NAVAL AVIATION NEWS

RESTRICTED

Safety of Pilots
Operation Haylift
NavAer 00-75R-3

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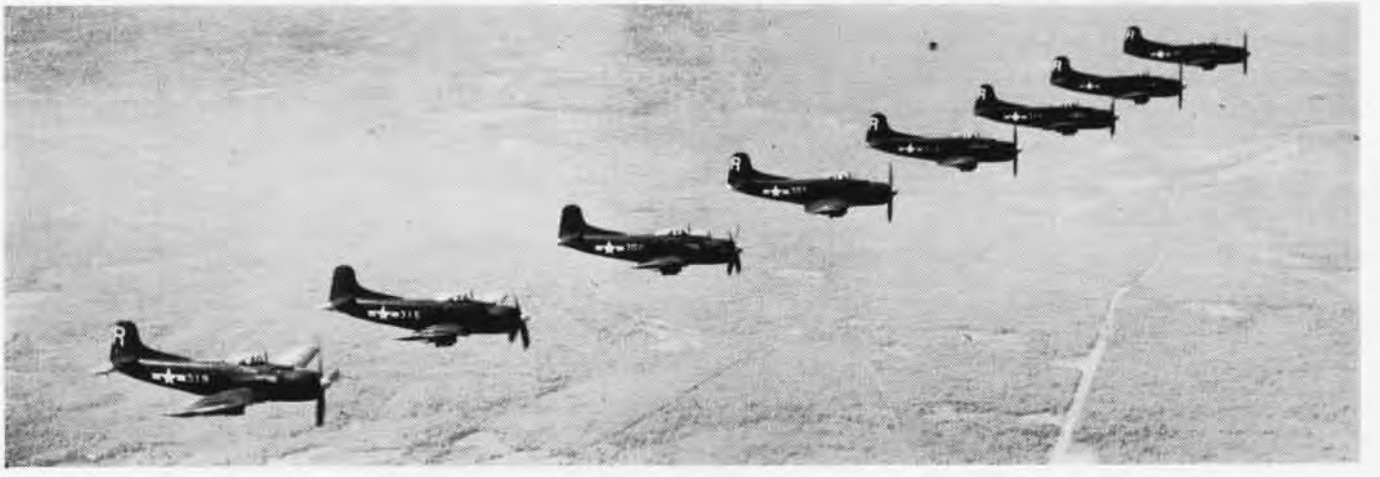
Few battle-bound fighter pilots will run into planes in such beautiful formation as these, but recognition is still important. Ans. on last page.

Two of *the three photographs on this page show the newest type Navy aircraft. The stubby, fat-bellied, propellerless plane above should be easy recognition, but how about the lower picture? Also, what are those ships steaming above?*



PILOT SAFETY

TODAY'S naval aviator with his Buck Rogers helmet can ease his jet throttle forward and come within hailing distance of Mach 1 with reasonable safety. It is not by chance, however, that he has achieved this peaceful state of mind.

While BUAER engineers are designing faster and faster aircraft, other men are figuring out how to get the pilot out of his plane alive in an emergency. Saving this pilot, copilot or aircrewmen in the event of a crash or mechanical trouble in midair is a continuing program, not only of BUAER, but of Bureau of Medicine and Surgery, the Naval Air Training Command, Office of Naval Research and Naval Air Material Center, Philadelphia.

Pilot ejection seats, detachable nose sections of planes, better oxygen equipment, stronger and more comfortable seats and shoulder harness all are projects being pushed to make it safer for a pilot to fly an airplane. It is not only a matter of a man's life either; it is dollars and cents to the Navy to prevent crashes, just as it costs money to train pilots.

At least five different types of ejection seats for jet fighter pilots have been developed. The Navy's own experimental model is part of an overall project at NAMC. Unlike the other four private company models, this seat has the main parachute attached to the seat instead of directly to the pilot's harness. After bailing out, the pilot can detach the chute from the seat structure and it remains attached to his chute harness.

FOUR aircraft companies have made seats of their own design, based on BUAER'S general specifications. Chance Vought's seat will be put in the XF7U-1 and production models of the F6U and F7U. Although the latter plane, a tailless twin-jet, has no high rudder for the pilot to avoid hitting, the ejection powder charge will be the same size as in seats which must clear a high tail. This will obviate any errors in using an insufficient ejection charge on those with a rudder and will simplify supply problems. Grumman's seat is in the F9F-2 and -3, McDonnell has a seat in the F2H and Douglas will have its seat in an experimental plane being built. All are fired by a powder charge.

What slipstream from 275 to 310 mph does to a pilot's face is shown by test photos by NAMC PHILADELPHIA photo lab

THE F3D Douglas *Skyknight,* unlike other Navy fighters, has the pilot and crewman seated side by side. Because of the impracticability of dual ejection seats for the men, the F3D has an escape chute slanting back from the seats at a 45° angle. The powder flash and air pressure inside a cockpit from the explosion accompanying a seat ejection, it is believed, would be so severe it would kill one man if the other one went out with his seat. BUAER is studying the idea of an ejection seat shaped like a capsule which could be used to save the pilot and copilot or aircrewmen.

The F3D escape chute, only one known to be installed in present-day aircraft, is an interesting method of meeting the pilot safety problem. To get into the chute in case of an emergency, the two seats can be collapsed so the men are free to dive into the chute. Automatic features open the trap door behind the seats. At the bottom of the six-foot chute is another trap door, half of which is jettisoned. The forward half remains on the plane and opens up at an angle to provide a buffer shield for the pilot as he emerges.

ALL OF the five ejection seats are provided with face curtains to protect the pilot from slipstream blast as the seat leaves the cockpit. Some of these curtains are designed so they cup the man's face for better protection. In all cases there are automatic "arms" on the sides of the seats, to keep the legs from being spread and the pilot injured from hitting cockpit structure on the way out and from being split by the windblast when clear of the airplane.

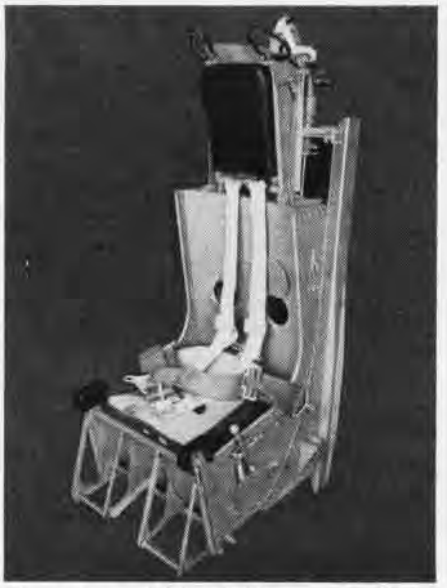
All Navy planes today with speeds more than 500 mph have to have ejection seats. Because not too much is known today about the problems to be met in high speed survival, the bureau decided to let contractors design their own seats within the general framework of the Navy specifications, later combining the best features of all seats.

One of the problems to be met in ejection is getting rid of the canopy. Eventually, this job will be done automatically, as will the separation of the pilot from his seat once he is free of the plane. The NAMC seat has a barometric unit which opens the seat parachute after the pilot and his seat have fallen below 15,000 feet. The pilot himself flips quick-disconnect units to detach the risers from the seat, then unfastens the belt which holds him in the seat. This falls free and the pilot rides the chute down.

Weights of the various ejection seats vary from 65 pounds for the NAMC seat to 105 for the McDonnell type. Grumman's weighs 77 pounds, Douglas 69, and Chance Vought 96. A standard F7F 40 G pilot's seat, non-ejection type, weighs 27 lbs.

While the biggest emphasis today is in perfecting ejection seats, BUAER also is working on detachable nose sections which the pilot could ride to safety should his plane start to disintegrate. NACA and Douglas Aircraft both are conducting studies on the nose section of the D-558-1 which can be detached from the fuselage just behind the pilot seat. These studies are investigating its tumbling or spinning tendencies. Other ideas being worked out envision egg-like capsules, streamlined and pressurized, to save pilots having

Chance Vought—Cdr. Paul E. Burr pulls the firing curtain on ejection seat



Grumman—This ejection seat will be put in F9F *Panther* for emergency use

NAMC Philadelphia—Leg braces, stauncher feet 'stirrups' feature this type

to abandon plane at high speeds and altitudes.

Controlled pilot ejections in seats have been made as high as 505 mph—the British tossing a man out of a Gloster *Meteor* at that speed. The Navy has made one live ejection, from a JD-1 at 250 mph and plans others later at higher speeds. When two-seat jet aircraft like the TF-80-C become available, dummy and live ejections are planned for speeds up to or above 500 mph. Dummies will be tried first.

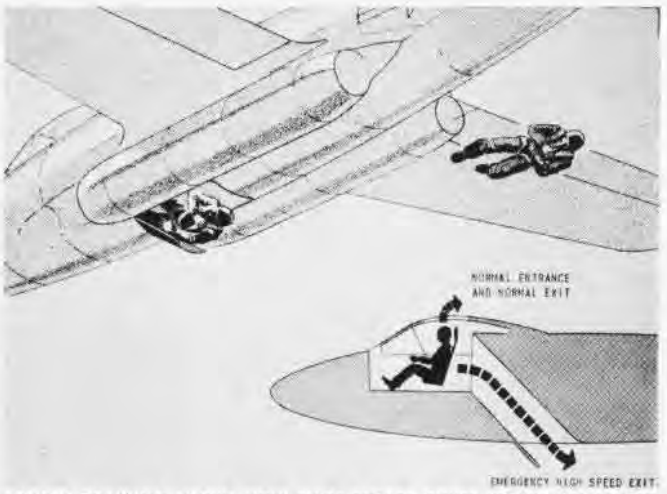
An F7F and helicopters are being readied to take moving pictures of the JD-1 ejections, to study the flight path of the seat and the man. English movies of the *Meteor* test showed the man tumbled over and over several times before his drogue chute stabilized his fall. In cooperation with the Naval Photographic Center, Anacostia, BUAER is preparing an indoctrination movie for pilots showing techniques of operating ejection seats in high speed aircraft.

Attacking pilot safety from another angle, BUAER is installing 40 G shoulder harness in a number of multi-engine planes. Eventually all big planes like the R4D, R5D, PBM, JRB, R5O, R5C and SNB will have shoulder harnesses for pilot and copilot. Even some helicopters may be equipped with them for safety reasons. Work now is underway to install 40-G seats in SNJ's, replacing the wood, plastic or metal seats now stressed for about 12 G accelerations.

IN THE field of G measurement, BUAER has underway a project to measure how much shock a pilot sustains when his plane crashes. Small steel rings (dynamometers) have been installed in 800 F6F aircraft seat belt and shoulder harnesses. In the event of a crash, these rings are bent into an elliptical shape, the bend depending on the G forces. Several rings have been salvaged from planes involved in accidents, but data are insufficient as yet to form any conclusions. This information will enable seat designers to provide increased safety to pilots in the future through better seat design.

In the ejection seat test tower at Naval Air Experiment Station, Philadelphia, subjects are shot upward in the seat with a force of about 18 G's. This acceleration is well within human tolerances and does not cause blackout or greyout because of the short duration of acceleration.

Another test program underway in the medical equipment lab at NAES is to study exterior lighting of planes to see what can be done to make it easier for pilots to fly formation at night or in low visibility. Ideas being tested include lucite strips along trailing edges of the elevators and rudder



ARTIST'S DRAWING SHOWS HOW PILOT ESCAPE CHUTE WORKS ON AN F3D

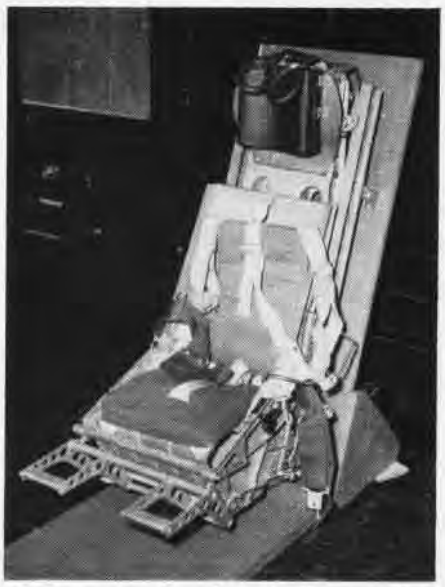
which would be given indirect lighting. Several SNJ's at Pensacola were so equipped and studies made to see if the lights helped the pilots. Another project to aid the pilot is to develop indirect lighting for cockpit consoles which will enable the night flier to retain dark adaptation.

Along the same line, AMEL is trying to develop an eye shield for the landing signal officer so the fluorescent lights at his feet do not ruin his dark adaptation at night. The "infropaque" material for the shield would cut ultra-violet light intensity.

The Navy is issuing two types of protective helmets for use by pilots of high speed aircraft, a Navy design and one developed by the Air Force. Both have laminated fabric and plastic outer shells and utilize either a sponge rubber liner or a suspension system to protect the wearer's head.

These helmets have been or are being issued to all jet pilots and pilots of F8F and F4U aircraft who require them. Neither of these designs is the final word, however, and BUAER is working on two types. One would be a helmet which would fit over the standard flying helmet. Microphone and oxygen mask and head phones would be attached to the regular helmet so they would not be lost in the event of bailout.

It has been found that in every case of bailout the helmet is lost. They have to be designed so that they will come off

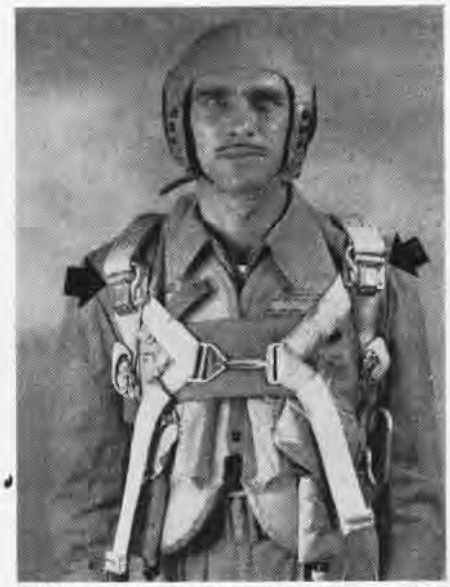


McDonnell—*Banshee* ejection seat features retractable leg braces, weight 105

F7F—*Tigercat* standard aircraft seat shows size compared to an ejection seat

Douglas—Carl Marcks, P. D. Dugan of BUAER inspect curtain shaped to fit face

CAPT. POPPEN TESTS PILOT HELMET STRENGTH



QUICK-DETACHABLE CANOPY RELEASE ON PILOT

MEDICAL LAB MEN CHART OXYGEN IN THE BLOOD

BOEING XB-47 USES 30-FOOT DROGUE CHUTE TO SLOW LANDING SPEED

CDR. SCOTT OF AMEL, PHILADELPHIA, EXPLAINS NEW TEST CATAPULT

CAPT. POPPEN EXPLAINS EJECTION SEAT TEST TOWER AT PHILADELPHIA

in such event without a tight chin strap choking or causing injury to the pilot.

The second type under development incorporates all the necessary gear on one helmet. Eight companies and the Aeronautical Medical Equipment Laboratory at Philadelphia are designing or testing one of these two types of helmets.

Once a pilot is able to bail out or be ejected from his stricken plane, his life depends on his parachute. In this field, BuAer is making progress in many lines.

Underway is a program to replace all existing silk parachutes with nylon. Some 8,800 nylon ones have been ordered and will start going to aviation activities immediately. These all-nylon chutes include canopy, risers, pack and harness all made of that material, which has demonstrated better keeping qualities as well as strength.

Present chutes have 24-foot canopies. These are being replaced as fast as possible by 28-foot models made of ripstop nylon. Besides permitting the pilot to fall 15% slower in the air, the bigger chute gives less opening shock. By five years, BuAer hopes to have all of its silk chutes replaced by the new ones.

Another idea being worked on which shows promise to cut down the opening shock is "bag deployment". A 28-foot chute opens with a shock of 20 G's at 300 mph now. By packing the chute canopy inside a nylon bag which will hold it in a bundle until all the risers have paid out to full length, BuAer hopes to slow the unfurling and cut the shock. The nylon bag containing the canopy goes inside the regular chute pack. The new idea is expected to be easier both on the pilot and on the parachute, lessening danger of ripping at high speed openings.

Airborne Equipment division of BuAer has developed another new safety feature for parachutes which was given first service evaluation in the recent Atlantic fleet maneuvers in the Caribbean and also will get ComAirPac testing. This feature is perfected after several years of testing on more than two dozen different designs. During the war many pilots were dragged through the ocean and drowned because they could not spill the air from their chute canopies. Many were dragged cross country by a stiff wind and injured. To enable a man to get rid of his chute canopy without losing his life raft and survival gear which also are attached to his chute harness, BuAer developed a fast-acting canopy release (see photo, pg. 30 in NANEWS March issue).

These releases will attach the risers to the chute harness at a point just below the shoulder risers. Once the pilot has

removed the safety cover, he pinches two springs and pulls, releasing the risers from the personal harness. This operation can be done with gloves on, with cold or wet hands, without the pilot even having to look at the release gear.

All load-bearing parts of the release are forgings designed to withstand 5,000-lb. shock impact. Tests showed the new release could be operated even with a 400-lb. load suspended in the chute harness.

Another parachute development being made by BuAer to increase a pilot's safety involves a 30-foot ribbon-type chute which can be released from a plane tail and reefed back in again. Purposes of this chute are three-fold: *First,* it can be released when the plane is in a spin, to act as a stabilizing agent. *Second,* it can be "popped" to slow the plane down for arrested landings or landings on short fields. *Third,* it can be used for tactical purposes in midair, to slow the plane down.

STILL IN development stage with Chance Vought aircraft Co., which is trying it on a *Corsair,* the chute may be put on jet aircraft to slow them down from 600 mph to 140 for tactical or safety purposes. So that the canopy would not be burned in the hot jet exhaust as it unfurls, it is proposed to pay it out on a cable some distance behind the plane before unreefing it. Rings on the inside of the canopy "skirt" would enable the mouth to be closed, the chute reefed and pulled into its container in the fuselage.

During the war the Germans had a small four-foot drogue ribbon chute which they broke out of the tail of their jets to enable them to make short-field landings or decelerate in a hurry in combat. The Navy's chute operates on the same principle but is considerably larger. The Air Force used a similar idea for slowing down its six-jet Boeing bomber, the XB-47, for a landing on a recent visit to Washington. (see photo, pg. 4)

Another safety problem being worked on by the parachute section is development of canopies which will operate at speeds higher than 250 mph, which is about tops for present parachutes. Many dozens of designs and ideas have been tested by the parachute experimental unit at El Centro, Calif. The latest one involves an extended "skirt" on the canopy which gives it almost a globular appearance. This design is said to give a low shock opening and good stability.

Ever since a French meteorologist named Tissandier killed off two companions in 1875 by flying a balloon to 28,820 feet, aviators have known the need of oxygen was important. Having oxygen and using it are two different things because a man in early stages of oxygen starvation loses sense of what he is doing—in Tissandier's case he had oxygen aboard but was so far off his trolley from anoxia he failed to use any when the time came.

With talk of fighting jet aircraft at 40,000 feet and higher becoming common, the Navy is putting more emphasis on the workings of its oxygen breather system for pilots. New developments in this field include: *1.* A quick disconnect unit containing the mike cord, oxygen tube, and suit heating cord to simplify the gear hanging on the pilot's body when he is in the cockpit. (NANEWS, Nov. 1948, pg. 5) *2.* New diluter demand oxygen regulator which automatically feeds the pilot the correct amount of oxygen as he goes up or down. *3.* Automatic opening oxygen cylinder valve.

The latter device permits locating the oxygen cylinder in the airplane distant from the pilot's seat. It can be recharged more easily and is less of a fire hazard to him in case of a gunfire hit. Aviation equipment officers in squadrons have been directed to change regulators every 90 days and shop test them to insure pilot safety.

The Navy is installing liquid oxygen-producing plants aboard some aircraft carriers for greater capacity. Pilots' oxygen bottles will be "refueled" without removal from the plane, the liquid oxygen being turned into a gas.

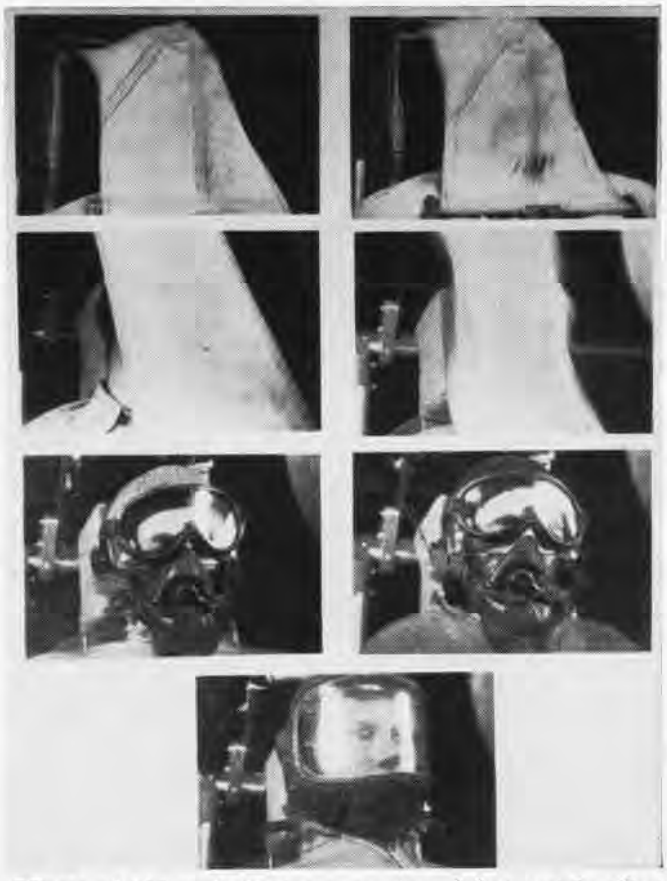
Before new equipment can be put in airplanes or attached to pilots, much research has to go into its usefulness and necessity. It is in this field that aviation medicine plays a big part—taking a look at a new idea and trying it out to see if it has possibilities. Flight surgeons also investigate many scientific angles of pilot training to see if flying can be made safer and border-line fliers diverted into other activities.

There is pilot dizziness or vertigo, for instance. Many a flier in combat or in training was killed because he got so confused in a spin or violent maneuver in a cloud that he could not recover himself. In this field, BuMed aviation section is continuing its research into effects of angular acceleration and deceleration on visual perception and its effect on apparent motion.

At Pensacola the school of aviation medicine has a disorientation device to test pilots to see if they are susceptible to vertigo. A tilting room and other devices are used to find out if he has a weakness in this respect that might make him useless as a pilot later on, after thousands of dollars had been spent in training him.

Some 2,000 students in the aviation training program at Pensacola have been given psycho-motor tests and about 50 pencil-and-paper tests to see if they have the makings of a pilot.

Navy special devices contribute a part to the program. Aviation Medicine school uses a cycloramic Link trainer and another device which enables the student to land a miniature plane suspended from a boom on an endless moving belt simulating the airstrip. (photos on pg. 6) These enable flight surgeons better to assess a cadet's potentialities.



