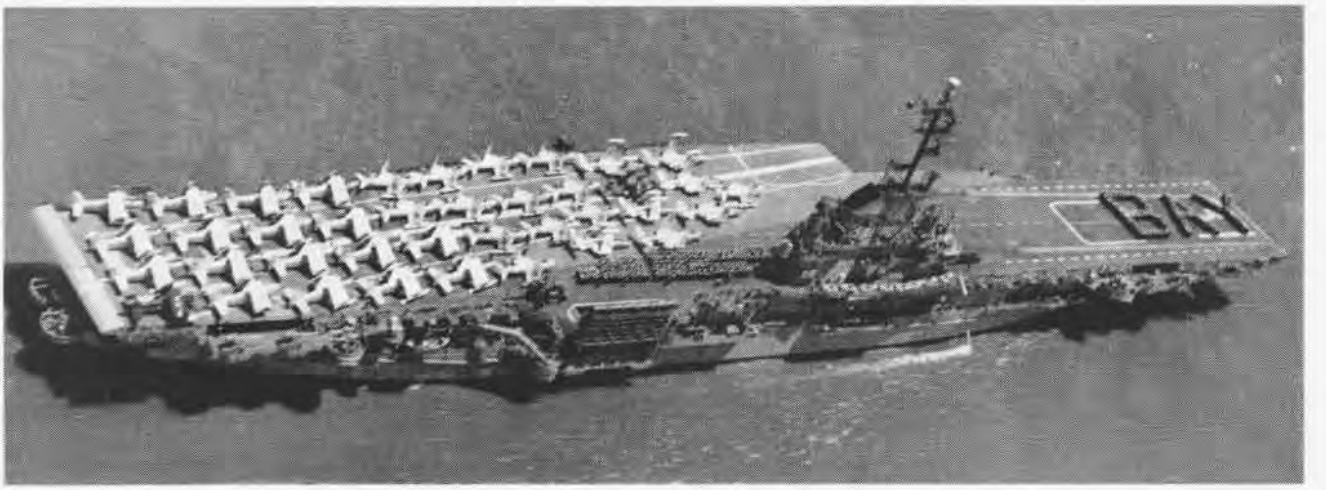




'HELLO BAY AREA'

When the three big aircraft carriers, shown above, entered San Francisco Bay, the crews expressed their sentiments by spelling a greeting. On hand to record the event was NAS Oakland's blimp, from which the pictures were taken. Carriers are, from the top: USS *Boxer*, USS *Bon Homme Richard*, and USS *Essex*.

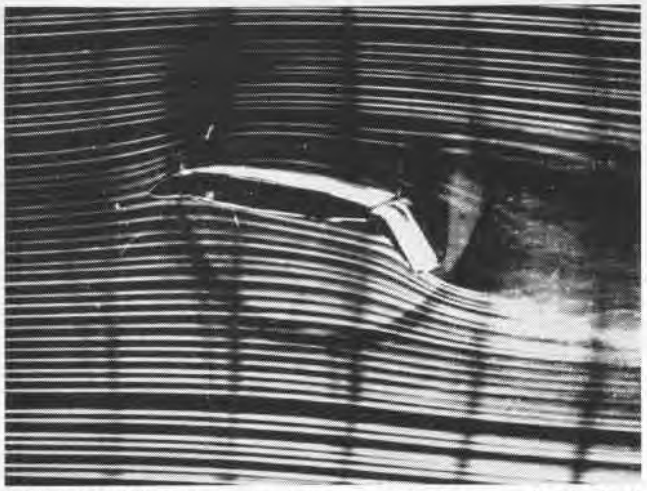
SWEPT AND SHAPED FOR SPEED

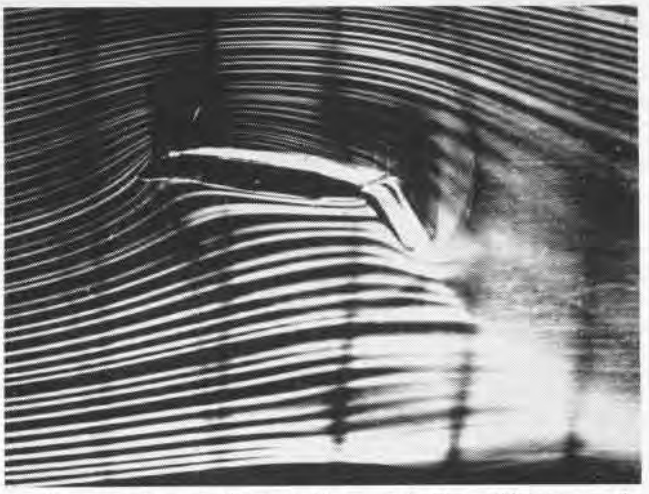
EVOLUTION produces curious shapes, such as the duck-billed platypus, the bustle and the helicopter. Each has its place in the scheme of things, whether it's biology, milady's styles, or aerodynamics. Many decades ago a few obscure men found more interest in the shape of things aerodynamic than of women's wear, and though some of their results were curious, even bizarre, they produced an evolution that has changed a world with lasting effect.

Nothing else in the broad field of aeronautics has had the impact of aerodynamics, the branch of dynamics which treats of the motion of air (or other gas) and the forces acting on bodies in motion through the air. Its physical results are shapes. In a sense, what is aerodynamics if not a science of shapes?

Modern aviation owes a great deal to the forbears who tussled with the secrets of lift and drag, stability and control, speed and range. It is an interesting fact that these matters are still in the category of basic problem stuff of the science.

By Joe Stein
Aeronautical Information Specialist, NACA





COMPARE FLOW *field about airfoil above with that on right, to which Boundary Layer Control has been added. Note turbulence above the lifting surface at left and the smooth flow, adhering to the upper surface at right. Lift is increased and drag is nearly halved.*

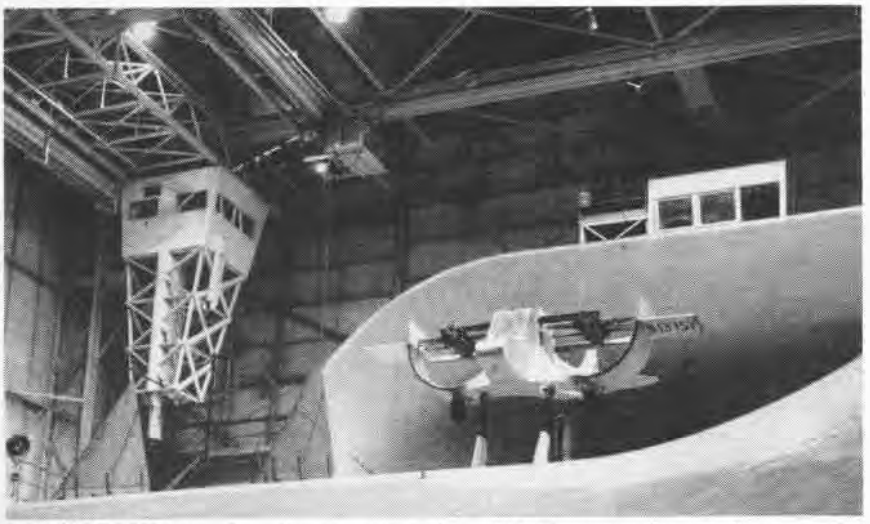
IN THOSE EARLY years, it was determined that the speed at any given altitude depends on the power available and on the drag force exerted by the air on the moving body. Within the framework of that simple formula aviation has made its fabulous advances in speed, to the end that the world now faces the ultimate, "escape velocity," the speed necessary to overcome the force of gravity and take the aircraft literally out of this world.

But the fundamentals of aerodynamics really have not changed through the years, despite all that science has accomplished. In the words of one of the eminent old-timers, "only the numbers are different. . . ."

Indeed the numbers are different, so different as to need new forms and new terms of measure. And new words! The numbers for speed and payload and range have jumped beyond the ken of the pioneers. As for words, science fiction writers now favor such eye-catchers as the aforesaid "escape velocity," "hypersonic," "thermal barrier," "Mach buster," and more. But these new values and new words tend to obscure the hoary old problems of lift and drag, stability, landing and stalling speeds. In truth, aerodynamics has vastly more impact on our world, but it is very old stuff and more than ever full of challenge for the human mind.

Lift and drag are still inter-related as of yore. As everybody knows, lift is the force acting perpendicular to drag; drag, the force acting opposite to the aircraft's forward motion. Both result when air flows around the wings and control surfaces, or airfoils, of the aircraft. With a suitably shaped airfoil, to produce lift at low enough drag, there is only one necessary condition to provide the right amount of lift to support the weight of the whole aircraft. This is pressure distribution.

The hard-working windmill proves that air, though invisible, is powerful because of pressure itself. And one of the many properties of air is that its pressure will drop when its speed of flow is increased. Because of the greater distance it must travel over the curved upper surface of an



EXPERIMENTAL *Custer channel wing airplane, designed to fly at very low speeds, is mounted for stability and control tests in full-scale wind tunnel at NACA's Langley Aeronautical Lab.*

LEADING-EDGE *extensions are being tested by research pilots after model wind tunnel tests.*

airfoil, its pressure drops, thus producing the major part of the total lift. The other part is due to the higher pressure of impact against the airfoil's lower surface. The greater the speed, the greater the pressure difference and the greater the lift.

Possibly the simplest way to demonstrate pressure differential is to hold a hand in the wind around a moving automobile. Pressure builds up in front of the hand and reduces in back, thus forcing the hand rearward. This pressure differential is what produces the force of lift in the proper direction on the wings, control surfaces, trim tabs, propeller or rotor blades—all airfoils—of the aircraft.

To illustrate simple aerodynamics further, before going into its complications, now hold your hand out of the car window again, flat, with fingers pointed forward. Elevating or lowering your fingers causes your hand to be raised or lowered by pressure. This is how aircraft controls work. When a control stick is pulled back, the elevators are raised, and pressure differential causes the plane's tail to go down, the nose up and the plane begins to climb. If the stick is moved to the left, the left aileron goes up, the right one goes down, and the plane banks to the left.

Then there are handy gadgets called trim tabs. These are small control surfaces, usually controllable from the cockpit, and a part of the ailerons, elevators and rudder. Their sole purpose is to make a pilot's job easier. By adjusting the trim tabs, he can ease off control pressures caused by torque, uneven loading, or other elements.

Drag is the force that holds the aircraft back. Whether induced by the production of lift itself, or caused by air friction with the aircraft skin or with the necessary external parts that do not contribute to lift, drag is always present. Though the objective is the lowest drag possible, a minimum amount is a must; like a car without brakes, a drag-free airplane could not be brought to a halt.

Likewise necessary is that quality of aircraft we call stability, another of our ancient problem areas. Stability makes the airplane hold an altitude without attention from the pilot. Stability varies with different aircraft, according to need. In a fighter, it is compromised in favor of maneuverability. In a transport, stability is favored over maneuverability.

The lift-drag relationship, stability and control and like matters are the stuff of aerodynamics in all the various speed zones—subsonic, transonic, supersonic, hypersonic. These are useful, meaningful terms but the newest thing about them is their common usage.

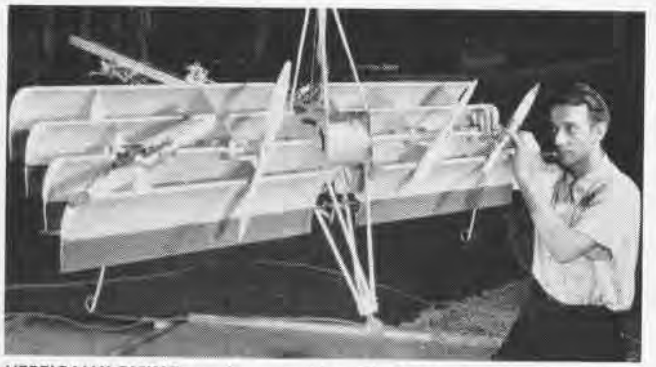
Incidentally, those popularized terms for the various speed zones do not have fixed, rigid limits in aerodynamics. When no part of the airflow over the airplane reaches the speed of sound, flight is said to be subsonic. Depending on aerodynamic shape, the upper limit of subsonic flight may be as slow as Mach 0.70, or fast as 0.90. "Transonic" simply means "through the speed of sound," that is, when the flow of air is mixed super- and subsonic. "Supersonic" means air flow all above the speed of sound, while "hypersonic" (usually implying Mach No. 5 and above) is a convenient way of indicating very high supersonic speeds.

Another well-publicized term of modern vintage is boundary layer. The boundary layer is the thin part of the airflow that hugs the airfoil surface like oil. Compared to the flow outward from the aircraft skin, it is virtually stagnant. It can be troublesome, but it is always present, and so is a part of aerodynamic life on this planet. When the boundary layer becomes thick or turbulent—caused by increased speed or bad flow pattern—it can spoil lift, not unlike the way taxes spoil a TV give-away winner's prize.

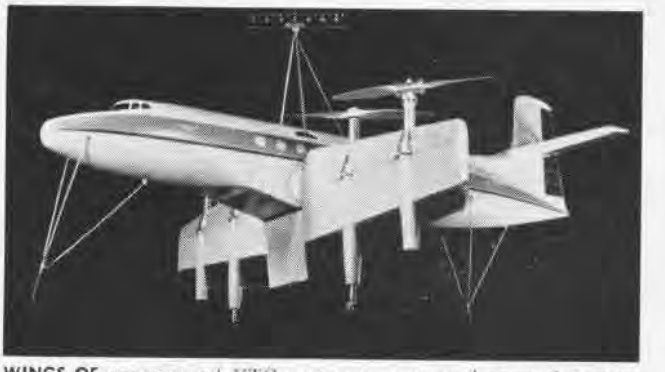
Means of controlling the boundary layer include flaps and slot and slats, among the more familiar. But some modern planes are equipped with devices to blow or draw off air near the leading or trailing edges of the wing. The control air stream is forced through porous surfaces or tiny orifices in the wing skin. Flap, slot, slat or directed air stream have been tried over the past years, successfully, but they all perform the same basic function, permitting the airflow to remain close to the airfoil surfaces, thus providing improved lift characteristics.

Is boundary layer control (BLC) new? Development emphasis is, but both the principles behind it and the application are relatively old hat. A German aerodynamicist named Prandtl did the groundwork in this field as far back as 1904. Some actual tests were made with the control air system many years ago. The need was not so great then, however, and the flap was a more practical landing aid.

For two main reasons, BLC in the form of a direct air stream has received real attention lately. The jet engine and the thin wing came along about the same time, one offering a convenient air pump, the other causing greater problems in obtaining high lift for landing. In the circumstances, the new development of BLC was bound to come into favor.



VERTICALLY-RISING *airplane model, with five-foot wing span, shows quadriplane wing arrangement, is used in stability, control research.*



WINGS OF *experimental VTO transport rotate to horizontal position for forward flight. Model free-flies, and is electrically powered.*

There is further new dress for old problems in the current one of pitchup, found in some supersonic fighter planes, about the time the pilot pulls his stick back. Even before the airplane's nose goes high enough to reach a stall, he finds that nose suddenly and violently going higher, which is an uncomfortable situation very much opposed to the old Hoyle for good airplane behavior.

Pitchup is a real stability problem. As noted, it occurs *before* the airplane stalls, and it results from two related sources for swept-wing airplanes equipped with horizontal tails. One source is premature loss of lift near the wing tips. At high angle of attack, the tips stall out while the inboard sections are still developing lift. In two-cent words (aviation has no one-centers), since the inboard areas of a swept wing are closer forward to the nose than the tip sections are, the center of pressure (lift) moves forward. Hence, the nose-up result!

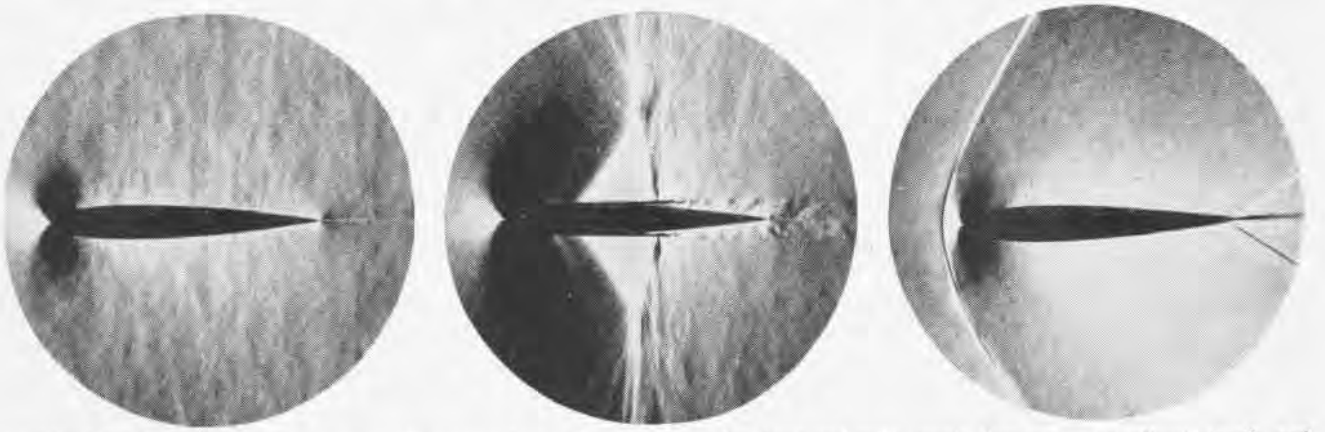
The other source of pitchup is caused by the location of the horizontal tail in a region where the downwash from the wings varies rapidly with change in angle of attack. In such regions, the tail may contribute to instability or may not supply enough stabilizing force to equal or overcome the heavy instability of the wing.

Some of this pitchup instability may be considered acceptable if it does not occur at too low an angle of attack and is preceded by buffeting or some such warning. To be acceptable, it should be corrected by means of powerful pitch control. The all-moving or "flying" horizontal tail can provide such control.

Pitchup may be corrected by wing "fixes," such as a drooped leading edge or a leading edge slat, to permit the outboard sections to carry more lift. The strips of metal or so-called fences on the upper wing surface can do this job too, by interrupting the boundary layer flow toward the tips. As a matter of fact, this spanwise flow of the boundary layer air is the source of the tip stall itself. Usually, pitchup correction calls for a combination of two or more such devices.

As for location of the tail, it is best set a little below the extended plane of the wing, or placed very high in the T-shape like that of the Martin P6M *Seamaster* and others. Sometimes no one tail location, wing fix or combination will answer all the needs, and the aircraft designer has to compromise on conditions that will delay and reduce the pitchup instability to acceptable limits. Tail location is affected by a great many conditions and requirements, and volumes of technical material have been written on this complex matter of aerodynamics.

Beyond the fix or compromise, there are other ways to compensate for pitchup. One is the stick pusher, which simply exerts pressure on the stick when pitchup approaches (though the pilot can overpower the pusher's force.) Still another solution is a damper, usually working through elevator action, which suppresses pitchup motions as they appear. Neither device answers the large question perfectly, since either sacrifices some degree of maneuverability. Ultimately the designer considers the airplane's purpose.



SUBSONIC TYPE *airfoil is shown at air speeds varying from subsonic, left, to supersonic, right. Note the type of shock waves, the small boundary layer and wake, steady flow pattern at subsonic speeds, and the varying flow patterns at transonic and supersonic air speeds.*

Pitchup not only means discomfort for the pilot. It can put dangerous loads on the structure, to say nothing of its ability to ruin those steady, responsive qualities so necessary in fighting airplanes.

While stability, control and such problems are troublesome and ancient, this is not to say that really important work has not been accomplished by science in recent years, nor that the pioneers' work has been neglected. The progress of aerodynamic science never stands still. The breaching of one barrier inexorably leads to several new ones as the field broadens. Solutions beget problems to challenge the human mind, and it is a striking fact that the secrets of aerodynamics have been wrested from Nature by a very small army—a battalion, rather—of devoted men. In recent months only has the really small size of this rather obscure group been more fully appreciated.

While becoming the nation's largest industry, aviation has worked up a great need for scientists and engineers, a need now reaching the critical stages. The small staff of the National Advisory Committee for Aeronautics, whose primary responsibility is basic research in aeronautics, has made real contributions to insure American supremacy in aviation that was sired by the Wright brothers. Further research and development by the Navy's Bureau of Aeronautics and Office of Naval Research, plus the efforts by the Air Force, Army, universities and industry, have made American aeronautical products the world's best by far.

In the Wrights' heyday, jet propulsion, compressibility, sonic velocity and such matters were studied by a few relatively unknown men who were probing the frontiers of knowledge. Going back to Bernoulli, who determined that when the speed of air over a surface is increased the pressure is decreased, they found that as the flow approached the speed of sound (sound, remember, is itself a pressure disturbance) compressibility would set in. Suddenly the pressure would be increased. Some years later the pioneer pilots who experienced compressibility could not cope with it. It made the airplane's nose prone to tuck under like a mad mule, and no amount of gee-hawing on the stick could raise it. Some found only one solution—get out.