Effects of 530 mph slipstream on shaped face curtain of an ejection seat shown above, and 355 mph blast on flat curtain

SPECIAL DEVICES CONTROLLABLE AIRPLANE TESTS PILOT PROFICIENCY

In the field of vibration and hazard to humans in operation of jet aircraft engines, a test was made at NAMC PHILADELPHIA to see if men sustained any ill effects from operating jet engines. The high whine of the engine apparently had no lasting effect on the men although they were positioned within a few feet of the engine. The one constant finding is a reversible hearing loss, particularly for the high frequencies. Some subjects complained of headaches, fatigue, dizziness, loss of appetite and weight. One 17-year-old subject stated that he had thought he had to shave more frequently than before the study.

GAS FUMES bothered the "guinea pigs" more than the sound, experimenters found. Animals were used around the engine before the nine men who participated in the test took their places. The men were given the best ear protection during the tests, which were more concerned with ultrasonic sound waves than with those the human ear could register. Another project investigating jet engine noise was conducted with an F-80 at Patuxent River in collaboration with Naval Research Laboratory and Naval Medical Research Institute. The jet engine was operated at high speeds on the ground while microphones were spotted at various distances around the plane.

The work was part of the larger problem of measuring and analyzing sonic and ultrasonic noise in jet engines during flight, around them on the ground and around jet engine test stands. Common supposition is that personnel exposed to the noises for any length of time might suffer bad effects.

The survey revealed that forward of the wing, the whine of the compressor impeller is predominant. It becomes submerged in the louder jet noise toward the rear. This whine is not so predominant in the pilot's cockpit.

Other studies centered around hearing loss and fatigue as well as an attempt to detect unknown and unsuspected hazards to humans. Research also is underway on problems which result from flying high speed aircraft at high altitude, to discover if any new hazards are to be expected.

At Naval Medical Research Institute at Bethesda, other projects are underway, all aimed at finding out things about pilots and their environment. One project involves a number of enlisted men who are trained to fly Link trainers, then given small amounts of such drugs as seasick pills, benzedrine or alcohol to determine the effect if any on their ability to "fly" the Links. Such information is important to flight surgeons who might be prescribing medicine containing those drugs for a pilot.

PANORAMIC LINK TRAINER HELPS WINNOW OUT LESS ABLE AIR CADETS

ANOTHER project is investigating whether wider shoulder straps might provide better safety for pilots. A couple of years ago, the Navy investigated undrawn nylon vest-type harness and straps which would "give" several inches, as a possibility to cushion the landing shock in a crash. The unpredictable nature of the material, the study found, made the idea not too valuable, although it was found a pilot could take a greater shock load with such straps than with the conventional type that did not stretch.

A companion investigation to this was made at NAMC PHILADELPHIA where nine surveyed aircraft were catapulted into a solid earth barrier at speeds ranging from 85 to 103 mph. Dummies in these aircraft were restrained by this experimental safety harness consisting of a vest and straps of undrawn nylon similar to those used at the Bethesda experiments. (see photo, pg. 1)

Equipment to measure the amount of shock sustained when the planes smashed into the earth barrier was attached to the dummy in the cockpit and the radioman's compartment. The vests did not function uniformly, but interesting data were gathered on the rate of deceleration of the dummies after the plane smacked the barrier. It was found the greatest deceleration came in the very short final distance of travel as the straps stretched. The dummy sustained 100 G's upon impact.

Temperature, humidity and rate of application of force all affected the stretching ability of the undrawn nylon so that it was not constant. In the radioman's compartment, modified to provide more room, the material elongated to a maximal length of five feet, allowing the dummy to collide with surrounding structure. This is not considered good.

Another research project aimed at providing valuable data for pilot safety is one being done by the Medical Research Institute in cooperation with U.S. Bureau of Standards. Tests are made to determine resistance of human bones to heavy loads such as a pilot might sustain in a crash. Pieces of actual human bone are put in giant presses and scientific readings made of the forces they can withstand.

A SOMEWHAT similar investigation is being made at Cornell Aeronautical Laboratory in Buffalo. A project is collecting data on the force delivered to a pilot's head upon impact with the cockpit structure during a crash.

The information is valuable in developing structures which will provide the safest contact surface during a crash. Instead of a human head, however, this project uses hen's eggs and head-sized plastic shells filled with gelatine.

This "head" is thrown into measuring machines by a catapult and the forces sustained and "injury" to the head are determined. The idea behind the project is to improve cockpit design to eliminate as much as possible the hazards striking sharp edges on gunsights and instrument panel.

CARRIER SURVIVES A-BOMB

OPPONENTS of Naval surface-air seapower received a jolt during the Atlantic Command war games in March when one carrier, the *Franklin D. Roosevelt*, was damaged and only temporarily disabled when an "enemy" bomber slipped through the defense screen and dropped an "atom" bomb.

Part of the largest peacetime war maneuvers ever conducted by the Navy, the attack came as an assault force proceeded toward little Vieques island off the eastern end of Puerto Rico. The island represented part of the European-African land mass.

Despite a combat air patrol of F8F's and FH's forming an umbrella over the force, it was discovered that there was insufficient fighter strength and too little information from shipboard radar directors was received to effectively intercept the enemy P2V with its escort of four F7F's. To correct the first deficiency, Adm. W. H. P. Blandy, Commander-in-Chief of the Atlantic Fleet, recommended larger CAP and attributed the CIC performance to lack of highly-trained radar personnel due to the large exodus of two-year men and draftees.

The air burst, actually a parachute flare, occurred 1,500 yards astern the *Roosevelt*. No planes were on board at the time. It was ruled that all personnel topside were killed.

Two other carriers in the assault force, the USS *Leyte* and the USS *Kearsarge*, were not damaged, each being two miles away in an atom-age type of disposition in which each carrier is placed at the point of a triangle measuring two miles on each side.

For weeks prior to the start of the maneuvers 14 February naval and Marine air units took deep breaths and tightened their collective belts as they prepared for extended periods away from home under simulated battle conditions.

CLIMAX OF BIGGEST PEACETIME WAR GAMES WAS VIEQUES ISLAND; 'X' MARKS LANDING POINT

FROM Coco Solo to Quonset Point, carrier and Marine air groups, patrol wings, utility wings, blimprons and experimental units feverishly reviewed tactics and polished maintenance to 100% availability.

Defending Vieques was a simulated force of 6,000 troops, actually 330 Army officers and men. Participating in the landing operations were Marines, U. S. Army and a Canadian Cadre.

In addition to the assault carriers were the USS *Palau* and USS *Saipan* in the support group, while the USS *Sicily* was the nucleus of the hunter-killer force.

For the first time jet fighters operated from an aircraft carrier in war maneuvers. Embarked in the *Roosevelt* was VF-171, giving the modern touch to interceptor tactics with FH-1 *Phantoms*.

While proceeding on their invasion mission the ships encountered heavy concentrations of submarines in the vicinity of Bermuda, six of which were the new Guppy-Snorkel type. The hunter-killer group and heavy land-and-seaplanes pitched in to test the latest in ASW principles. Later the submarines opposed the assault group at Vieques.

By 1 March the assault group made a feint at the island, employing surface and air bombardment. After the "softening up," the next day thousands of Marines and soldiers landed on the south side of the island. Assault troops were under the command of Lt. Gen. K. G. Rockey, USMC.

Marine air was represented in the operation by one half of VMF-171 and VMX-1 embarked in the *Palau*, VMF-212 and VMF-222 in the *Saipan*, MAG-14, under the command of Col. E. J. Pugh, Marine Hedron 2, VMR-252, MWSG-2, Col. J. C. Munn commanding, and MAG-11, Col. E. A. Montgomery commanding.

PBM's, PB4Y's and P2V's took part on both sides of the operation. Squadrons represented were: VP-3, 5, 7, 8, 21, 23, 26, 34, 40, 44, 45, 48 and 49. Blimps from ZP-1 and ZP-2 also participated. Carrier squadrons and groups were embarked as follows: *Roosevelt*, VF-61, VF-62, VF-63, VF-171, VF-174; *Leyte*, AG-9; *Kearsarge*, AG-3; *Sicily*, VC-22 and VC-12; *Saipan*, VMF-222, VMF-212. Tactical Air Control Squadron Two operated in the USS *Mount Olympus*.

Liberty was granted in Guantanamo, Cuba; San Juan, Puerto Rico; and Port of Spain, Trinidad. Another grand scale phase on antisubmarine tactics was conducted off Haiti after the liberty period.

Guantanamo Bay and vicinity was the scene of the third and last phase when antiaircraft fire was directed at radio-controlled target planes and carrier groups made simulated air strikes on the Guantanamo operating base.

LANDINGS ON VIEQUES WERE SUPPORTED BY BOMBARDMENT; BOMBS SOFTENED ENEMY POSITIONS

GRAMPAW PETTIBONE

How's Your Life Expectancy?

One thing I've noticed about most aviators is that they're always sure that *they* won't be killed in next week's fatal aviation accident. They know that accidents occur; they know that "flight pay" is directly related to the extra hazards of duty involving flying. But it's always the "other fellow" who's going "to get it".

This outlook is fine for morale and certainly there is not much to be gained by brooding on the hazards of one's occupation.

Just the same, once in a while it's a good idea to give some thought to your life expectancy and in particular to what you can do to increase it. The retirement benefits for military personnel are mighty fine, and they compensate to some extent for the modest pay which goes with a career in the Army, Navy or Air Force. But these benefits don't help a bit if you wind up in a pine box before you finish your first 20 years.

The statisticians across the hall tell me that they've been keeping records for close to thirty years, and that aviators on the average can expect to live about 11 years less than their non-flying friends. In other words, when you "won your wings" you also cut down your life expectancy at age 20 from about 48 years to 37 years.

Another way of saying the same thing is that out of a 1000 naval aviators who start flying at age 20, only 770 will live to reach the ripe old age of 35.

Which group you fall in will depend pretty much on what you know about your airplane, how well you navigate, how thoroughly you plan your flights. If you're ready for an emergency when it occurs and know just what to do—your chances of being in the "live" group will be a heck of a lot greater.

Remember — you haven't chosen a particularly safe way to make a living. Don't increase the hazards of flathatting, flying into instrument weather on a VFR plan, or failing to use the safety equipment that is provided for your protection.

Be like the Ensign who looked up while examining a safety device and said, "You know this gadget will be worthwhile if it only saves one life—particularly if it happens to be mine."

Scratch One Beechcraft

The pilot of an SNB was returning to Corry Field following a simulated instrument flight. As he entered the traffic pattern a rain squall was approaching the field from the Northwest. The ceiling was 1000 feet and visibility 1 mile, but as he continued his approach and was turning on the final he entered the squall which reduced ceiling and visibility considerably. Lining up with runway 16, the pilot noticed a definite drift to the left for which he corrected, and presumably made a normal slightly tail-low, full flap, landing. Immediately upon landing, the flaps were retracted and the pilot applied brakes to arc down wind.

Observers state that during the roll out he was losing speed very slowly and seemed to be having trouble in getting the tail down. When the pilot realized that he was going too fast to stop normally, he attempted an intentional ground loop to the right. The plane changed its heading about 90 degrees but continued in a skid along its original course of approximately 140 degrees. It crashed in a drainage ditch to the *left* of the runway and suffered strike damage.

The plane was landed at an indicated speed of about 70 knots and traveled 3000 feet from the initial touchdown spot to the point where it came to a stop. During this landing attempt the wind shifted from 270 degrees to 315 degrees with gusts of 20 knots. The SNB was going almost directly down wind at the time the pilot was attempting to slow down the landing roll-out.

Grampaw Pettibone says:

Looks to me like this accident was caused by a combination of over-confidence and poor judgment. The pilot had over FIVE THOUSAND HOURS, of which 1050 were logged in SNB's. I'm surprised that an aviator with this much experience would try to land just as a squall was passing the airfield . . . particularly in the Pensacola area where so many other fine fields are available.

One of the worst commercial transport crashes last year occurred during a take-off attempt under just such conditions.

It simply doesn't pay to try a landing or take-off right at the moment that a rain squall or thundershower is approaching the field. You will almost invariably encounter a strong wind shift.

Play it safe. Under such conditions land at another field, or fly outside the rain squall until it is well past the airport at which you wish to land.

Seven Minutes to Eternity

An F4U-4 pilot (total time 1180 hours) took off and joined the FCLP pattern. His first pass was normal and he received a cut. He made a fair landing, bounced about three feet, and added take-off power. The plane settled to the runway with the left wing low and then veered about thirty degrees to the left. The pilot chopped throttle, attempted to level his wings, and correct his heading.

Before his wings were level and his heading corrected, he again added take-off power and pulled the F4U into the air. Upon becoming airborne the left wing continued down and the nose came up to an extremely high position. The plane continued this steep roll to the left until it reached the inverted position. It crashed into the ground nose down from approximately 50 feet. The pilot had been airborne seven minutes. He died one hour later.

Grampaw Pettibone says:

When you let two thousand horsepower and six tons of airframe get out of control—watch out! Torque, produced by sudden application of full throttle, combined with low airspeed caused this pilot to lose control of his plane.

Take my advice and do this for your own protection. Take your plane to a safe altitude and demonstrate to yourself its stalling characteristics at low speeds. Any plane will go on its back under certain circumstances and any plane can be *prevented* from going on its back. It is up to you to know just where the stalling speed is under varied conditions.

Here lie the bones of Ensign Wright
A little late for a scheduled flight
He didn't bother to check his tanks
Now he's flying in haloed ranks.

The Deep Six

The crash pictured here occurred during the landing of a TBM-3E which had previously reported a rough running engine and a slight oil leak. The pilot radioed this information to his flight leader and the message was intercepted by the ship. For this reason the TBM was being brought aboard first and the LSO had been informed of the emergency condition.

A heavy swell existed at the time of the landing and deck had a 30 to 50-foot pitch. The TBM came up the groove and began to settle just as the deck reached its highest point of pitch. The LSO gave the pilot a "low" and an urgent "come on" signal. As a result the pilot had on almost full throttle and was climbing at the time of the "cut". By this time the deck was going down and this combination left the plane quite high in relation to the deck. The pilot accepted the "cut", began to settle, and then applied full throttle in an attempted wave-off.

The TBM continued to settle with the left wing going down, and struck the deck as shown in the second picture. It then rolled over on its back and hit the water nose-down at about an 80 degree angle.

The shoulder harness was effective in preventing serious injury on impact. Both pilot and passenger cleared the plane and floated to the surface. The pilot discovered a hole in one side of his life jacket, and the passenger lost his life jacket a few moments after escape from the aircraft. He had been properly checked out in the use of his equipment but believes that he neglected to fasten the buckle on his life jacket.

By clinging together and treading water the pair managed to remain afloat until picked up by the plane guard destroyer 17 minutes later.

The pilot states that he did not consider his engine trouble sufficiently serious to constitute an emergency, and therefore had not reported it to the ship. Had the LSO known that the TBM could safely take a wave-off, it is probable that he would not have given a "cut" on this pass.

The accident board was of the opinion that the pilot could have landed aboard safely or at least with less serious results if he had not decided to try a wave-off after taking the "cut."

Grampaw Pettibone says:

Once you get that "cut" signal, it's MANDATORY to land the airplane. In this case there was some confusion as to the extent of the engine trouble in the TBM, and the pilot was probably surprised to receive a "cut" in such an unfavorable position. Nevertheless, he really stuck his neck out a mile when he accepted the "cut" and then changed his mind half way down to the deck.

Let's all pay more attention to the use of our safety equipment too. These fellows had a second narrow squeak when both of them had to remain afloat on half a life jacket.

Over the Bow

The pilot of an F6F made a fine carrier pass, received a cut, and caught the number 5 wire on a CVE. The arresting cable pulled out about 15 inches when the tail hook broke loose, allowing the plane to continue up the deck. ALL FOUR BARRIERS WERE DOWN.

The F6F crashed into three planes and went over the bow of the ship carrying a parked F4U with it. The pilot of the F6F was not recovered, and it is presumed that his exit was blocked by the F4U which fell on top of the F6F as both planes went off the bow.

Grampaw Pettibone says:

A life lost because someone didn't get the word. One of the barrier operators had been verbally commended by the Admiral in Command of the Carrier Division a few months before for lowering his barrier early on one occasion thereby avoiding contact with a plane which had caught a late wire. He was operating the number 2 barrier and he instructed the men on the number 3 and number 4 barriers to lower their barriers as soon as they saw the arresting hook engage a wire.

The number 4 barrier operator had been criticized over the loud speaker for being slow in the operation of his barrier. He was trying to speed up his operation by watching to see exactly when the plane caught a wire. In this instance he saw the plane catch a wire and dropped his barrier. When the tail hook broke off he attempted to re-raise his barrier. It was only partially up when the plane's wheels struck it, breaking the shear pins and allowing the barrier wires to pass under the wheels without engaging the plane.

In their efforts to speed up operation these men defeated the whole purpose of the battery of barriers.

Let's not try to save seconds at the expense of lives. At least two barriers should remain up until the plane landing has come to a full stop.

JETS TAKE DITCHING EASY

WITH WHEELS AND FLAPS DOWN F9F-2 COMES OUT OF DITCHING LITTLE THE WORSE FOR WEAR

ONE FACTOR that keeps the multi-engined and big-boat pilots content with their lumbering lot, is the "ditching" spectre. An open sea landing in a seaplane is no pleasant pastime. Take away the hull and power, and "Brother, you tail-hook boys can have it."

When the talk moves on to jet jobs, the boxcar pilots remain mum but not glum. The thought of a gas-eating, hole-in-the-nose pile of high calibre aluminum ranging over the ocean, perchance to ditch at sea, has very little appeal for the boys who get used to multiple fans.

As a matter of fact, it apparently isn't so bad. Up to the present time, there have been five cases of Navy jet fighters ditching. The first one was an XP-59. The ditching was successful, but little weight was given this as a test due to the conventional design of the plane, and the fact that it was an isolated instance.

Since that time four more Navy jets have ditched, furnishing a good cross-section analysis. And they all took the hurdle with flying colors and little or no blood.

The first FJ-1 *Fury* that ditched ran out of fuel on the tail-end of an operational training flight. The plane landed on the water in normal ditching attitude for conventional fighters at a speed of 80 knots. The sea was fairly smooth and the plane stayed afloat 1½ minutes —not long enough to pack a bag, but long enough to get well clear. All-in-all the plane reacted favorably in the new role. It rode high and had no tendency to dig in even though the FJ has a sizable intake in the nose, which would give it plenty of "scoop" area.

The second FJ-1 that went in was ditched as a result of "flame-out" at altitude. When the engine refused to restart the plane was ditched. It hit in smooth sea at 95 knots. Deceleration was no faster than an arrested landing; the plane floated for slightly over 30 seconds, had no tendency to break up or dig in when it slammed into the sea.

THE F9F ditching was one of the more rugged type since it came about under rather awkard conditions. The plane lost power on the cross leg of an approach to landing. Approach was over water, wheels and flaps were down, altitude was only 250 feet when the engine failure occurred. Obviously about all the pilot had time to do was land, which he did in a three-point attitude at 88 knots. The lowered nose wheel gave the plane a nose-down pitch that brought a bit of the briny into the open cockpit, but it bounced back and stopped in an upright position. Not only that, but it stayed afloat for five minutes. The salvage crew suggested a lot of time could have been saved if the pilot had only gone over the side and towed her ashore instead of just waiting for the crash boat.

The pilot admits he missed a bet there, but feels, that had the wheels been up, an outboard motor would have made an excellent racing boat out of the plane. Neither the plane, pilot nor engine sustained more than very minor damage from the landing. (Future F9F carrier pilots, *note* for morale purposes.)

Original intentions were to bolster the dive-flap on the *Panther* in order to give it a makeshift hydro-flap for ditching, but after this performance the idea was dropped. It was decided that if the plane was made better for ditching the big-boat boys would be casting a too covetous eye. Someone else would suggest doing away with island landing strips, "cover the ramps with rubber and let 'em skate in on the water."

Another quickie ditch was performed with an FH-1 *Phantom*, when the plane mushed in off a carrier deck immediately after take-off. Wheels had been started up, but were presumed to be

PHANTOM WENT IN WITH WHEELS AND FLAPS DOWN BUT STAYED AFLOAT

FURY SKATES ALONG ON BELLY IN WATER WITH THE GREATEST OF EASE

just partially retracted. Plane stayed upright and afloat for 1½ minutes, and the pilot, as usual, found successful jet ditching, one easy lesson.

An Air Force F-84 ditched up around Long Island sound very successfully. And the F-84 has a long slim nose reamed out for the jet intake and is considered fairly hot when it comes to landing speeds. It undoubtedly hit the water at something around or over 100 knots. Pilot made the landing in normal attitude and experienced no difficulty. Plane stayed afloat while pilot crawled out and away.

The facility with which jets ditch comes as quite a pleasant surprise to the experts who predicted dire ditching characteristics for the prop-less wonders. On paper the jet just didn't take to water, the intake was supposed to drag in a snootful of H_2O and either make like a submarine, or else wind up upside down. The water roaring into the engine was slated to cause some sort of explosion with turbine blades ripping through the fuselage like saw teeth. The high landing speed of the plane would create loads on the craft which would rend it into little pieces, and anyway it wasn't going to be the best duty.

BUT IN real life it didn't work that way. Apparently the jet intake has little effect on the water landing. The planes with the intake in the nose ride high enough to keep from scooping water, and the planes with wing intakes only slow down faster. The CG farther aft tends to keep the nose up, and the smooth skin and lack of a prop and engine forward acts to allow the plane to ski along the water until practically all forward speed is lost before the plane settles in. Also, the fact that the fuselage and wings are slick and tight for streamlining tends to make it more buoyant and watertight.

So, don't feel too sorry for the boys in jets who may have to take it down for a water landing. The jet appears to take to the water like a well-greased surfboard. One word of admonition, however; ditching may not be hard, neither is your head. So keep those shoulder straps buckled down; it'll help keep your knees buckled up.

VA-65, ATLANTA — This squadron feels that it holds some sort of record for domesticity. A recent survey disclosed these interesting facts: Out of a total of 160 personnel assigned, 85 (53%) are married. Of the 85 men married, 58 (68%) are fathers. The 58 fathers have produced a total of 83 children, or approximately 1½ child per daddy. Twenty-eight of the 160 personnel assigned are officers. The married officers number 20 and have 16 children, 7 of whom were born between 25 January 1948 and 4 July 1948.

LSO LICKS LANDING PROBLEMS

USS F. D. ROOSEVELT—As Lt. Cdr. "Doc" Abbott once said, "the only difference in landing aboard at night and landing aboard in the daytime is that at night you can't see." Of course that is only partially true but the difficulties are increased radically because of poor visibility, particularly on dark nights.

From the landing signal officer's standpoint, the two main difficulties are in judging the plane's attitude during the approach and protection to his eyes from the ultra-violet ray lamps used to illuminate his suit and flags.

Since the landing approach light is difficult to use and not absolutely reliable, Lt. (jg) W. S. Stewart, VA-45, designed wheel lights for the AD-1 and the F4U-4 which solved this problem completely. By installing a small light on the landing gear structure of both main wheels and the tail wheel and arranging them so that they are in line when the plane is in a three-point attitude, it is easy for the LSO to judge the plane's attitude and speed.

Another important feature is that these lights serve as a positive gear down check. This system was used on several AD-1's and F4U-4's during night qualifications aboard the *Roosevelt* and was found to be extremely satisfactory.

To protect the LSO's eyes, Lt. (jg) R. E. Chadwick, V-2, ship's company, designed a shade which is more efficient than any used by the *Roosevelt's* LSO, Lt. W. B. Barrow, Jr. By clamping a shade of thin opaque plexiglas around the Navy-issue non-fluorescing goggles and cutting the shade so as to satisfy the individual LSO, it will protect his eyes

SMALL LIGHT ON 'PANTS' SHOWS WHEELS DOWN

not only from the ultraviolet lamps but also from the flare of his suit and flags. The fact that this type of shade is light and does not interfere with the various signals is another important feature.

Due to the highly critical nature of the LSO's post briefing period, the instructive value of this period can easily be lost to poor relationship between the pilots and the LSO, particularly if the LSO does not fly. During our last two cruises, all five squadrons of CVG-4 have

LT. BARROW USES SHIELD TO CUT LIGHT GLARE

been using the LSO's signal board suggested by Ens. J. T. Gibbs in the July issue of NAVAL AVIATION NEWS (pg 34) and found it very helpful.

An excellent solution to this problem was suggested by Lt. (jg) E. C. Hoskins, VF-41, which the ship has been using for some time. By setting up a wire recorder on the platform and having the assistant LSO announce each landing, including the pilot's name and comments on everything that happens during the approach, it was found the play-back over the inter-com squawk boxes in the different ready rooms is quite similar to a radio broadcast of a sports event.

Some of the playbacks have been plenty exciting and even the ship's officers are taking an interest in them. The on-the-spot comments carry more weight and the pilots claim them to be much more instructive than the normal type of post briefing. One reason for their success might be laid to the rapid-fire delivery, a la Bill Stern, of LSO Barrow who "talks 'em in" as well as "waves 'em in."

Training Unit Sets Record

Many Hours Flown Without Accident

NAAS WHITING FIELD—Speaking of safety records, BTU-1A flew 6,386 hours in 61 consecutive flying days up to 1 February without a solo accident. This record is more remarkable in view of the fact most of the pilots had never flown before.

The record also is significant since the flying was done in SNJ's rather than the lighter and slower *Yellow Perils* which formerly were used to train embryo pilots. At the time the switch was ordered, some authorities questioned whether green men could step right into SNJ's and fly them, in view of the more-complex operation of a plane with retractable landing gear, more cruising and landing speed.

During the period that the 6,386 hours were flown, an average of 340 students received flight training and 132 completed the unit syllabus of training.

DID YOU KNOW?

Navy to Cut Air Strength

Budget Drop to Close Down Stations

A smaller Navy with fewer ships, planes and men is provided in the program submitted to Congress by Secretary of the Navy Sullivan following President Truman's reduced budget for the new fiscal year starting 1 July.

A total of 29,500 men were slated to be lopped off the payrolls, 24 ships put into mothballs, 418 operational planes cut off the lists, nine air stations closed and three others reduced to standby status.

Carriers slated for inactivation are the CV's *Princeton, Tarawa* and *Antietam.* Air stations to be closed are at Naha, Okinawa; Ewa, Hawaii; Adak, Alaska; Orote, Guam; Sangley Pt., Philippine Islands; Honolulu; El Centro, Calif.; Santa Ana, Calif.; and South Weymouth, Mass. Those to be put in standby status are Pearl Harbor; Barber's Point, Oahu; and Glynco, Georgia.

The Navy plans to cut its enlisted strength by 21,700 men to a total of 350,000. Navy and Marine officers will be cut by 1,195. A number of these will be Reserves who were called back on active duty and paid out of Regular Navy funds. These men have been directed to submit requests for retention on active duty if they desire to continue in the Navy.

Cold Complicates Air Hops

Medical Cases in Aleutian Difficulty

VR-5, SEATTLE—There is never a dull day when transporting medical and surgical cases, especially up in the Aleutians.

A recent flight from Adak, with three patients aboard, went into Anchorage because of bad weather at Kodiak. One of the patients required fresh milk at frequent intervals. While the plane was being refueled, the fresh milk froze. However, when the plane was airborne again the milk thawed and the patient resumed his "treatment."

Another patient had a fractured jaw which had been set but not wired. While walking from the plane to the hangar, this patient, protected from the elements by a parka and a blanket around his head, tried to let his teeth chatter in the normal fashion. Naturally the fracture position was completely upset. It might be worth mentioning here that the temperature was 12 below zero.

ADM. PRIDE RECEIVES AWARD FROM MR. KENNEY

BuAer Wins Safety Award

Wins Secretary's Certificate for 1948

Bureau of Aeronautics has captured the Secretary of the Navy Award for Achievement in Safety for the calendar year 1948 by reducing the accident rate in its industrial activities by 30% under 1947.

Activities concerned include O&R shops, public works, supply—any place on an air station where civilian personnel are employed. Presentation of the award was made in behalf of Secretary Sullivan by Undersecretary W. John Kenney and received by RAdm A. M. Pride.

BUAER won the award in competition with other bureaus of the Navy. The 1948 record represents a reduction of more than 300 lost-time accidents under the preceding year. The Navy as a whole reduced its rate by 22% over the same period. Several air stations will receive the Secretary's award for reducing their accident rates last year. They are MCAS CHERRY POINT, NAS ALAMEDA, ANACOSTIA, LAKEHURST, NAMC PHILADELPHIA, NAS SAN DIEGO, NATB PENSACOLA, NATTC MEMPHIS, NATC PATUXENT RIVER.

Engines Flown To Kodiak

'Operation HP' Beats the Deadline

VR-44, MOFFETT FIELD—Twenty-one R-1830 engines were urgently needed at NAS KODIAK. ComFairWestCoast gave the squadron four days to make delivery.

In short order, an endless border-to-border shuttle was in operation. VR-44 pilots took the engines from San Diego to Seattle where VR-5 crews relieved them for another shuttle hop. VR-5 expedited lift of the engines to Kodiak on its regular run, with the whole operation completed well in advance of the deadline for the repairs.

Kimball New Air Secretary

JATO Official Succeeds John Brown

The new Assistant Secretary of the Navy for Air is Dan A. Kimball, an Army Air Force pilot in World War I and later executive vice president of Aerojet Engineering Corp., of Azusa, Calif.

He succeeds John Nicholas Brown, who resigned for health reasons on 11 February after having served as the No. 1 man in naval aviation since 1946. Kimball also is vice president and a director of General Tire & Rubber Co., in charge of their West Coast operations. Aerojet is a subsidiary of that company which manufactures the well-known JATO units used for quick take-offs by many Navy aircraft.

World Travelers Move On

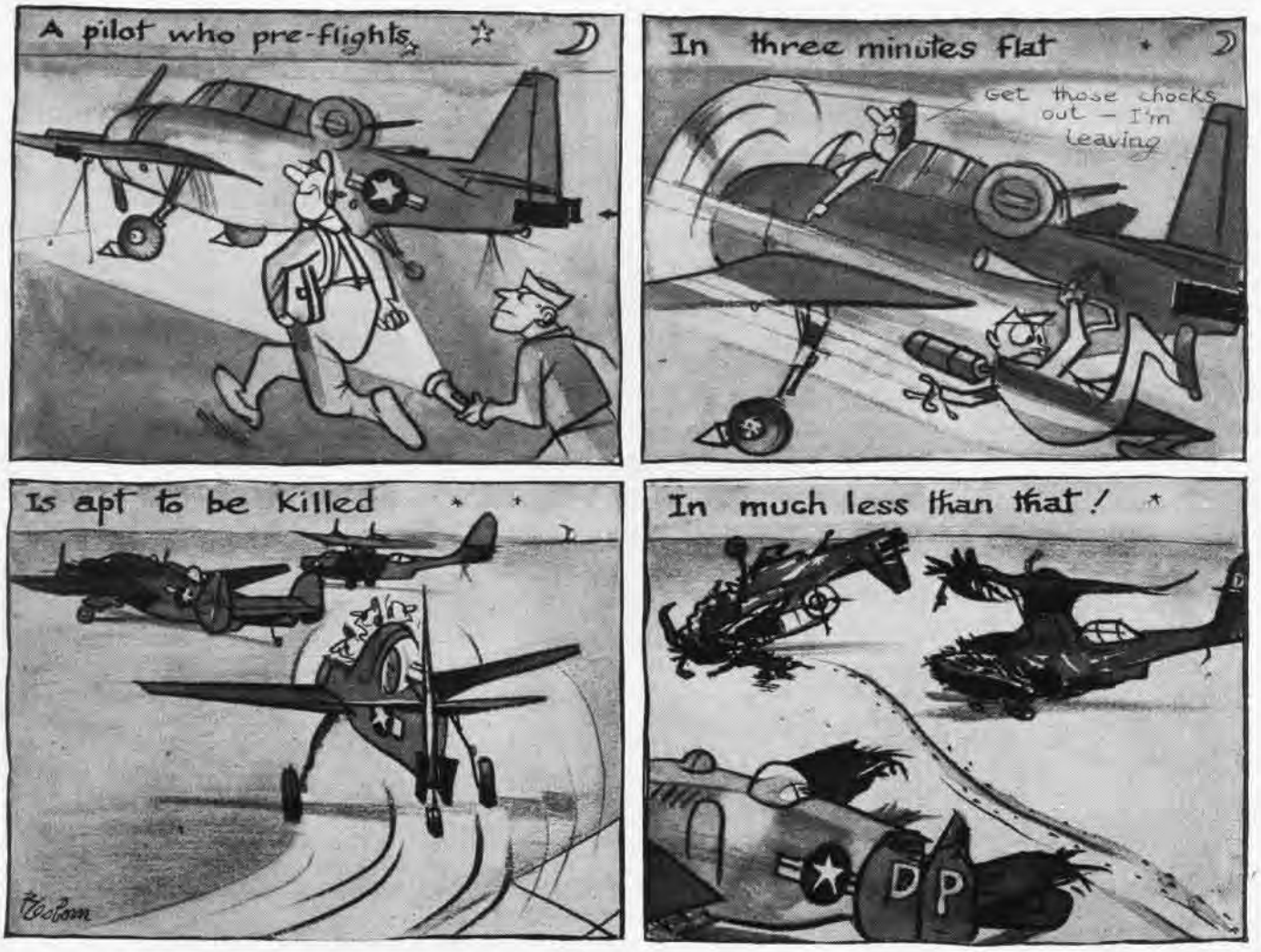
Air Group ONE Gets Impressions

AIR GROUP ONE—Taking over the continental air and the magnificent manner, Air Group One aboard the USS *Tarawa* happily departed Tsingtao on 6 December for Hong Kong. Reports are a little garbled from the various squadrons aboard, but the comment by Attack 14 "fine sport" or perhaps it was "fine port" sums it up. Fighting 11 went in for sartorial splendor, art and beauty. They picked up some fine English tweeds and beautiful hand-carved ivory. Fighting 13 was more social conscious and went out to meet "great numbers of English" in Hong Kong and found their "customs and opinions most interesting." *Brooklyn was never like this.*

Next stop was Singapore where Fighting 13 looked over some Buddhist temples, rubber plantations and millionaire's homes. Attack 134 merely mentioned Singapore in passing, but Fighting 11 noted that leopards were out of season and the political situation in the Maylaya peninsula was discouraging. Fighting 12 granted liberty.

On to Ceylon and the Bay of Bengal, where Fighting 13 enjoyed life as they found it and Fighting 11 picked up some "very old, very rare" sapphires and cracked ivory elephants. Fighting 12 was "raring to go—home" and noted that still another year had passed.

The report knocks off with CAG-1 enroute to Bahrien on the Persian Gulf and new and different ports and sports. Next month, CAG-1 in NEW ADVENTURES on the HIGH SEAS."



Rushed To Death

THE PILOT arrived at the operations desk about an hour and a half before daylight on a cold winter morning. He was given a VFR clearance for a round robin flight and assigned TBM #129. When he went out to the line he found that the plane was still tied down and had not been pre-flighted.

Seven minutes later this pilot was killed. Three airplanes were destroyed and a fourth was seriously damaged.

When the line-crewman arrived at the plane the pilot was climbing into the cockpit. He shouted that he had untied the TBM himself and was ready to go. Checking to see that the wings were unhooked, the lineman noticed that the elevator and aileron battens were still on. He removed the elevator batten and climbed up on the stub wing to remove the aileron batten. At this moment the pilot started the engine without waiting for an all clear signal. The force of the propwash blew the lineman off the stub wing. He picked himself up and started to put the battens in the tunnel hatch, when the engine torched. As he ran forward with the firebottle, the engine was idled down and the pilot gave the signal to clear the chocks.

No one had noticed that the rudder batten was still in place. No yellow sheet had been prepared for the plane. The pilot taxied away without signing for the aircraft.

Almost immediately after the start of the take-off roll the TBM began a swerve to the left, leaving the runway about 140 yards from the spot where the pilot had first lined up for take-off. From tire marks on the grass it could be determined that the plane did not become airborne until it was within 150 feet of the aircraft parking line.

The TBM first hit a parked PV and then tore up two PBY's, before crashing on its back with both wings torn off and the left horizontal stabilizer gone. The crash crew found the pilot partly out of the cockpit. Apparently he had been killed on impact with the first PBY, when a portion of the PBY wing cut through the cockpit of the TBM.

From the standpoint of Flight Safety this accident is of particular interest because of the variety of errors.

In the first place, the operations officer violated station regulations in assigning this aircraft to the pilot without determining that it was ready for flight.

Second, the pilot was at fault in not giving the plane a careful visual inspection and in accepting the plane without examining and signing the yellow sheet.

Third, the pilot should not have rushed the line crewman as he attempted to get the plane ready for flight. In particular, it was discourteous of him to start the engine with the lineman on the stub wing. He should have waited until the lineman was standing by with a fire-bottle and signaled "all clear."

Last of all, the pilot neglected to go over the standard check list before take-off. Had he done so he would have discovered that the rudder was locked. Certainly this is a tragedy of errors, but it should serve as a reminder to each of us that hasty and incomplete flight preparations can easily result in a fatal or serious accident.

FOG LIGHTS FOR AIRCRAFT

PILOTS contend that the airplane is here to stay, and, if it weren't for weather, it might stay in the air. Weather has been a persistent, and often a successful, opponent of aviation since its beginning. Much progress has been made toward circumventing the effect of unfavorable weather in the air, but when fog and low visibility roll in around airports where planes have to land, then planes usually quit rolling at all. Navigational aids, instruments, radio, radar, GCA and ILS can get the airplane over the field and down to within a few hundred feet of the runway, but it still takes a pilot to land the plane and if he can't go contact prior to touchdown, he's in trouble.

Working hard on this problem of landing in fog and low visibility, is the Landing Aids Experiment Station at Arcata, California. And what better place—here there are days when only the fish fly—fish, and LAES planes.

The Arcata station is owned by the Navy, but the project is carried on in cooperation with the Air Force, CAA, Navy and commercial companies. Control of the program is shifted from time to time to various participants, so each will have an opportunity to run it "the way it should be run." A lot of people are interested in keeping planes airborne on a yearly basis rather than a seasonal one.

GCA and ILS are used to get the planes lined up with the runway while the pilot is still on instruments; then through the use of high intensity lights strategically located, the pilot is shifted to contact for the final approach and landing. Experiments are also carried out with various types of runway lights and several types of fog dispersal.

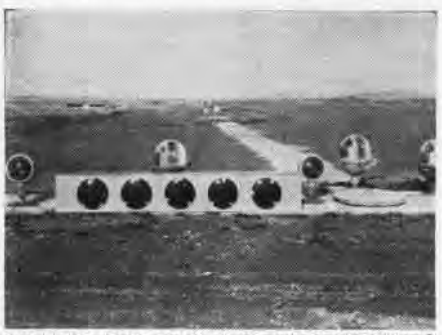
The first approach lighting system tried at Arcata was the Air Force high intensity funnel system installed in 1946. Although this system proved satisfactory for experienced pilots to land most types of aircraft during daylight object visibility of only 1/16 mile, it was determined that two parallel rows of lights about 250 feet apart and 3000 feet long were preferable.

BOTH GCA AND ILS WORK FULL TIME AT ARCATA

APPROACH LANE AT ARCATA IS CLUTTERED WITH VARIETY OF LIGHTING SYSTEMS UNDER TEST

In September of 1947, the Bartow multi-row approach lighting system was flight-tested at Arcata. This system consisted of eight parallel rows of lights with only the two middle rows of lights extending the full distance from the approach portal to the runway threshold. Variations of this system were tested utilizing only one row, two rows, six rows and all eight rows. The lights were so controlled as to be able to make the rows extend 3000 feet, 2200 feet or 1000 feet out from the runway.

THE FULL multi-row system was found to be satisfactory for 1/16 mile object visibility. Using only two rows of the multi-row system, landings could be made down to about 1/4 mile visibility. Using one of the inner rows singly did not prove satisfactory.



RUNWAY LIGHTS COME IN FOR SHARE OF TESTING

During 1948 two rows of towers about 225 feet apart were installed. Each tower supports a platform 20 feet long having its inner end about 105 feet from the extended centerline of the runway. A modified Air Force system, the two inner rows of the multi-row system, a Sylvania flashing light system and a Westinghouse flashing light system have been installed on the platforms.

The two single line systems, using flashing lights installed on the above described platforms were flight tested during the 1948 fog season. It was decided that flashing lights were satisfactory only for identification purposes.

The CAA slope-line approach light system was installed during late 1947. This system, as installed at Arcata, consists of two slightly diverging rows of lights beginning at the end of the runway and extending out 3000 feet and spaced 100 feet apart in the rows. Each light unit contains 10 600-watt aircraft landing light lamps mounted in a line which is at an angle of 45 degrees with the horizontal plane. Thus each light unit leans toward the centerline of the glide slope. This gives the pilot both horizontal and vertical reference during final approach.

If the plane is squarely in the center of the glide path, the leaning bars of lights will form two continuous lines of lights leading to the runway. To illustrate how this works, visualize flying down a straight line of telephone poles at such an altitude that the top of the nearest telephone pole just overlaps the bottom of the next pole ad infinitum, the optical illusion would be one of a single gigantic telephone pole. Now, tilt these poles at a 45 degree angle, project yourself at the same angle from the poles, and you would have a long, leaning pole. Make two converging

lines of such poles, stay at the proper altitude in the center to maintain the illusion on both sides, and perhaps you can get the idea of how the CAA slope-line system works.

ANY DEVIATION from the glide slope centerline will make the lines of light break up into characteristic "hash mark" patterns.

No color filters are needed to distinguish the approach light system from the runway lights, because of their very different appearance. The approach lights are elongated bars of light while the runway lights are pinpoints. The break between the end of the slope-line lights and the beginning of the runway lights leaves the pilot even less opportunity to make errors. Without the use of color filters, two to 10 times as much candle power can be realized.

The CAA slope-line system has proved the most popular approach light system tested to date, and it has been satisfactory for approaches by experienced pilots in visibility of $^1/_{16}$ of a mile. This system, with slight modification, is being recommended for adoption by the Air Force, Navy, Civil subcommittee on visual aids to air navigation.

A new system to be installed at Arcata, is the cross-bar system. Developed and adopted in England, the cross-bar system consists of a line of lights on the extended centerline of the runway with transverse lines, or cross-bars, of lights bisected by the centerline. The cross-bars increase in length with increased distance from the runway at the same rate that the glide slope height increases.

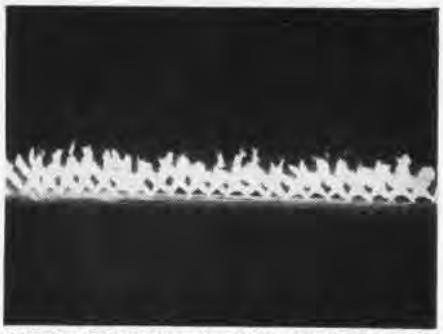
ON TOO HIGH APPROACH LINES ARE BROKEN

It is the intention of the ANC subcommittee on visual aids to air navigation, which directs LAES, that all other approach lighting systems which have had initial tests indicating definite possibilities for use under bad visibility conditions, will be installed and tested at the station.

In conjunction with the approach systems, a number of high intensity runway lighting systems are being tested.

To obtain necessary aerological data, including analysis of fog with respect to droplet size and the water content of the atmosphere, the atmospheric transmission of light, temperature, wind direction and intensity, ceiling and humidity, a complete meteorological department is maintained at Arcata. Six transmissometers are installed to make continuous records of the atmospheric transmission of light.

Construction of an instrument which will automatically control the intensity of approach and runway lights has been completed by the National Bureau of Standards at the Navy's request. This control will correct for background brightness and adjust the brightness of runway and approach lights for any fog condition so that there will be no danger of blinding the pilot by runway or approach lights that are entirely too bright. This equipment is considered necessary because the density of the fog in the approachway may be entirely different from the density of the fog on the runway or in the vicinity of the control tower.



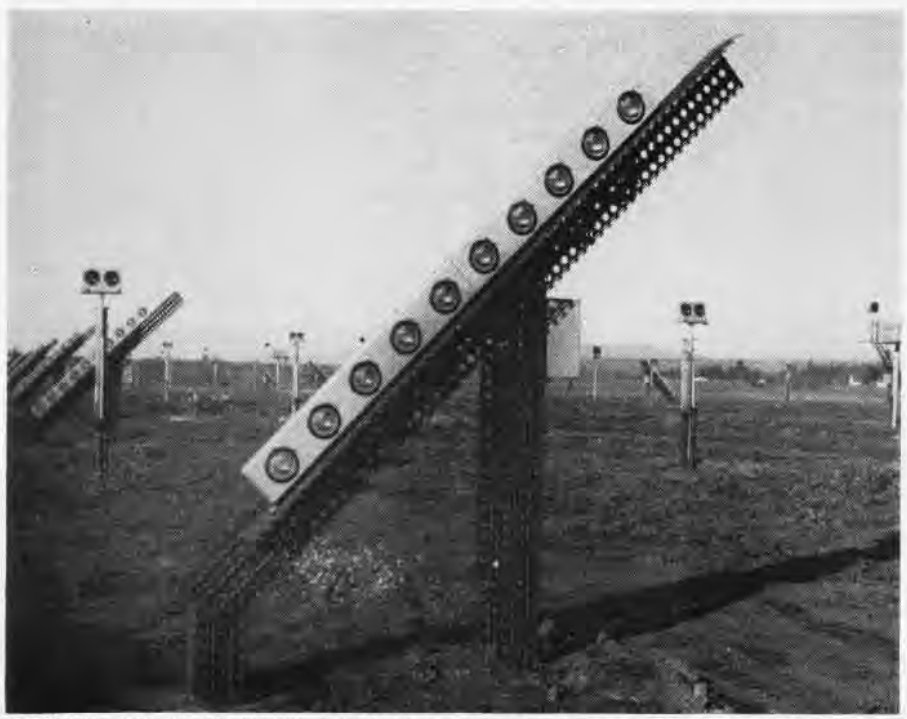
TABLES ARE TURNED AND HERE FIRE FIGHTS FOG

A fog dispersal laboratory has been set up at Arcata where a few burners may be installed and valuable test information obtained at low cost. Already more than ten different types of fog dispersal equipment have been tested at Arcata. The work has consisted of studies or tests of wind curtain, water curtain, sonic, supersonic, electrical and thermal fog dispersal systems. At this time, a thermal-type fog dispersal system is considered most practical.

At those fields, both civil and military, where approach lighting systems have been installed, it will probably be some time before slope-line replacements are made. However, in the future, where lighting system installations are made, they will probably be in conformance with ANC recommendations.