In the climate of rapidly increasing speed that was born in World War II, compressibility became one of our most serious aerodynamic problems. Again, this is an old term in aerodynamics, having been a pox on ballistics people for many years, and in much of aviation's history, on the designers of propellers. The term "compressibility" derives from the fact that air is a compressible fluid. Unlike the more familiar fluid water, it is elastic and given to quite different behavior.

In the subsonic era, compressibility phenomena were not fully understood, and aerodynamics paid it the respect of avoidance. It could be avoided then because speeds were low. Propeller tips were held to safe limits below the compressibility range, as were wings in later years for aircraft designed without reference to compressibility.

Research, which leads aircraft production by five to 15 years, dug into the compressibility problem shortly after World War I. Dr. Hugh L. Dryden, the present Director of NACA, was one of a trio who made a study of compressibility under an NACA-Bureau of Standards contract in 1923.

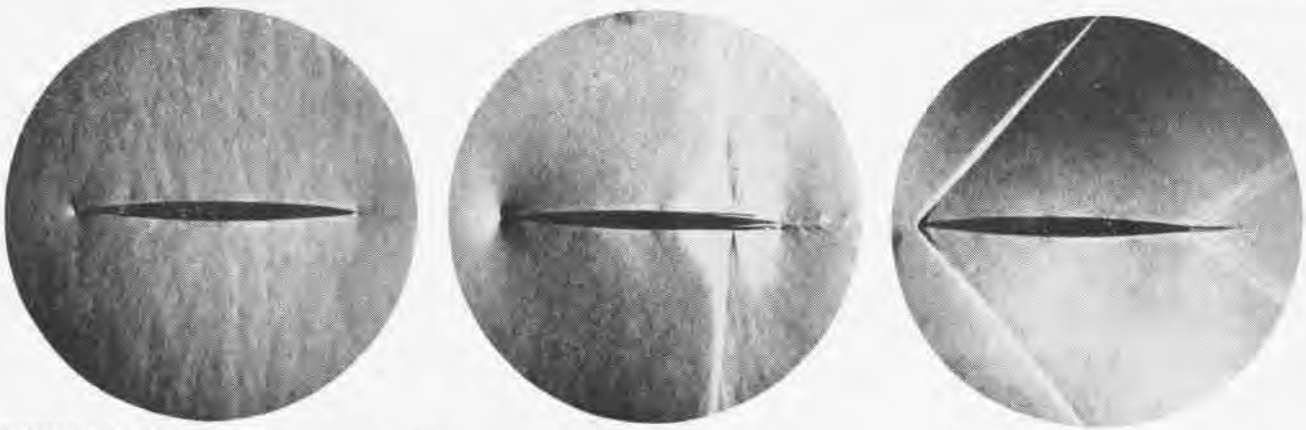
Compressibility effects mark the formation of shock waves, the large localized pressure disturbances created by the movement of the airplane through the air. Instead of pushing forward ahead of the plane as they do in subsonic flight, the air pressure impulses pile up on the nose and leading edges of wings and other surfaces. They form a barrier with the consistency of good quality concrete; like the same concrete, they distort the pressure distribution.

Pilots met this ogre of speed in dives at high altitudes, because they could attain higher speeds in the thin air and because sonic speed is slower up there than it is near the deck. The sonic speed rate varies directly with temperature rather than with altitude, as is well known, but since temperature falls off with increasing altitude, the speed of sound and altitude are indirectly related. For a good distance above 35,000 feet the temperature of air stays constant and cold and so does the speed of sound. At that height it is about 576 knots. Sound travels faster in the warmer low levels, at sea level, 662 kts., the difference being due directly to temperature.

Just as pressure distribution is the key to flight itself, so is compressibility the key to transonic flight. In subsonic flight (all airflow below the speed of sound) and supersonic (all airflow faster than sound) the flow is uniform, whereas the transonic flow is mixed. For this reason, the earliest researches were comparatively easier for supersonic than those of the transonic. Design of useful supersonic wind tunnels was easier too—in fact the transonic tunnel defied solution for some years. Its problems were so baffling that eventual solution, the slotted throat, which effectively bleeds off the troublesome shock waves, won for John Stack and his group at the NACA Langley Aeronautical Laboratory the 1952 Collier Trophy.

In research airplanes sponsored jointly by the Navy, Air Force, NACA and aircraft industry—the Douglas D-558 series, Bell X-1, etc.—the compressibility problem was met head on. In these airplanes, which pioneered the high speeds of the present service fighters and bombers, it was the enormous power of rocket engines and the use of plenty of beef in the airplane structure that permitted flight in the transonic range.

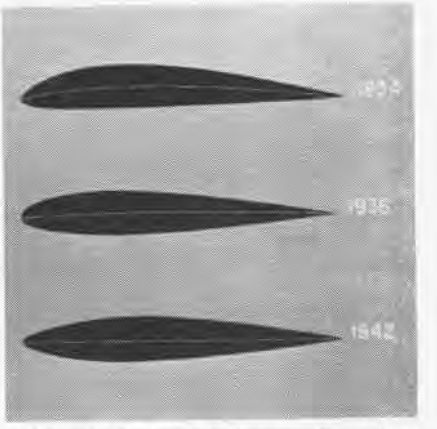
At such speeds the pressure disturbances created in the air stream by the flight of the airplane build up into a pile of compression or shock waves. They usually are accompanied by extreme turbulence, a sudden rise of density and temperature and a subsonic flow directly behind the waves. This is actually a wave of great noise—when it reaches the ground or another airplane, it is the well-known sonic boom. At various speeds, the airplane will develop a variety of these waves on the various parts of its surface.



SUPERSONIC TYPE *airfoil shows an entirely different type of patterns than those shown on opposite page. The flow is much smoother from subsonic to supersonic (l to r), with spear-head bow and trailing edge type shock waves, small wake, and moderate boundary layer.*

LARGE, SUDDEN increase of drag is one of the worst penalties of transonic flight. One of the major breakthroughs in transonic aerodynamics in recent times is the so-called area rule by NACA's young Richard T. Whitcomb. In simple terms, the area rule is a principle dictating a certain cross-sectional area for the wings and fuselage of an airplane, calculated together. With the proper cross section, the drag increase is reduced substantially. In most cases, some of the cross-section area of the fuselage is subtracted to make up for the presence of the wing, so the end result usually is a slim waist in the fuselage—a trim shape like the female "fuselages" seen on the beach. In some circumstances, the area rule can give a bustle type bulge too. The significance of Whitcomb's rule is that it improves speed up to 25 per cent without any increase of thrust or weight.

GRUMMAN F9F-8P *photographic Cougar sports the so-called fences, or metal strips to interrupt the boundary layer flow toward the wing tips. It is a device to prevent pitchup and tip-stall.*



PROGRESSION *of airfoil shapes is shown here, but today's supersonic shape is much thinner.*

The Navy's Grumman F11F-1, the supersonic *Tiger*, was the first plane designed from start with area rule. Applied to the USAF Convair F-102, the rule accounted for a large part of the 150-mph speed gain in the A-model of that delta wing fighter. Whitcomb's work has been termed the greatest achievement in the whole field of aeronautics since the advent of jet propulsion. It has been extended to the supersonic range and more is being learned about it in that field.

While many of the aerodynamic problems of transonic flight have been solved by research, much more remains to be done, especially toward an understanding of the nature and characteristics of shock waves. It is known that these waves travel outward at sonic speed from the source of disturbance—the airplane—in a continuous series which intensifies as the plane goes faster. The plane generates an infinite number of waves as it progresses, with a different wave pattern for each zone of speed. The fact that they run out in the free air many times the wing span gives a clue to their strength.

Supersonic aerodynamics has a set of vicissitudes of its very own. And shapes peculiar to its laws. Since shapes are so vital in aircraft wings, and though a perfectly flat plate can be made to produce lift, the cambered or slightly arched airfoil is better. In supersonic and hypersonic flight this L/D relationship is very much present, like all hands on payday. Here, though, the demand is for a certain shock wave pattern.

Thin wings, research has shown and experience proved, are best for supersonic flight because of their low drag. Some wings on modern fighters have been squeezed down to measure less than six percent of the chord length, i.e., with a chord of 100 inches, maximum wing thickness is less than six inches. Under trial now are even thinner ones, some barely four per cent. Though in detail far different, the airflow over a supersonic wing produces lift in a manner not unlike that of subsonic flow.

The matter of airflow is not limited only to wings and other airplane surfaces, of course. It is basic to propellers, helicopter rotor blades and no less, the compressor and turbine blades, inlets and exhaust ducts of gas turbine engines, and the nozzle and ducts of ramjets and rocket power plants—all airfoil surfaces.

The fact is, science may find the means to make the supersonic compressor, rotor or prop useful in the years ahead. To be sure, aerodynamics has become an integral part of power plant sciences, since the engines of our time not only burn the oxygen in the air but must move great quantities of that air and utilize its airflow to produce thrust.

But the matter of speed in the dynamic science of aerodynamics certainly is not limited these days to the transonic and higher. If only for the reason that all things flying inevitably must slow down to land, the matter of subsonic speeds remains fraught with problems for the designer. One of NACA's busiest wind tunnels is the 40 by 80-ft. facility at the Ames Aeronautical Laboratory, Moffett Field, California. Used for research in landing, takeoff, stalling and other qualities of subsonic speeds, this wind tunnel has a top speed of only 250 mph—a Mach number under 0.40.

Though seldom the subject of feature writers and top headlines in the public press these days, subsonic flight still has something for everybody. In fact, there is more intense study going on now in the aerodynamics at the bottom of the speed scale than ever before. The objective is lower and lower landing speeds, with the ultimate in vertical or short takeoff and landing capabilities. A variety of ideas, such as the flying platform, the tilting wing, the "venetian

DOUGLAS A4D *attack bomber shows the leading edge slat in extended position. They permit outboard wing sections to carry more lift.*

GRUMMAN F11F-1 *Tiger was the first plane to have area rule used in its design from the first planning. Note the wasplike fuselage.*

CHANCE VOUGHT *F8U-1 Crusader exhibits its two-incidence wing during landing on USS Forrestal. It exceeds sonic speed flying level.*

HEAD-ON VIEW *of F11F-1 Tiger on deck edge elevator of the Forrestal appears like face of monstrous bug. Note the leading edge slats.*

blind" wing, are under intensive research at this time.

Our pioneer said, "Only the numbers are different," but the magnitude surely is different. The magnitude of the problems in aerodynamics is best appreciated in view of the range of speeds of operation. That range is wide. Good flight characteristics for practical airplanes must be assured right down to the stall point, for obvious reasons, with equally acceptable qualities at high speeds and altitudes. In short, the desirable qualities must be built into airplanes for a speed range from less than 100 to above 1000 knots and even higher.

The range for rockets and missiles, which is far above those speeds, provides data on the baffling problems of flight for piloted airplanes in the high supersonic range. There is much to be learned in this realm of flight, much about aerodynamic heating, which can raise temperatures by 300 degrees (F) at Mach 2.0, and more than 900 degrees at Mach 3.5. Today the "heat barrier" looks formidable. At real hypersonic speed, the temperature can go high enough to melt any known materials. Adding great complexity is the factor of uneven heating, which may mean buckling or creep of the skin.

An airplane built to investigate this problem is the Bell X-2, a flying laboratory which has wings and fuselage of stainless steel, plus a windshield of tempered glass, along with a rocket engine of about the same power as a Navy cruiser. This is one of the research aircraft series mentioned earlier.

The research plane program, which had its origin in 1944 in the need for aerodynamic data at transonic speeds, has won some notoriety for the first breaching of the "sound barrier," then to setting higher and higher marks to today's Mach 2.5 (1430 kts.) and altitude over 90,000 feet.

The significant results of this cooperative flight research program are not the speed and height marks, but the qualitative data it provided on drag, stability, trim changes, control forces, air loads, and much more, at all speeds within the capabilities of the aircraft. Wind tunnels, slide rules and test rigs are very useful and necessary, but the final test is flight itself. That is the research airplane in essence. The contributions it has made are evident in all of our present front-line military and Naval aircraft.

One of the flying laboratory's least recognized great contributions was the unexpected one of dispelling fear of the unknown. To his credit, it must be remembered that the research pilot has no handbook to tell him what hazards lurked in the far reaches of altitude and speed, but all the same, the long-feared troubles of compressibility were mastered and the "sonic barrier" proved to be not a barrier at all, but one more baffling problem to be met, understood and conquered. Knowledge of a difficult problem serves to drive the true scientist to find the way to overcome it. The record of the past strongly suggests that whatever they are, the problems of hypersonic flight will be mastered just as were those of the subsonic range, when the large objective was to get a little payload into the air somehow, and never mind the speed.

The most important tool in research, much more important than its physical tools and paraphernalia, is the human mind. That's what has shaped the science of aerodynamics and what has made this science of shapes dynamic, productive and ever progressive with limitless possibilities.

GRAMPAW PETTIBONE

Dear Grampaw:

This didn't happen to me but I thought you might like to hear about it. One of the medical officers at our air station—*not a flight surgeon*—desired a ride in a jet and arranged with a commander on two weeks' active duty in a reserve squadron for a flight in a TV-2. The doctor got down to the flight line in the nick of time and off they went, towing a target sleeve for gunnery by squadron *Cougars*.

When he was briefed, the doctor was told that an oxygen mask was unnecessary since they would go only to 15,000 feet and the cabin altitude would never be above 9000 feet. The borrowed hardhat had no lip-mike but this was justified by saying that "so long as you can hear me, it's O.K."

During one of the gunnery runs, the occupants of the TV felt a moderate jolt. The pilot assumed that a 20mm had hit the tow cable or possibly a wing and asked the good doctor to look around for evidence of it. The doc was a bit shook when he noticed a sizable hole in the left wing near the fuselage with fuel streaming behind. The pilot didn't see this and yelled at the doc to get off the controls.

Having heard about an ejection seat, the doctor checked for one in the airplane. He was surprised to find no face curtain, but was unable to ask the pilot about this since he had no mike. Exploring his personal safety gear, he found that the leg straps to his chute were missing. He finally realized that he was sitting on them, but couldn't free them without releasing his safety belt. He was afraid to do this because of the erratic manner in which the plane was behaving. Owing to his confidence in the pilot and the lack of an alternative, he finally leaned back and prayed that his wife wouldn't hear about it.

A safe landing was made and it was found that there was also a 20mm hole in the horizontal stabilizer which had contributed to the difficulty in control experienced by the pilot during flight.

All ended well, but one can't help but wonder why.

LT (MC) USNR

Grampaw Pettibone Says:

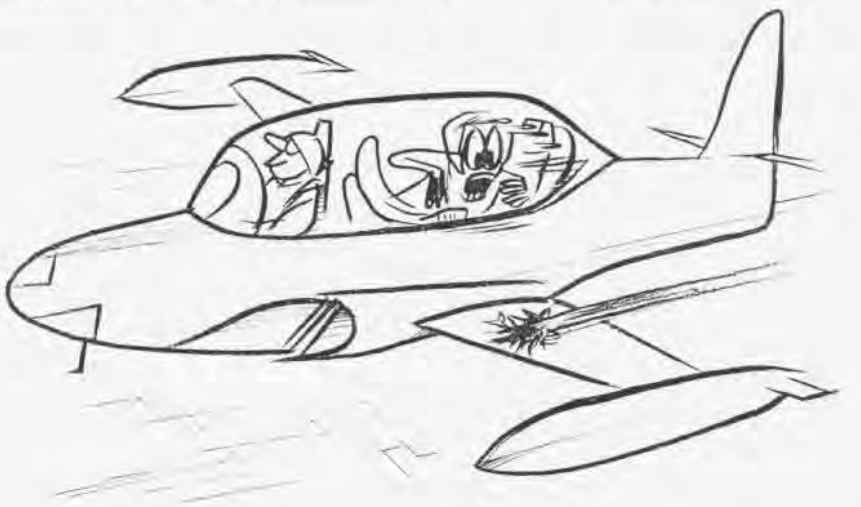
Lesson No. 1 on how to lose friends and alienate tow pilots—shoot a few holes in the towplane. Ordinarily I'm not one to hold a grudge, but when they start lobbing 'em in my direction my blood pressure zooms and friendship ceases.

Strictly speaking, the pilot of the TV-2 complied with the broad provisions of existing OpNav instructions, but that is not to say that he used the old noggin to the fullest extent. The passenger was not required to use oxygen since the *intent* of paragraph 41.a. of OpNav Instruction 3710.7 is to specify its use above a *cabin* altitude of 10,000 feet (this will be clarified in the forthcoming revision to that instruction). Of course, that leaves no provision for loss of pressurization.

The previous day the pilot did brief his prospective passenger, but it appears that he may not have *adequately* instructed him "on such personal safety and survival equipment and procedures as required for the particular aircraft" as required by paragraph 63 of the same instruction. For one thing, the TV doesn't *have* a face curtain, but the passenger didn't know this and, once airborne, he couldn't question the pilot on this point.

While two-way interphone communication was not required by OpNav directive, its desirability was dictated by common sense—and by near-necessity in this case.

Following the written rules is not always enough. They serve as a general guide, but they should be supplemented by the unwritten rules of common sense, foresight, mature judgment and thoughtful consideration for the other fellow. Don't be like the little fellow who told his mother when she returned to the kitchen: "Well, you didn't say NOT to put the cat in the dishwasher."



WHAT'LL I DO NOW?

The following was taken from a message the ferry pilot sent to his Commanding Officer:

F2H-2 BuNo 124956 Wheels up landing 152200 at NAS Alameda x No injuries to pilot minor damages to aircraft x Aircraft for delivery to Fasron x Fasron will not accept x Request instructions x.

Grampaw Pettibone Says:

Wish I had a copy of the CO's reply. This red-faced pilot's acute embarrassment could have been avoided by simply placing the gear handle down—prior to landing.

My Aching Back

After the break for landing, the F2H-2N pilot reduced power to 60% and extended the speed brakes. At 160 knots the wheels and flaps were lowered. At the 180-degree position, with the aircraft at 1300 feet and 140 knots, the speed brakes were retracted. Suddenly the aircraft went into a nose-down attitude, and the pilot was forced to use all his strength—both hands—to free the elevator control. The pilot told the tower he was in trouble and didn't want to go around. At the 90° position, the pilot reduced power, causing the need for more "up" elevator. Both hands were again required to free the stick.

Over the end of the runway, at 120 knots and slightly high, the pilot reduced power. The nose fell through slightly. To aid in bringing the nose up, the pilot extended the speed brakes. This time before he could free the stick the aircraft hit the runway. The starboard main gear, tip tank and nosewheel struck almost simultaneously. The pilot sustained a back injury; the aircraft was a strike.

Grampaw Pettibone Says:

This pilot was dealt a rough set of circumstances that cost an airplane and an aching back and almost cost a life—all owing to error of other personnel. The pilot had made a complete preflight inspection of the aircraft, including a check for freedom of movement of controls and operation of the trim tabs. Further, no binding of the controls was evident during the 70 minutes prior to his break for landing.

An improperly seated oxygen bottle that stopped elevator control movement was the culprit. A coaxial cable from an outside antenna to special electronics equipment was routed through the hole in which the oxygen bottle is recessed and tilted the bottle upward. It became apparent that the aircraft had been transferred and accepted with the oxygen bottle out of proper position.

The aircraft accident board concluded: (1) The electronics personnel should not have routed the coaxial cable through the stowage space for the oxygen bottle whether or not it was out of position; (2) aviation equipment personnel should have detected and corrected the faulty positioning of the bottle on the acceptance or subsequent routine maintenance checks; and (3) airframes personnel could have noted the chafing of the elevator control tube end against the improperly positioned oxygen bottle if a particular access opening had been removed as required during the last routine inspection.

Aviation safety is an all-hands job that requires teamwork and attention to detail and the conviction that "I AM my brother's keeper." If he had his druthers, a pilot would druther be given a break than a broken back.

Policy Paid

After an hour and 20 minutes of flight, an SNJ had a momentary overspeeding of the prop followed in rapid sequence by rough engine operation and complete engine failure. Unable to restart the engine, the pilot elected bailout for himself and the rear seat passenger who was on his first aircraft flight.

The passenger pulled his rip cord at 1750 feet. The pilot abandoned the aircraft at about 1000 feet, getting two or three swings of the parachute before landing uninjured in a clear area. The passenger landed in rough, wooded terrain, his parachute becoming entangled between two trees with the wearer left dangling. Several oscillations and minor scratches later, he

freed himself from his 'chute harness, climbed down a tree and again planted his number twelves on solid earth.

Grampaw Pettibone Says:

A rough introduction for this newcomer to aviation, but he wasn't up a tree for long. Prior to the flight the pilot had thoroughly briefed his uninitiated passenger, a fellow Marine, on bailout procedures—a policy that pays good dividends for small investments of time.