The final goal of all the Arcata research in approach lighting systems and methods of fog dispersal is either to make it transparent or to drive it away entirely. If the fog cannot be seen through, perhaps it can be blown away. If it can't be blown away, then drown it, or send it packing with high sounds or low noises. If none of these systems work, then shock it into the next county with a shot of high voltage, or just set a fire under it and turn it into a lot of hot-air—for hot-air in small doses is seldom fatal.

So next time you get caught up on top, just cruise around until you find a field with approach lights. If none are in the immediate vicinity, fly on out to Arcata. They'll bring you in and your landing will be another valuable, though small, contribution to the never-finished fight against weather.



APPROACH LANE AT THE ARCATA STATION SHOWING THE SLOPE-LINE UNITS IN THE FOREGROUND

DOPEOFFS' BONER BADGES

WANTED: A cure for "doping off". There was a time, in the days when Grampaw Pettibone was in his prime, that it was literally true that any landing you could walk away from was a good one.

The crates they flew not only had built in sharp stall characteristics and guaranteed spins but the general lack of information on how to fly them created an additional hazard. Scuttlebutt has it that an early commandant at Pensacola, a non-aviator, added his own danger factor when he observed that most accidents occurred when planes were making turns. Seized with an inspiration, he decreed that thereafter "all planes are to slow down in turns."

An old timer had a good excuse for an occasional washout.

Came the day of tail hooks, however, and our intrepid aviators started to forget essentials. To tail hooks add mixture control, retractable landing gear and flaps. Then have it all under the control of an occupant suffering with spring fever or a hangover and you have

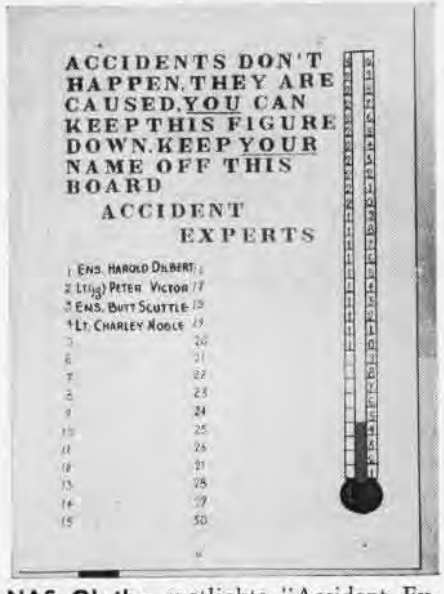
Aviation Cadet (Cdr. USNR Inactive) E. S. Gwathmey pays price for mistake

the makings of a 100% pilot error accident report.

With the advent of the numb-above-the-neck type of accident ready room bull sessions took up the problem of curing the disease. Commanding officers responsible for keeping their flocks on the straight and narrow cudgeled their brains for new and novel ways to enforce use of checkoff lists. There evolved the phony award type of reminder to potentially wayward pilots.

One of the first, now hoary with age, was the *Flying Jackass*, which some fertile mind on the old *Saratoga* pulled from his hat. If *Ens. Dilbert* forgot to lower his tail hook and produced a new ulcer for the LSO, a ready room kangaroo court was convened to weigh the evidence and assign some penance. In minor cases he might have been handed an extra watch as SDO, but for unqualified bonehead stunts all pilots were assembled, and, with appropriate ceremony, the unfortunate was awarded the *Flying Jackass* emblem which he was obliged to wear until some other lame brain earned the right to wear it.

A favorite in VP squadrons was the furlined thundermug which reposed on the offender's desk the required period.



NAS Olathe spotlights "Accident Experts" while thermometer keeps score

BLUNDER TROPHIES AS THEY APPEAR IN THE AIR FORCE MUSEUM AT WRIGHT-PATTERSON AFB

At Pensacola in old Squadron Three at Chevalier Field the cadet mark of shame was a placard worn about the neck reading "Ignoble Order of Blind and Dumb Airplane Pilots."

WITH THE advent of war more important events pressed these quaint practices into the background. Combat losses made a wheels-up landing a matter of little consequence.

One outstanding exception, however, was Air Group 35 embarked in the *USS Chenango* under the command of Cdr. F. T. Moore, Jr. Leaving Pearl for combat areas, the group, with many untried carrier pilots on their first cruise, made one training flight. It was immediately evident that some remedy for sloppy techniques was needed. A conference produced a system for fining pilots which was adopted without delay.

The scale of fines was as follows: *a.* 25 cents for every cartridge over one used on F6F starting. *b.* $2.50 for each tire blown on landing. *c.* $5.00 for damage to a propeller. (Catching a late wire and nicking the barrier, for example.) *d.* Miscellaneous fines for "Dilbert" techniques such as too long getting into proper position on the catapult and too great a landing interval.

Fines were assigned by a board of three pilots and approved by the C.O.

With application of the system it was noticed that individual pilots spent more time, supervised when necessary, on ground training and discussing procedures. At the beginning the "slush" fund grew at a great rate, but as the cruise wore on the contributions dropped sharply. As a consequence,

maintenance improved and for the last three months before the cruise ended there was 100% availability every day.

As a sequel CAG reported, "Monies so collected were used to augment the recreation fund and the entire amount was used for a most enjoyable dinner at the St. Francis in San Francisco upon our return to the states."

Now that naval aviation has returned to a comparatively peaceful existence the incidence of mishaps due to absent-mindedness has increased. Maybe it's the pressure of paper work or the let down from combat work under forced draft, but the sad fact is, despite a declining accident rate, the proportion of accidents due solely to pilot neglect has risen.

WHEN a plane was washed out in Grampaw Pettibone's day (we assume the venerable one miraculously escaped that fate) the damage to the exchequer was in the order of $35,000. But when Ens. Dilbert creams an F2H the budget officers shudder as they see $870,000 go down the drain. At that rate the naval aviator circa 1927 would have an allowance of 25 airplanes to contribute to the scrap heap.

Grampaw Pettibone Interrupts:

Don't pin any angel's wings on me, son. I ripped off my share of wing fabric learning to make cross wind landings, and even joined the Caterpillar Club one day when I forgot to fasten my safety belt. There are plenty of naval aviators who have never scraped a wing tip, but not many from my day. Anyway, I figure that those early boners stand me in good stead.

Nowadays I can see right through some pilots' statements, because I remember that time I ran out of gas. Incidentally, plenty of my friends ended their flying careers very suddenly because they forgot some minor point or took one chance too many. That's why I raise so much h..l all the time—just trying to keep you young fellows from killing yourselves.

Now that the profligate expenditures of war are a thing of the past, several commands and squadrons have revived the use of ridicule as a means of sharpening memories.

During the Mediterranean cruise of the *USS Midway* the winter of 1947-48, a section leader took his wingmen by the stern somewhere between flight deck level and the surface of the water at 400 knots. He paid the price when, at a ceremony conducted by the CO, he was awarded a not-too-neat flathat.

At operational training in Miami a huge pair of wings is suspended about the neck of the pilot who make a pass at landing with his wheels up or some equally serious dopeoff. In carrier qualification at Jacksonville an elaborately engraved certificate of the order of T.T.O.S. (Thicker Than Owl's Singing) is awarded.

Various minor tortures have been found effective. One of the best is requiring a patrol plane captain to ride as copilot for awhile after pulling a prize boner. A salutary effect is produced also when pilots are assigned duty in the prop or metal shops as the situation warrants.

Boner badges can be used effectively for ground crows as well as flight personnel. Inveterate smokers who have to carry their cigarettes onto flight lines, hangar or flight decks and near gasoline stowages can be curbed by some of the methods discussed here.

Here are some devices produced in the past in naval aviation and the Air Force (where they are known as Blunder Trophies):

Large, locomotive type, oil can.
Flying Jackass.
Lung tester.
Alibi trophy cup.
Furlined relief tube with attached powder puff.
Kiwi bird.
Dumbbell.
Crown decorated with four leaf clovers perched on an egg.
Solid ivory ball with wings.
Furlined thundermug.
Bone.
Maggie's panties (in deplorable condition).
Cocked dice.
Cast iron derby
Flathat.
Order of Dumb and Blind Pilots.

VP-3, Coco Solo—This squadron dropped some 60 500-lb. bombs on desolate rocks on the Panama side. One plane suffered windshield damage from concussion at the amazing altitude of some 2,200 feet.

Flying Banana Saves Pilot

Helicopter Pulls Man From The Sea

HU-2, LAKEHURST—The Navy's new tandem helicopter, the Piasecki HRP-1 attached to this squadron, made a dramatic rescue of a carrier pilot flying from the *Leyte* (CV-32). Lt. (jg) Floyd Hale crashed on take-off in an AM-1.

He was thrown clear of the aircraft and passed down the starboard side of the ship. Surface winds were 28 knots and the sea was rough. Lt. W. H. Shawcross was flying plane guard at the time and, even though some difficulty was encountered in locating the downed pilot, he was hovering about 10 feet above Hale in a matter of seconds.

The rescue sling was lowered hydraulically but Hale, battered and exhausted, could not get his 200 pounds completely in the sling. He did manage to get his arms through. He was hoisted up to the cabin of the helicopter but since he was not completely in the sling and the major part of his body was below the cabin door, the crewman of the helicopter, Dawson L. Huff, AD1, was unable to drag the flier into the aircraft.

Huff held the pilot by the arms for one to two minutes while Lt. Shawcross flew at minimum altitude over the DD *Johnson*, where Hale was deposited, unhurt, into the waiting arms of crewmen aboard the tin can. This was the first rescue by the HRP-1, which is named the *Rescuer*, and shows that this versatile aircraft with minor modifications will lend itself profitably to future rescue missions of the Navy.

DOGS STOP THEFTS AT MIRAMAR

In wartime dogs in the K-9 corps proved their worth. Now in peacetime dogs are once again showing their ability to help in emergencies. At NAAS MIRAMAR, six German Shepherd dogs are helping to stop pilferage in the automotive compound.

This vehicle pool contains valuable portable and negotiable equipment and requires constant surveillance. Due to shortages in personnel, adequate security patrols within and around the fenced area could not be maintained, and repeated thefts of parts and equipment occurred.

Through the cooperation of W. Plass Owen, a well-known professional dog trainer, the six dogs were obtained from the San Diego Shepherd Club, and three enlisted volunteers were given a course in dog handling.

The dog guard works in this way. Pairs of dogs occupy kennels spaced throughout the area and are fed there during working hours. All personnel, except a duty dog-handler, clear the patrolled area at the end of working hours, at which time dogs are released from their kennels.

The dogs are trained to give an alarm by barking, when anyone except a dog-handler known to them enters the area. They are *not* trained to attack trespassers. The patrolled area fence is posted with "Beware of Dogs" signs. Security personnel and a dog-handler maintain a continuous watch outside the area. The dog-handler accompanies security personnel investigating alarms and is also available to accompany fire-fighting equipment to the area.

Since August 1948 the use of these specially-trained dogs has proved successful in safeguarding government property. Results more than offset the cost of care and handling.

▲ ***BuAer Comment*—The use of watch-dogs appears to be an excellent means of accomplishing the maximum security with a minimum expenditure of funds and personnel. It is felt that other activities having similar security problems might profit by a consideration of the system pioneered by the auxiliary air station at Miramar.**

HAY BALE-OUT VIA NAVY

LOS ALAMITOS' LT. DALLAS CHECKS WITH W. ASHLEY AND L. SOMBRERO

FLYING BOXCAR READY FOR LOADING AT NAVY'S AIR BASE AT FALLON

THE STEAK you eat next fall may well come to you through the courtesy of naval aviation which delivered hundreds of tons of hay to starving cattle cut off by the storms and blizzards that swept over the West and Southwest during the first of this year.

The Navy united with the Air Force in *Operation Haylift,* during which, in the three weeks ending 18 February, 1100 tons of hay were dropped to starving, snowbound livestock in remote Nevada range land. From 1 to 9 February naval aviation units from the Pacific Fleet, Organized Naval Air Reserve and Marine Corps, based in the Eleventh Naval District, also conducted a large scale emergency operation to relieve acute shortages of food, medicine and livestock feed imperiling the entire Colorado plateau.

Sixteen Navy planes participated in *Operation Snowbound*, as the Southwest mission was called. Marines from MAG-1, El Toro, flew two R4D's and six giant *Skymasters,* while the other eight R4D's were piloted by personnel from NAS LOS ALAMITOS, NAMTC PT. MUGU, NOTS INYOKERN, VR-44 MOFFETT FIELD and NAS SAN DIEGO. All planes averaged three round trips a day, with the R4D's carrying 2½ tons of hay per load and the R5D's 6½ tons.

Fifty-two officers and 138 men from these activities flew from seven in the morning to five in the evening, whenever weather permitted, and again demonstrated the kind of pin-point accuracy in hitting targets for which Navy pilots are famous. Included in this group were 18 Organized Naval Air Reservists from Los Alamitos who took leave of their civilian occupations to take part in the operation. Fifty additional personnel worked as plane ground crews and loaders. One R4D was manned by Reservists of VR-61 from NAS GLENVIEW who were taking two-weeks' annual training at Moffett Field.

Sleet and snowstorms, extreme cold and poor visibility failed to halt the flights, although some transports were forced to climb to 16,000′ to get over the weather. More than 870 tons of hay were delivered in this operation along with wood, food and medicine. Planes completed 258 flights.

All flights started from NAF LITCHFIELD PARK, where 1,000 tons of baled hay and food had been assembled by federal and Arizona agencies. To save time R4D's did their daytime reloading at Winslow Arizona's municipal field.

LT. BLOUIN TALKS WITH FASRON-8'S DONNELLY

R5D FROM MOFFETT FIELD DROPS BALE OF HAY

Providing housing, messing and working facilities for 200 extra "guests" gave diminutive NAF LITCHFIELD PARK with a normal complement of 170 officers and men an acute case of "growing pains".

Targets were assigned daily by the Federal Works Agency in Phoenix, which acted as coordinator for all relief operations, whether military or civil. To avoid confusion over geographical names of Spanish or Indian origin, targets were indicated by using code letters and numerals of a grid, which had been superimposed over a map of the areas involved. Thus a terse "BAKER 24—40 tons" might mean 40 tons of hay in the vicinity of Oraibi.

Many mercy missions were flown to the 40,000 Indians living in the relatively inaccessible Navajo and Hopi Indian reservations in northeastern Arizona, which cover 22,400 square miles, an area equal to Holland and Belgium combined. Not only was their food situation acute but their cattle, horses and sheep—the backbone of their economy—were cut off from their feeding lots by heavy drifts.

Indian guides, most of whom were experiencing their first flights, accompanied the planes as spotters to help the crews jettison hay bales to points of greatest value. Pin-point accuracy was aided by Indians on the ground signalling dropping-places by mirrors.

Marine pilots reported that drops of 80 lb. loads were often made at under 50′ above the terrain. As a result the

NAVAJO'S ASHLEY SHOWS TARGET TO LT. KRIEG

bales remained intact and were more easily handled by the waiting Navajos.

Biggest single assignment was the transporting of 80 tons of hay to the 12,000 animals on the million acre VVV Ranch near Seligman. Marcus M. Rudnick, owner of the ranch, who acted as guide on these missions, stated that the Navy had definitely saved his immense herd from extensive loss.

Top day for operations was 6 February, when 47 missions were flown and 171 tons of supplies were dropped.

On 9 February, after the most isolated Navajos had received enough hay to "see them through" and roads were again being opened to the stock feeding grounds, this airlift operation was officially rolled up, along with another naval aviation record for "mission accomplished."

Commander A. P. Coffin, operations officer on the staff of Commander Air Logistic Support Wing, Pacific, acted as officer-in-charge of the operation, which was ordered by Rear Admiral B. H. Bieri, ComEleven, and directed by Rear Admiral C. A. F. Sprague, Commander Naval Air Bases, 11 and 12 ND's.

Operation Snowbound marked the second time in two years that Naval Air Reservists from Los Alamitos had brought food and supplies to the suffering Navajo and Hopi Indians. It also was the second occasion on which Marines resorted to "air mail" delivery of feed for livestock. During the Nicaraguan campaign of 1927, Missouri mules carrying supplies deep in the interior got their hay and oats by airlift.

The Fleet Advance Air Base at Fallon, Nevada, served as base for 250 Air Force men engaged in *Operation Haylift*. The Navy furnished all gasoline for this operation. Pilots from VR-23 at NAS ALAMEDA also flew in 400 gallons of oil in drums from Alameda, and 50,000 pounds of food for AF personnel, as well as 100 bunk beds, blankets, medicine and winter clothing.

Housekeeping and janitor service for the Air Force *Boxcars* was performed by 40 FASRON-8 men attached to NAS ALAMEDA, who were under the command of Lt. Emil G. Blouin. They also acted as "buckaroos" and "hay kickers", loading the heavy bales of hay into the *Boxcars*, then climbing aboard to kick it out while in flight. (The hay, which had been trucked to Fallon air base, had been purchased by ranchers.)

SEVENTEEN C-82 *Flying Boxcars* made a total of 240 flights from Fallon to drop the hay to starving cattle and sheep. In addition they dropped an undetermined number of blankets and K-rations furnished by the Navy to persons snowbound in homes or marooned in automobiles with temperatures of 25° below.

Despite a host of housekeeping problems caused by weather that froze pumps and water pipes, naval personnel did their job in *Operation Haylift* so well that *Boxcar* flights were made on schedule with a minimum of discomfort to the Air Force men.

RANCHER RUDNICK THANKS RESERVIST INGRAM

This was the first joint operation of its kind undertaken by the Navy and Air Force and its success was due in great measure to cooperation between the two services.

Relief operations on all fronts were further aided by the comprehensive radio communication network alerted through the facilities of the Navy and Marine Corps Training Centers extending from South Dakota to Texas and from Arizona to Kansas. Emergency mobile stations were also tied into the Navy communication system.

In addition, the Navy furnished men and equipment to aid in local emergencies. *Weasels* and bulldozers were trucked from Port Hueneme to Flagstaff for Army use, and men and equipment were dispatched from NAD HASTINGS to McCook, Nebraska, and to Navy crews near Valentine, Arizona. Trucks and crews were also sent from Omaha to Ainsworth, Nebraska, and from Denver to Rawlins, Wyoming, for emergency use with Air Force planes.

INDIAN WAVES TO R4D FROM NAS LOS ALAMITOS ASKING FOR MORE HAY

R5D FLIES OVER ARIZONA GRAND CANYON ENROUTE TO HAYLIFT TARGET

Constitution Joins Navy To Assist Airlift

GIANT CONSTITUTION FLIES PAST SAN FRANCISCO WATERFRONT ON ITS WAY TO ATLANTIC COAST

CDR. COLLINS, SKIPPER OF R60-1, AT WHEEL

THE NAVY's newest and biggest—the Lockheed R60-1 *Constitution*—went on "active duty" on 3 February when it flew a party of 72 newspaper and magazine writers and 18 crewmen from Moffett Field to Washington, D.C.

The flight, inauguration of the huge 92-ton plane's transcontinental service, took 9 hours and 35 minutes at an average speed of 268 mph. Preceding the flight came commissioning ceremonies at NAS ALAMEDA where Cdr. William N. Collins, its captain, took over command for VR-44, the training squadron at Moffett.

After formalities were over, Cdr. Collins took the *Constitution* aloft with JATO, flew past the assembled thousands at 290 mph, then made a slow pass at 110 mph. Eighteen F8F's from VF-131, 132 and 133 off the CV *Boxer* flew escort for the transport.

Another of the huge planes, the original *Constitution* to fly, is being fitted out with seats at Burbank and will replace the #2 plane this summer when the latter will be ready for its 1,000-hour maintenance. Both will fly under the Fleet Logistic Support Wings organization, headed by Capt. M. B. Gurney. After its flight east, the *Constitution* returned west with another load of newsmen, but this trip took 18 hours, due to bad weather encountered on the way.

Definite plans for operation of the *Constitution* are being formed but present indications are it will make several transcontinental flights a week from Moffett to Patuxent River.

Since two of its squadrons of transport aircraft are in the Berlin Airlift—VR-6 and VR-8—the Navy welcomed addition of the *Constitution* to its operational lists. Its transcontinental operations will not be scheduled, but flights will be made whenever the Navy's need for large-sized airlift requires. Unused capacity will be made available to other services when possible.

The *Constitution* is the world's largest commercial-type landplane. It can carry 180 persons when fully fitted with seats, although it carried only half that number on its maiden flight. Troop seats can be fitted to the lower deck to double present seating capacity.

ON ITS transcontinental hop the *Constitution* flew mostly at 23,000 feet, where pressurization and heating helped combat the 40 degrees below zero temperature it found there. Cabin altitude was around 10,000 feet. Crew in the plane for the inaugural flight besides Cdr. Collins were: Lt. Cdr. Louis R. Burnett, pilot; Lt. H. George Webster, pilot; Lt. Cdr. Don S. Chary, navigator; Henry Gettle, ADC, flight engineer; Sam Rumph, AD2, assistant flight engineer; G. T. Roselius, AM2, hydraulics engineer; Paul H. Sperry, AE1, electrician; J. F. Waples, ADC, engine mechanic; R. S. Johnston, ALC, radioman; Lt. Elizabeth M. Schwartz, flight nurse; orderlies, Elizabeth Gabriel, ADC, Kay Langdon, AK1, and Margaret Cook, AT1.

To stimulate interest in the Navy's aviation programs — aviation cadet and ensign aviator — the *Constitution* will launch a nationwide tour in San Francisco, May 2. Other corps such as medical, CEC, supply, nurse and dental will have exhibits aboard. It is proposed to have a flight surgeon and corpsman in the plane to give preliminary examinations to any applicants who may be interested. A representative of the procurement branch will distribute literature on officer programs, answer questions and help fill out application blanks.

The itinerary of the *Constitution* tour is: May 2-3, San Francisco municipal airport; May 4-5, Los Angeles, Burbank; May 6-7, Denver municipal; May 9-10, Dallas, Love field; May 11-12, Oklahoma City, Will Rogers; May 13-16, St. Louis, Lambert field; May 16-17, Memphis municipal; May 18-19, New Orleans, Moisant; May 20-22, Birmingham, Ala., municipal; May 23-24, Atlanta, Candler; May 25-26, Columbia, S.C., municipal.

May 27-29, Pittsburgh, Pitt-Alleghany; May 30-31, Buffalo municipal; June 1-2, Detroit, Detroit-Wayne; June 3-5, Indianapolis, Weir-Cook; June 6-7, Chicago municipal; June 8-9, Minneapolis, Wold-Chamberlin; June 10-12, Kansas City, old municipal.

CONSTITUTION FLIES PAST ALAMEDANS AT 290

Before complex instrument panel, Sam Rumph, asst. flight engineer, and Henry Gettle, flight engineer, watch gages

Newspaper writers on *Constitution* flight east get dinner en route from Margaret Cook, AT1, while over Middle West

Newsmen snap pictures of Navy men at commissioning; crew is on the right

No crowding in plane's roomy galley when Kay Langdon, AK1, pours juice

Four 3500-hp *Wasp Major* engines give R60-1 300 mph top speed, cruise at 250

In the spacious forward compartment of lower deck, J. F. Waples, ADC, engine mechanic, checks luggage of flight

Under movie floodlights, the *Constitution* unloads passengers at MATS terminal, Washington, following flight east

SECRETARY FORRESTAL PRESENTS NAVY CROSS TO LT. ARTHUR G. ELDER

SKIPPER CROWLEY IS SHOWN HERE WITH HIS BLUE RAIDER SQUADRON

BOMBING SQUADRON 117

"Good hunting! — Franklin D. Roosevelt" was written across the corner of a program of the commissioning of Patrol Bombing Squadron ONE HUNDRED SEVENTEEN the first of February 1944. The squadron was to fulfill this hearty wish of the Commander-in-Chief by bringing to the western Pacific such a scourge of well-aimed vengeance that the Japanese came to know them as the *Blue Raiders*, and another President, Harry S. Truman, later conferred upon the squadron a citation which described its exploits.