GARRISON NORTON BECOMES SECNAV FOR AIR

SECRETARY THOMAS IS WITNESS AS RADM. SHELLEY SWEARS IN SECNAV FOR AIR NORTON

IN A BRIEF ceremony in the office of the Secretary of the Navy, Garrison Norton was sworn into office as Assistant Secretary of the Navy for Air. RAdm. William R. Sheeley, Acting Judge Advocate General, administered the oath of office.

Secretary Norton, who took over the post vacated by Secretary James H. Smith, Jr., is a Naval Aviator, and has had many years of government service in the field of civil aviation. Entering into active duty in October 1940 as a LCdr., Mr. Norton served until November 1945 when he was released to inactive duty. He attained the rank of captain and now holds that permanent rank.

After the war, the Assistant Secretary entered service in the State Department when he was appointed Deputy Director, Office of Transport and Communications, 1945. The next year he became the Director. In 1947 he was appointed Assistant Secretary of State, which position he held until he resigned in 1949 to enter a banking firm.

Secretary Norton has a knowledge of aviation potentials and problems on an international scale. As top U. S. representative he has met and discussed problems with aviation representatives of other countries in an impressive list of international conferences. Some of these are: 1946, U. S. Delegate, Civil Aviation Conference, Bermuda; U. S. Representative, International Air Transport Policy, London; U. S. Representative, Civil Aviation Conference, Paris; 1947, Chairman, U. S. Delegation, First Assembly, International Civil Aviation Organization, Montreal; 1948, Chairman, U. S. Delegation, U.N. Conference on Inter-Governmental Maritime Organization, Geneva.

Since 1952, Secretary Norton served as a research and development consultant to the Secretary of the Air Force.

In announcing the resignation of James H. Smith, Jr., as Assistant Secretary of the Navy for Air, Navy Secretary Charles S. Thomas called attention to the fact that Mr. Smith had originally agreed to accept the post as Asst. SecNav for Air for a period of two years, and that he had then, at the personal request of the Secretary, agreed to remain in that post for an additional year.

"Mr. Smith has been one of the key members of the Navy Secretariat," Secretary Thomas said. "His energetic and forceful application of a broad understanding of air and weapon technology, together with a full appreciation of the world-wide political and social problems facing us today, have resulted in continuous noteworthy contributions to the Navy, the Department of Defense, and to our country.

"My association with him has been one of the most satisfying and pleasant ones that I have ever had," the Navy Secretary concluded, "and it is with the deepest regret that I see his leaving us".

A Naval Reservist since 1931 and a World War II combat Naval aviator, Mr. Smith had been Assistant Secretary of the Navy for Air since July 1953.

Radio 'Hams' and Satellite

Amateurs May Assist in Tracking

Radio amateurs in this country and abroad have been invited to help track the scientific earth satellite to be launched during the International Geophysical Year. By designing and building systems to receive the radio signals from the satellite, they can contribute substantially to the undertaking. Hams everywhere are getting ready.

Both optical and radio tracking methods will be used to follow the satellite in its 18,000 mph orbit at an altitude varying from 200 to over 800 miles. Optical tracking, although feasible and accurate, is limited to a few hours after sunset and before sunrise.

A more reliable method of tracking, involving the use of radio devices developed by the Naval Research Laboratory of ONR, will be put in operation. Known as "Minitrack," the heart of the system is a miniature radio transmitter in the satellite which will radiate a continuous signal to receiving equipment on the ground.

An additional simplified version of the "Minitrack" system has been developed by NRL for radio amateur organizations. They have been asked to build and man tracking stations in the region to be covered by the satellite, roughly a band around the earth extending in a latitude range of about 40 degrees on either side of the equator.

Complete details on the system are contained in the July issue of QST, official publication of the American Radio Relay League, Inc., and of the International Amateur Radio Union.

LATEST ADDITION *to Marine Corps flying team is the Convair R4Y-1, a twin-engine, cargo-type plane. A rapid rate of climb, and the plane's ability to fly higher and carry more weight in proportion to its size are some of the chief advantages the aircraft has over similar types in use by the Marine Corps. The R4Y can carry 44 passengers with top speed of about 260 mph.*

Safety Award Presented

Basic Training Command is Cited

The Naval Air Basic Training Command was presented a citation by the National Safety Council "for its outstanding contribution to highway safety in 1955." The award is one of 14 such citations given on a nationwide scale.

The "Safety Oscar" was accepted by RAdm. Robert Goldthwaite, CNABaTra. Present at the ceremony was RAdm. Dale Harris, ComCarDiv-4, whose flag flies on the USS *Forrestal*. The traffic safety program was inaugurated when Adm. Harris headed the Basic Training Command.

Adm. Harris said the safety plan originated when it appeared that each day's papers carried items about reckless driving and speeding by young officers and other personnel.

All Hands Go to School

Fire Fighting is Required Course

Aboard the *Philippine Sea*, everybody will eat smoke! That is the dictum of the *Phil Sea's* Commanding Officer, Capt. E. L. Farrington. But it isn't what it seems—this smoke-eating is only a means to an end. As part of the efforts to make the *Philippine Sea*, CVS-47, the "safest ship in the fleet," every man aboard her is scheduled to take the fire fighting course offered by the Treasure Island Naval Station, San Francisco, California.

Latest firefighters to take turns at the nozzles for practical instruction in extinguishing shipboard fires were Capt. H. B. McKinney, Dental Officer, Cdr. C. W. Lawler, Chaplain, and Cdr. C. E. Pruett, Medical Officer. Like all others, this trio of students was instructed as to the use of fog spray, foam, and CO_2 in extinguishing gasoline, oil, electrical and combustible types of fire. Part of this instruction

NEWEST SMOKE-EATERS ON THE PHIL SEA

involves entering burning structures and smoke-filled compartments.

According to the U.S. Naval Schools Command, this is the first time that senior staff officers have attended the Fire Fighting School, and now the *Phil Sea's* goal of 100% attendance at the school is that much nearer.

Pilot Takes the Low Road

Reports to Duty Station Hard Way

When Lt. Gerald W. Wise reported to VC-62 at NAS JACKSONVILLE from Photo School at NAS PENSACOLA, squadron members learned he had arrived the hard way.

With a 21-foot inboard boat boasting a 66 hp engine, and equipped with all the essentials, Wise and his wife, Doris, chugged 865 miles on a 20 day cruise through the Gulf of Mexico and the Intra-Coastal Waterway.

"Our trip across the heart of Florida, through Lake Okeechobee, proved exciting and most interesting," Wise said, "despite having hit a rock, bending the shaft and cracking a propeller."

The Wises' white cocker spaniel acted as boat mascot. "Don't ever take a dog on a boating trip," says Lt. Wise, "we had hair in everything!"

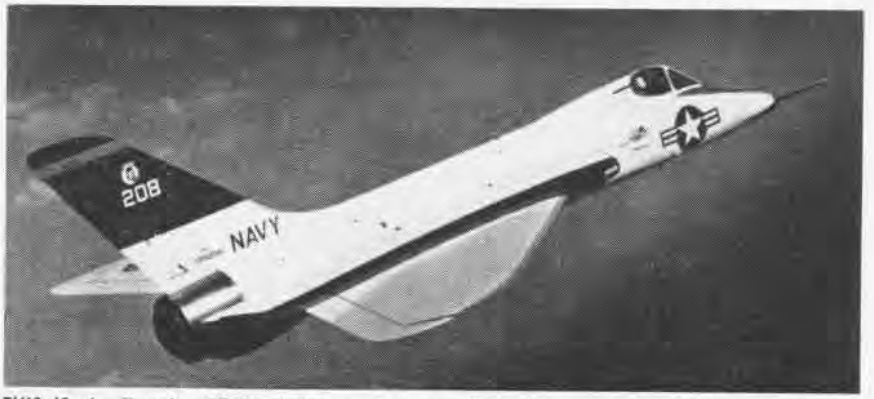
SNJ Retired From Corry

'Work Horse' Put Out to Pasture

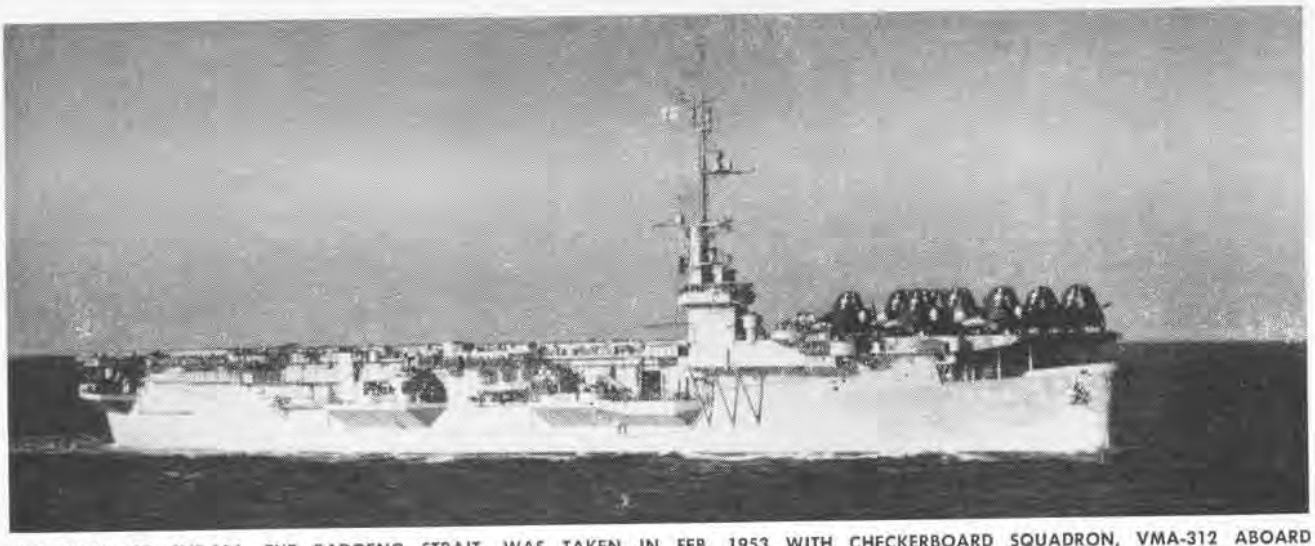
The SNJ, the Navy's sole basic trainer for over a decade, and often referred to as the "work horse of the Navy," has been retired from NAAS CORRY FIELD. The last of them has been flown to Litchfield Park.

The first SNJ "Texan" came to Corry in 1939 to replace the NJ, which was used primarily for radio instrument training. It also soon replaced the *Yellow Perils*, the N3N's and N2S's, to become the Navy's basic trainer.

The T-34 and T-28B, with their tricycle landing gear, higher power and many modern improvements are taking over the important job held so long and successfully by the SNJ.



THIS IS *the Douglas XF5D Skylancer. It is an all-weather, carrier-based, high altitude performer, with a wafer thin, modified delta wing which takes back from a long, slim fuselage. Complete performance data on the Skylancer has not been revealed, but general flight characteristics were described as excellent. It is powered by an improved model of P&W's J-57.*



THIS SHOT OF CVE-116, THE BADOENG STRAIT, WAS TAKEN IN FEB. 1953 WITH CHECKERBOARD SQUADRON, VMA-312 ABOARD

THE GHOST, THE BING DING, RIDES AGAIN

With the decommissioning of the USS *Point Cruz* (CVE-119) early in 1956, the last of a valiant and hard-working type of ship—the CVE's—has left the Pacific Fleet."

So read a recent release, and at once, there was a loud protest from the USS *Badoeng Strait* skipper. "It's death by insinuation! The Old Girl doesn't die that easily. Hear this!"

Right now, the USS *Badoeng Strait* (CVE-116) is in the middle of the nuclear bomb business with Task Group 7.3 at Bikini. In fact, she was the first large ship of the task group to arrive in the Pacific Proving Ground.

Normally the first to arrive has first choice of anything to be had. With the *Bing Ding*, however, the best was a mandate to make the place ready for those to follow. That meant five weeks of back-breaking labor.

It meant working parties of up to 70 men, slaving all day in the tropical sun. It meant clearing acres of semi-jungle, hauling crushed stone in a two man "coolie box," and digging 500-lb. rocks out of the beach sand and snaking them into place with three-inch manila lines. It meant hitching two Bluejackets to a palm log drag and grading a section, mixing concrete with a snow shovel when the shovel finally became available, and getting back to the ship, after a good 12 hours on the job, as the stars came out.

Simon Legree was LCdr. Leon Crawford, the ship's engineering officer, who not only got 125% of the best that was in every working party, but worked himself into a few weeks under the doctor's care with a back injury.

But when the task group ships finally gathered, Camp Blandy was ready. Task Group Commander, RAdm. J. H. Wellings said it was "just like the Roney Plaza at Miami—only better!"

The *Bing Ding* has sponsored the establishment of Amateur Radio Station KX6BS at Camp Blandy with the primary intent of making it available for 11 hours a day, seven days a week, to ALL personnel in the Bikini area—civilian as well as all Services—so they can put through calls to the folks at home. The station went into operation about the middle of June; it has done a land office business ever since.

All licensed "ham operators" in the area, including Capt. B. L. Bailey, skipper of the USS *Curtiss* (AV-4), take turns on watch in the "ham shack," punching the calls through to Mom, Pop, and "the li'l Woman." If you've never seen ecstasy, you should be out here to watch some of the customers as they come away from a turn at the microphone. It's worth the price of the station—the price, not the cost, because the equipment is on loan.

Having built Camp Blandy—except for some of the heaviest construction work— the *Badoeng Strait* had to run the camp as a recreational area for task group personnel. Her skipper, Capt. J. A. Jaap, was appointed chairman of the Task Group Recreation Council. As such, he had his storerooms loaded with everything from Acey Ducey games to snorkel masks, swim fins, television sets, and horseshoes. CPClk Caesar Peverada, appointed Blandy OinC, immediately turned to, dispensing soft drinks, hot dogs, hamburgers, sage advice, and, of course, snorkel masks, swim fins, and horseshoes.

But what about TV sets? A TV station at Bikini? There is—complete with filmed programs and commercials —whenever the *Bing Ding* enters the lagoon. It is the world's first and smallest entertainment TV station afloat. Ens. Barrier and Ens. Jim Knight emcee, newscast, and do plain hard work in the studio, the forward third of the after ready room.

Valuable also to the TV studio is HMC William Snyder whose daily disc jockey show is called "Waxes with Willie." ET1 Bob Sutherland is on early as "Zeke" with earthy music and wit and at other times is TV engineer. Winding up the evening is another TV engineer, ET1 Ken Stahl, to give his "Sportscasts for the Day."

The *Bing Ding* does more at Bikini than operate a playground. For example, she plays host to military and civilian personnel, some of whom have permanently assigned bunks on board.

The strange conglomeration of struc-

tures on the forward end of the flight deck, makes the *Bing Ding* act like a reversed wind vane whenever she's brought to anchor. There are three semi-trailers, colored in AF blue and mounting weird-looking aerials, that can best be described as electronic totem poles. There is a wild assortment of antennas —everything from towers over 50 feet in height to a modest little array that serves the Skipper's TV.

The three trailers which belong to a combined Air Force-civilian group carry equipment with which to keep tab on the maneuvers of airplanes used in the tests.

The Marines with their HRS-3's belong to HMR-363, commanded by Maj. J. A. "Buz" Sawyer. In between atomic tests, they transport material and personnel to scientific stations all around Bikini Atoll.

But these people are not the only semi-permanent lodgers in Hotel *Bing Ding*. The big crowd comes the day before a "shot." Most of them are civilian engineers who work at the various sites around the atoll, but must get clear until after each big event takes place. They come clad—and quite properly so—in such a profusion of Aloha shirts and shorts that the *Bing Ding Maru* soon begins to look more like Waikiki than a proud Man o'War.

All this compounds berthing, bookkeeping, messing, and serves to keep the Exec, Cdr. C. E. Healy, on the hop. He says that after this cruise he is going to set up a motel on the beach. If he does, he'll have to provide slightly

SNYDER, HMC, TAKES TURN AS DISC JOCKEY

better accommodations than the *Badoeng Strait*, where some 200 guests spend the night on folding cots. One of them remarked recently, "This is the first time in my life I ever slept with a helicopter!"

The *Bing Ding* is not only the last CVE active in the Pacific Fleet, but—she doubles in brass as destroyer tender-refrigerator ship-stores ship-cargo ship-oiler-gasoline tanker. As an AD, she does all sorts of miscellaneous work for the destroyers and DE's. As an AF, she frequently accepts custody of foodstuffs for the smaller ships. As an AK, she does the same with hard goods.

The AO job was a bit trickier. There are no suitable fenders anywhere in the Marshall Islands and, with all of her projecting sponsons and the like, the *Bing Ding* could not bring the small craft alongside for fueling at anchor. So—fuel 'em astern! LCdr. T. A. Nicholson and ChBosn Marlo Stepanovich put their heads together and obtained "Tillie," Cdr. Robert Amme's mobile airplane crane. Soon a DE was brought astern and gulped down oil.

Once the AO job was tried, the AOG task was easy. A pair of big gasoline trailers was loaded into a landing craft (utility). The boat was brought astern, and the avgas for the aircraft on the beach started gushing through the hose.

Then, of course, there is the most time-consuming assignment of all. What with his task group divided between two locations a few hundred miles apart, the Task Group Commander has to have someone at Bikini to carry on the administration work of the SOPA during his periodic absences with his flagship. The *Bing Ding* got the job!

And in a place like Bikini, the SOPA (Admin) automatically becomes Port Director as well. Simple? Try it some time. Fifteen or 20 ships are coming and going—some Navy, some under Navy operational control, but civilian manned. There are all sorts of needs: shore patrol assignments, permission to get underway, boating regulations, airline reservations, etc., etc.

Of course, the ship is loaded with extra personnel to get all this done—an additional Chaplain, four radiomen, and a pair of TAO lieutenants. While the world reads the news that the USS *Point Cruz* is majestically steaming into mothballs, leaving the Pacific Fleet without any more of the valiant "jeep" carriers. *The ghost, the Bing Ding, rides again!* ★★★

BING DINGERS PREPARE FRONT LAWN FOR EM CLUB AT BLANDY

BUT IT ISN'T ALL WORK, AND THE CLUB IS A POPULAR SPOT

MIDWAY CLAIMS CONSTANT SPEED RECORD

WHEN THE STORY was told (NANEWS, May '56) about the USS *Tripoli*, CVE-64, maintaining station on the oiler *Salamonie* for four hours without a speed change during refueling, comments were invited by anyone with knowledge of a better record.

Response was quick and positive. From the Far East, came a report from the USS *Wasp*, CVA-18. On 21 June, 1956, somewhere west of Manila Bay, the *Wasp* maintained a steady 86 rpm alongside the USS *Kawishiwi*, AO-146, for a period of two hours and ten minutes as she took on fuel. The *Wasp* is justifiably proud of this, but it is not a challenge to the *Tripoli*.

As other reports were received, evidence added up to the fact that while the *Tripoli's* performance of maintaining constant speed alongside the *Salamonie* is a fine one, it is not a record. First real challenger was the USS *Badoeng Strait*, CVE-116. On 3 July, 1956, the *Bing Ding* settled into position alongside the USS *Navasota*, AO-106, to take on fuel oil and aviation gas. Sixty-five rpm (12 knots) was rung up on both shafts and no change in rpm was made during the ensuing period of over five hours.

Evidence that this was a *bona fide* performance and not an attempt at a record, is the fact that the "steady state" steaming was not noticed as such until after four hours had passed and that the *Navasota* was not informed until just before the end of the fifth hour, when the Prep flag was at the dip.

The *Bing Ding* insisted, "In one way the 895,000 gallons of fuel oil and the 51,678 gallon of aviation gasoline we took on was a record—it was the most oil the *Navasota* had ever sold to any one customer at one time!"

During the five-hour-plus period, the *Badoeng Strait* conn was passed around among the captain, the exec and two regularly assigned OOD's.

The distinction of being the real champion in the matter of constant speed record, however, belong to the USS *Midway*, CVA-41. With a total of nine hours, 31 minutes of constant speed alongside the USS *Allagash*, AO-97, the *Midway* stands head and shoulders above all others—until displaced by a still better record.

THE USS MIDWAY ALTERNATED MEDITERRANEAN TOURS WITH EAST COAST OPERATIONS

Letters from the *Midway* officers most concerned with the operation told the story, and examination of the *Midway* and *Allagash* deck logs confirmed it.

In November, 1950, the *Midway*, enroute from Gilbraltar and a tour in the Mediterranean, to Norfolk, Va., went alongside the USS *Allagash* to offload aviation gasoline, clearing out the gasoline tanks so they might be cleaned prior to entering the Norfolk Navy Yard.

The *Midway's* deck log for 5 November 1950 reads:

1200 to 1600: Steaming as before. Changed speed to 15 knots (85 rpm). Commenced maneuvering on various courses at various speeds to go alongside the USS *Allagash* (AO-97). 1313—First line over to the *Allagash*.

1600 to 1800: Steaming as before.

1800 to 2000: Steaming as before. 1900—Set all ships clocks back one (1) hour to conform with plus (plus 3) zone PETER time.

2000 to 2400: Steaming as before. 2124—Completed pumping aviation gasoline, having transferred 168,000 gallons at 75° F. 2144—All lines clear from USS *Allagash*. Changed speed to 16.5 knots (94 rpm).

Cdr. A. M. Aichel, *Midway* Engineering Officer, wrote: "If I remember correctly, the approach was made at somewhat more than the speed of the *Allagash*. Subsequent to that time, the gasoline hoses were hooked up, the gasoline transferred. . . ."

To quote Capt. W. P. Woods, "I was the executive officer of the *Midway* and witnessed the entire operation. RAdm. F. N. Kivette, then Capt. Kivette, was at the conn. He quickly found what he called the magic number and set the shaft rpm.

"Some ten hours later, two hours after darkness, twilight not included, the *Midway* passed the hose back to the *Allagash*. During this (almost) ten-hour period not one change in rpm. was made. The job done, we finally had to change the engine speed and pull away. Until someone tops this, I believe three records were established: (1) Total elapsed time alongside without engine changes, (2) total daylight time alongside without engine changes, and (3) total night time without engine changes."

RAdm. Kivette, now ACNO(Air), remembered, "During this operation, Capt. Woods and I each took two-three hour watches, and a two hour watch at the conn." He added the light note. "After several hours with no change of speed, it was reported to me that the Engineer Officer of the Watch sent a messenger topside to see if we were still alongside the *Allagash!*"

According to Capt. Woods, "Battery for this no-hit, no-run marathon was Kivette pitching, Aichel catching."

LET'S LOOK AT THE RECORD

VS-6 Saves Navy $2240

Repairs Damaged Tie-Down Reels

Maintenance personnel of Fleet Aircraft Service Squadron Six at NAS JACKSONVILLE, salvage damaged aircraft tie down reels instead of discarding them. Since April, 400 reels have been repaired, saving the Navy $2240.

Tie down reels are used to anchor planes parked outside hangars, and they are expensive to come by. "We could not meet the requirements of Jacksonville-based squadrons, unless we made repairs to damaged reels," says CWO John P. Piercy.

The old reel is completely disassembled and inspected to determine damaged parts. No replacement parts are purchased; the undamaged parts from every five reels are repaired to make four new ones.

Each rebuilt assembly is lubricated and tested before it is used.

VMA-212 Makes Its Mark

Logs Record Hours in One Month

Stiff training and operational readiness paid off for VMA-212 of Kaneohe Bay. During May, the Marine squadron claimed a new all-time, all-service record of 4276.2 hours aloft in one month.

About 65,000 man hours were required to accomplish the 1485 flights of the AD-4 *Skyraiders* and set the new record. Maj. John J. Rollins, the *Devil Cat* Squadron's CO, gave high praise to the enlisted crews for their concentrated efforts at aircraft maintenance. Aircraft availability averaged 81% during the month.

The training was geared to increase pilot proficiency in carrier operations, since Marine aviators must be ready for land or sea assignments.

AD-4'S OF VMA-212 MADE RECORD IN MAY

NATC Wins Top Award

Makes High Mark in Aviation Safety

Adm. Arleigh A. Burke, CNO, has announced that the Navy's highest award for aviation safety was made to the Naval Air Training Command, headed by VAdm. A. K. Doyle.

Flying nearly 2,000,000 hours during 1955, NATC lowered its aircraft accident rate by 27% over the earlier record set in 1954. The command averaged less than three accidents per 10,000 flight hours.

Adm. Burke commended the Training Command for making its record at a time when a large part of the flight training was being shifted from propeller-driven planes to jets.

Replenishment Record Set

USS Shangri-La Beats Wasp Record

A 500-man working party aboard the attack carrier USS *Shangri-La* in the Far East set what is believed to be a new replenishment record. The men managed to move 177 tons of provisions in 52 minutes.

This time topped that of the *Wasp*, which had set a new record earlier the same day. Cargo received included ammunition, aviation supplies, comissary supplies and fuel.

Five carriers, three cruisers and twenty-three destroyers were included in the replenishment operation.

Safety Award for VP-47

Ceremonies Aboard NAS Alameda

VP-47, based at NAS ALAMEDA, received the 1955 Dual-Piloted Aircraft Safety Award. It is presented to the multi-engine squadron in the Pacific Fleet which accumulates the greatest number of accident-free flight hours during any one calendar year.

CAPT. JONES GIVES AWARD TO CDR. SLOAN

Since this safety award is to be discontinued, VP-47 is the last squadron to receive the honor. The patrol squadron flew over 7,150 accident-free hours in 1955.

Cdr. Lloyd E. Sloan, VP-47 CO, received the award from Capt. C. B. Jones, Chief of Staff, ComFAirAlameda.

Pilot Wins Hart Award

RAdm. Lee Presides in Ceremonies

Ltjg. Dennis C. Glover, FASRon-11 Electronics Officer, has won the Silas C. Hart Jr. Memorial Award. RAdm. Fitzhugh Lee, ComFAirWestPac, presented Glover the award at NAS ATSUGI.

Glover won the Annual Hart Award for 1955, for being the Naval aviator who exhibited the most skill in instrument flying while undergoing flight training at NATC PENSACOLA.

The award consists of a pilot's chronograph and a plaque. Glover's name will also be inscribed on a plaque at NAATC hdqtrs. at Corpus Christi.

RADM. LEE PRESENTS AWARD TO GLOVER

British Planes Popular

53 Types are Used by 70 Nations

During the past 10 years, no fewer than 53 types of British aircraft have been delivered to 70 countries and territories overseas. A number of these are, by today's standards, obsolescent, yet most of them are still giving good service.

Wartime aircraft are still used abroad extensively. Various makes of *Spitfire* and *Seafire* have been supplied to eight countries while the *Mosquito* has been adopted by no fewer than 11 overseas countries. *Hurricanes, Lancasters, Lincolns, Halifaxes,* and *Beaufighters* are in service in places such as Argentina, Australia, Egypt, France, Portugal, St. Dominica and Turkey, while in Finland, *Blenheims* are used for aerial photography.

The Syrian Air Force ordered 40 *Spitfires* eighteen months ago; the Royal Iraqi Air Force possesses three squadrons of *Furies* while the Israeli Air Force is still operating *Spitfires* and *Mosquitos*. *Fireflies*, in various guises, are in service in eight countries.

An airliner used in some 10 countries abroad is the *Viking*. These include the Argentine, Denmark, India, Pakistan, Rhodesia, South Africa and the U. S.

Production Contract Made

Navy Orders Additional Crusaders

A contract totalling more than $20,000,000 has been awarded Chance Vought Aircraft, Inc., for additional production of the F8U-1 *Crusader*. The new Navy contract calls for both fighter and photographic versions of the F8U-1.

The prototype XF8U-1 made its first flight on March 25, 1955, and exceeded the speed of sound in level flight. The first production model of the jet flew just seven months later. Hailed as one of the Navy's primary first-line fighters, the *Crusader* recently went aboard the USS *Forrestal* for carquals.

Powered by a P&W J-57-P-4 turbojet with afterburner, the *Crusader* has been described by the Navy as operating "in an entirely new speed range well beyond the supersonic."

Earlier production orders totalling more than $145,000,000 have been awarded the contractor since it won a Navy design competition with the F8U *Crusader* in May 1953.

VELEZ GAINS ALTITUDE WITH ROUND FILE

Jockey Aboard Yorktown

Ship's Barber has 'No Hot Dope'

Sky-jockeying, a topic of interest and conversation piece among the men of the USS *Yorktown*, has been pushed to the rear in leisure "bull sessions" now that Philip J. Velez, SA, has reported aboard.

Velez is somewhat of a novelty among the 116 sky jockeys, as the pilots of the Navy are sometimes called. A ship's barber, Velez actually is a jockey. He rides horses and confides, "Everybody wants to know the inside story of racing. They keep asking me questions like, 'Ever get any hot tips? Could I look you up while I'm on leave sometime? "They think I'm really in the know."

As an apprentice jockey, Velez was just beginning to hit his winning stride when he joined the Navy.

He has one major triumph to his credit—he rode a filly named "Headaway" during the California Lieutenant Governor's Handicap at Sonoma County's Fair Grounds and won.

New Navy Trainer Ordered

TT-1 Designed and Built by Temco

The Navy has ordered 14 new primary jets from the Temco Aircraft Corp. The order followed competitive evaluation of the Temco trainer at Patuxent River.

Designated TT-1 by the Navy, the first of the new trainers is scheduled for delivery sometime in July of 1957.

Old SNJ's Never Wear Out

They Just Fly Away, says Navy Pilot

Nearly 13 years ago, Lt. Stanley J. Andrews, BTU-1S NAAS WHITING FIELD instructor, flew his first solo flight in SNJ-4, WB-140. Recently he was at the dual controls of the same aircraft with one of his students.

He didn't realize it was the same plane until after the flight. His unusual discovery led to a rundown of the plane's history. Investigation revealed that an untold number of students had soloed in it. Its amazing durability was a tribute to the Navy's efficient maintenance crews. "When I last flew her," said Andrews, "I found the plane to be in excellent condition."

The SNJ's log book revealed that the craft underwent a minimum of five engine changes and spent a minimum of 6000 hours in the air.

Gradually T-34's are replacing the old SNJ's. SNJ-4 WB-140 ended its career at Whiting a few weeks ago when it left for "mothballing."

Another 'Diaper Special'

USS FDR Sails Around Cape Horn

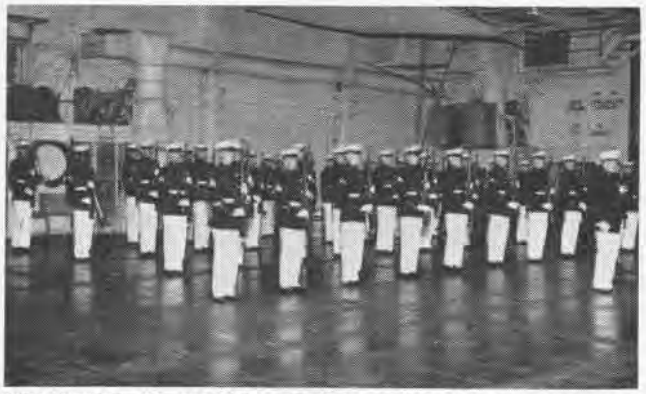
While officers and men of the newly modernized aircraft carrier USS *Franklin D. Roosevelt* were taking their ship around the Horn bound for a new home port at NAS MAYPORT, their families were traveling in style across country on the largest Navy family train in history.

The big ship has been undergoing an extensive overhaul at the Puget Sound Naval Shipyard for the past 24 months.

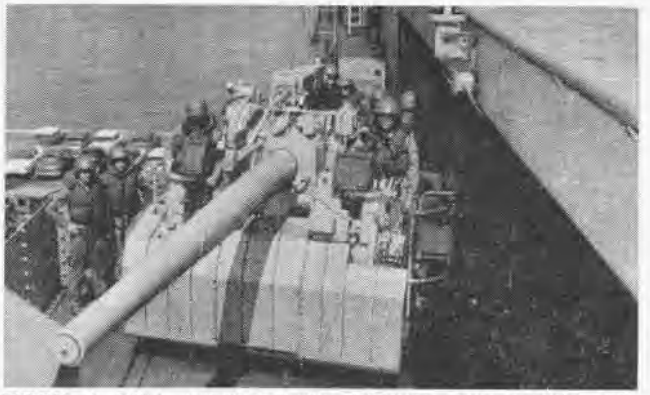
The train, consisting of 17 pullman cars—all the railroads will allow—carried between 300 and 400 dependents. The trip, straight through from Washington state to Florida, marked the first time such a routing has been accomplished. It was arranged with railroad officials by BUPERS and Congressman T. W. Pelly of Washington.

The special train carried a Navy doctor, a nurse and two WAVE hospital corpsmen to assist in the train's sickbay. A recreation car provided entertainment for the more than 200 children who made the trip.

Movies were shown daily in a special movie car. The trip took six days. The Navy notified relatives of the "Diaper Special" passengers who lived along the route so that brief family reunions could be held.



DETACHMENT OF MARINES 'PRESENT ARMS' ABOARD RANDOLPH



DURING A DRILL, MARINES MAN FIVE-INCH GUN MOUNT TWO

LEATHERNECKS ABOARD A CARRIER

By Dick Morris, BM3

ONE DAY EARLY last summer, 20 Marines came to attention on the Norfolk pier. Facing the USS *Randolph,* they had their first view of the ship, the skipper, Capt. E. J. O'Neill, USN, and their detachment commanding officer, Capt. Heman Redfield III, USMC.

The Marines had gone through weeks of tough training in the Marine Barracks at the Naval Shipyard only a few blocks away from where they now stood. They were there to replace the Leathernecks who had completed their tour of duty with the Atlantic Fleet.

Once aboard the ship, they were escorted below to their living and working spaces and the schedule they began to keep was one similar to that of other Marines on other ships.

The first day aboard the *Randolph* was spent in "squaring away." When the men got acquainted with their floating home, they checked in with MSgt. R. G. Hendren, a Marine veteran of 14 years service.

The second day aboard the carrier started at 0515, with close order drill on the flight deck. Only those actually on watch were excused from drill. The time from 0600 until 0730 was spent at breakfast and general cleanup details. While in port, the Marine color guard rendered colors in the morning and evening.

After quarters each morning until 1100, the off-duty section of the guard was put through extensive training sessions by the XO and detachment sergeants. Besides classes on small arms and gunnery, the men reviewed the General Orders, and were briefed on the care and upkeep of their uniforms. When the guard changed at noon, the off-duty section went through the same routine of training, 1300 until 1600.

The ship's brig is under the Chief Master-at-Arms, but the security of the brig comes under the Leathernecks. When the brig is not in use, the sentries are assigned to other duties.

When the general alarm sounds, the Marine detachment makes it on the double to man their two five-inch gun mounts. Both mounts are manned entirely by Marines. Special weapon security is a major function of the "seagoers."

The skipper and executive officer of the *Randolph* always have a Marine orderly close by. This is another of the detachment's duties.

The nucleus of the ship's landing party are Marines. Working side by side with their bluejacket buddies, they constitute the amphibious operating force of this carrier as well as others.

Working as a team, the Marines and Sailors, living by their own traditions, make an effective combination.

MARINE ORDERLY WITH CAPT. E. J. O'NEILL

DURING FIELD MANEUVERS AT GUANTANAMO

SENTRY ZARRA STANDS GANGWAY WATCH

NAVY'S SHUTTERBUGS AT ATSUGI

AERIAL PHOTOS TAKEN FROM AN OPEN DOORWAY

CREWMEN OF THE TARGET TOWING SHIP WATCH AS A DIRECT HIT IS SCORED

By Keith G. Riley, PHC

THE PHOTOGRAPHER clicks a switch, and the camera grinds away. This is a "take." Location is not on a Hollywood sound stage, but a Navy plane, thousands of feet above the Pacific. Here there are no rehearsals and no retakes. Accuracy is essential.

Utility Squadron Five's Fleet Air Photo Lab at NAS ATSUGI is the largest naval air station photo laboratory in the Far East. Its personnel copes with the problems connected with taking and seeing a good picture through to the finished product.

The lab's work includes aerial coverage of military installations, photomapping, aerial photos of aircraft in flight, pictures of crash scenes, and processing eight miles of gun camera movie film each week. The Photo Lab's camera repair shop keeps the photo equipment of the Air Station and fleet units in top condition.

One of VU-5's important jobs is furnishing aerial photos of surface gunnery and torpedo practices of ships of the Seventh Fleet. Two photographers are assigned to cover fleet target practice. Equipped with aerial camera, data board, safety belt and flight clothing, the photographers report to their plane. The plane's rear door is removed and electric power for the camera is checked. Life jackets and parachute harnesses are donned, and they're ready.

When visual contact is made with the target towing ship, the plane circles the target. One photographer fastens on the safety belt and stations himself at the open door with the 65-pound aerial camera. The other photographer stands by to record each picture taken, each run and salvo of the firing ship, and the altitude of the photo plane.

After the exercise, the plane returns to Atsugi. The film is rushed to the VU-5 Lab for processing. Before long, the finished prints and film are on their way to Fleet Camera Party at Yokosuka for plotting and evaluation.

Using these photos, the ship's gunnery men can determine any deflection or range error during gunnery practice and correct their gun calibrations.

Not all the jobs of VU-5 Fleet Air Photo Lab are as interesting as aerial photo coverage, but each entails vital and exacting work. But no matter what the assignment, the skilled Navy photographer can produce the goods.

ROLL OF AERIAL NEGATIVES ARE CHECKED

OFF ON ANOTHER AERIAL PHOTO MISSION

K. G. RILEY, PHC, EXHIBITS LAB CAMERAS

'First' Scored on Randolph

Demon Used in Fleet Operations

VX-3 scored a "first" in Naval Aviation when it conducted the first fleet operations with the F3H-2N *Demon* on board the USS *Randolph*.

The squadron put the *Randolph's* new angled flight deck and temporary mirror landing light to good use during the two-week cruise off the Virginia coast.

Squadron CO, Cdr. Robert G. Dose, led VX-3 on board. When he touched down his *Demon*, it marked the first time that an F3H-2N had used the carrier as home.

During the operations, Squadron Leader Eric A. Knighton, RAF, experienced his first catapult take-off, and made his first carrier landing.

Corpsman Builds Flotilla

His Hobby is Model Ships and Cars

The talents of James B. Boswell, HM2, and some complicated model kits have produced a fine flotilla of fighting frigates and plastic sport cars.

Stationed at NAAS SAUFLEY FIELD, Boswell has completed 10 model ships and 18 European and American automobiles of various vintages during the last six months. He had originally planned to use the models as subjects for his camera, but he became so interested in building that he has yet to photograph them.

Some of the members of the pint-sized fleet include: USS *United States*, USS *Wasp*, USS *FDR*, USS *Sullivans*. The automotive display covers cars from 1900 to 1956, and includes such famous names as Stutz, Duesenberg, Ferrari, Mercedes, Jaguar, Ford, Buick and Cadillac.

Boswell's other hobbies are working in copper, wood and ceramics. He is also an avid photographic fan.

BOSWELL DISPLAYS MODEL SHIPS AND CARS

NAVCAD CHOIR MAKES XMAS RECORDS

FLIGHT GEAR IS THE DAILY GARB FOR MEMBERS OF PENSACOLA'S FAMED NAVCAD CHOIR

PENSACOLA's famed Naval Aviation Choir journeyed to Hollywood this summer to make a record of Christmas music. Directed by Ens. Fred Schad, the choir is constantly in demand on radio and TV.

This will be the third record of the choir to be released by Vonna Productions of Hollywood. Two previous 45 rpm releases, "Introducing the Naval Aviation Cadet Choir" and "Eternal Father," are already on sale in Navy Exchange stores throughout the Navy, or direct from Vonna.

Despite the fact that the choir is regularly changing its roster, it maintains a standard that has made it a hit on the Ed Sullivan and Perry Como shows. In Easter 1955, its appearance at the Hollywood Bowl Sunrise Service proved its director far too modest when he says the Choir is nine-tenths spirit and one-tenth talent.

The choir is composed of 68 men in training at NAS PENSACOLA. Many singers have completed their preflight training and have entered Basic Flight Training. Still others are preparing to make their first landings aboard the Navy training aircraft carrier in the Gulf of Mexico.

Student pilots give up many off-duty hours to practice. None is given any special privilege, and each must keep his grades above average. Should a member drop behind in the aviation training program, he is immediately dropped from the choir.

In 1952, one of the members, now stationed elsewhere, arranged the theme song of the NavCad choir called "Mighty Navy Wings." The song was taken from an old march. Introduced on a national hook-up, it was an outstanding success.

The Choir is set to introduce "Navy Wings of Gold," to the public in conjunction with the Navy Band. Written by Cdr. George Cornelius, it is expected to be a hit.

The most popular number to date is "Nothing Like a Dame" from the show "South Pacific." Cadet Vince Charpentier is featured in the novelty solo.

"He's an excellent showman and his natural talent contributes to the success of the number," Schad says.

THE CADET Choir receives requests to sing from civilian organizations and military installations all over the country. The most popular assignments for the young men by far are the college appearances. Here each bachelor combines business with pleasure between engagements.

The Naval Aviation Cadet Choir was organized to sing during Divine Services each Sunday at the chapel of NAS PENSACOLA. Today the choir continues that weekly appearance, but its fame has spread from coast to coast through the years.