Eight months later, after intensive operational training, VPB-117 arrived in the combat zone where it was one of the first three long range patrol squadrons based at Tinian in the Marianas. Operating under the Third Fleet, the squadron flew offensive reconnaissance patrols to the Bonin Islands and surrounding territory. It also flew interdictory patrols ahead of Admiral Halsey's Fleet and extended searches of as much as 1,150 miles in support of fleet operations against Formosa and Nansei Shoto. During the 54 days of operation from Tinian, VPB-117 flew 244 missions, logging more than 2,800 hours.

On 1 December 1944, VPB-117 led by Cdr. E. O. Rigsbee, Jr., USN, reported to Aircraft Seven Fleet under the command of Rear Admiral F. D. Wagner who had his flag on the USS *Currituck*. The squadron became the first Navy shore-based, long-range squadron to operate from the Philippines. Based at Tacloban, the squadron flew into combat to break the Japanese attempt to reinforce Yamashita's forces on Leyte.

Japan's great and only ally was the weather which did not stop VPB-117, but certainly increased the hazards. Again and again, planes had either to take off or land—frequently both—under conditions approaching zero-zero. Navigation by radar was routine, and it is to the everlasting credit of radar personnel that gear was maintained without a single failure.

Blue Raiders from Tacloban flew without escort in good weather and bad. They not only raised havoc with enemy shipping and airborne opposition in the Philippines, but they attacked the enemy at maximum range in such places as British Borneo, French Indo-China, Formosa, and the China coast itself. Although their mission was primarily search, the *Blue Raiders* from Leyte sank 66 ships, damaged 22 more, shot down 31 aircraft and scored 5 probables. The good hunters were out in full and deadly force.

With the liberation of the Philippines fast becoming a reality, the squadron shifted its base of operations to McGuire Field, Mindoro, on 6 February 1945, and set out to sever the enemy's South China shipping lanes to the Empire as part of Group ONE, Fleet Air Wing Seventeen. Cdr. Harold W. McDonald headed the group, and Lt. Cdr. Thomas P. Mulvihill became squadron skipper.

On the very first patrol out of Mindoro, Lt. William J. Quinn and Lt. Cdr. Harold M. McGaughey each shot down a Japanese plane. On 10 February, McGaughey encored with another plane downed and scored a probable on a 1,200-ton enemy ship. On the 11th, Lt. Jan B. Carter shot down a covering *Jake*, destroyed a 2,500-ton cargo ship and damaged a 500-ton patrol craft.

At this time the enemy was moving thousands of tons of vital supplies up the Indo-China coast along the enemy's last remaining line of communications from the Indies to the Empire. The Nips were defending their line with great tenacity. Convoys were being heavily escorted, provided with air cover, and they moved through shallow waters in short stages, seeking refuge in nearby anchorages when attack became imminent.

It was at this juncture that VPB-117 initiated another of its many *firsts*. Known as the "Pro-Submarine Doctrine," a system was devised whereby the aerial search planes became the eyes of the submarine fleet which was throwing a blockade on the sea lanes between Indo-China and the Philippines. The doctrine paid off dividends as VPB-117 overcame serious communication difficulties and exchanged with scouting submarines and the Fifth Air Force information mutually advantageous.

Close cooperation was the order of the day, and one instance illustrates the deadly efficiency of the inter-service triple-play. On March 27, a Japanese convoy, consisting of two large merchant ships and nine escorts, was spotted at night by a patrolling submarine which sent the location to VPB-117. The squadron arranged to have a search plane pick up and shadow the convoy at dawn, and a strike group of Army B-25's was alerted to take off when the Navy search plane had verified the position of the convoy.

Finding the convoy at dawn, the search plane made two strafing attacks. At this time two of the three submarines dogging the convoy were under a depth charge attack which the strafing cut short. One submarine managed to slip inside the screen to torpedo and

sink one of the large merchant ships and a destroyer. The B-25 strike group came in to sink the remaining ships. The Japs learned the hard way; they never attempted to run a major convoy through the blockade again.

Living conditions at Tacloban were the worst VPB-117 had yet encountered, but undaunted the *Blue Raiders* set out to write a record of destruction so fast and so thoroughly that the Japanese had hardly enough time to tally up their losses before they were hit again. Throughout February and March, Pilots Mulvihill, Quinn, Carter, McGaughey, Empey, Kimball, Garlick, Hyland, Elder, Whitmore, Bourchier, Bell, Willyard, Allsopp and Jensen rolled up a high score in Japanese ships, aircraft and short installations.

On 4 March, Lt. Hyland shot down two *Nells*—they hit the water "in formation"—and brought his total to six in two weeks. Four days later, Lt. Cdr. Mulvihill, Lt. Moore and Lt. Elder destroyed installations in a three-plane strike against the Paracel Islands.

On 30 March, Hyland's plane was forced to make a landing after being badly damaged by 8 *Franks* that jumped it over Samah Bay. All aboard were safely landed on Triton Reef. But the PB4Y-1 had left its mark on the attacking Japs—one *Frank* probably downed and three damaged.

IT WAS Lt. Arthur G. Elder who, with his two copilots and a crew of eight men, established one of the outstanding individual heavy bomber records of World War II. Within a period of seven weeks, beginning on 16 February when he destroyed a 4,500-ton merchantman and a smaller craft off Cap San Jacques, Lt. Elder and his crew sank 26,000 tons of enemy shipping, damaged another 30,000 tons, shot down two enemy planes, destroyed 12 others on the ground—all this in addition to successfully raiding shore installations from Sarawak, Borneo, to Tourane on the Indo-China coast.

★ THIS IS THE sixteenth of a series of short sketches of squadrons in World War II. It is based on reports filed with Aviation History and Research in DCNO (Air).

On March 25, Lt. Elder executed one of the most spectacular assaults against the enemy when he penetrated the great delta of the Mekong River in the first Navy *Liberator* to fly over that area. Heading for Saigon, the former French naval base and Indo-China's second port, Elder followed the deep channel of the river to a point near the town of Nhabe where the river forms a huge "S." Protected by two escorts, 10 large merchant ships and many smaller vessels were riding at anchor.

The *Blue Raiders* went into action! In three bombing and three strafing runs, Lt. Elder and his crew sank a 7,500-ton cargo ship, two of 3,000 tons each, five large ships and ten smaller ones. Heading south toward Cap San Jacques, Elder spotted a Saigon-bound Nip seaplane flying at 300 feet. Although the Jap pilot maneuvered desperately, he could not escape the destructive fire of the *Liberator's* .50 caliber guns and crashed in flames.

On April 8, Lt. Cdr. Roger J. Crowley, Jr., USNR, became commanding officer of the squadron. During April and May, 299 armed search missions were flown for a total of 3,429 hours. Twenty-eight ships were destroyed in addition to 39 damaged; four enemy planes were destroyed and three probables were scored.

AS FEWER enemy ships ventured into the sea lanes and fewer Nip planes rose to contest the *Blue Raiders*, it was necessary to fly farther to find targets worth the bombing. On May 16, Lt. Jerry P. Dougan bombed and strafed two Saigon-Tourane railroad bridges. On the 25th, Lt. Cdr. Crowley bombed and strafed a radar station at Cape Vanella, and on the same day, Lt. Raymond L. Klassy successfully bombed the railroad marshalling yards at Binh Dinh. On the 31st, Lt. Cdr. Crowley and Lt. Klassy joined forces to bomb and strafe a shipyard at Vinh, destroying five small cargo vessels and damaging four others. The shipyard burned to destruction.

On 18 June, Lt. Robert E. Empey, Lt. (jg) William D. Crawford, and Lt. (jg) Joseph W. Hellrung staged a three-plane strike against Ha Tien which lies on the Gulf of Siam. When the three *Blue Raiders* swooped in over the harbor, they had flown 1,000 miles from their base. In three treetop runs, the pilots sank a 1,000-ton cargo vessel and six smaller vessels. As they pulled away, nine *Oscars* began attacking from around the clock. Three *Oscars* were shot down in rapid order, and one was damaged. The *Blue Raiders* then turned home and the remaining Nip planes provided a respectful escort for a distance of 50 miles.

On VJ-Day, VPB-117 could point with pride to their score against the forces of the Rising Sun:

Ships sunk—210—109,170 tons
Ships damaged—274—96,085 tons
Aircraft shot down—63
Aircraft probably shot down—5
Aircraft damaged in air—9
Aircraft destroyed on ground—16
Aircraft damaged on ground—4
Attacks against shore installations—300

For its outstanding search operations with the Third Fleet, for its coordinated operations with Army attack groups and Allied submarines against enemy shipping, for its relentless destruction of small vessels, for its smashing attacks on shore installations, VPB-117, described as "a gallant fighting unit," was awarded the Presidential Unit Citation in 1947.

The magnificent record of the *Blue Raiders* made it clear that FDR's wishes for "Good Hunting" had been at once accurate and prophetic.

VPB-117 SKIPPERS RECEIVE PRESIDENTIAL CITATION FROM SEC'Y BROWN

LT. JERRY P. DOUGAN BOMBED TWO SAIGON-TOURANE RAILROAD BRIDGES

RESERVES FLY FROM FLATTOP

CVEG-71 Reservist from NAS GLENVIEW in *Hellcat* fighter is waved aboard the *Cabot* by landing signal officer during recent carrier re-qualification training cruise

"IN THE EVENT of war, I would be happy to have CVEG-71 aboard the *Cabot* in the same state of readiness as they now are." This comment was made by Captain John W. King, Jr., skipper of the *Cabot,* as he watched the 44 officers and 118 men of this Reserve air group from NAS GLENVIEW complete their annual 14-day training cruise aboard his ship.

During their four flight operational days on the *Cabot,* CVEG-71 chalked up 202 carrier landings, 34 catapult launchings and 226 take-offs without injury to personnel.

This record is even more impressive than it looks at first glance. Although battle-proven, pilots and ground officers in the group for the most part had not flown aboard a carrier for three years. Enlisted personnel were largely seamen and seamen recruits with no previous Navy experience. In addition, the *Cabot* had only recently been taken out of mothballs and had a new crew.

Since CVEG-71 is typical of the 55 carrier groups at stations under the command of the Chief of Naval Air Reserve Training, Rear Admiral Richard F. Whitehead, the recent operation indicates that the Naval Air Reserve program could furnish qualified carrier aviation personnel in case of an emergency faster than the carriers, themselves, could be taken out of mothballs.

Eight more Reserve air groups are scheduled to take carrier re-qualification training aboard the *Cabot* this spring and summer, with CVG-87 from Glenview taking the March 15 cruise.

With three Glenview R4D's flying down personnel, equipment and spare parts to Corry Field, Pensacola, the cruise got underway on 31 January. The next day 21 F6F's and 8 TBM's converged on the field together with an R5D carrying the remaining men in the group. Then came three days of simulated carrier landing practice at the field. Due to the heavy rains, however, some pilots got in but two landings.

Pouring rain also canceled out the plan to fly planes aboard the *Cabot.* Instead the men of CVEG-71 worked late into the night hoisting planes to the flight deck and stowing spare parts.

February 5 saw the *Cabot* ploughing through the stormy waters of the Gulf of Mexico. Then the familiar "Pilots man your planes" was heard. At exactly 1400, Lt. (jg) R. G. Clinnon, who all through the cruise was sending stories to his paper, the *Chicago Herald-American,* gunned his *Avenger* and cleared the deck. With two *Hellcats* having to be pushed aside because of mechanical difficulties and with many green hands in the deck crew, the 35 minutes required to get the remaining 19 planes aloft was considered a satisfactory first-day's record.

Three minutes later the call came, "Prepare to receive aircraft."

The first landing, for a 4.0, was made by Lt. Cdr. Dick West, air group commander. Others equally good followed. One, however, caught a late arresting wire too far to the starboard and was whipped into a small tractor and gear near one of the stacks. Result — one strike, the only one of the cruise, and no injury to the pilot. Apart from this, only four planes received minor damage during the entire cruise.

The second day aboard the *Cabot* brought smoother operations along with an increased tempo of landings and take-offs. Sixteen planes of the group launched an attack on the carrier.

The third day, planes were loaded with rockets, miniature bombs, and .50 cal. ammunition for gunnery exercises on a towed spar. Pilots demonstrated that their regular practice over Lake Michigan paid ample dividends.

Then came two days of liberty at

R. Adm. R. F. Whitehead and Capt. J. King discuss flight operations on *Cabot*

Havana, followed by a day at sea during which the *Cabot* drove for Pensacola.

On the morning of the 11th, last flight operations took place with gunnery and rocket practice 25 to 30 miles off-shore. At 1330 the call to flight quarters was sounded and shortly thereafter the planes of CVEG-71 were homeward bound.

Throughout the cruise officers and men worked as a team. Lt. Cdr. Dick West headed the group, assisted by Lt. Cdr. R. B. Trimble, exec, and Lt. Cdr. N. A. Carlson, CO of the attack squadron and Lt. Cdr. C. R. Ellwood, skipper of the fighter squadron. Lt. Cdr. D. H. Deaver, adminstrative assistant, Lt. (jg) F. K. Hubbard, LSO, Lt. (jg) E. J. Sczech, personnel officer and leading chief L. A. Putzler did much to make the cruise a success. A popular member of the group was Lt. (jg) C. C. Leary, who flew from the *Cabot* during the war with VF-29.

For their excellent performance in demonstrating the ability of Reservists to fulfill their mission, CVEG-71 received a "Well Done" from the Secretary of the Navy, CNATra and CNAResTra.

As planes warm up for a quick take-off from the carrier, the Reserve pilot of TBM-130 receives the 'go' for a deck launch

Five F6F's in formation manned by Reserve aviators from Glenview fly escort over *Cabot* as she steams toward Cuba

Decked out in whites, CVEG-71 men muster aboard the *Cabot* for liberty

VA-71-E CO Carlson talks to *Chicago Daily News* cartoonist V. Shoemaker

Flattop 'happy hour' with V. Walter, H. Maule, French, Chudzinski, Archer

Lt. Karstrom briefs pilots in ready room before operations—front row: J. Neri, S. Rines, S. T. Bitting, and N. Carlson

Airmen apprentices R. Johnson, V. Walter, T. Decker, and H. McLaughlin pose for photographer during Havana liberty

One of the *Navy's newest squadrons is VA-174, headed by Lt. Cdr. R. E. Farkas, first pilot to land an AM-1 aboard the Kearsarge, or any carrier, for that matter. Left to right, they are: Front row, Ens. R. J. Farley, Ens. L. D. Hughes, Lt. (jg) L. O. Hawn, Lt. Cdr. H. E. Vita, executive; Farkas, Ens. G. D. Cryan, Ens. A. J. Bujnowski, Lt. (jg) G. D. Richardson, Lt. D. P. Wallace. Rear row: Lt. W. L. Lafleur, Lt. B. J. Connolly, Lt. (jg) J. S. Gallagher, Ens. C. H. Meyers, Ens. M. E. Taylor, Lt. D. R. Annesley, Ens. M. D. Hand, Lt. J. F. Driscoll, Lt. (jg) F. E. Hale, Ens. G. W. Lockwood, Ens. G. R. Ranney, Ens. E. V. Fineran, Lt. (jg) H. D. Lancaster, Ens. J. H. Hunt, Lt. G. L. Rice (LSO), Lt. (jg) J. Spargo, and Lt. (jg) M. W. Buckner, (LSO). Eleven of the men in the group shown are in the Reserve.*

Navy Pilots Join Airlift

Air Force GCA Crews Navy Trained

FLSWINGS, MOFFETT FIELD—Navy-Air Force joint operations have reached a new peak in the "Operation Little Vittles" and GCA controller training.

Navy transport crews have gone to the MATS replacement Training Unit at Great Falls, Mont., and Air Force personnel started training in GCA control at NAS OLATHE. While Air Force personnel were at Olathe the Navy provided two GCA crews at Great Falls for a period of 12 weeks.

Qualified R5D pilots selected from FLSW were assigned to the Air Force school for a two-weeks course in air traffic procedures in the "Little Corridor" at Great Falls where conditions of the Berlin Airlift were simulated. Upon completion of the course the crews join the airlift with Navy MATS Squadron Three.

Lost Boat Alerts Key West

Gibson Girl Causes Complications

NAS KEY WEST—Search and rescue pilots at Key West have been kept busy participating in mercy missions.

Distress signals from a *Gibson Girl* radio alerted the East Coast from Cherry Point through Florida. Its constant transmission led to the belief that an aircraft was downed. The search was called off when the Coast Guard took into tow a pleasure boat which had broken down.

During the Christmas holiday period intensive search was made for a missing commercial DC-3 enroute from San Juan to Miami, while in January two fighter pilots whose planes crashed at night were rescued.

Squadron 'Mines' Harbor

Bomb Flashes Plot Mine Placements

VA-15, PACIFIC—To prove that precision flying is synonymous with naval aviation, 10 planes flew from North Island to San Clemente Island and in a coordinated night mining run sealed the entrance to one of the island coves.

In this simulated mining attack, miniature bombs were dropped in place of mines. The run was timed so that all planes dropped bombs simultaneously and the bomb flash used to estimate the mining pattern. This exercise will be used extensively in the squadron's future operations to train pilots in night precision flying.

Fights For March Of Dimes

Everybody Wins At Charity Matches

NAAS OCEANA—Fighting 62 backed the March of Dimes drive by backing some bouts. The Quantico Marines challenged all of the top Navy and civilian amateur boxers in the Norfolk area and punched their way to the top in a majority of the bouts. Fights were held 21 January, 1941.

All hands, while enjoying a fine evening of entertainment, contributed through donations and purchase of tickets. The winner of each bout received a wrist watch; the loser, a jacket; the March of Dimes, nearly $8000.

VPB-118 Photos Needed

The historical sketch of VPB-118 *is ready, but we cannot publish it unless members of the squadron send in pictures of men and actions. Pictures will be kept carefully and returned to owners. VPB-118 cooperation will be greatly appreciated.*

Out in the *balmy Pacific around Hawaii, where VP-22 is making a name for itself in typhoon reconnaissance, search and rescue and the like, pulchritude seems to flourish. At least VP-22 claims having the prettiest wives of any Navy squadron. The above photo, taken at a noon hour gathering to watch three new ensigns sworn in, was offered by VP-22 to support the claim. The girls hail from all over the globe, including the wife of J. E. Mishan (standing, second) from Belgrade, Yugoslavia, and of F. W. Howard, (last, seated) who is a native of Viatka, Russia.*

N.A. NEWS VISITS
NAS Columbus

AIR RESERVES IN OHIO BUILD UP PROGRAM

WEEKEND WARRIORS OF VR-73 AT COLUMBUS LINE UP FOR THE PHOTOGRAPHER BEFORE A FLIGHT

JUST AS Christopher Columbus had to weather many storms to reach his goal, so did the naval air station at Columbus have to conquer many hazards to build up its facilities and develop a full-fledged program for training Organized Reservists in the mighty Ohio area.

During the war, to be sure, the Navy had moved into the Columbus Municipal Airport, know as Port Columbus, had built a fine airfield there, and had set up a naval air facility to serve as a delivery unit NATS terminal. But with demobilization, plans were made to return the field to the city and deactivate the facility. Two of the barracks, the mess hall, and one wing of the BOQ were turned over to Ohio State University for housing of veteran students. Most of the shops were stripped and equipment was sent to other activities and to surplus.

At this point, the Navy decided that Columbus, with its strategic location in the center of Ohio, would be a good spot for training Organized squadrons. So, early in 1946 the field was again opened by the Navy and NAS COLUMBUS became one of the original 22 stations and units on the Naval Air Reserve Training Command circuit.

Operating a Reserve training program on a municipal field, used by commercial airliners and civilian planes, presented many difficulties. In addition, a small privately owned airfield a few miles south added to the traffic hazards. The problem was finally solved by giving all light planes a 600-foot traffic circle and Navy and commercial planes a 1000-foot circle.

Ironing out the problem of necessary facilities was something else again. Until a new campus housing program could be completed, Ohio State veterans still had to occupy their assigned buildings. As a result, recruiting of O-2 personnel was held up for nine months.

In the fall of 1946, the student veterans finally began moving out, and the job of converting the buildings into a technical training department was begun. At last, the place began to take on the aspect of a real naval air station, as the changes were made.

While all this was taking place, Organized Reserve pilots (whose training program was already well underway) were continually being asked to take part in air shows throughout Ohio, Indiana, Kentucky and West Virginia. Eager to cooperate in community enterprises, the Reservists filled as many of these requests from local communities as they could fit in.

EARLY in October 1946, the station became a national focal point as the terminal for the *Truculent Turtle* on its record-breaking flight from Perth, Australia. The plane had smashed the world's non-stop record hours before it reached the west coast and had radioed that it planned to land at Port Columbus. Needless to say, the resulting furor swamped the facilities of the station. Newspaper reporters, cameramen, sightseers and high-ranking Navy officials descended in huge droves on the totally unprepared base.

Following this upheaval, the station went back to its building program. Bowling alleys and recreational facilities were installed. A bowling team, destined to win the Ninth Naval District telegraphic bowling tournament, was formed. A basketball team, softball teams, slated to be the 9ND champions, and a boxing team were organized. One member of the latter team, which acquitted itself creditably in the *Golden Gloves*, finally won the 9ND boxing champion.

VF-53-A'S CO, LT. CDR. J. H. KNOOP, LEADS HIS SQUADRON TO THE LINE FOR A FLY-OVER

R. Adm. Whitehead, Chief of Naval Air Reserve Training, is greeted by Capt, Sutton and Capt. Leeper of NEW ORLEANS

VP-ML-52's Lt. Cain, Lt. Fisher, Lt. (jg) Pirnat discuss San Juan flight plans with Lt. Wilkinson as Martin AL-2 looks on

BY 1948, the program was really rolling. June marked an astonishing new high in flight hours. No less than 10,400 hours were logged with no injuries to personnel. Organized and stationkeeper personnel worked together furiously—both night and day—to keep plane availability at a top level for the hordes of Organized and Volunteer pilots aboard for 14-day training cruises.

In the late summer, Columbus' patrol squadron, VP-ML-52, under the command of Lt. Cdr. James S. Temple, began to get the urge to see foreign shores. Since September the squadron has journeyed to Pensacola for its two-weeks cruise, to Guantanamo Bay, to Miami, and to San Juan, Puerto Rico. Now they have a new adage to go along with "join the Navy and see the world"—it's "join VPML and see the Carribbean".

Since Columbus has no facilities for bombing and gunnery due to its inland location, CVG-82 and CVG-53, through the cooperation of NAS GROSSE ILE, use that station's bombing area in Lake Erie and its gunnery area in Lake Huron. Although pilots must spend nearly a full day on trips to and from these areas, they now get in their full quota of "high sides" and "overheads".

The two Associated Volunteer Units (A), which Columbus supports at Louisville, Kentucky, and at Charleston, West Virginia, have proved most successful. At present a third AVU is slated for activation at Fort Wayne.

The rampant Ohio River annually sets up an opportunity for the station's communications department to demonstrate its readiness. When southern Ohio towns find themselves inundated with the spring thaw, the MBS unit is dispatched to the most severely flooded section to provide communication between that area and Columbus.

Ordnance officer Pinyerd checks rifle score of S/Sgt. Ford at a nearby range

The Columbus GCA unit (#23), under Lt. M. M. Hershey, has proved its worth by chalking up four definite "saves" and innumerable "assists" in landing planes during Columbus' inclement weather periods. On 15 December 1948, for example, an Air Force C-47 was guided to safety, while on January 24, 1949, an Air Force C-45, which didn't have enough gas to circle the field another time, was brought in.

IN ADDITION to its regular duties, the station's fire department has charge of fire-fighting for the entire field. The "smoke-eaters" had an excellent chance to demonstrate their training, when an F6F caught fire in a hangar containing seven other planes. Prompt action on their part resulted in the saving of the seven planes. The hangar itself was damaged only to the extent of blackened rafters.

Despite a relatively small population area from which to draw, the Organized Reserve squadrons at Columbus are practically up to complement in regard to officers. To help the enlisted personnel quota "get over the hump", the station has recently instigated a drive

COLUMBUS CO, CAPT. F. C. SUTTON CONGRATULATES LT. SUTHERLAND AS HE TAKES OVER REINS OF AVU(A)-2 AT CHARLESTON W. VA.

O-2 boots try their hands at the old 'dit-dah' system of sending Navy messages

Organized Reservist Dunkle GM2 loads 'claws' for *Hellcat* in ordnance shack

VP Reserves McIntyre, Kinkade, Martin, Blain, Cain are bound for Puerto Rico

to fill up the squadrons with personnel drawn exclusively from smaller surrounding cities. The recruiting team, composed of 10 leading petty officers and chiefs and headed by two station officers, has produced some excellent results. Some 200 O-2's were brought into the Reserve in the first month of the campaign.

THE COMMANDING officer of NAS COLUMBUS is Captain Frank C. Sutton, a graduate of the Naval Academy in the class of '22 and a naval aviator since 1926. During the war, he served as executive officer of the *Chenango* (CVE 28), commanded the seaplane tender *Wright* and later was CO of the *Saginaw Bay* (CVE 82).

He is ably assisted by his executive officer, Commander H. J. Murray, who has been a naval aviator in the Reserve since 1919. Cdr. Murray was a member of the Organized Reserve squadron at the first Naval Reserve Aviation Base at Squantum, Massachusetts, from 1923 to 1937, when he returned to active duty. During the war he served as CO of ACORN-34 at Clarke Field, Luzon.

The type training officer, Lt. Cdr. I. H. McPherson, is an experienced torpedo pilot having served during the war with VT-6 aboard the *Enterprise*: he later was CO of VT-29 on the *Cabot* and then torpedo skipper on the *Boxer*. He holds the Navy Cross, the Distinguished Flying Cross and the Air Medal as well as Presidential and Navy Unit Citations.

LT. COL. John P. Harris commands the Marine Air Reserve Detachment at the station, which is reponsible for training VMF-244 Marine Reservists. During the war he was CO of VMF-155, the only Marine squadron to take part in the Aleutians' campaign and the first one to serve aboard a CVE.

Under the leadership of these officers and with the backing of a loyal group of 30 officer and 474 enlisted stationkeepers, NAS COLUMBUS has taken great strides in the last three years toward its goal of turning out well-trained squadrons which will do credit to both the station and the Navy. With this development has come an upsurge in spirit and enthusiasm of the Organized Reservists, themselves. Today they make a fine team whose mission it is to maintain peace through vigilance.

Columbus Squadrons and AVU(A)'s

CVG-53—Lt. Cdr. E. C. Peterson, Jr., CAG

VF-53-A—Lt. Cdr. J. H. Knoop, CO; Lt. R. B. Etter, Exec.

VF-54-A—Lt. Cdr. M. O. Marks, CO; Lt. (jg) W. G. Grannis, exec, (Acting)

VA-53-A—Lt. Cdr. R. P. Brester, CO; Lt. (jg) W. U. Class, Exec.

VA-54-A—Lt. Cdr. Jack Littlefield, CO; Lt. L. E. Mokrey, Exec.

CVG-81—Lt Cdr. E. A. Kraft, CAG

VF-81-A—Lt. Cdr. Clifton Towles, CO; Lt. W. D. Eikenberry, Exec. (Acting)

VA-81-A—Lt. W. C. Hirsch, CO; Lt. A. E. Edelsohn, Exec.

VA-82-A—Lt. Cdr. A. E. Schwarzwalder, CO; Lt. J. J. Hudson, Exec.

FASRon-53—Lt. Cdr. K. J. T. Sommerville, CO; Lt. S. E. Cunningham, Exec.

FASRon-153—Lt. Cdr. A. M. Lucas, CO; Lt. W. S. Rambo, Exec.

VR-73—Lt. Cdr. W. C. Clark, CO; Lt. J. R. Hoerath, Exec.

VP-ML-52—Lt. Cdr. J. S. Temple, CO; Lt. Cdr. J. T. Higley, Exec.

VMF-244—Capt. J. B. Gifford, CO; Capt. J. F. Rolfes, Exec.

AVU(A)-1, Louisville—Lt. Cdr. F. C. Lewis, CO; Lt. Stanley Ousley, Exec.

AVU(A)-2, Charleston—Lt. W. W. Sutherland, CO; Lt. (jg) C. E. Norris, Exec.

Mechanics of Fleet Aircraft Service Squadron 53 are hard at work giving an SB2C a thorough going-over on 60-hour check

Instructor J. A. Agardi ADC explains intricaties of R-2800 cutaway engine to a new class of boots during regular drill

More Realism For The Link

Mustin-Washington Contribute Idea

NAAS MUSTIN — For use in the cross-country phase of the Link course, this command has developed a uniquely realistic chart of the Philadelphia area. New York and Washington sectional charts were joined and the Philadelphia area photographed to a scale of 3" equal 10 miles. This scale fits the crab speed. Necessary portions of the photograph were traced on onion skin paper and blueprinted to obtain the finished cross-country chart.

In use, the crab is placed directly on the chart and since the chart is scaled to the crab speed, provides both pilot and instructor with authentic record of actual track. The student is able to figure reliable ETA's over reporting points, and to compute wind effect on his progress over the airway. All voice communications are in accordance with those prescribed in "ANC—Procedures For the Control of Air Traffic." This system very nearly duplicates actual flight conditions on cross-country.

Another Link suggestion comes from the girls in the Navy Department Link room.

They use the sectional chart as published, the scale of which permits a crab speed of approximately twice the indicated speed of the trainer. They cover the chart with clear acetate sheeting, erase the lines after flight and reuse. This permits a much longer cross-country for the time, and a maximum number of check points, reports and let-downs can be practised while giving a very accurate track.

The Washington girls also use the photographing method to duplicate area holding procedures. Holding procedure charts from the HO 510 are photographed and enlarged to 3" to 10 miles to obtain the finished chart.

Blimps Fly Off Two CVE's

Operation Proves Feasibility of Use

VP-2, LAKEHURST — Problems of handling a blimp operating from a carrier deck were investigated in mid-January when aircraft from this squadron and ZP-1 made carrier landings aboard the CVE's *Sicily* and *Mindoro*.

The operation also included changing of crews, refueling and replenishing of airships. The operation was highly successful and led to plans for operating airships off a carrier during fleet operations.

On 20 January Fleet Airship Wing One was commissioned with Cdr. A. L. Cope as commanding officer. Its mission is to maintain uniform operation, training and administration of all assigned units under ComAirLant and ComFairWingsLant.

The unusual *thing about this photo of a Navy HO3S-1 helicopter is that it is sitting on the roof of a building. When the newly-completed Seattle Post Intelligencer building was formally opened, the Navy was on hand. In the photo are Lt. (jg) R. D. Carleton, Marvin R. Van Meer, AD3, of CAG-21, and Marino A. Maule, AA, talking to paper executives*

BuPers 'All Hands' On Sale

Subscriptions Open on Magazine

The Bureau of Naval Personnel's official informational magazine, *All Hands*, is available to aviation and other personnel, in or out of the Navy, by subscription for $2 a year.

The magazine can be secured from Government Printing Office, Washington, D.C., by writing to the Superintendent of Documents and enclosing a money order or check in that amount. For foreign country subscribers, the price is $2.75 a year.

Like NAVAL AVIATION NEWS, which is also obtainable through the same source, *All Hands* is one of several publications issued by the Navy to keep its active and inactive personnel advised on developments in the service. Bureau of Yards and Docks issues a monthly Reserve publication for its Seabee "alumni" and Bureau of Supplies and Accounts publishes a Reserve Newsletter for former supply officers and men.

Hornet Alumni To Convene

May 7 Set as Date for Big Reunion

The first reunion of "alumni" of the USS *Hornet* (CV-12) promises to be a big success judging from the hundreds of letters indicating they would attend the all-day party in Washington, D. C., on May 7.

"The USS *Hornet* (CV-12) Club" was incorporated and a slate of officers elected to handle details of the reunion and other affairs of the group. They were: Capt. C. H. Duerfeldt, president; H. J. Neubig, ADC, vice president; Robert P. Neuhauser, corresponding secretary; F. E. Cooper, ADC, recorder and historian, and Lt. A. E. Stein, treasurer.

Any person, who ever served on the CV-12 or its air groups, is eligible to attend. A dinner dance is scheduled for the evening. "Alumni" can get more dope from Capt. Duerfeldt, Telegraph Road, Alexandria, Va.

RADAR PLANE GUIDES FIGHTERS

VMF-323, EL TORO—This squadron is a firm believer in radar after its experiences flying off the CVE *Rendova* during fleet exercises when heavy weather made flying hazardous at times.

The squadron sent 23 planes out to search for the "enemy" fleet on one occasion but was unable to locate it because of instrument weather conditions. Numerous rain squalls and limited ceiling cut visibility to zero. The squadron could not land on the *Rendova* because of heavy pitching and rolling.

It was instructed to land at NAS WHIDBY ISLAND. A friendly PB4Y-2 from Fairwing Four called the flight leader and informed him that instrument conditions prevailed throughout the area enroute there. A rendezvous was made with the plane at Cape Flattery and the flight leader was led into the NAS by the *Privateer*, using his radar equipment. The splendid cooperation of this patrol plane did wonders for the fighter pilot's morale as they were low on gas and flying on instruments. All 23 planes landed at Whidby.

The following week pre-dawn strikes were launched against the enemy fleet. Led by P2V's, again the use of radar-equipped planes to guide the fighters proved their worth. Valuable time and fuel were saved by this method, since the fighters were given the approximate enemy position and due to poor weather conditions the strike flights would have spent considerable time in locating the enemy, if able to locate them at all. At the completion of the strikes, the P2V's led the return to the *Rendova*.

A majority of the flights were made under adverse weather conditions and actual instrument flying predominated. Pre-dawn launches were completed for the first time by pilots, and it was not uncommon for a pilot to find himself on instruments right after "wheels up."

TECHNICALLY SPEAKING

Alameda Rust Prevention Program

NAS ALAMEDA—Installation of the chemical processing equipment for applying phenolic resin coatings to aircraft engine parts is underway at NAS ALAMEDA, one of the first stations to carry out application of this rust prevention program (outlined in *General Engine Bulletin No. 66*) on a production basis. A new quonset hut has been erected for conveyorized chemical treatment of parts in various chemicals and rinse solutions, and conventional conveyorized paint spray booths.

The station's power plant division started production work on the process in 1944. During the past three years, masks, fixtures, holders and production techniques have been developed to the point where station officials believe they have adequate information for BUAER to aid other naval activities install similar equipment and begin production with a minimum of experimenting and research.

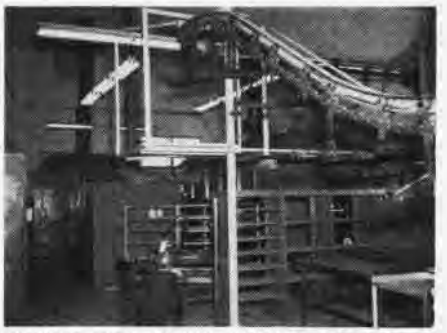
Phenolic resin, as supplied, is a liquid material for spray application that must be baked to obtain a tough non-hygroscopic coat. The thickness must be controlled within a few ten-thousandths of one inch over the entire area. The material is applied with standard spray painting equipment, although the trend in development is toward electrostatic painting with electronic control.

Blue aniline dye is added to the resin to aid painters in controlling the desired thickness and coverage. Upon first application the color is a definite blue. Proper baking is controlled by observing change in color. A change from blue to Kelly green is ideal and indicates thorough baking.

An additional advantage of the phenolic resin process was noted in that the extent of overheating of internal parts can be determined by observing any further changes from Kelly green to a tan or dark brown color.

Since 1946 hundreds of steel, aluminum, and magnesium aircraft parts have been coated by the phenolic resin process to prevent rust and corrosion. About 1700 engines have had this process applied to the link rods and master rods in the past two years. Approximately 75% of these engines have been returned to the station's power plant group for subsequent overhaul without any known instance where a phenolic resin coated part has had to be replaced because of excessive corrosion or rust.

Upon commissioning of this new equipment at NAS ALAMEDA, all internal non-bearing engine parts will be phenolic resin coated. Rusting and oxidation of costly engine parts will be further reduced by widespread application of the coating on other aircraft components. A tremendous saving of funds can be made that would otherwise be spent in procuring spare parts to replace those made useless by corrosion. Future development work in the use of phenolic resin will be in its application to jet aircraft engines and special equipment.



INTERIOR VIEW SHOWS PHENOLIC RESIN SET-UP

Method of Heating Plastics

Of particular interest to Class "C" naval air stations and to FASRONS is a simplified method of heating plastic material, such as lucite or plexiglas, prior to forming. This method, submitted under the Navy department beneficial suggestion program by Alvin W. Baer, office of the BAR, Douglas Aircraft Co., El Segundo, Calif, is suitable for use at activities where temperature control ovens are not available.

Essentially the method is by use of a hotplate of ¼" to ½" flat aluminum alloy supported on sides and rear by brick or other material. Height of the aluminum alloy plate above the ground or other supporting surface should be sufficient to clear a plumber's hand blow torch about three or four inches.

Lay a clean cotton cloth on top surface of aluminum alloy plate, place plastic sheet on top of cloth and cover with three or four thicknesses of asbestos cloth.

To assure that the plastic material heats uniformly, make frequent checks by first lifting the asbestos cloth with one cotton gloved hand, and then raising the plastic sheet from the front edge. Observation will determine whether the blow torch is rightly placed for proper distribution of heat.

This method has been found completely successful in forming parts up to 20 inches square without crazing or other deleterious effects. It requires only ordinarily available equipment: plumber's blow torch, metal box with one open end, pair of cotton gloves and asbestos cloth. Electric heat could be used in lieu of blow torch where gasoline fumes would preclude use of the latter.

From five to 10 minutes is required for heating, whereas heating in controlled temperature oven requires 20 to 30 minutes. After a few trials for self instruction, an individual using this method could make quick-fix patches or shapes for operating aircraft pending later replacements of entire plastic assemblies if required by the shop.

Jeep Now Gets Triple Use

NAS WILLOW GROVE—To utilize its line maintenance jeep to greater advantage, the aircraft maintenance department at this station has modified it, as shown in the picture, to serve three purposes. The jeep can now pinch hit as snow plow, plane guide and part of a jet aircraft starter team.

The snow plow was manufactured from scrap boiler plate and iron. It was made adjustable by incorporating a hydraulic system to raise and lower the scraper.

An illuminated "Stop and Follow Me" sign, controlled by a series of toggle switches, was manufactured for the rear of the jeep.

DELUXE JEEP NOW IN USE AT WILLOW GROVE

For starting jet aircraft, eight six-volt 175-ampere hour batteries were installed in place of the rear seat compartment with a junction box to permit another powered jeep to be operated in parallel. The present system for external power is left intact for use on conventional type aircraft.

▲ ***BuAer Comment*** **— Utilizing the line maintenance jeep for additional uses shown in this article is satisfactory. However, the bureau wants it thoroughly understood that the primary purpose of these jeeps is to start aircraft and service electronic gear.**

Photos Help Assess Damage

VMP-254, EL TORO—A new use has been found for aerial photography—estimating damage to station buildings from an extremely high local wind, to help in repair plans.

Sonne camera was used and several low altitude runs made over designated areas. Remarkably good results were obtained and because of the third-dimensional effect secured, a simple job of photo interpretation remained to figure damage.

Commando Not Spin Proof

VMR-252, CHERRY POINT—The exception proved the rule when pilots of this squadron discovered that an R5C could spin. Popular belief was that straight and level flight could be maintained in a full stall until instructor during a check-out of a new pilot had to eat his words when the plane insisted on dropping the left wing.

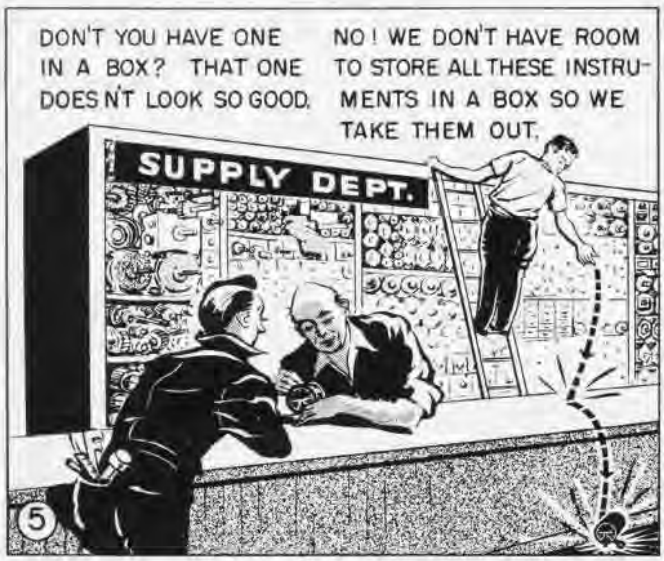
WHO DUNNIT?

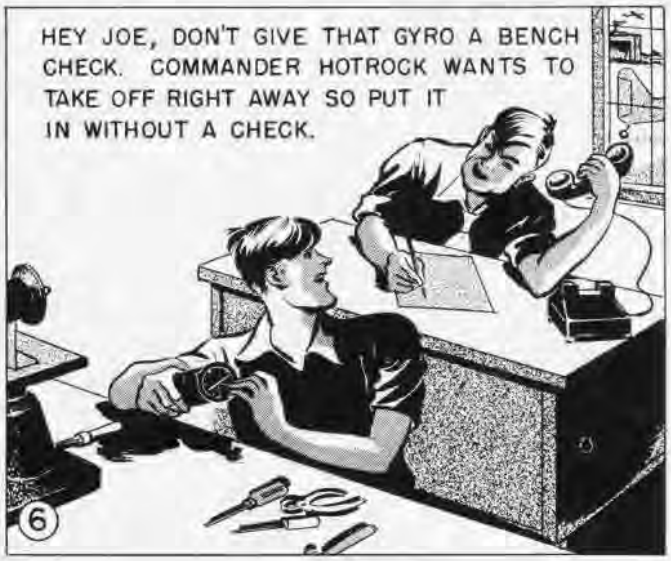

O & R SHOP STORES
I'M SORRY WE DON'T HAVE THAT PART.
WELL I GUESS I'LL USE THE OLD PART EVEN THO IT DOESN'T MEET REQUIRED TOLERANCES.
1


I'VE BEEN WORKING ON THIS GYRO FOR 3 DAYS AND IT STILL DOESN'T WORK - THINK I'LL TAKE UP THE END PLAY BEYOND TOLERANCES SO I CAN GET IT BY INSPECTION.
2


THIS GYRO HORIZON DOESN'T ERECT WITHIN THE SPECIFIED TIME BUT I GUESS I'LL PASS IT, OR JOE WILL BE MAD AND NOT TAKE ME OUT ANYMORE.
3


I DON'T HAVE ANYMORE BOXES OF THE SPECIFIED SIZE FOR THIS GYRO SO I'LL USE THIS SMALLER BOX AND LEAVE OUT SOME OF THE WADDING.
4


DON'T YOU HAVE ONE IN A BOX? THAT ONE DOESN'T LOOK SO GOOD.
NO! WE DON'T HAVE ROOM TO STORE ALL THESE INSTRUMENTS IN A BOX SO WE TAKE THEM OUT.
SUPPLY DEPT.
5


HEY JOE, DON'T GIVE THAT GYRO A BENCH CHECK. COMMANDER HOTROCK WANTS TO TAKE OFF RIGHT AWAY SO PUT IT IN WITHOUT A CHECK.
6

LOOK!—YOU MAY BE IT!

HOW WOULD you like to be in the place of the pilot below? You wouldn't and neither would anyone else, but it's quite possible that you helped put him on the spot. Any one of the persons or incidents depicted in these illustrations could be responsible for the untimely failure of this gyro horizon.

It has been next to impossible to single out any one person or activity as being wholly responsible for the excessive number of instrument failures and the resultant high usage of these instruments. The tendency of most personnel is to place the entire responsibility for this condition on the overhaul and repair shops, especially those who are unfamiliar with the operation of an instrument overhaul shop. Such a conclusion is not only untrue but unjust! It is agreed that the overhaul and repair shops are responsible in many instances, as pointed out in illustrations 1 through 3; however, if instruments are not packaged and handled properly after leaving the overhaul and repair shop they will fail prematurely, regardless of how well they were overhauled and calibrated.

It is all too easy for supply and maintenance personnel to sit back and scream that overhaul and repair shops are giving them "bum" instruments, but if these personnel would stop and thoroughly evaluate themselves and their methods, they would soon realize that overhaul and repair shops are receiving a little outside help in producing these "bum" instruments.

To improve the quality of instruments being furnished the fleet as replacements, the Bureau of Aeronautics has continually stressed to the overhaul and repair shops that quality must come before quantity. This campaign is paying dividends and will continue to do so as long as supervisory personnel maintain quality control and carry on the training programs within their shops. This is not an assumption but a fact, borne out by recent visits to several shops by Bureau of Aeronautics personnel. During these visits it was noted with satisfaction that topside and supervisory personnel realize the importance of quality control and are taking all action possible to insure that the instruments released from their shops as ready-for-issue material are in the best condition possible, taking into consideration, of course, the undesirable spare parts situation which now exists. A joint program between the Bureau of Aeronautics and the Aviation Supply Office is now under way to review the instrument spare parts situation. It is hoped that this program will result in a more satisfactory stock position for instrument spare parts and partially eliminate the costly and ever expanding cannibalization procedure.

The next step in this campaign to better support the fleet is to educate all other personnel who handle instruments in the proper methods of handling and preventive maintenance. A thorough review should be made of packaging methods to insure that personnel are complying with approved packaging and preservation procedures. Supply activities should maintain a continuing program to educate storekeepers, screening unit personnel, truckdrivers, laborers and all other supply personnel connected in any way with the handling of instruments, stressing the delicate construction of instruments and the absolute necessity for careful handling. Operating activities can help in this campaign by emphasizing to line maintenance personnel that thorough "trouble shooting" and pre-installation checks are a must and that rough handling of instruments prior to and during installation will not be tolerated.