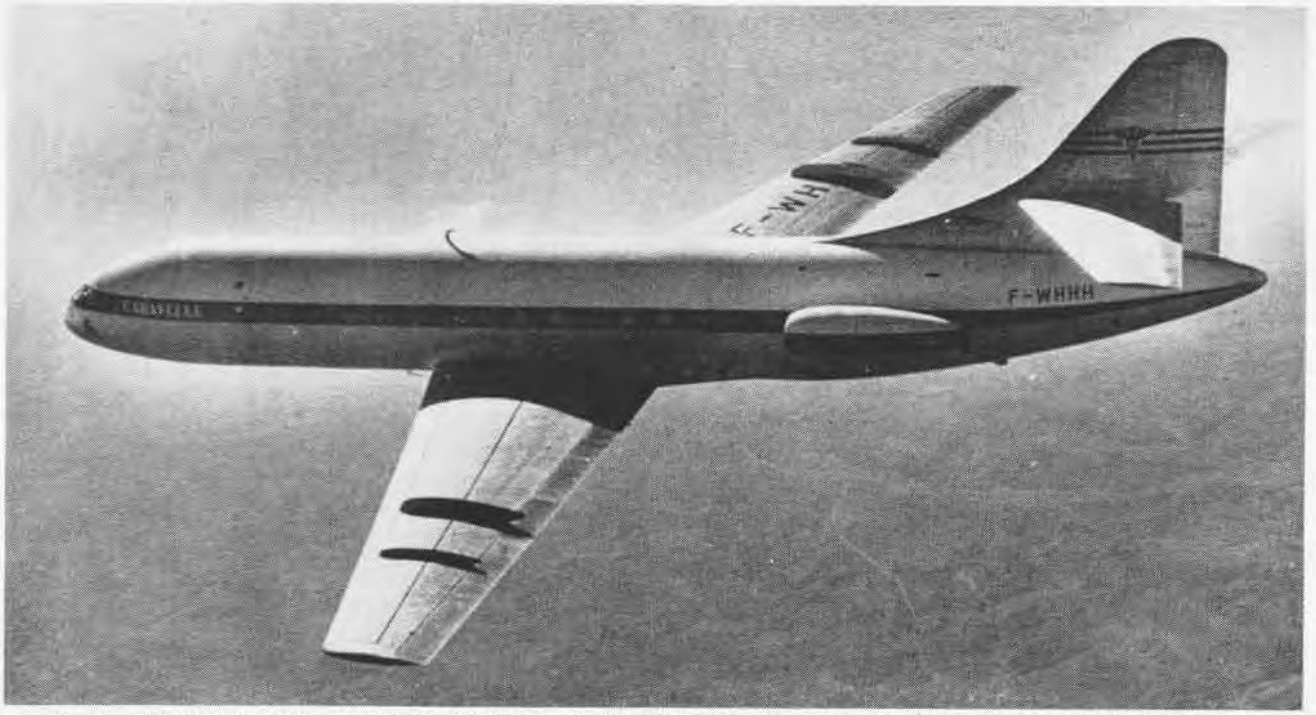
CHARPENTIER IS CHECKED BY ENS. SCHAD

● MYSTERE XXIV, SMOOTH AS AN ARROW, IS FIGHTER DESIGNED FOR NATO ●

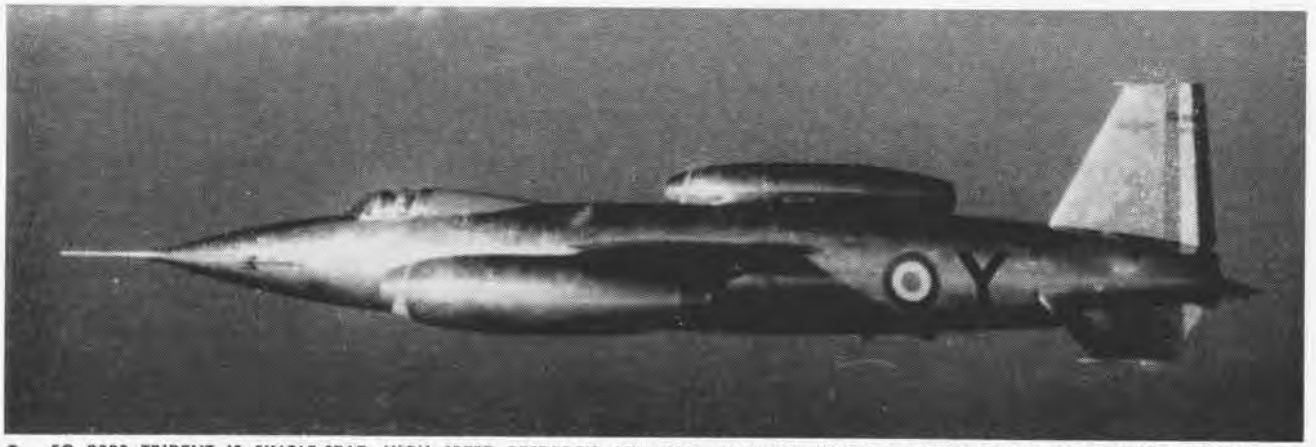
● AQUILONS FIRST FLEW IN MARCH 1954 ●

FRENCH AIRCRAFT TODAY

● CARRIER-BASED AQUILON (SEA VENOM) IS BUILT BY FRANCE UNDER BRITISH LICENSE FOR NAVAL AVIATION SQUADRONS ●



● SE 210 CARAVELLE, BUILT BY SUD-EST AVIATION, IS JET TRANSPORT WITH COMET NOSE, AVON ENGINES, CARRIES 70 ●



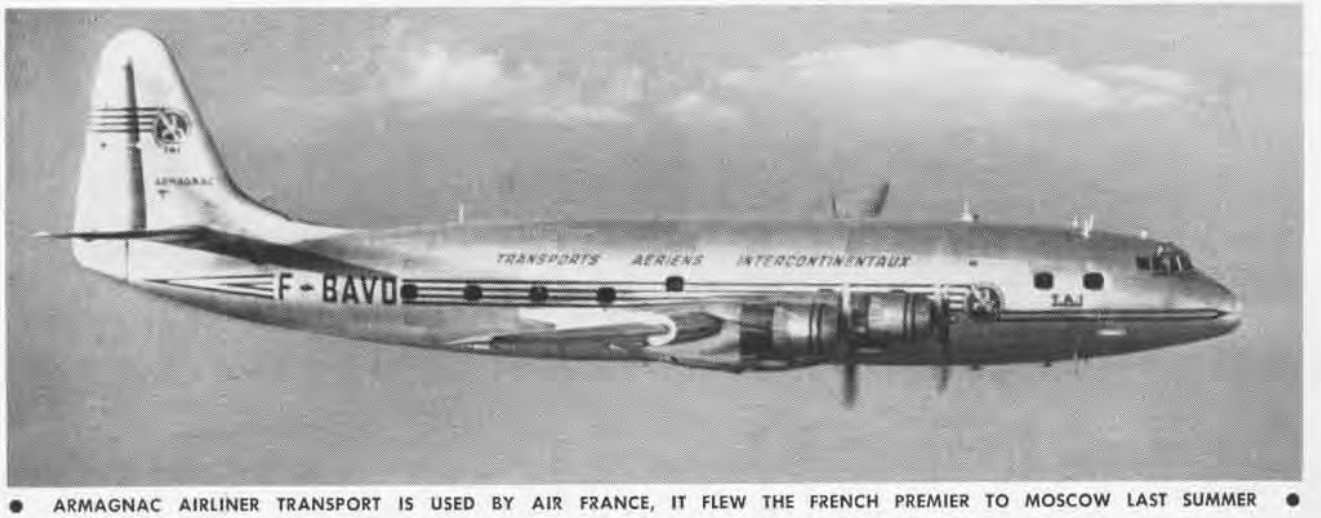
● SO 9000 TRIDENT IS SINGLE-SEAT, HIGH SPEED RESEARCH AIRPLANE, EXCEEDED MACH 1 DURING CLIMB WITH ROCKET POWER ●

● S.O. VAUTOUR, A BOMBING, ALL-WEATHER FIGHTER FOR TACTICAL SUPPORT, EXCEEDED MACH 1 IN PROTOTYPE MODEL ●

● FRENCH-BUILT VAMPIRE, USED BY THE FRENCH AIR FORCE, CALLED MISTRAL, IS BUILT BY SUD-EST AVIATION ●

● NORD 2501 IS TRANSPORT FOR THE FRENCH AIR FORCE ●

● BARODEUR IS NOVEL FIGHTER WHICH LANDS ON SKIS ●



● ARMAGNAC AIRLINER TRANSPORT IS USED BY AIR FRANCE, IT FLEW THE FRENCH PREMIER TO MOSCOW LAST SUMMER ●

● THIS IS A PROTOTYPE DESIGN WHICH IS DESIGNED FOR NAVAL RECONNAISSANCE; IT CAN LAND ON SHORT FIELDS ●

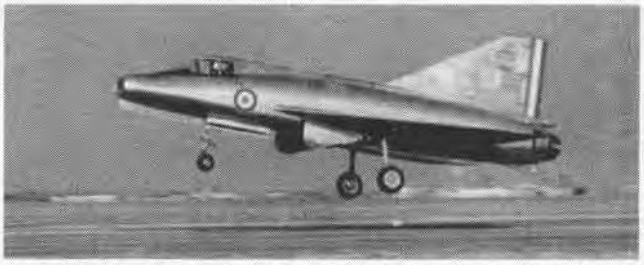
● HUREL-DUBOIS MODEL 32 WITH TWO P&W ENGINES AND HIGH ASPECT RATIO WING IS ON ORDER FOR THE FRENCH NAVY ●

French Naval Aviation has undergone a tremendous change in size and character since the end of World War II.

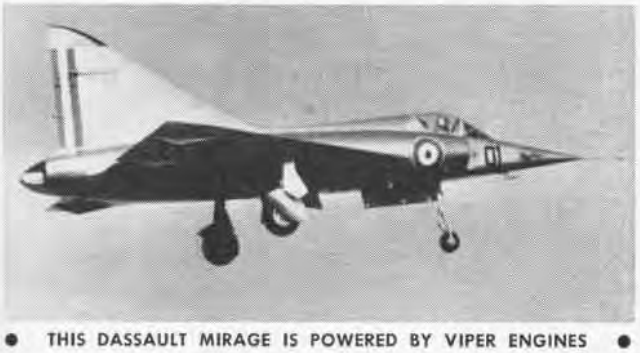
France now has three carriers — the *Arromanches*, formerly HMS *Colossus* on loan from the Royal Navy; the *Lafayette*, formerly the USS *Langley*; and *Bois Belleau*, once the USS *Belleau Wood*. These carriers have not been modernized.

In 1954, the French government authorized funds for the construction of the attack carrier *Clemenceau* and for the procurement of *Sea Venoms* to be manufactured in France as the *Aquilons*. More have been ordered.

● GRIFFON PROTOTYPE JET FIRST FLEW IN JUNE OF 1955 ●



● SUD-EST DURANDAL IS A LIGHT DELTA WING FIGHTER ●



● THIS DASSAULT MIRAGE IS POWERED BY VIPER ENGINES ●

● MYSTERE IV IS NIGHT FIGHTER WITH NOSE LIKE F-86D ●

NAVAL AIR RESERVISTS ON PARADE

GROSSE ILE SAILORS MARCH IN FLAG DAY PARADE BEFORE WORLD'S LARGEST FLAG

Flag Day in Detroit

Flag Day, throughout the United States, is marked by color, parades and music. The celebration of Flag Day in Detroit was highlighted by the raising of what is claimed to be the world's largest American Flag.

The huge flag, hung from a large department store in downtown Detroit, measures 104 feet by 235 feet. It weighs approximately 1500 pounds.

NAS GROSSE ILE lent support and added color to the event by providing marching units of Sailors and Marines.

Outstanding Record at Birmingham

The last prop-driven fighter squadron in the Naval Air Reserves Training Command is VF-681, based at NAS BIRMINGHAM, Alabama.

Led by Cdr. Billy Burch, and flying the F4U-5NL *Corsair*, the Birmingham fighter boys have averaged 8.3 hours of night flying for the past six months.

The group boasts a 10.74 hour average per pilot instrument time in fighter type aircraft, and 6.01 hours each on instrument time in SNB and JRB trainer type aircraft.

The squadron is especially pleased about its average of 95 hours per pilot for the fiscal 1956. The command average for fiscal 1955 was 64 hours.

Dallas Chief Cited

A. F. Bullock, Leading Chief of VP-702, has been selected as the "outstanding Chief Petty Officer of the Organized Reserves attached to NAS DALLAS for fiscal year 1956."

Bullock, who joined the Navy after Pearl Harbor, received a television set from Mr. Garland Medaris, Dallas Navy League President. Capt. D. A. Sooy, air station CO, read the official letter of commendation.

New Benefits for Reservists

The President has signed a bill providing for readjustment pay to Reserve personnel.

The new law provides lump sum payments to Reservists, officer and enlisted, who are involuntarily released from active duty after 9 July 1956. Up until their discharge, they must have completed at least five years continuous active duty, with breaks in service of not more than 30 days. The term "involuntary release" covers those who request an additional tour of duty, but whose request is turned down.

Payments are authorized on the basis

THE CRACK DRILL TEAM AT NAS OAKLAND

MISS WEEKEND WARRIOR AT NAS SEATTLE

RICHARD COLLECTS REWARD AT GROSSE ILE

of one-half of one month's basic pay in the grade served at the time of release from active duty, for each year of active duty, not to exceed 18 years. Those Reservists within two years of retirement, may expect to remain on active duty until they qualify.

Survival Trek for Reservists

During a two-week training period at NAS SPOKANE, 34 Naval Air Reserve Recruits left the air station in trucks for a survival trek in the mountainous terrain of northern Washington.

Their mission was a four and one-half day hike with a day and one-half rations. Any other food had to be procured through their own resources.

The entire trip was done on foot, a 40-mile journey from Cusick to Chewalah, Wash.

During the trek, the young recruits learned ground navigation, first aid, and methods of finding shelter. They studied wooded area problems, compass reading, orientation. The Reservists learned how to trap their own food while on the hike.

Even though three days on the trail were rainy and cold, at the end of the survival trip, the men were still enthusiastic. They had proved their mettle. A "well done" was awarded by Capt. H. F. Webster, station commander, who greeted them upon their return.

Award to Oakland Drill Team

The famous four-man drill team at NAS OAKLAND has won more plaudits for the air station.

The team won the 1956 California Station Championships in their class.

The Oakland Station's full team has collected a staggering total of 80 trophies during the past two years.

A Queen at NAS Seattle

Carolyne Van Loock, representing FASRon-891, is the new "Miss Weekend Warrior" at NAS SEATTLE. She will represent the station in Seattle's Seafair Queen contest.

The brunette stenographer and part-time model won from a field of 18 contestants.

Capt. H. R. Horney, station CO, crowned her with an Indian bonnet.

Boy Wins HUP Ride

For his winning essay on "What Power for Peace Means to Me," Richard Beauchamp, 15, of Detroit won a ride in an NAS GROSSE ILE helicopter.

The essay contest, conducted for Armed Forces Day, was open to students in the metropolitan Detroit area.

This is what Richard had to say about power for peace: "I helped build this nation, I am the material force that protects you. I am the planes that fly over your land. I am the ships that guard your waters, I am the men who scan the sky for deadly weapons, I am the men who march through foreign lands to defend your rights. I am the one that guards your peace. You need me. Build me up. Maintain my strength. My name is power. Use me for peace."

THESE TIRED SPOKANE RESERVISTS FIND THAT HOME IS WHERE YOU HANG YOUR BOOTS

'Pilots' Rocket Sled Tests
'Catapult Casper' Strong, Silent

"Catapult Casper" is a six-foot tall, 200-pound mannequin, known in engineering circles as an "articulated anthropomorphic dummy." He has been the "pilot" on a series of high-speed rocket sled tests made at NOTS INYOKERN, to determine effects of high speed, high altitude bailouts from jet aircraft.

Tests have been made using the forward fuselage section of a Douglas A4D *Skyhawk*, mounted on a sled riding on rails, pushed at sub-sonic speeds on the thrust of a battery of rockets. Midway down the tracks, the canopy is jettisoned and "Catapult Casper" starts up the ejection rails, in his seat. A fraction of a second after he leaves the cockpit, separation from the seat takes place, and almost immediately, the parachute opens.

During the tests, Casper experienced exactly the same conditions a pilot would in escaping from an A4D, including extension of the face curtain, canopy jettison, ejection seat catapult, man-seat separation, and automatic parachute opening.

Readin' and Writin' Too
Japanese Self-taught by Chief

Robert E. Shaver, AEC, spent 16 months in an intensive study of the Japanese language. Many U. S. servicemen learn to speak Japanese while they are stationed in Japan, but this student went a few difficult steps farther. He mastered 400 of the Kanji characters which comprise the "picture" system of written Japanese.

"In Kanji, each word was originally a picture of the thing it represented," explained Chief Shaver. "There are two other ways of writing Japanese. Katakana and Hiragana are phonetic systems and are easier to learn than Kanji."

The Chief did not attend any organized language classes, although he was aided by a tutor. Besides studying in his off-duty hours, he has a small earplug radio tuned to a Japanese station to familiarize himself with the sound of the language while he works at his desk.

Shaver now speaks well enough to teach others. He has coached two groups of FASRon-120 sailors through a "Japanese in 30 hours" course.

A NAVAL AVIATOR WITH A DUAL CAREER

'Angel' at Moffett Field
Jet Pilot Plays a 'Cool' Harp

A harpist and a jet pilot would appear to be completely unrelated personalities but Ltjg. James M. Gore, attached to FAWTUPac at Moffett Field, is a combination of the two.

Not only a harp virtuoso, Gore can also play the piano and trumpet. A music lover long before he ever thought of aviation, he continued his musical career at the University of Washington, graduating in 1951. A year later he received his Master of Arts degree in Music Composition.

Gore won his wings in 1954. When deployed aboard the USS *Princeton*, he took his harp along. Much to the amazement of some of the "old salts," harp concerts became popular with the crew.

Plans for the future include more musical study, perhaps a PhD. At present, Gore practices his heavenly music in the officers' quarters at Moffett.

New Division at Pensacola
Course for 'Copter/LTA Training

A new division, a multi-engine unit, of the NAS PENSACOLA training department has been established.

Flight students selected for helicopter and airship training are being given a 12-week flight training course in multi-engine aircraft. This is comparable to the "Able" phase of advanced training.

RADM. R. GOLDTHWAITE GREETS STUDENTS

The Navy and Marine students began their training in the "Able" phase at Forrest Sherman Field. They have already completed basic training, and will go on to the helicopter program after completion of their present course.

The instruction consists of 110 flight hours, 41 academic hours, and 35½ support hours. Flight instruction will be given in SNB aircraft.

Picture shows RAdm. Robert Goldthwaite congratulating NavCad C. J. Seals and Ens. R. C. Lenzel, the first students to fly the unit's multi-engine aircraft. Instructor Maj. J. A. Wolcott (left) and Maj. Davis stand by.

Maj. G. L. Davis, Jr., USMC is the Pensacola multi-engine training officer.

Aussies Go Down Under
Eight Year Service Brought to End

An eight-year span of international military cooperation drew to a close at sunset on the first day of July when the Australian flag that flew at NAS IWAKUNI, Japan, was lowered for the last time.

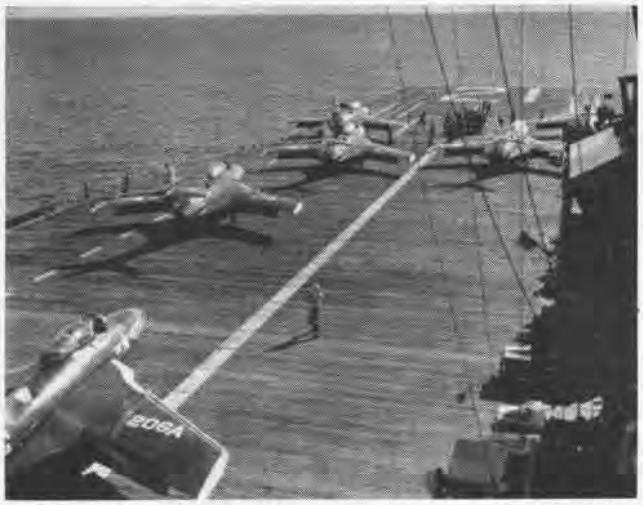
With the decommissioning of the Royal Australian Air Force Transport Flight Unit, the British Commonwealth Forces, Korea, began the final phase of their return to their Australian homeland.

At the close of World War II, and the beginning of the occupation of Japan, British Commonwealth Forces, and the component Royal Australian Air Force, moved into Iwakuni, with a maximum complement of 100 men.

Towards the end of the occupation, their Wing—the 81st Composite Wing—was reduced to one fighter squadron, the 77th, famed in those parts as "the squadron that never went home." This was not an overstatement. When hostilities broke out in Korea, squadron 77 was offered to the United Nations, and, together with Transport Squadron 36, formed the 91st Composite Wing, which operated out of Iwakuni in support of UN forces during the entire period of conflict.

Since cessation of hostilities in Korea, RAAF *Dakota* transports in the Far Eastern Area have flown over 33,000 accident-free hours, hauled over 11 million pounds of freight, and carried 9,100,000 pounds of mail.

VF-142'S FIGHTING FALCONS



COUGARS OF VF-142 TAXI TOWARD CATAPULTS FOR LAUNCHING

FOUR 'FIGHTING FALCONS' STREAK THROUGH PHILIPPINE SKY

THE *Fighting Falcon* story really begins just prior to the outbreak of the Korean conflict. Under the designation Reserve Squadron 791, the unit was training at NAS MEMPHIS, flying the F6F *Hellcat*. The "Weekend Warrior" routine ended abruptly in June, 1950; the Reds invaded South Korea.

Within a month, VF-791 was recalled to active duty and ordered to NORTH ISLAND. Together with three other Reserve squadrons, it was part of Carrier Air Group 101, and began intensive training for Far East duty.

On March 2, 1951, CVG-101 deployed aboard the USS *Boxer* for WestPac, where on 27 March it became the first all-reserve air group in Naval history to enter combat. Flying F4U *Corsairs*, VF-791 was skippered by LCdr. James Kisner.

The following months the *Boxer* and CVG-101 attacked enemy air and shore defenses. VF-791 expended 1,500,000 rounds of 50-cal. ammunition, 330,000 lbs. of napalm, and 472 tons of aircraft rockets and bombs.

In late October 1951, VF-791 returned with the air group to North Island. Within a few months, Cdr. John Kirk became the new squadron CO, and *Panthers* replaced the *Corsairs*.

The change from props to jets called for special training. In September, 1952 the squadron went to NAAS EL CENTRO for ordnance training. After the exercises, VF-791 was transferred to Naval Air Station MIRAMAR.

In early 1953, LCdr. Jim Naftzger became the squadron commanding officer. At this same time, the first F9F-6 *Cougars* arrived to replace the *Panthers*. In February, Air Group 101 changed its status from Reserve to Regular, with a designation of CVG-14. VF-791 became VF-142.

The *Fighting Falcon* insignia was adopted shortly after. The patch features a hooded falcon standing erect upon a mailed fist—representing striking power and aerial superiority.

VF-142, after months of training, and with LCdr. Edward Holley at the helm, was air-lifted with CVG-14 to NAS NORFOLK to prepare for a Mediterranean cruise aboard the USS *Randolph*. From February through August 1954, VF-142 engaged in various types of exercises aboard the carrier.

LCDR. E. R. HANKS IS SKIPPER OF VF-142

Back on the West Coast, the training cycle for another cruise began in October, 1954. It included two periods of deployment to El Centro, where the squadron flew 'round the clock. Several of the squadron pilots took time out to participate in Operation *Steam*, the evaluation of the steam catapults aboard the USS *Hancock*. In March, 1955, the air group participated in Operation *Snakebite*, an escape and evasion exercise.

AFTER a pre-cruise training period in June, 1955, CVG-14 left San Diego aboard the *Boxer* for WestPac. VF-142 chalked up a new air-to-air gunnery record for the F9F-6 in the operational readiness inspection competition at Pearl Harbor. While on this Pacific cruise, VF-142 amassed a total of 2,831.7 hours and 1,266 carrier landings. Capt. W. D. Sinclair, USAF, recorded the 72,000th landing aboard the *Boxer* in August.

LCdr. E. R. Hanks became commanding officer of VF-142 in December, 1955. Later at Guam, the *Falcons* were given the "red carpet" treatment. Their planes were the first jets that most of the children had ever seen.

Just before the end of the cruise, the *Falcons* were notified that the FJ-3 was to replace the *Cougars*. CVG-14 returned to the States on February 3, 1956. As the *Boxer* tied up at North Island, a banner proclaimed: World Famous Fighting Falcons Return!

Antarctic Contact Planned

Pax Hams to Extend Antenna

New equipment is going to put the Amateur Radio Club at NAS PATUXENT in direct touch with Antarctica over short wave in September.

Earlier this year, the Club contacted the South Pole by relay, but by raising the antenna from its present height of 12 feet to a planned 62 feet, direct contact will be possible.

The club has a new four-element beam antenna which has made it possible for them to talk to hams all over the world, including points in South America, Africa, Asia and Australia.

The club is in almost daily touch with VW-11 personnel in Argentia.

CDR. D. J. *Walkinshaw (center), first CO of VW-4 at Jacksonville, recalls hurricane hunting with A. L. Morgan, AE2, J. T. Puthuff, AD2, and present VW-4 CO, Cdr. H. D. Allen.*

New Course for New Day

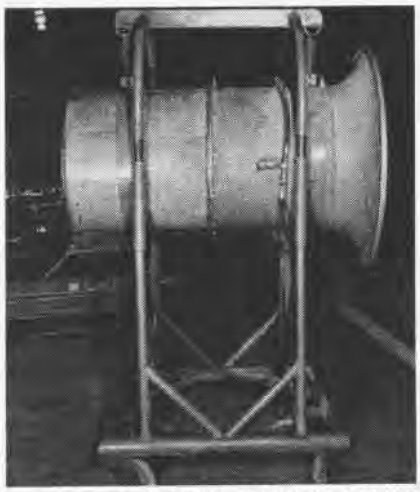
VMO-1 Aids in Training Marines

New concepts of warfare mean new skills to be mastered. Vertical envelopment, airlifting entire infantry units to points behind the enemy lines, has wrought changes in training the foot soldier.

At NAF New River, N. C., Marine Observation Squadron One is helping to train mud-slogging Marines who will someday be transported to battle through the air. Camp Lejeune officers and NCO's are taking a two and a half day course entitled "Aerial Terrain Appreciation."

The Marines are then taken for trips in VMO-1 observation planes. During these trips, the student carries a map of the terrain over which he will fly. The Marine must direct the pilot to the assigned landmarks of his particular problem and return to the runway without any "hints" from the pilot.

The course is directed by an infantry officer, Capt. Branch Jordan.



INLET TEST DUCT AND PORTABLE FIXTURE

Test Duct Fixture Devised

Mechanic Gets Incentive Award

Johnie L. Midgett, a civilian worker at MCAS CHERRY POINT, has been given an Incentive Award by BUAER for his money-saving air inlet test duct holding fixture. The former system consumed numerous man-hours in installing and removing the test duct in the pretest shop on each engine tested.

Midgett's device consists of a fixture on four casters that can be kept in test cells, which supports all the weight of the test duct. The duct is suspended from two springs, thus eliminating excess vibration. It also eliminates the possible rupture of the oil cooler.

The fixture is universal, and can be adapted to any axial flow jet engine. It has an additional safety feature in that the duct is never removed from the portable fixture.

CHIEF AVIATION *Metalsmith L. E. Summers, aboard USS Intrepid, built this machine to break the tire from its rim in two minutes. This task formerly took 30 minutes.*

Bennington Plays Host

Women Marines Visit Carrier

The Women Marine Reserve Corps established a temporary beachhead aboard the USS *Bennington*, when fifty young Reservists swarmed over the carrier for a short tour of the ship.

The tour was part of a two-week training period. Intrigued by the ship, the Lady Marines kept their guides busy with questions concerning every aspect of ship operations.

The group, which hailed from Seattle, Los Angeles and Chicago, took their training at the San Diego Recruit Marine Depot.

Two more groups are scheduled for carrier tours in the very near future.

GRAMPAW PETTIBONE'S *Secretary, Mrs. Edna Ginwright, is congratulated by VAdm. T. S. Combs, DCNO(Air), on receiving a Superior Accomplishment Award for outstanding work.*

New Course at FAETULant

AC Current Systems are Covered

Detachment Two of FAETULant at NAS JACKSONVILLE is offering a four-weeks course in alternating electrical current systems for aviation electricians. The course begins the first Monday of each month.

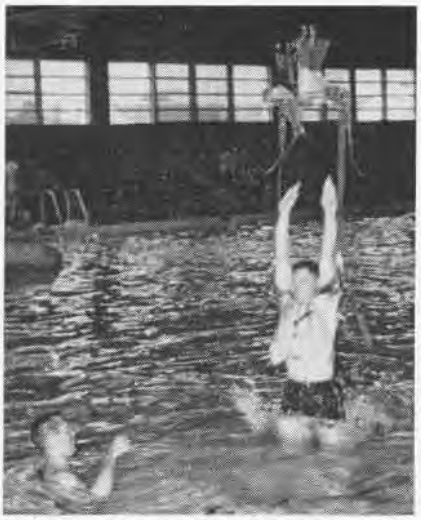
Known as Course 510, AC Power Systems, it is not specifically designed to aid AE's in the preparation for fleet-wide competitive exams, but instructors and former students feel that it does include much of the AC materials covered in the examinations.

All personnel in the E-4 rating and above of the AE rate are eligible. Mathematics is kept at a minimum in order to give the trainees more time on the practical side of AC equipment. The course consists of a review of AC basic principles.

Further information about the course is found in ComAirLant Instruction 1540.1B. Cdr. Eugene T. Allen is OinC of Detachment Two.

FIRST LESSONS IN DUNKING SENSE

IN 'CHUTE, HE WILL GLIDE INTO POOL



TRIPPING 'CHUTE, STUDENT HITS DRINK

HE IS GIVEN 'COPTER HOIST TO POOL DECK

ARE YOU the sort of fellow who dives merrily into an empty swimming pool, or who bails out at 10,000 feet only to have to go back for his parachute?" *Dunking Sense* published by Aviation Training urges Navy pilots to be able to get out once they get down. "If you are interested in old age pensions, a recommended first step is to break out your raft and give it plenty of study."

At the Airman Preparatory School, Naval Air Technical Training Center, Jacksonville, survival in the water is an important part of the course. With water, water, everywhere, it is clearly hazardous for airmen not to be experts in that element as well as in the air.

By Peter Salvus, JO2

Each airman is required to take an eight-week course in air-sea survival to insure that if ever the day comes that he finds himself down at sea, he will be able to take steps that will save his life.

In the last week of the course, the use of survival gear is demonstrated at the huge Admiral Price Natatorium. Each Bluejacket, Marine or Wave learns how to handle the equipment.

First the student is fastened into a parachute harness and launched along 150-foot glide from a 30-foot tower. He is taught to release himself upon hitting the water after the glide.

This is only the start. The student must next inflate his life preserver vest and make a backstroke swim to a simulated helicopter hoist. He is hoisted out of the water and landed on the pool deck.

Students are also introduced to inverted, inflated life rafts. The rafts are of two types—eight-man and single. Students are taught the proper methods of righting the buoyant, overturned craft, clambering aboard by the use of hand holds, and then overturning the rubber boats again.

This part of the course is under the direction of MSgt. Robert Hardt, assisted by TSgt. Charles Lightfoot and Sgt. Charles Greenwood. Some 75-100 students a week take the course.

HE SWINGS THE LIFE RAFT OVER THEN TURNS IT UPRIGHT AGAIN

STURDY MARINE CLAMBERS INTO RAFT TO AWAIT HIS 'RESCUE'

DRILLS, DUMMY-RUNS, DIVIDENDS

FAST, ACCURATE FIRE FIGHTING AND RESCUING CAN BE DONE, ALMOST WITHOUT THINKING, BY THESE SKILLED CRASH CREWS

As told to B. R. McGee, JOSN

I'D HIT THE RACK early that night; I was bushed. Our crash crew had had a run that morning that didn't amount to much. But with the drill in the afternoon and washing down the trucks afterwards, all in all we'd had a pretty busy day.

It wasn't much after 1800 when I slid between the sheets, and as I pulled up the covers I fervently hoped that it would be a quiet night. There were a few planes still in the air, but things were closing down rapidly.

You can't imagine how shook I was when, about 1920, all heck broke loose. Bells, whistles, sirens, and about 20 guys all let me know real quick that I wouldn't be sleeping for a while.

While I was running toward the truck, I caught a few bits of information as to what had happened from others who were running in the same direction as I was. It seems that an F7-U had creamed in on its belly; the landing gear had collapsed. As I was pulling on my overalls, I head someone say, "Boy, that Parker's on the ball. He had the MB-2 moving before the tower even sounded the call." And that is the way it was, too. Parker, H. L. Parker is his name, had seen it all. He and Cumpston had had wheels rolling on their foam mixer almost before that *Cutlass* stopped skidding.

It didn't take us long to get the MB-1 chasing right after Parker and Cumpston on the other truck. I was clinging to the side of the huge, 17-ton machine as it roared to the scene of the crash, all 320 horses under the hood pulling full force. Even so, by the time we got our truck hauled into position to back up the MB-2, it had already spread a lot of foam on the gasoline that was running all over the place. There'd been a fire under the plane, - - - taken care of in short order by our 'crash crew meringue topping.'

I crawled on the back of the crippled *Cutlass* and struggled to get the canopy open, trying to get at the JG stuck inside. It was strange; everything I did was almost automatic, like when I jerked the safety pin off my jumper and stuck it in place to freeze the ejection mechanism. I didn't even think about what I was doing.

WELL, we got the pilot out of the cockpit and into an ambulance in record time. Afterwards the crane came out to haul the plane away, and we followed along, just to make sure that the gasoline still pouring out wouldn't catch fire again. Some other guys went out and washed down the runway. It all happened in what seemed like a very few seconds.

Later, as I once again crawled into the rack—and couldn't get back to sleep—I got to thinking about the whole matter. What was it that made me put that pin in place? What made that other guy, I forgot who it was, pry open the door to disconnect the battery? We didn't just remember to do it—it was more than that.

There's only one answer to it. It must have been all the hours of training. It's what the drilling and more drilling had done to us. We had gone through every action necessary to a rescue until it was automatic—your hands did it whether your brain said to or not. I guess we have set fire to and put out those old fuselages over on the other side of the runway a hundred times. And after every time we put out one of our practice fires, we have a little bull session. Fire Chief Tabor eats us out for flubbing it, or pats us on the back for doing a good job.

It's all worth it—the drills and lectures, the standing by the runway while planes are in the air—the nocturnal practice crash calls. I say it's worth it, and I'll bet any pilot up there, circling around the landing pattern, trying to lower a stubborn landing gear, *he'll* say it's worth it, too.

And later there was something that sure made me feel good—a letter to our division officer from the Old Man himself—"I am deeply gratified to note the outstanding proficiency displayed by the crash crew. . . . Convey my sincere appreciation for a fine job to the men in your division."

IN FOREIGN SKIES

A LOOK AT FUTURE CIVIL AVIATION

ATOMIC-POWERED air freighters flying at supersonic speeds of a thousand miles per hour non-stop between any two points on the earth's surface—that is not a flight into Fantasia. It is a considered prediction made at the Caracas, Venezuela, Assembly of the International Civil Aviation Organization this summer. Delving 20 years into the future, the ICAO made this prediction as it planned for the air navigation aids and services which will be necessary then to insure safe and regular flight.

The ICAO report pointed out that aircraft such as the DC-8 and the Boeing 707, expected to be introduced into service within the next few years, will be capable of travelling at 600 mph, carrying 150 passengers on non-stop flights up to 4,000 miles. To achieve a still greater increase in range, powerplants and fuels other than present-day ones will certainly be necessary. According to ICAO, very long range planes will be likely to use atomic power. Because such a powerplant is inherently heavy, the airplane will be very large. Estimates of the smallest practicable atomic-powered air freighter range as high as 500,000 pounds, and it is expected that in the next decade, there will be civil transport aircraft with maximum weights of some million pounds!

Development of larger and faster airplanes has set off the chain reaction of an increase in approach, landing and take-off speeds, necessitating additional runway lengths. These requirements have already forced airport sizes and costs almost up to the point of diminishing returns. On this subject, ICAO predicts that the very large aircraft will not require longer or stronger runways than those required for the DC-8 and the Boeing 707.

Among the considerations under study by the Assembly for planning proper services were such as these: In 20 years time, all large airports will have to be capable of handling traffic travelling up to a thousand miles per hour. In addition, they will have to accommodate aircraft with landing, approach and take-off speeds ranging from very low to very high values, and with angles of climb and descent varying from very steep to those of present-day airplanes.

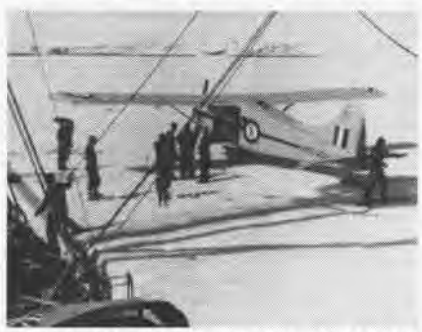
Hand-in-hand with the introduction of new aircraft will go a vast increase in air traffic generally. The International Civil Aviation Organization estimates that, by 1980, the number of passenger kilometers (five-eighths of a mile) performed by the world's scheduled airlines will be thirteen times greater than those performed in 1955—from a total 62,000 million in 1955 to an astronomical 800,000 million in 1980.

Aircraft for Antarctic

Canadian participation in the Antarctic phase of the International Geophysical Year is not anticipated, but the project will not lack the Canadian touch. Canada will be represented at the underside of the world by the *Beaver* and *Otter* aircraft.

Last year, the U. S. Navy, impressed by the performance and versatility of the U. S. Army's Arctic based U1-A *Otters*, took delivery of four of these aircraft for Operation *Deepfreeze*. Since that time the U. S. Navy has called on de Havilland of Canada for early delivery of nine more *Otters*.

For the Commonwealth contribution to the pre-Geophysical Year Antarctic survey, Australia and New Zealand chose *Beavers* for their operations. The *Beaver* preceded the *Otter*, but the family characteristics, short take-off and landing ability, simple construction for easy maintenance, low cost operation, versatility and reliability are common to both aircraft.



AUSTRALIAN BEAVER IN THE ANTARCTIC

Protecting the Pilot

From London come reports of tests of new flying clothing designed to protect pilots against the ill-effects of very low atmospheric pressures encountered at extreme altitudes.

The clothing is being worn by Wing Cdr. R. P. Beamont, chief test pilot of English Electric, while flying the high altitude Canberra Mark 9 photographic reconnaissance aircraft and the P.1 supersonic fighters.

Consisting of a helmet which hermetically seals itself, and a pressure jerkin of advanced design, the equipment will enable the pilot to continue to breathe and remain fully conscious in the event of the normal pressurization system in the cockpit failing.

The helmet has been designed and developed by the M. L. Aviation Co. Ltd. It maintains adequate pressure around the pilot's head if the cockpit should be punctured or suddenly lose its air pressure for some other reason. It also acts as a crash helmet if the pilot's head strikes some part of the cockpit during violent maneuvers.

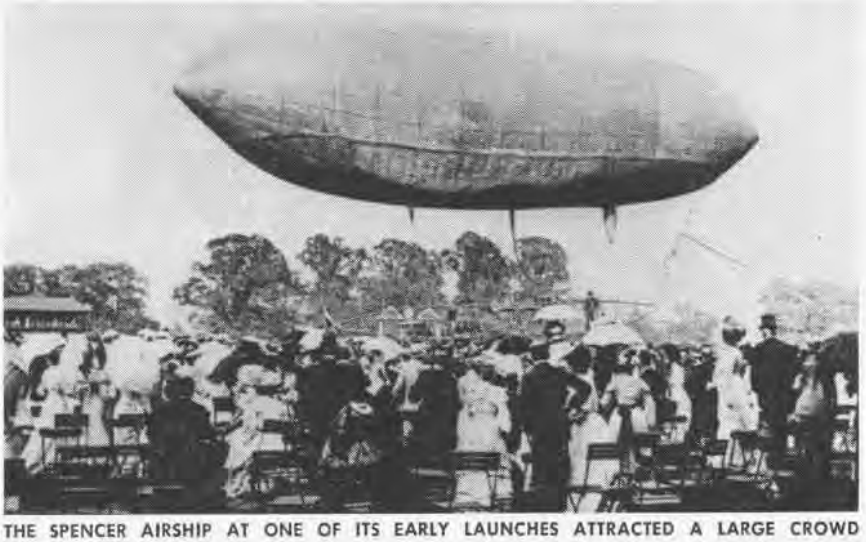
It is used in conjunction with a pressure jerkin designed by P. Frankenstein & Sons, (Manchester) Ltd. in cooperation with the RAF Institute of Aviation at Farnborough, England.

Japanese ASW Force Strengthened

Six Japanese Maritime Self Defense Force (Japanese Navy) Lockheed P2V-7 *Neptunes* now fly antisubmarine patrols, operating out of the Kanoya Base, headquarters of the Japanese Naval Air Arm. This force will soon be augmented by a number of S2F's, first of 30 of the Grumman anti-submarine *Trackers* that have been designated to be released by the U. S. Navy to the Japanese.

According to reports from Tokyo, Japanese defense officials, in efforts to strengthen their anti-submarine defense, have requested an additional 18 P2V-7's, ten of which they hope to receive within the next year.