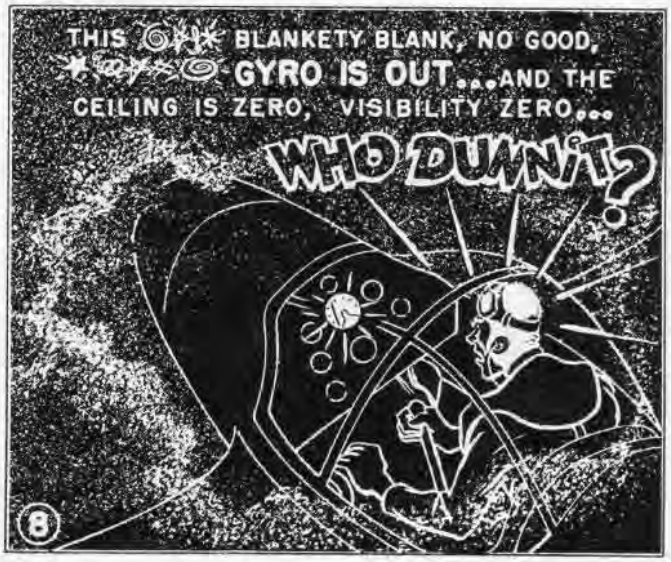
NAVAL AVIATORS are not exempt from this campaign by any means. You can help by complying with existing instructions on caging gyro instruments and by refraining from the practice of beating the face of an instrument to break loose a sticky pointer when a light tap on the glass will suffice; also by stopping the practice of using free air thermometers for hand grips and by being a little more careful where you put your feet when entering the cockpit.

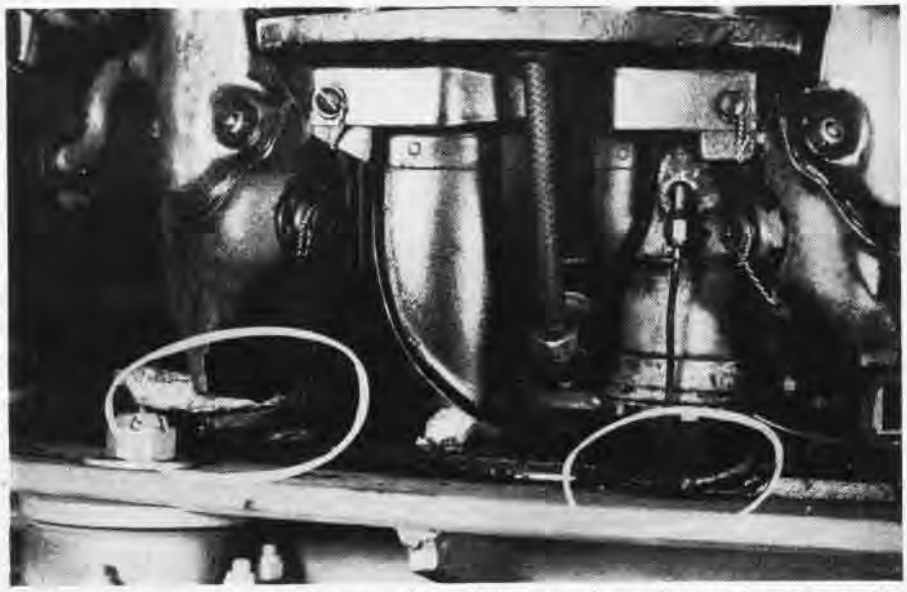
We are all responsible in one way or another for the excessive usage and premature failure of aircraft instruments. What are you doing about it? We have been complacent long enough; our war surplus stock of usable material is now a thing of the past and the budget string is becoming tighter each new fiscal year.

Our only hope of being able to support the fleet properly is to get the maximum use out of every instrument. This can be accomplished by proper overhaul, handling and preventive maintenance.

It is hoped that everyone connected with aeronautical instruments in any way will take it upon himself to do his part in this campaign to reduce the quantity of replacement instruments required and to increase the quality of instruments being installed in operating aircraft.

Copies of the accompanying drawing are being distributed to all interested activities in poster form. Additional copies of this poster "Who Dunnit", NavAer 05-1-583, may be obtained upon request on form NavAer #140 from Publication Division, NASD Philadelphia, Pa.





Believe *it or not, this engine was shipped by one of our larger air stations. To place an engine in a container for shipment without securing it with the nuts and bolts provided is really a "spoiler antic." Result was a severely damaged engine.*

Factories Train Jet Mechs

Factory training courses in maintenance, overhaul and operation of the J-33, J-34, J-35 and J-42 jet engines are now being conducted at the various plants making these engines. The program is designed to train key maintenance personnel of squadrons and supporting FASRons using jet aircraft. Training does not include pilot procedures and techniques. The following three-week programs have been scheduled for the remainder of fiscal 1949. Further training will be scheduled if the need exists.

J-33—Allison Division, General Motors, Indianapolis, Ind.
J-34—Service School, Aviation Gas Turbine Div., Westinghouse Electric Corp., Essington, Pa.
J-35—Allison Division, General Motors Corp., Indianapolis.
J-42—Service School, P&W Aircraft Div., United Aircraft, East Hartford, Conn.

To date, quotas have been assigned to the Commandant USMC, ComAirLant, ComAirPac, NAS NORFOLK, NAS QUONSET, NAS SAN DIEGO, NAS ALAMEDA, MCAS CHERRY POINT, NATC PATUXENT, CNATechTra, First Marine Air Wing, Second Marine Air Wing and MCATS QUANTICO.

It is believed that activities requiring such training are attached to the above commands. However, any activity not so attached and requiring quotas for this training may submit requests to BUPERS through appropriate channels. Requests must include detailed justification. It must be emphasized that this training is open only to key maintenance personnel of sufficient experience to assimilate advanced levels of instruction.

Fire Prevention Pays Off

NAS ALAMEDA — While unloading gasoline from a barge on 2 December, 1948, an alert fireman noticed a thin ribbon of smoke rising from the gasoline hose, which was resting on the curb of Pier No. 3.

Upon investigation it was found that a hardwood board had been placed under the hose to prevent chafing. The fireman removed the piece of wood, thereby averting what might have been a disaster. Further investigation showed that the board was charred and in a combustible condition.

The barge was loaded with 30,000 gallons of 115/145 octane gasoline, and an *Essex*-type carrier was berthed at the same pier opposite the gas barge.

Device For Cylinder Heating

NAS NORFOLK—An engine heating device, designed and developed by an employe of the O&R department now makes the removal and replacement of valve guides and seats quicker and more efficient by permitting a more uniform prior application of heat to the engine cylinder head. Its use within the department has reduced materially the number of engine cylinders that were heretofore damaged or warped when heated by other methods.

For application of an even, controlled heat, a gang torch, consisting of three torch burners arranged in triangular form, is used to generate and focus heat on the cylinder. The engine cylinder is mounted on a revolving table, and while the heat is being applied, the cylinder is rotated slowly by means of a controlled pneumatic drive to allow a uniform distribution of heat.

This improved method greatly reduces the possibility of burning or otherwise damaging and ruining the cylinder by overheating or by uneven heating, which frequently resulted when heat was applied to the cylinder's side by a single acetylene torch.

Adoption of the device has produced very satisfactory results. Developed primarily to reduce damage caused by use of improper heating methods, its design also makes possible the use of propane gas, which is less expensive than acetylene gas. Continued use of this device within the shop has effected a 25% saving in gas consumption and has reduced the heating time approximately 50%, thereby resulting in an increase in number of cylinders processed.

BOOKS

Rocket Propulsion Elements. George P. Sutton. John Wiley & Sons, 1949, $4.50.

MAGAZINE ARTICLES

If War Tomorrow. Cy Caldwell. *Aero Digest*, Feb. 1949, pp. 19-21, 115-118.

How They Fly the Atlantic. Wolfgang Langewiesche. *Air Facts*, Feb. 1949, pp. 42-62.

How Congress Plans to Boost Air Force. *Aviation Week*, Feb. 7, 1949, pp. 12, 13.

Missiles Enter Production Stage. *Aviation Week*, Feb. 7, 1949, p. 15.

Severe Test Proves Turbojet Reliability. *Aviation Week*, Feb. 7, 1949, pp. 21, 22. (DeHavilland *Goblin*)

New Copter Tests Pulsejet Power. *Aviation Week*, Feb. 14, 1949, pp. 22-26. (American Helicopter's XA-5)

Flight Refueling Broadens Aircraft Utility. *Aviation Week*, Feb. 21, 1949, pp. 17, 18, 21.

(The Feb. 28 issue of *Aviation Week* is devoted to an "Inventory of U. S. Air Power," including the following articles:)

Air Power: America's First Line of Defense. Robert Hotz. *Aviation Week*, Feb. 28, 1949, pp. 10, 11.

USAF Builds Intercontinental Force. *Aviation Week*, Feb. 28, 1949, pp. 11-14.

New Navy Planes Hint New Tactics. *Aviation Week*, Feb. 28, 1949, p. 14.

Air Force and Navy Planes. *Aviation Week*, Feb. 28, 1949, pp. 15-17.

Air Power Strength Starts in the Laboratory. Robert McLarren. *Aviation Week*, Feb. 28, 1949, pp. 39-47.

High Speed Flight Research. *Aviation Week*, Feb. 28, 1949, pp. 49-53.

Foreign Air Power. *Aviation Week*, Feb. 28, 1949, pp. 104-126.

Lakehurst: Handyman's Home. *The Bee-Hive*, Jan. 1949, pp. 16, 17, 30. (Navy helicopter training.)

External Tanks. *Flight*, Jan. 27, 1949, pp. 101-104. (Methods of carrying extra fuel.)

Stalin's Strategic Airlines. Charles M. Cook. *Flying*, March 1949, pp. 18, 19, 72, 73.

Paper Air Force. J. William Welsh. *Flying*, March 1949, pp. 20, 21, 69, 70. (Comment on the Air Reserves.)

How to Fly the Thunderjet. *Flying*, March 1949, pp. 22-26.

The Big Hairy Dogfight. Harold H. Martin. *Flying*, March 1949, pp. 42, 43, 77-79. (A World War II combat episode involving four Marine *Corsairs*.)

Missiles vs. Missiles. *Newsweek*, Feb. 21, 1949, p. 52. (Guided missile controls.)

Air Power and the 81st Congress. Leo E. Allen. *Skyways*, March 1949, pp. 14, 15, 42, 43.

Skyway to Berlin. Orv. Splitt. *Skyways*, March 1949, pp. 26-29, 45, 65, 67.

Photo Eyes of the USAF. Jerry Leichter. *Skyways*, March 1949, pp. 30, 31, 46, 47, 65.

Planes of the USAF. *Skyways*, March 1949, pp. 54-64.

★ ★ ★ ★ ★ ★

GCA BOX SCORE

January GCA Approaches	8,086
Actual GCA Landings	452
Grand Total Approaches	183,765
Total GCA Landings	8,100

CALLING ALL ARTISTS!

Naval Aviation News in the past has published cartoons like the one below, drawn by artists at various activities in the field. The News will be glad to consider cartoons on aviation subjects. Send them in. The one presented here was drawn by James Cowan of NAS San Diego Supply section.

The Fighting Flying Firemen

VP-44—On 30 June, 1948, Patrol Squadron 44 had a fire which was almost a model of what to do when. A standard refueling truck was gassing a PBM when a fire broke out to the truck's rear. At 1200 the driver shouted "fire," the rear of the truck was afire and the hose section attached to the aircraft was also ablaze, as well as an area under the truck and plane covering approximately 30 feet in diameter.

The SDO, Lt. Prestwich sounded the fire alarm and called the NAS fire department. In the meantime, AD1 Langford removed the gas lines by hand, from a position inside the plane, and the beach crew hooked a tow line to the aircraft and pulled it into the clear. Other members of the beach crew drove the flaming truck to a clear area where it was liberally doused with CO_2 by squadron personnel who had manned their fire stations near the plane.

The remaining pool of gas was extinguished with portable CO_2 fire bottles and the fire was completely out at 1203. A total of 18 fire bottles were brought to bear on the fire within 90 seconds after the first alarm. By 1230 another gas truck had been secured, the aircraft gassed and all hands were "standing by."

Tech Data Control System

NAS WILLOW GROVE—In order to maintain an adequate control system of all technical data, bureau changes, bureau bulletins

WILLOW GROVE'S TECH DATA CONTROL SYSTEM

and miscellaneous modifications to be incorporated on aircraft within this activity, personnel at this station constructed a swinging wing frame chart stand.

The stand, which has a revolving pivot arrangement, consists of 10 frames (one for each model or type aircraft) with plexiglas covers over an outline made on paper. The plexiglas is sanded for use with a pencil. One side is used for bureau bulletins and the reverse side for bureau changes and miscellaneous modifications.

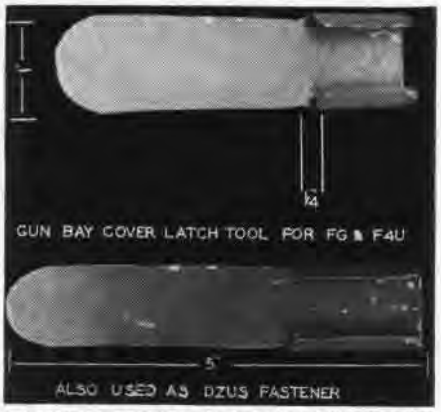
A code is used for keeping a record of work to be performed or of work already performed on aircraft. X indicates *incorporated*, A—*parts available*, O—*parts on order*, and N—*not applicable*. The code letters show the status of each bulletin, change or modification checked in the block opposite the particular aircraft.

On receipt of aircraft from overhaul or other activities, an acceptance check sheet is issued covering all bureau changes, bulletins and modifications that have to be incorporated on the aircraft. The aircraft log book is checked for these data which are then entered on the frame chart. Any bulletin, change or modification received at a later date is incorporated according to the instructions contained in the respective publication or letter.

Corsair Latch Tool Simple

This gun bay cover latch tool, developed at NAS NEW ORLEANS is simple to design and easy to manufacture. It is used to open the FG and F4U gun bay cover lever.

Affording the needed leverage to turn the lever, it also prevents injury to knuckles and fingers by the lever spring. The opposite end of the tool is used to fasten and unfasten dzus buttons. The tool can be made of durable scrap metal. Dimensions are 1/16" thick, 1½" wide and 5" long.



NEW ORLEANS DEVICE UNFASTENS DZUS BUTTONS

Alameda WAA Closes Down

NAS ALAMEDA—After disposing of $55 million worth of property ranging from airplane rivets to horses, the War Assets Administration has folded at this air station.

Since 1946 the station's disposal division handled all WAA goods for air stations at Moffett, Oakland, Santa Rosa, Livermore, Crow's Landing, Vernalis, Watsonville, Hollister, and Fallon, Nevada.

Under supervision of Lt. Frank S. Bird, the division inspected and processed millions of items, including four riding horses used for patrol duty at Santa Rosa. Breakdown of the material disposed of included:

$100,000 worth returned to naval custody for local disposition.

$18,000,000 worth transferred to naval, Army and Air Force activities.

$20,000,000 donated for educational purposes in West Coast schools.

$150,000,000 screened for stock.

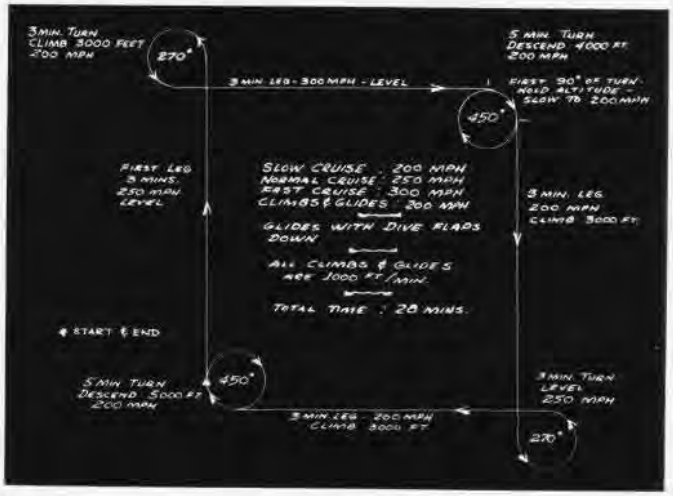
$75,000,000 screened for surplus.

$31,000,000 worth of salvage and usable material sold locally.

The salvage scrap program was a good money-making proposition. Around 3,068 tons were moved at a return value of $102,000. The reverberatory furnace produced 4,346,208 pounds of aluminum ingots worth $532,356.

Speedy TO-1 Jets Require Wide Landing Pattern

Inasmuch as the *Charlie Pattern* is highly desirable for instrument training, and the TO-1 jet possesses a different set of performance figures, the new *Charlie Pattern* was designed and adopted by VMF-311 at El Toro. Changes were made as follows: *1.* One-half standard rate of turn is used to avoid excessive precession in the attitude gyro horizon. *2.* Rate of climb and descent is changed to 1,000 feet a minute. *3.* Airspeeds are changed to 200, 250 and 300 mph. respectively for slow, medium and fast cruises, the squadron reports. As the chart opposite shows, all climbs and glides are made at 1,000 feet a minute. Glides are made with plane flaps down



SERVICE Test
INTERIM REPORT DIGEST

This digest covers the 15 February Interim Report of Service Test, NATC PATUXENT, and does not necessarily reflect BUAER policy.

AD-2 (339 Hours)

External lower rocker box oil scavenger system on the R3350-26WA engine has eliminated oil drainage problems encountered in the R3350-26W engine. Amount of oil which drains or is discharged from exhaust stacks after overnight idle periods is negligible.

Maintenance requirements for the system have been satisfactory. Complete system was removed and reinstalled while performing an engine valve check. One oil leak developed after reinstallation because of a loose packing nut.

Recommend that schematic drawing of the scavenger system be included in the AD-2 E&M manual and in the R3350-26WA engine service instructions. Drawing should show location of the two types of packings and washers used in the flexible oil sealing connections. Sufficient spares should be provided in section "B" allowance list to cover loss factor on the following parts: packing, P/N 136170; packing, P/N 136171; washer, P/N 27D299; washer, P/N 27D300; tube, P/N 136304; tube, P/N 136305; tube, P/N 135909.

Deflector Assembly. Model R3350-26WA engine NO. 185961 was furnished for installation in AD-2 aircraft with deflector assemblies (rear inter cylinder cowl air seal WAC P/N 425301N4) installed. These deflector assemblies lacked a hole for passage of the Lord mount air blast tubes used on this aircraft. Power plant installation requires that 6 deflector assemblies contain air blast tube holes. The rear inter cylinder cowl air seal deflector assemblies were reworked by adding a 7/8" diameter hole, located 2" from the center of the spark plug lead hole and 3/4" from the attachment flange. To provide clearance for the Lord mount air blast tube when removing or installing the deflector on the engine, a slot 7/16" wide was cut from the hole to the inboard edge of the deflector.

Recommend provision of rear inter cylinder cowl air seal deflector assemblies properly punched for passage of the Lord mount air blast tubes required when the engine is installed in AD-2 aircraft.

Nose Oil Pressure Line. Inspection of nose oil pressure line, P/N 425 2100-36, showed slight chafing between the line and the right hand aft anti-drag ring armor plate adjacent to the line support point on No. 7 cylinder. Line is supported by insulated clamp, bolted to outboard of two cowl support bolts provided on exhaust rocker box of No. 7 cylinder. The nose oil pressure line in present installation leads from port side of front oil pump and sump housing around starboard side of engine, over exhaust stack of No. 7 cylinder (in violation of para. 736 of specifications SD-24-E) and through the engine adapter.

This routing greatly increases length of line and complicates its proper support on the engine. Nose oil pressure line was shortened approximately 1½" at bulkhead fitting installed on engine adapter. Line support clamp was moved from the outboard bolt to the inboard bolt in No.7 cylinder exhaust rocker box to provide sufficient clearance between the line and the armor plate.

Recommend 1. that aircraft service bulletin be issued on temporary fix described; *2.* that on future production engines contractor be required to provide a steel nose oil pressure line integral with the engine, leading back adjacent to the crankcase main section from the nose oil pressure connection directly to the engine adapter; *3.* that paragraph 736 of BUAER specifications SD-24-E be complied with.

Propeller Thrust Bearing. (Bearing P/N MCR 9125-10, matched assembly NO. 105, ball retaining ring NO. 185961) Thrust nut was found so loose that weight of wrench supplied enough torque to unscrew it. Thrust nut was retightened and after plane was flown for 6.5 hours, second inspection showed thrust nut again loose. Considerable rust deposits were present in area forward of thrust bearing and slinger ring, and beads of water were found on all surfaces. Examination of thrust bearing after removal showed total bearing end movement of .011"; clearance between inner race and ball retainer ring of .042"; scattered rust spots of pin head size on inner thrust race and inner anti-thrust race; rust streaks up to 1/16" wide and to 1" long all around inner perimeter of ball race; rust marks present under contact points of seven adjacent balls; scattered rust spots of pin head size on outer thrust race; entire area of outer anti-thrust race covered with rust stain, rust spots pitted and could be felt with finger nail; ball retainer ring showed no visible signs of abnormal wear; all balls pitted and roughness could be detected with finger nail.

New thrust bearing was installed and thrust nut was carefully tightened with applied torque of 1500 foot pounds. After 16.5 hours of operation the propeller thrust nut was again found loose. As there were no visible signs of failure of the thrust bearing, thrust nut was again tightened and aircraft released for flight with provision that thrust nut be inspected after the first six hours of flight and at intervals of ten hours thereafter.

Sequence Valve. Hydraulic fluid was observed leaking past left inboard main landing gear door sequence valve piston. On disassembly, following defects were noted: *1.* Piston "O" ring, P/N AN6227-5, was worn around one half of circumference to approximately one half the original size. *2.* Edges of the piston "O" ring groove in sleeve, P/N 2219022, were not chamfered. *3.* Valve seat for steel ball was roughly machined. *4.* Small dents were noted on surface of piston, P/N 2219021, which rides in piston "O" ring.

Believe that failure of "O" ring was caused by sharp edges of "O" ring groove. *Recommend* that greater care be exercised in assembly and handling of the component parts of the sequence valve; that edges of the piston "O" ring groove be chamfered to comply with paragraphs D-4d and D-4c of specifications AN-P-74-b dated Oct. 1948; that quality of workmanship be improved.

Propeller Control Rod. Male adjustment end of adjustable propeller control rod, P/N 2255826-502, broke at second thread from control rod shoulder. Failure resulted in complete loss of propeller governor control. *Recommend* that on each routine inspection of propeller control assembly, threads on male end of rod assembly be inspected for any indications of cracks at the thread roots, and that size of male end connection of adjustable propeller control rod be increased from 1/4 x 28 to 5/16 x 24.

F8F-2 (199 Hours)

Indicator Light. The arresting hook down indicator light is obscured by wheel position indicator, P/N R88-I-1888. *Recommend* that light be moved to unobscured position.

Solenoid Failure. Landing gear control handle locking solenoid, P/N R83-CX-3532, was rendered inoperative by break in lead between binding post and coil. Failure apparently caused by lead becoming grounded to brass armature guide. Resulting short circuit burned the wire. Solenoid coil is free to move slightly in the housing and vibration probably contributed to the failure. *Recommend* that closer fit be provided between solenoid coil and its housing, and that more flexible and better insulated leads be provided from solenoid coil to binding post.

F2H-1 (23 Hours)

Drain Line. On acceptance check, external opening in aircraft skin for aileron boost hydraulic pump drain line was found completely covered with paint. *Recommend* that aircraft be inspected more thoroughly prior to delivery.

Fabric Seal. Zipper on fabric seal between fuel tank compartment and radio compartment was found broken and seal was hanging open. *Recommend* more rigid inspection before delivery.