LADY AERONAUT AT TORO



THE SPENCER AIRSHIP AT ONE OF ITS EARLY LAUNCHES ATTRACTED A LARGE CROWD

MRS. ROSE Spencer Pearson, the world's "first feminine airship skipper" recently visited the flying Leathernecks at MCAS EL TORO.

Mrs. Pearson made aviation history in 1902 when she soloed in a power-driven balloon invented by her first husband, Stanley Spencer, noted English aeronaut. This was more than a year before the Wright brothers made their first flight at Kitty Hawk, N. C.

A picture of the Spencer airship as it appeared on July 11, 1902 is shown above. The original photograph is in the archives of the Royal Aeronautical Society, located in London, England.

MRS. PEARSON WAVES FROM SKYRAY JET

Mrs. Pearson's first contact with the Marines came early in the century when she took the famed Marine Band leader, John Philip Sousa, on an aerial jaunt over the English countryside. The March King composed a special melody in her honor.

In late 1953, by that time living in California, Mrs. Pearson again met the Marines at Santa Ana where she was made an "Honorary Marine" by the Leathernecks.

On this year's visit to El Toro, after meeting MGen. C. C. Jerome, CG Fleet Marine Force, Pacific, she was taken on a tour of the air station. Her itinerary included a helicopter air sea rescue demonstration, a look at the new Douglas *Skyray* and a "flight" in a Link trainer.

The "ornery Marine," as she calls herself, was 77 years old in June.

Pilot Saved after Bailout

Sgt. Relays 'Mayday' to Tower

Marine Sgt. James A. Payant, of the electronics shop of VMF-533, was instrumental in saving the life of an AD-4 *Skyraider* pilot. The tower radio at MCAS CHERRY POINT was out of commission at the time for repairs. Payant was checking a radio in one of his squadron's airplanes and was tuned to the frequency used as a guard channel.

He received a "Mayday" from the pilot, Capt. P. J. Gregory of VMA-225, who was forced to bail out of his crippled *Skyraider*. Payant relayed the call to the air station tower and a helicopter was dispatched to the crash scene.

The pilot had landed in a tree and was picked up by the rescue craft. He was taken to the Cherry Point Hospital where he was treated for burns on the hands and face. He was later transferred to Camp Lejeune. Payant received a meritorious mast from LCol. H. A. McCartney, CO of his unit.

CVS-47 Filled Blood Quota

A Pint a Minute Was Their Record

A huge crane from the Long Beach Naval Shipyard swung it up from the dock, lifted it high over the side, and lowered it gently down to the flight deck. In this way a Red Cross bloodmobile came aboard the *Philippine Sea* for blood donations as that "floating city" lay alongside its pier.

Lowered to the hangar deck on the after elevator, the bloodmobile was opened up, its Red Cross personnel set up shop, and *Operation Blood Donation* was under way.

First blood was drawn at 1015. Four hours later, at 1415, the final tap was completed. In that near record time, a quota of 250 pints had been filled, scoring an amazing average time of about 58 seconds per man.

When the operation was secured, one-day liberty passes were issued to all of the donors by order of the ship's skipper, Capt. E. L. Farrington.

ROLLING BLOOD CENTER BOARDS A CARRIER

PRETTY NANCY *Perry tries out the ejection seat trainer at NAS Quonset Point during Open House on Armed Forces Day. Cars lined the street outside the main gate for over a mile.*

Relief Aid for Chinese

Lexington Carries Huge Shipment

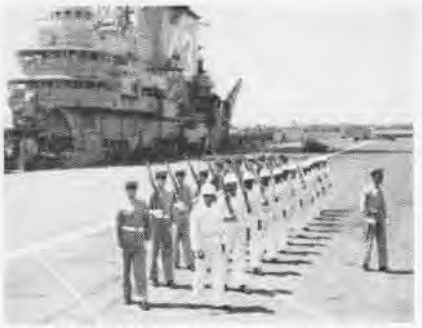
The newly modernized USS *Lexington* has delivered relief clothing for nearly 10,000 Chinese refugees and orphans from Red China and the Tachen Islands.

The 40,000-lb. shipment was collected by the Voice of China and Asia, an interdenominational missionary enterprise supported by Christian people of the United States and Canada.

The clothing was accepted for the people of Free China by the ship's commanding officer, Capt. A. S. Heyward, Jr., from Mr. Robert Hammond, director of the Voice of Free Asia. It is the first such relief shipment to be carried by a U.S. Navy aircraft carrier.

Delivery was made at Yokosuka to the Free China Relief Association, which maintains offices on Formosa.

A FLEDGLING *sailor, John Hoskins Johnson, met his namesake during a visit to NAS Quonset Pt. The boy's father, R. E. Johnson, GM2, named the boy in honor of Adm. Hoskins, ComFAirQuonset.*



USS CORAL SEA'S *drill team, composed of ship's company sailors and the Marine Detachment, practices on the flight deck. They perform at ceremonies ashore and afloat.*

HMR-262 Returns Home

Completes Deployment in Near East

Maj. William G. Voss has led his helicopter squadron back to MCAS CHERRY POINT following an amphibious operation with the Eighth Marines.

Commanding Officer of MAG-26, Col. H. E. King arranged a surprise reception committee in honor of their return.

At present, HMR-262 is at the top of the "totem-pole" for the AirFMF-Lant safety award for fiscal 1956—12 months without a single major accident.

THE MARINE CORPS' *HOK-1 plays the part of a "skyhook" in this demonstration of lifting ability. The sling releases automatically.*

Pilot Scores on Carrier

Records 28,000th Landing on Wasp

Ltjg. Alfred H. Gonzales made a record landing aboard the USS *Wasp* in June. It marked the 28,000th landing aboard the carrier since her recommissioning in 1951.

With Gonzales in the AD-5N *Skyraider* was J. D. Garrett, AN, and G. E. Brewer, AM3.

Attached to CAG-15, the men are members of Composite Squadron 35.

Costa Ricans at Corry

Army Officers Train in the T-28

Three Costa Rican flight students are now undergoing flight training at NAAS CORRY FIELD. They hope to return home as full-fledged flight instructors.

Capt. Alejandro Carrillo, 1st Lt. Armando D'Ambrosio, and 2nd Lt. Francisco Hernandez are all members of the Costa Rican Army Air Force. Having completed basic training and instruction on the T-34, they have reported to Corry for transitional training in the T-28B.

Lt. W. C. Thomas, their instructor, says all three are hard workers, and have an excellent flying aptitude.

W. C. VICKERS AND FRIEND, MR. FALCON

Injured Flyer on Carrier

Falcon Lands Safely on Oriskany

The USS *Oriskany* had an unexpected visitor while enroute through the China Sea. A huge falcon swooped out of the blue and landed on the signal bridge. The bird was so fascinated by the light signals, it decided to stay.

While showing the peregrine falcon around the bridge, W. C. Vickers, QM3, found that the bird had a crippled wing. With typical Navy know-how, he administered first aid.

During the next few days as the ship steamed towards Hong Kong, Capt. C. L. Westhofen, *Oriskany* CO, had to share his bridge position with the falcon. Mr. Falcon's chief interest seemed to be observing flight deck and catapult operations.

By the time the carrier reached Hong Kong, the injured wing had healed. Without warning, Mr. Falcon took leave of the ship. Before disappearing, he circled once in a salute.

Let's Stop that Noise!

Mr. Herman Lee Answers the Call

A plaster dummy, dubbed Herman Lee, has made his debut at BuMed's Acoustic Research Laboratory, Pensacola. He is used to test ear protection devices, in a study to combat flight deck noises.

Herman is a plaster replica of a human head. His "ears" are especially sensitive. Initial tests on a new ear protector are made using Mr. Lee.

Because no artificial ear can ever exactly duplicate a human one, the

HERMAN HAS ENDURANCE OF A SPARTAN

measures obtained from Herman are only tentatively employed and are used in the early, cursory evaluation of noise blocking devices.

Besides saving the Navy time and money, Herman has no temperament, and can work a long, hard day with ease.

Herman's greatest asset is being able to endure tests of noise volume that would injure a human being's ear.

100-HP Gas Turbine Unit

New Unit Weighs Only 175 Pounds

A new, small gas turbine unit, with a 100-hp rating has been developed by the Garrett Corp. It has successfully completed a 200-hour test run at the Naval Aircraft Engineering Laboratory in Philadelphia.

Designed as a power unit for driving airborne or ground support AC or DC generators, liquid pumps and alternators, it can be adapted for mounting on jeeps, trailers, boats or aircraft as an auxiliary power unit. It is so compact that it could be contained in a standard size duffel bag.

One model has been operating on the Martin P5M for some time with no malfunction. On these flying boats, it supplies power for hydro-flaps and all AC power usage such as radar, radio and galley functions.

BUTLER BREAKS GROUND AS VIP'S WATCH

New Building for PIC

July Ground-Breaking Ceremonies

Ground-breaking ceremonies for a new building to house the Naval Photographic Interpretation Center were held in July. The $2,500,000 dollar structure will be located in Suitland, Maryland.

Speakers for the occasion included RAdm. J. S. Russell, Chief of BuAer, the Honorable H. R. Sheppard, Congressman from California, and Cdr. D. S. Butler, commanding officer of the Center.

The Photographic Interpretation Center is now located in quarters at the Anacostia Receiving Station.

First HAW in PacFleet

Commissioning at NAS North Island

Heavy Attack Wing Two, the first in the Pacific Fleet, was commissioned at NAS North Island. The new wing will assume operational and administrative control of the Pacific Fleet's heavy attack squadrons.

Comprising HAW-2 is VAH-2, VAH-4, and VAH-6. Their mission is to conduct long range all-weather bombing missions. HAW-2 operates the new A3D *Skywarrior* and the AJ-2 *Savage*.

Capt. Wallace H. Weston is the first commander of the new attack wing.

IFR-IQ?

What is the "Common System?"
Answer on Page 40

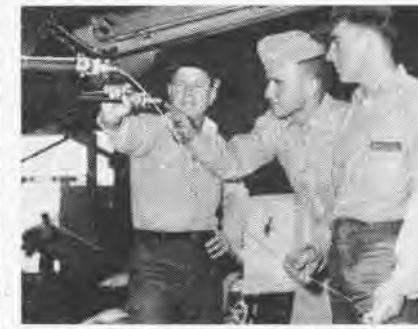
New Device for VU-7

Saves Time and Promotes Safety

The VU-7 Ordnance Department, NAAS Brown Field, has devised a new method of installing a cable cutter on the tow outriggers of the "Jig Dogs." It enables the ordnanceman or pilot to cut the cable with the flick of a switch.

Formerly the cable was cut by hand with cable cutters. This was a difficult operation.

The new arrangement allows instant separation of the cable and banner



LTJG. MESTER SHOWS NEW TOW RELEASE

from the tow plane. The device will be especially valuable for releasing the banner in case an emergency occurs.

New Equipment on R3Y's

In-Flight Refueling of Four Planes

A Convair R3Y *Tradewind* has been flown as the world's first seaplane tanker capable of simultaneous in-flight refueling of four Navy fighter planes.

Four jet fighters were refueled in less than five minutes from the wing tanks of the big dual purpose transport. By using two of its four tanks for jet plane fuel, the R3Y turboprop can carry enough to service eight fighters.

All *Tradewinds* eventually will be equipped for in-flight refueling, using the "probe-and-drogue" method.

Another 100% 'E' Squadron

VA-16 Makes Record in Exercise

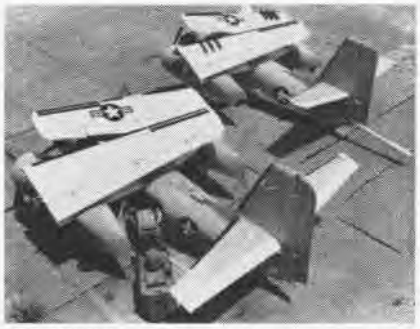
The *Moondowners* have joined the exalted ranks of the "100% squadrons." The fourteen pilots of VA-16 chalked up fourteen "E's" during a competitive loft bombing exercise.

Commissioned in June, 1955, VA-16 claims to be the first AD attack squadron to achieve one hundred percent in this type of exercise.

Based at Oceana, the squadron is skippered by Cdr. B. J. Connolly, III.

'OPERATION *Petticoat' aboard the USS Valley Forge (CVS-45) found 82 wives, parents and dependents of the ship's crew enjoying a one-day "Family Cruise" off the Virginia Capes.*

MORE THAN *163 years of ordnance experience is wrapped up in these seven Officers from Aviation Ordnancemen School at NATTC Jacksonville. Longest service time is 29 years.*



NO LONGER *nameless are these two Grumman planes. The S2F sub-killer (top) has been named "Tracker," and the TF-1 the "Trader." The official names were approved by BuAer.*

Titanium Forging Process
New Development Cuts Metal Cost

A new, secret process which is said to protect titanium from problems normally associated with its forging, has been developed by Canadian Steel Improvement, a member firm of Avro Canada. According to British Information Services, it is expected that the new method of forging will revolutionize production of the coming generation of supersonic jet engines by removing the barriers to economic use of the stronger-than-steel, lighter-than-aluminum strategic metal.

Details are being closely guarded, but it is believed that usual problems of titanium production are eliminated by this development. One such problem has been its chemical affinity for hydrogen and oxygen, which cause it to become brittle and a scale to form, with possible distortion during forging of thin sections.

There are over 1,000 blades, made of steel, aluminum or titanium, in jet engines. Use of titanium permits more powerful engines because of its higher temperature limit.

Contract to North American
Development of Navy Jet Trainer

The Navy has awarded a contract to North American for the development of a two-place basic jet trainer.

The new trainer, the T2J, will be designed for operation aboard aircraft carriers. It will be used to meet the requirements of basic pilot training, instrument work, gunnery training and other service operations.

The T2J will have a top speed of over 400 knots, and a service ceiling above 40,000 ft. Its range will be in excess of 800 nautical miles.

TSGT. C. J. PERRY *(L), MSgt. P. J. Hillock, and Chief H. A. Simmons (R) examine safety features on VMF-533 starting mule. Extention cord extends distance between plane and vehicle. Clutch is of non-slip variety.*

THE BLACK SPOT *on the side of the F8U's fuselage below the leading edge of the wing is the plane's ram air turbine for emergency hydraulic or electrical use. Turbine pops out into slipstream as shown in the picture above.*

Study of Dust Particles
Can Impede Outer Space Travel

Tiny particles of airborne dust may be a great hindrance to outer space travel, according to scientists at Armour Research Foundation of Illinois Institute of Technology, Chicago. Another problem studied at ARF is the erosion of metal surfaces caused by the heat generated by air friction.

To simulate some of the hazards encountered in space flight, the scientists have developed a method of propelling dust particles at speeds of 11,000 feet per second.

Investigators have learned that ordinary dust traveling at high speeds can cause extensive damage to metal and glass surfaces. Such damage could seriously diminish the chances of a missile or satellite reaching its goal.

Scientists are also working to combat heat damage generated by air friction. This heat can cause severe damage to exterior surfaces, and if intense enough, it may vaporize the outer surface of a missile.

Plane Crew System Used
Inaugurated at NAS Norfolk on R6D

At Norfolk, the plane crew system was inaugurated on the R6D *Liftmaster* for a trial period, with only one crew participating. The system has proved such a success that more R6D's will be maintained in the same manner.

The *Keflavik Aurora* was picked at random from a group of *Liftmasters*. W. W. Stafford, ADC, with his 18-man crew, was put in charge of maintenance.

During the 30-day period trial run, 255.6 hours were flown with only two mechanical delays. Plane utilization was a high score of 8.5 hours per day.

R5D Returns to O&R Corpus

Saw Duty in Operation 'Deepfreeze'

A paint-scarred but rakish looking R5D *Skymaster* returned to the O&R Department at NAS CORPUS CHRISTI after participating in Operation *Deepfreeze*.

The aircraft is called "Rosemary" after the wife of LCol. H. R. Kolp, Plane Commander. LCdr H. G. Han-

HANSON (L) AND CDR. J. MEAKIN OF O&R

son, the plane's pilot, said that the *Skymaster's* fine performance was a tribute to the O&R Department.

"Rosemary" was the first multi-engine aircraft to make a wheeled landing in the frozen Antarctic, and the first plane during the *Deepfreeze* expedition to fly over the South Pole.

The historic R5D is now being reconditioned for Operation *Deepfreeze II*.

ONR Sponsors Symposium

To Discuss Uses of Molybdenum

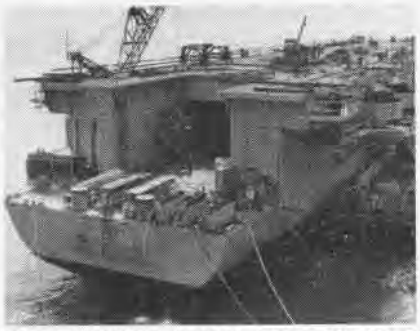
The Office of Naval Research is sponsoring a two-day symposium on the "Technology of Molybdenum and Molybdenum Base Alloys." It is scheduled for 18 and 19 September, at the Rackham Memorial Building, Detroit, Michigan.

The object of the symposium is to present to scientists interested in materials for high temperature applications, an up-to-date picture of the status of molybdenum and its alloys as structural materials.

The Climax Molybdenum Company of Michigan will hold an open-house at its Detroit Laboratory on 20 September for all those interested in the arc-melting and working of molybdenum alloys.

Attendance will be by invitation. Those interested should contact Mr. J. J. Harwood, Head, Metallury Branch, ONR, Navy Dept., Washington, D. C.

'COPTER CARRIER COMMISSIONED



MORE BERTHING SPACES WERE INSTALLED

THE U.S. Navy's, and no doubt the world's, first helicopter assault aircraft carrier was commissioned in ceremonies at the San Francisco Naval Shipyard, July 20. The ship is the USS *Thetis Bay*, formerly an escort carrier with the designation CVE-90.

Extensively modified at a cost of $8,000,000 to operate helicopters exclusively and to accommodate 1000 combat-equipped Marines plus personnel of Marine helicopter squadrons, the ship has been designated CVHA-1. The ship operates about 20 HRS-type helicopters, each capable of carrying eight combat troops. Larger 15-man 'copters will be available soon.

The ship joins the Pacific Fleet this month. As an aviation ship, it will be under the control of VAdm. Alfred M. Pride, ComAirPac; but will operate largely in its new mission under the operational control of VAdm. T. G. W. Settle, Commander, Amphibious Force, Pacific, with headquarters at Coronado, California.

"Commissioning of the *Thetis Bay* as CVHA-1," Capt. Thomas W. South II, the new carrier's skipper, "marks the real beginning of a joint effort on the part of the Navy and Marine Corps to develop and define doctrine, tactics and procedures under a new concept of warfare. This is known as vertical envelopment. This new concept of amphibious assault consists of multiple vertical envelopment from the air joined with surface attacks from the sea." (See NANEWS, May 1951, pp. 1-5, in which this concept is described.)

Capt. South explained that the close supporting fire from U.S. Navy ships and carrier-based aircraft, the helicopters, loaded with combat-ready troops, are launched from fast carriers and approach the objective from several directions. They fly over the enemy defenses and seize critical points which dominate the landing area, thus freeing the beach for later surface logistics support.

The flexibility and mobility of the helicopter enable an attacking force to choose its own direction and thus overcome the difficulty of assaulting a fortified beach zone. The new concept is still being developed.

The Navy and Marines feel, according to Capt. South, that the advantages of vertical envelopment are obvious. It will be the special mission of the *Thetis Bay* and its embarked Marines, both air and ground, "to iron out the wrinkles."

• The XO of VF-73, LCdr. Bill Flynn, logged the 39,000th hook on recently aboard the USS *Hornet* when he came aboard in an F9F-6 *Cougar*.

• The experimental XC-7 steam catapult, presently under evaluation at NATC Patuxent River, can hurl a dead load of 15,000 lbs. from a standing start to 168 mph in 3 seconds.

ESCORT CARRIER WAS SPECIALLY MODIFIED IN TERMS OF HELICOPTER ASSAULT TASK

USAF TEAM SET UP BRAND NEW MOBILE PRECISION RADAR TRACKING UNIT AT SAUFLEY

SAUFLEY HOSTS EGLIN TEST UNIT

AT NAAS SAUFLEY Field, Pensacola, a fine example of inter-service cooperation has taken place.

A team of 12 Air Force enlisted men from Eglin Air Force Base, under the command of 2nd Lt. Dean E. Huntley, arrived on June 4 for a month's stay to test some of the USAF's offensive radar equipment.

Setting up their equipment worth hundreds of thousands of dollars behind Saufley's runways, the Air Force team made daily operational suitability tests of the new mobile equipment.

Officially known as AN/MSQ1A, the equipment tested was a short range radar unit used for precision tracking. According to Lt. Huntley, the unit works in this way; "Suppose that one of our planes was on a bombing mission above clouds so dense that the pilot could not see the ground. The radar unit would then go to work, locking on the plane, directing it to the target, and once over the target, would drop the bombs for the pilot. The unit works just as effectively directing the latest-type missiles to their targets."

Saufley, which was picked by Eglin operations for the project, held the distinction of having the only Air Force set in operation in this area. The station furnished the unit with telephone service, fuel, and a crane. The unit had its own diesels for power, except at night, when power was furnished by Saufley. The cooperation was thorough and genuine.

The AF enlisted men lived in Saufley's enlisted barracks aboard the station while Lt. Huntley and a manufacturer's representative commuted daily the 60 miles from Eglin. All the AF men praised the cooperation and help they received from the Navy.

FAWTUPac Receives F4D

Unveiled to Public at North Island

FAWTUPac made the headlines when the Air Defense Division unveiled its new plane, the F4D *Skyray*.

LCdr. John B. McKinny, first officer-in-charge of the Air Defense Division, put the *Skyray* through its paces for newsmen and spectators at North Island.

The first naval installation to use the F4D, FAWTUPac has already received five *Skyrays*.

The plane is able to climb 10,000 feet, in 56 seconds from a standstill.

KAMAN ROBOT *helicopter is put through paces during a demonstration for DOD officials. Ground control is simple. Safety pilot is in the robot, but he does not fly aircraft.*

Remote-Controlled 'Copter

Navy-Army Announce Development

A remotely controlled helicopter, which can perform a wide range of military missions, has been developed for the Navy and Army by the Kaman Aircraft Corp.

The craft is designed to be used in a variety of missions. Equipped with a TV camera, it can be used in battlefield surveillance. The helicopter can lay communication wires, carry supplies, drop smoke bombs, lay smoke screens, and even lay a line of explosive charges. Dangerous missions can be accomplished without hazard to pilots.

The new helicopter, a brain child of the Office of Naval Research, is simple to control, and can be managed by a man with no flight training. It can be controlled from both a ground station or another helicopter.

Tool Simplifies Work

Used to Link 20mm M-3 Ammunition

A hand linking tool has been developed by Robert J. White, AOC, and Robert F. Merrell, AO2, attached to VF-92.

The tool was designed to overcome the difficulty experienced on AD type aircraft in connecting ammunition belts between the outboard gun ammunition cans. Solid support was needed when forcing the link on the cartridge to connect the belts.

MODIFIED PLIERS IS HAND LINKING TOOL

The new tool gives this support. A pair of modified pliers is the major component of this device.

This tool should prove useful to all squadrons equipped with aircraft using 20mm aircraft guns. A plan for the modified pliers may be obtained from BUORD (Ma-8), Navy Dept.

ANTENNAE FOR MODERN AIRCRAFT

RADIO ANTENNAE on aircraft of a decade ago were prominent masts and wires whipping around in the slipstream. But in today's supersonic aircraft, antennae are buried inside the plane. To accomplish this new design, a whole new class of electronics engineering was born.

To keep pace with antenna development for its aircraft and missiles, Chance Vought Aircraft has expanded its testing facility, located on the rooftop of their main plant.

ANTENNAE COME IN ALL SHAPES AND SIZES

Here 17 men work with various sizes of plane and missile models. Unlike those used for wind tunnel testing, these little models are hollow inside and have rough copper-sprayed exteriors.

The models are mounted on tall poles outside the testing lab. Electrical waves are shot at them as they are rotated in all possible flight altitudes. Charts are made of their radio reception. In this way, the lab locates the best spots on the airplane in which to bury their radio and radar antennae.

When the antennae location is tentatively decided on by use of miniature models, full-scale models are made and electronics gear installed. Measurements are made with the large model mounted atop the facility's roof to see if the plane transmitter will feed power to it.

Once an antenna design is proposed, it has to run the gantlet of rigid tests. In the humidity chamber in structures test lab, it has to withstand rugged ordeals of shock, vibration, salt spray, humidity and temperatures. The speed and altitude at which the plane or missile is to operate dictate the temperatures to which the antenna is subjected.

A TEST OF ANTENNA ON A MODEL REGULUS

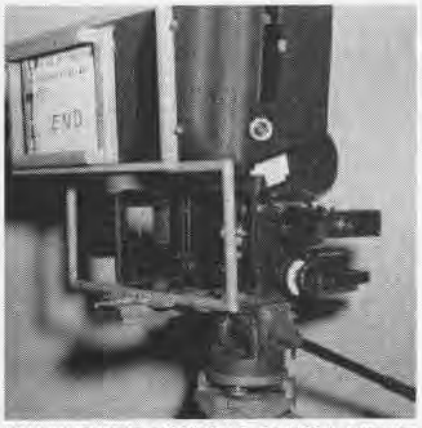
Most of today's fighter planes carry up to seven antennae. These serve the identification system, communication, radio navigation, the radar altimeter and radar. Each has to have its own antenna, sometimes two. Planes which are flight-tested also require antennae to send back telemetering data to the ground recording truck.

In addition to installing antennae for its own planes, such as the F8U-1 *Crusader* and the F7U-3 *Cutlass*, Chance Vought has designed antennae for the FJ-3 and F4D fighters. These were converted to act as "mother" planes in controlling *Regulus* missiles in flight.

Versatile Camera Mount

NPC Technician Devises New Unit

John B. Heikel, technician at the Naval Photographic Center, has devised a combination teleprompter and tele-lens mount for motion picture cameras. The mount can be used on most of the cameras and camera heads in producing sound motion pictures, or on any combination of them, whether gearhead or friction. When the mount is set to receive a certain model of teleprompter, no additional work is necessary on the camera or camera head.



JOHN HEIKEL'S VERSATILE CAMERA MOUNT

After installation, the camera and prompter are balanced without any adjustments, because of the prearranged holes bored in the mount and clearly marked for each type of camera.

Another feature is a sliding rail arrangement. During production, a camera man must make many adjustments, such as changing lenses, adjusting for exposure and focus, and time is saved by sliding the whole mount forward allowing easy access to all parts of the camera.

Heikel's device has been approved by BUAER for optional adoption by other activities. It is being considered by the Bureau of Aeronautics Incentive Awards Committee as worthy of an award to the designer.

Like Father, Like Son

Father-Son Team aboard Princeton

When Clarence J. Dolmseth, BM1, calls a fellow petty officer "son," chances are he's not kidding, for both he and his son, Richard, are stationed aboard the USS *Princeton*.

DOLMSETHS ABOARD THE USS PRINCETON

The elder Dolmseth is affectionately known as "Pop" to the crew. He enlisted in the Navy in 1922. After a period of inactive duty, he reentered in 1941. "Pop" has been aboard the *Princeton* since her recommissioning in 1950.

Richard L. Dolmseth, AL1, has been in the Navy since 1948. He is now serving as a sonar operator with HS-2.

Royalty on the Randolph

Count Orlowski Serves as Seaman

A young French immigrant with a royal title that goes back more than a hundred years is serving as a seaman apprentice aboard the USS *Randolph*.

He is Count Andre P. Orlowski, youngest son of Count Stanislaw Orlowski, direct descendant of five generations of French and Italian blue-bloods.

A 21-year-old draftee, Andre previously attended the University of Arizona, where he majored in Romance languages and studied economics and political science. He speaks French, Spanish and English fluently.

Andre is striking for storekeeper in the *Randolph* Supply Department and is performing all the duties required of a seaman in the Navy. This includes swabbing decks, painting and the customary field days every week.

Andre first came to the United States in 1950. He originally intended to study at an American college and return to France, but decided to stay on and become an American citizen.

Andre's father, who served as a Polish Army Officer during the war, has taken up the banking profession in Mexico City, Mex. His stepmother, Countess Jacquelin Bergen Orlowski, is the daughter of RAdm. J. J. Bergen, USNR.

Now undergoing a six-week shakedown cruise in Caribbean waters, the *Randolph*, commanded by Capt. J. C. Renard, was modernized at the Norfolk Naval Shipyard, Portsmouth.

COL. WALTER *Bayler, CO of MCAS El Toro, presents to Miss Martha Taylor, American Cancer Society representative, a check for $966.99. The money was donated by Marines at the El Toro and Santa Ana Facilities.*

LETTERS

SIRS:

As a staff NCO working in operations, I've been constantly in debate with Navy and Marine Corps pilots in regard to the correct voice radio call to be used when flying on a DD-175 flight plan.

For several years now there has been an assumption made on the part of most pilots of the naval service that the correct call consists of the last five digits of the bureau number. This has come about due to a directive to all USAF pilots to use five digits. JANAP 115B plainly states that the correct call is the LAST FOUR NUMBERS.

So, unless you can prove me wrong, how about using the NAVAL AVIATION NEWS as a medium to "pass the word" to all airplane drivers. As it stands now, here are samples of the correct calls on a DD-175 flight plan:

For props: "Navy 1234"
For jets: "Marine Jet 1234"
For helicopters: "Navy Helicopter 1234"

TSGT. ALBERT S. GREENE, USMC
NAS ATSUGI, JAPAN

¶ The Sergeant is correct.

SIRS:

I was interested in your story of the Antarctic rescue on page 11 of NAVAL AVIATION NEWS, June 1956. I was a member of the search and rescue party at Little America V.

In regard to your story of the rescue, Lt. Sullivan and his crew located the wrecked "Otter," but the actual rescue was made by four other persons after Lt. Sullivan had returned to Little America.

R. W. Skinner, AO1, (AP), Pilot, and LCdr. C. S. Larsen, Co-pilot, flew out to the wreckage only to find the survivors had left. They followed their trail and found the survivors. In the meantime it was decided to fly the "Otter" out to help make the pickup. The pilots this time were Lt. D. Sliwinski, USN of VX-6 and MSgt. H. Dolleman, a veteran of Adm Byrd's previous stay in the Antarctica 1939-41.

The pickup was made by the HO4S (Skinner and Larsen) and Sliwinski and Dolleman in the "Otter."

The two planes returned to Little America for a happy reunion and to "splice the main brace."

The search and rescue party consisted of the following personnel: Capt. Cordnier, O-1-C; LCdr. C. S. Larsen, VX-6; Lt. D. Sullivan, TF-43; Lt. D. Sliwinski, VX-6; Lt(jg) Bacon, HUP-2; Lt(jg) Alexander, HUP-2; AO1(AP) R. W. Skinner, VX-6; MSgt. C. L. Voshall, VX-6; MSgt. C. L. Wilkes, VX-6; MSgt. V. X. Baldwin, VX-6; MSgt. H. Dolleman, TF-43; AD-1 W. Shenko, HUP-2; AD-2 H. B. Brown, VX-6; AD-2 W. R. Selman, VX-6; AD-3 J. Smith, HUP-2; AD-3 A. F. McCulloch, HUP-2; AT-3 M. J. McFadden, HUP-2. All were Naval and Marine Corps personnel, except MSgt. Dolleman, USAF.

MSGT. CARL L. VOSHALL, USMC
MCAS CHERRY POINT

SIRS:

In order to settle a long standing debate between pilots and operations personnel, would you please obtain and publish the official "word" on the following questions pertaining to the Aircraft Clearance Form (DD-175). We have in mind an IFR flight, using a specific climb-out and let-down.

Item #1. Which is correct when completing the Route block?

(a) Show the route to be flown—less the climb-out, let-down and final leg to the airport.
(b) Show the entire route to be flown, including the climb-out, let-down, and final leg to landing at the airport.

Item #2. Which is correct when showing the time enroute in the ETE block?

(a) Show only the time enroute to the final fix prior to the let-down.
(b) Show the entire time enroute to the final landing.

Would you please include in your reply the source of your information, as this question will undoubtedly arise. By the way, why don't we have an OpNav Instruction containing DETAILED instructions on filling out the DD-175 form? As it is now, local interpretations are really making for inconsistency.

TSGT. ALBERT S. GREENE, USMC
1ST MAW, FMF
NAS ATSUGI, JAPAN

¶ There is, at present, no instruction on how to fill out a DD-175. However, Op-53 advises that it is being covered in OpNav Inst. 3710.7 (revised). Op-53 further advises that Items 1 (b) and 2 (b) are the correct answers to your questions.

THIS IS NOT *an O-Soba man, but Lt. I. L. Miller, staff-member of ComFAirJapan at Atsugi. He plans to take his Japanese soba (noodles) cart back home to use as a barbecue grill.*

LETTERS

SIRS:

I have just finished reading the June issue of your excellent magazine, NAVAL AVIATION NEWS. In that issue is an article of great interest to me, "Second Battle of Midway."

Actually the second battle started before the first, and apparently was not won. Several skillfully planned assaults have been launched against the "Gooney Bird," and with no great success. In this connection, I believe the following plan will be successful, in the event you agree pass it along to the Command at Midway for study and possible use.

Install a fence, preferably a small gauge chicken wire, along the edge of the runways on both sides all the way into low tide. The fence should be erected at a degree of approximately fifteen or twenty degrees outward from the runways, the outer edge should be about eighteen or twenty-four inches above the ground. The idea of the degree and small gauge wire is to allow the birds to walk up the slant to the outer edge into the grass, and once there it is impossible for them to return. The idea of the fence running into low tide is to discourage the birds from wandering from the beaches onto the runways.

MSGT. NOLAN J. KITCHENS, USMC

LOS ANGELES, CALIFORNIA

* It occurs to the editor (a bird-watcher of some reputation) that the birds could walk over the wire onto the grass, and faced with the impossibility of walking back, might just try FLYING back onto the runway. Of course, if they were that smart, nobody would call them Gooney birds.

SIRS:

"Let's Look at the Record" is always an interesting feature in NAVAL AVIATION NEWS. I was particularly interested in that department in the January 1956 issue wherein ten more aviators have been accepted into the USS *Leyte's* "Centurian Club."

It occurs to me that, with the possible exception of the old *Lexington* and *Saratoga*, the *Leyte* just might have more Centurians than any other carrier in the Navy.

I am sending this letter via the Commanding Officer of the *Leyte* who is respectfully requested to make such comment as he may deem appropriate, particularly noting the present size of the club.

Adding my own congratulations to VS-32 for her 3000 accident-free CV landings, along with a hearty "welcome aboard" to her new Centurians, I will claim that we have the largest Centurian Club!

E. S. MEMEL, CDR.

HEY, FELLOWS!

Some recent communications to NANEWS with faulty addresses have taken a coon's age to reach us. We LIKE to hear from you. You are the men who make the News, and the only way we hear about it is for you to tell us.

You are all authorized to write to us direct. If you have a story to tell (including sea stories), let us have it and accept our thanks for your help. The right address is: Naval Aviation News, Op-O5A5, Navy Dept., Washington 25, D. C.

SIRS:

I am enclosing Cdr. Memel's letter, and list of the "Centurians" we have to date. There are at present 87 actual 100-landing Centurians, plus two "honorary ones," who distinguished themselves in other ways.

Since the *Leyte* just recently (April 11) celebrated ten years continuous service with the fleet, it is possible that she may have the highest number of Centurians, although I know of no central place where such records are kept. She also recently passed her 54,000th landing.

Probably the only way to find out would be to publish the claim, and see if any other carrier wishes to challenge it.

H. T. JOHNSON, CAPT.

CO, USS LEYTE (CVS-32)

IFR-IQ?

According to OpNav Air Traffic Control Procedures Section "It [the Common System] provides for a single national common civil-military system of air navigation and air traffic control. The national integrated system shall satisfy the air navigation and air traffic control requirements of all civil and military air operations, except for those special military requirements peculiar to air warfare."

Ref: U. S. Civil Air Policy

CONTENTS

● COVER

Blades of compressor 1 on the Unitary Plan Wind Tunnel at NACA's Lewis Flight Propulsion Laboratory, Cleveland, Ohio. In operation, the rotor blades (upper left and right) sweep past the stator blades (center) at about 600 mph, forcing the air through the tunnel throat at supersonic speeds.

● SUBSCRIPTIONS

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SQUADRON INSIGNIA

Insignia of two VP and two VS squadrons shown this month have something in common. All four outfits are mad at submarines. VP-44 sports a bomb-laden Marlin with radar eyes, giving the works to a sinking sub. The shark of VP-6 is likewise engaged in mortal combat with an underseas raider. In days of yore, a wounded knight was carried from the field of battle on a shield. Thus, symbolically, VS-21 bears its broken victim on the lightning emblazoned shield. VS-36 uses a vicious wolf, notoriously an avid hunter, to illustrate the squadron's mission. Its strong jaws hold a broken enemy sub.

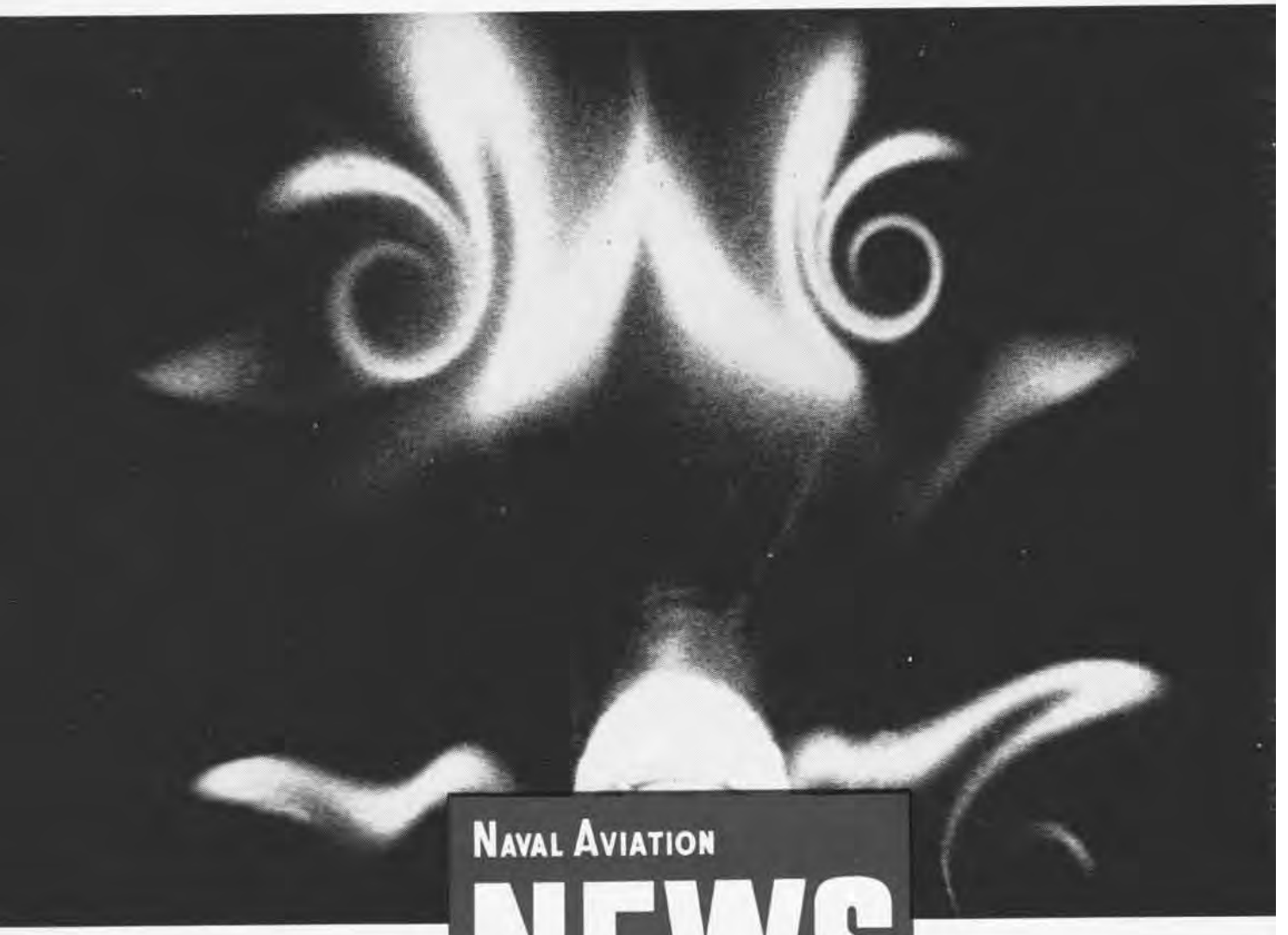
VP-44

VP-6

VS-21

VS-36

HERE'S LOOKING AT YOU



NAVAL AVIATION
NEWS

This fantastic pattern was formed by vortexes generated by a wind tunnel model. Water vapor introduced into the wind tunnel forms fog particles in the air stream, and a cross section of the stream is illuminated. This method of study, the vapor screen technique, enables scientists to determine the effects of vortex interference upon airplane stability. Technical developments such as this are reported in each issue of NANews. Order your personal subscription today. Send a two-dollar check to Superintendent of Documents, Government Printing Office, Washington 25, D. C.

SEE NAVY THROUGH NAVAL AVIATION NEWS