Fuel Hose. Fuel manifold to fuel filter, starboard side, hose, P/N 15-58022-107, was cracked, fabric and rubber separating. Hose showed evidence of having been forced on the fittings with a screwdriver. *Recommend* more rigid inspection.

Electrical Leads. Leads to fuel booster pump motors were not supported and were chafing on fuel compartment access door hinge support. *Recommend* that clamps be installed to support leads in accordance with Specification AN-W-14a.

Chafing Strips. A number of chafing strips on wheel well and access doors were loose and had sections missing. *Recommend* that satisfactory chafing strips be provided and that closer inspection before delivery be required.

Lubricator Fittings. Fittings on upper inboard torque links for lubrication of shear-sleeve are inaccessible for servicing. *Recommend* replacement with 90° fittings.

Gear Adrift. A ¼-28 flat head countersunk screw one inch long was found adrift in flap actuator motor compartment. Careful inspection failed to show its source. *Recommend* that contractor initiate more rigid inspection of aircraft before delivery.

Access Holes. Access holes to lubricator fittings on bracket assembly, nose gear emergency extension bungee, are too small to permit use of standard grease gun fittings. *Recommend* that holes be enlarged.

Blast Tube Shutter Spring. Spring for left inboard gun was found to have failed at after end. Failure occurred in hook formed at end of spring. Examination showed a crack on inside of hook at forward end of spring in same relative position as failure at after end. A second identical failure occurred at 4.5 service test hours. *Recommend* investigation of cause.

Lubricator Fitting. Straight lubricator fitting on bottom of nose wheel assembly is difficult to service because of location. *Recommend* replacement with 90° lubricator fitting.

Koehler Drain Valve. Five valves of this type, P/N K2800A1, are used in the F2H-1 as fuel cell drain valves. All valves developed gasoline leaks after 1.5 hours service test. Increase in ambient temperature, such as that which occurs when airplane is moved from line into warm hangar, apparently causes valve leakage. *Recommend* that manufacturer provide satisfactory fuel cell drain valves.

Preflight Drain Cocks. The two preflight drain cocks in the main fuel strainers leak when in closed position. To make valves seat properly it is necessary to tap the drain cocks with a soft faced hammer. *Recommend* that manufacturer provide satisfactory preflight drain cocks.

Kneeling Switch. Nose gear will retract only when kneeling switch is in the "Unkneel" position. To prevent accidentally placing switch in "Stop" position, a pin should be installed in switch guard. *Recommend* that a pin be installed in the kneeling switch guard similar to that on battery switch.

Strut Door. Crack was found along the row of rivets near the lower forward attaching screw on left hand main landing gear strut door, P/N 15-41007-1. Believe flexing of door while closed caused failure. Shims were installed between door and strut attaching brackets to reduce flexing. *Recommend* that door assembly be installed in such a manner that it fits properly in closed position.

Gun Blast Tube Shutter. Left inboard and outboard gun blast tube shutter springs were found broken at hooks which are formed at ends of the springs. These are third and fourth failures. *Recommend* that cause be investigated and more durable springs provided.

Speed Brake Actuator. Motor failed after 1.5 hours service test. Motor had overheated and burned wiring insulation. One brush had only about 50% contact with armature and other brush had about 75% contact. *Recommend* that manufacturer provide satisfactory speed brake actuator motor.

Filler Cap. Aileron boost reservoir filler cap was found to be badly mutilated, evidently damaged while being opened and closed. Since reservoir is under pressure of 10-12 psi, it is important that cap be well secured after each servicing. Unless special tool is manufactured for tightening cap, the raised portion of cap will eventually be so mutilated that tightening will be difficult. *Recommend* that present cap be replaced with cap having a hexagonal head to permit use of a wrench.

Worn Bushings. Two outer bushings, main landing gear outboard door locks, were found to be worn and galled in area contacted by two main landing gear outboard door lock hooks. Door unlocks became improperly adjusted because of wear on bushings. *Recommend* that manufacturer provide satisfactory bushings.

P2V-2 (480 Hours)

Howler Signal. Audible warning howler signal failed to operate after 404 test hours. Insulation had partially burned from the coil windings and one coil lead was burned in two. Insulation on all leads to coil and to condenser were charred. Vibration points showed evidence of overheating. Solder had melted from one condenser lead connection. Failure is attributed to breakdown of insulation which protects condenser lead where it passes between coil windings and metal bridge. *Recommend* that better insulation be provided and that condenser leads be routed so that they will not chafe against the metal bridge.

Anti-Icer. One carburetor anti-icer pump and the propeller and windshield anti-icing pumps failed to operate. Teeth were stripped from driving gear of carburetor anti-icing pump and shaft was mutilated by flexible drive coupling. Windshield and propeller anti-icing pumps had seized internally but no damage was caused to internal parts. After lubrication, pumps functioned well.

Failures resulted from operating pumps without anti-icing fluid in tanks. The four pumps use 35 gallons per hour and with all pumps taking fluid from the 25 gallon tank, the supply will last for approximately 43 minutes. No provision has been made for determining the amount of fluid in the anti-icing fluid tank. When using the fluid anti-icing system intermittently during icing conditions, pilot does not know when the supply is exhausted.

Recommend that safety shear links be provided on drive couplings between anti-icer motors and pumps to protect internal parts of pumps against failures caused by pump seizure, and that suitable gage be provided to indicate amount of fluid in the anti-icing fluid tank.

Carburetor. Starboard fuel indicator showed approximately 100 pounds per hour more flow than the port at equal power settings. Investigation showed that fuel was being by-passed back to the fuel tank through the carburetor vapor vent return line.

Pilot's Light Circuit. Power supply to all lights in the flight compartment is protected by a single five-ampere circuit breaker in copilot's circuit breaker panel. Short circuit at any location in pilot's light circuit could blow the circuit breaker and cause all lights to fail. *Recommend* the following changes suggested by VP-7 RUDM #116-48.

Provide a circuit breaker for each of the following three circuits:

1. Pilot's instrument panel circuit, excluding engine instruments, pilot's sub-panel light, pilot's check-off list indirect light, and PDI indirect light.

2. Copilot's instrument panel circuit including the engine instruments, copilot's sub-panel light, and Mk 8 compass light.

3. Right and left overhead spotlights, radio panel overhead spotlight, auxiliary fuel panel indirect red lights.

These circuit breakers could be installed on an extension to the copilot's circuit breaker panel.

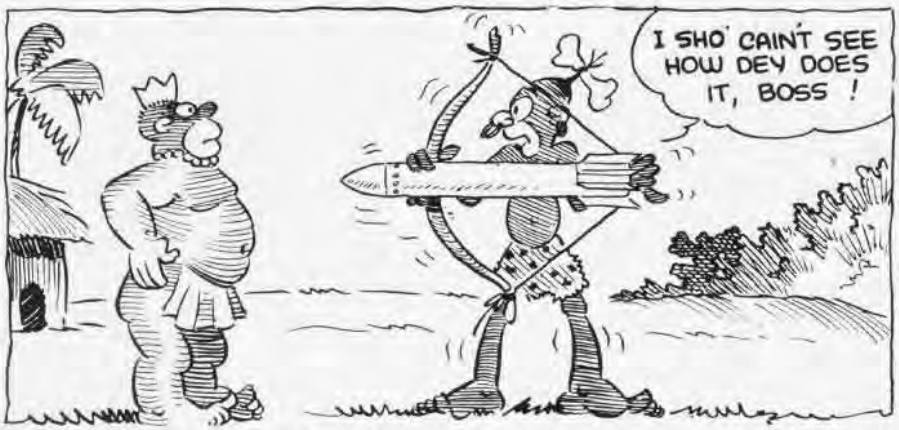
Service Change Kit. Discrepancies were noted during installation of Service Change No. 65. In description of change, step No. 1 should follow step No. 8, as the work described in steps 2 through 8 can be accomplished before jacking the plane. Step No. 2 infers that all four landing gear door carriages and track assemblies are to be removed. Actually, it is necessary to remove only the two inboard carriages and track assemblies. In addition, discrepancies were noted between parts listed as required and those provided with kit. *Recommend* that manufacturer exercise more care in preparing service bulletins and packing P2V service change kits.

Astrodome Installation. When installing either the astrodome or the astrohatch flush cover, it is difficult to obtain proper alignment of the location pin in the centering hole. Any misalignment prevents proper sealing and causes damage to the skin around the centering hole. Damage also is caused to astrohatch flush cover roller bracket by eccentric plate on handle assembly. *Recommend* that more positive method be provided for centering astrodome and astrohatch flush cover assembly in the fuselage opening.

Gunsight Anchor Assembly. The Mk 8 gunsight is mounted and secured in place in an anchor assembly which contains a wedge type plate and a spring loaded securing pin. This assembly does not provide a positive lock for the gunsight. Proper boresight alignment cannot be maintained because the sight can be moved approximately 3/16" both vertically and horizontally when secured. *Recommend* that positive lock be provided.

Spotweld Panel. Middle spotweld panel assembly, box beam nacelle panel installation, failed during a gunnery flight. A section of outer skin, which is spotwelded to inner skin, separated from the inner skin for a distance of approximately eight inches. Panel is part of nacelle fairing for port engine over which the engine exhaust gases pass. Believe that repeated heating and cooling caused metal fatigue and ultimate failure. *Recommend* investigation of possibility of riveting instead of welding the double skin sections, and extending the fairing support structure, to which the middle spotweld panel is attached, to the panel edges in order to provide a better support.

AVIATION ORDNANCE



Lights! Lights! and Lights!

BuOrd has a variety of special lamp bulbs required for the various sights and aircraft fire control systems furnished for fleet use. Apparently, Supply Officers are becoming somewhat confused and are of the opinion that every item of aviation fire control equipment has a different specially shaped or coated lamp bulb or some odd voltage light source which necessitates obtaining and stocking special lamps for replacements.

Ordering and reporting:—In view of the questions which have recently arisen with regard to ordering and reporting these lamps under their proper stock numbers, a short description of each lamp currently being furnished for replacement as shown on Allowance List NAVORD 20870F follows:

J17-L-6731-10 (formerly 2-L-225L) is a 13-candle-power, 22-volt, single-support filament, single contact, bayonet base with spot, "V" type lamp. (Westinghouse Number 480), for use with gun sight Mk 18, Mk 23, and sight unit Mk 8 and Mk 10.

J17-L-6733-10 (formerly 2-L-345L) is a double filament, 21-6 candle-power, 24 to 28-volt, double-contact, bayonet-candelabra, partially-silvered envelope with lightly-frosted bulls-eye opening lamp (Mazda 846), for the illuminated sight Mk 9 and Mk 9 Mod 2.

J17-L-6734-35 (formerly 2-L-400L) is a 21 candle-power, double-filament, double-contact, bayonet-candelabra, 24 to 28-volt, outside silvered bottom, lamp (Mazda 890), for the illuminated sight Mk 8, Mk 20, and sight unit Mk 1.

J17-L-6738 (formerly 2-L-800L) is a 32 candle-power, 12-16 volt single contact, prefocused base lamp (Mazda 1327 IF) for type K4 automatic compensating sight assembly.

Activities stocking these lamps under their former numbers should take steps to insure that they are reported to the Bureau of Ordnance under their present stock number.

Maintenance parts:—Limited line maintenance parts are available to service this sight, and may be obtained by requisitioning in accordance with NAVORD OCL V2-47. The line maintenance parts are listed below.

Nomenclature	*Navy Stock No.*	*BuOrd Dwg. No.*	*ACS Dwg. No.**
Cell Assembly, Gel	J942-C-2615	323368-5	5581148
Filter Assembly, Gel Cell	J942-F-189-600	323347	5581157
Gasket, Cork Gel Cell	J942-G-316-150	323369-7	5581090
Plate, Reflector	J942-P-4155	413526-4	5582302
Plug, 10 Wire, Electrical Connector	J942-P-4340	323562	5581559
Screw, Fill Hd., 10-32 x 1.937"	J942-S-1669-325	323346-3	5581073
Screw, Reflector Plate Mounting	J942-S-1672-185	415511-6	5582306
Socket Assembly, 10 Wire	J942-S-4221	323563	5581559
Silica Gel, 100% Tell-Tale	J51-S-533-20		
Paper-Lens, Tissue	53-P-14130		
Lamp, 22V	J17-L-6731-10	323393-6	5581155

*ACS-AC Spark Div. GMC

Ammo Containers Helpful

A report of a recent inspection of an aviation supply activity by the Office of Industrial Survey stated that excellent use was being made of obsolete ammunition containers for the storage of material and spare parts. These containers not only aided the preservation program but were very easily palletized for bulk storage.

It is believed that other activities may have a similar use for surplus or obsolete ammunition containers. There are large numbers of various sizes of both tanks and boxes in this category being held in open storage. It is recommended that any activity having a requirement for containers for storage purposes contact the nearest naval ammunition depot for information as to the availability of surplus or obsolete ammunition tanks or boxes which could be used for this purpose.

SCAR Rocket Bars Lifted

BuOrd has completed extensive tests to determine the extent of weld failures in the 2.25" rocket motors Mk 11 Mod 0, reported in NANews, Oct. 1948.

It was found that all lots tested were satisfactory and that failures were not universal. Disposition is being effected for those lots in which failures occurred and which were previously declared unserviceable. The restriction from use has been lifted for all other lots.

Mk 232 and 233 Fuzes 'Out'

BuOrd is receiving a number of requests from various air squadrons for copies of Ordnance Pamphlet 994. This publication describes special bomb fuzes which were developed during the war for use with bombs in TDN and TDR type aircraft.

These fuzes, Mk 232 Mod 1 and Mk 233 are not authorized for, and should *not* be used for, any other bomb fuzing applications.

BuOrd Action: Inasmuch as TDN and TDR type aircraft are no longer used by the Navy, BuOrd plans to declare the bomb fuzes Mk 232 Mod 1 and Mk 233 obsolete and surplus. Activities stocking these fuzes should retain them pending instructions from BuOrd.

TO-1's Use K14B Gun Sight

The new TO-1 aircraft (F-80-C), being obtained from the U. S. Air Force for use in transitional training to jet aircraft, is equipped with a computing gun sight, USAF type K14B. This sight is almost identical to the gun sight Mk 23 and the sight unit Mk 8 Mod 0, a component of the aircraft fire control system Mk 6 Mod 0.

The major differences, other than manufacturer, are in its fixed reticle presentation and its calibration in yards instead of feet. Operationally, the sight head functions exactly the same as and may be used interchangeably with the gun sight Mk 23.

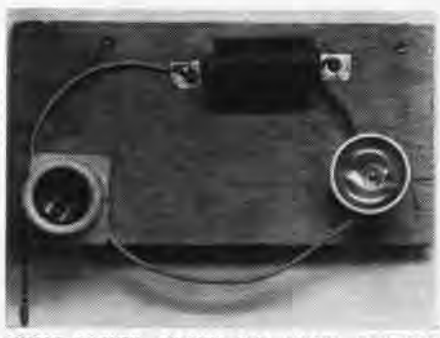
How to use:—Instructions concerning the operation and maintenance of this sight are to be found in *Handbook of Operation Service and Overhauling Instructions with Parts Catalog* AN-11-35C-1, dated 28 June 1948.

Device Tests Flash Bulbs

VMP-250, El Toro—To prevent missing good photoflash pictures due to bulb failure, a battery-operated tester was made from spare parts by Sgt. William L. Gilliam and T/Sgt. Hilary B. Downey.

The tester consists of one porcelain light socket, one 1½ volt battery and a small flashlight bulb and reflector. Parts are soldered in series and two copper strips hold the battery in place to complete the circuit.

Voltage of the battery is sufficient to light the small flashlight bulb but not sufficient to discharge the flash bulb. Therefore, if a good flash bulb is inserted in the socket it will complete the circuit and allow the small flashlight bulb to light up without discharging the big bulb. Conversely, if a bad flash bulb is used, the circuit will not be completed and the little bulb will not light up.



SIMPLE SOCKET, CIRCUIT END PHOTO FAILURES

SUPPLY NEWS
FROM ASO AND SUPPLY DIVISION BUAER

Provisioning the Albatross

The first joint provisioning meeting to establish a complete spares order and source coding for the amphibious UF-1-A aircraft (Air Force designation SA-16A) under a Navy contract was held here recently at the Grumman Aircraft Corporation. This meeting, together with one to be held at the Fairchild Corporation for the C119B/R4Q, will provide the experimental groundwork required to inaugurate changes in the procedures of each service necessary to prepare a Joint Air Force—Navy Provisioning Appendix.

The UF-1A conference was opened with indoctrination of conferees as to the probable planning, operation and deployment of the *Albatross*. The conference chairman furnished Air Force representatives with a detailed explanation of the Navy methods and procedures that would be followed.

The contractor furnished 100% breakdown in group assembly form of all engineering released parts comprising the complete aircraft design, and all drawings were arranged in this manner. Every UF-1A blueprint was reviewed and marked as follows: (*a*) source codes; (*b*) maintenance item, overhaul item, or both; (*c*) salvageable or non-salvageable.

O&R representatives indicated on each print the recommended quantities of the (P) and (P1) items to be procured on the "C" list for overhaul support, and the fleet representatives in a similar manner recommended the quantities of the (P) and (P1) items to be procured on the "B" list to assemble the initial fleet section "B" outfitting allowance.

Conferees reviewed 14,042 items of which 363 were coded (P); 412 were coded (P1); 1594 were coded (M); 10,760 were coded (M1); and the balance (A), (A1), (X), and (X1) or (*). A total of 775 (P) and (P1) items were purchased by the Navy at approximately $1,300,000 of which 344 items were placed on the section "B" allowance list for maintenance support of the aircraft.

A thorough review of vendor accessory items established by the contractor's engineering department was accomplished and a recommended procurement list for peculiar accessory bits and pieces was made up for 21 accessory items. In addition a tentative section "B" allowance list for vendor items was prepared.

Arrangements were made with the contractor to forward to ASO a complete set of drawings that were reviewed at the conference. In addition to the airframe drawings, drawings for special tools and ground handling equipment were included. Drawings and parts lists for approximately 30 vendor items were brought back to ASO.

Issue Oldest Stock First

A large quantity of Classes 14, 51, 52, and 53 material is being reported as over-age. Possibly a great deal of this material might have been saved had activities followed the basic principle: *Issue your oldest stock first.* It is only through sound, logical distribution of stock that efficient and economical aviation supply can be accomplished. Field activities are requested to adhere to the "oldest first" policy, insofar as possible, in the future issuance of perishable materials.

ASO Catalog Innovations

As a result of a recent field survey, questionnaire, ASO will include in all future airframe sections, beginning with the HO3S-1, Section 8225, the vitally important source coding of airframe material. Propeller section 8701C is being revised to include interchangeability information previously contained in the Interchangeability Lists. If field reaction is favorable to this added catalog feature, future engine sections will show interchangeability, eliminating the issuance of Interchangeability Lists as a separate publication.

The arrow printed on the cover page of most ASO Catalog sections points the way to important supersedure information. These supersedure data will explain exactly what portions of each section are being replaced and will insure getting the latest up-to-date information. Read the message under the arrow carefully to avoid throwing away important divisions of a still active catalog section.

The "new look" in the back page catalog "plugs" as seen recently in Section 8248 is intended primarily to catch the eye and encourage reading of the important cataloging message. The text of ASO Catalog "plugs" contains valuable information which will give a better understanding of the benefits to be derived from use of the Catalog.

Style-Conscious Plug Users

An unhealthy trend recently has been noticed for field activities suddenly to become "out of stock" of old spark plugs whenever a new design is issued. Human nature—the desire to acquire the latest styles—is probably responsible for the greater part of these disappearances. Proper concern for the interests of the taxpayers, however, requires that the spark plugs on hand be used. To maintain the necessary rigid inventory control, ASO must insist that this principle be observed. Field activities *must* requisition spark plugs by engine model only as directed by *General Engine Bulletin No. 98*, and ASO, under BUAER instructions, will decide the design of spark plug to be issued.

Engine Containers Are Lost

One of the headaches of aviation supply at present is the location and accountability of reusable steel engine containers. Supply officers shudder when asked to receive these containers at a price and be held accountable for their return from O&R shops. Many of these expensive containers are purchased each year, only to become lost or misplaced after their initial use.

The steel cans, unlike the CFE wooden engine boxes, were purchased from vendors at a relatively expensive price and must be considered a separate item of accountable aeronautical equipment. When transferred to another activity or returned to O&R shops, these containers shall be invoiced at the current price reflected in the QSSR.

Photographic Items Critical

Field activities which have had occasion to requisition photographic material recently are aware of the critical nature of such items. To give all activities fair and equal consideration in apportioning existing stocks, ASO must be furnished proper justification on all photographic requisitions. Activities ordering photographic material should be sure that the following information, as required by BUSANDA Manual, Chapter II, is contained in the requisition: Quantity on hand, on order, and expended (0-0-0) during the previous six-month period.

Deicer Fluid Cleans Shield

VMF(N)-513, EL TORO—The F6F-5N, for practical purposes at least, is equipped with a windshield washer, M/Sgt. A. G. Sadewski has discovered more or less by accident.

While warming up a plane on a carrier deck for take-off, Sadewski noticed the windshield had acquired oil. As it was late afternoon and a landing into the sun was almost certain, the oil had to be removed. To prevent further delay of deck operations, Sadewski tried to clean the windshield by working the deicing equipment intermittently. By the time the plane was taxied forward, the windshield was sufficiently clean.

Further testing by other pilots has proved that the deicing equipment, with AN-A-18 alcohol, is capable of cleaning the windshield in the air. Besides use aboard ship as above, the cleaner is used on all day and night hops about the local area. Its greatest use is in keeping the usual sea-air film off the windshield when night flying under hazy conditions.

▲ ***BuAer Comment*—This should provide a good method for use under the conditions noted. In general, for cleaning on the deck, synthetic soap C-120 and water will give better cleaning without adverse effects on the plastics on the aircraft.**

LETTERS

SIRS:

Upon reading the January issue of NAVAL AVIATION NEWS, I am afraid I shall no longer believe in the accuracy and reliability of some of the articles printed therein. I am writing concerning a narrative that occurred in February of 1948 during the Atlantic Fleet maneuvers and submitted from NAS COCO SOLO. Their station newspaper, *Contact*, is in error, and so is your article, titled "Pinwheel in Quick Rescue," printed on page 20.

An aircraft accident report will verify that upon completion of an air support mission to Vieques Island, the plane guard, a helicopter from the *Leyte*, piloted by Lt. (jg) Schaufler, was on station between the carriers during landing operations.

When a water landing was effected, I got out of the plane and into my pararaft in less than one minute before the plane sank. I had no aircrewman in the rear seat. You have invented the name of W. V. Lemon, ACMM. Having been previously briefed on the use of the hoisting sling, I am certain Mr. Schaufler would deny that I did not know how to use the sling. If I had no crewman, it is utterly impossible to argue with myself over the salvaging of my parachute. True, I was most pleased with the certainty of rescue, and would have appreciated a souvenir that eventually became bounty to a destroyer in the screen at that time.

D. B. EDGE, LT. (JG)
VA-94

*NANEWS regrets the garble on your rescue from the drink. Our story was reproduced as received from the field.

SIRS:

Six enlisted Reservists from NAS SQUANTUM recently received appointments as naval aviation cadets and departed for 18 months training at the Naval Air Training Center, Pensacola, Florida, often called the "Annapolis of the Air."

The new NavCads, as they appear from left to right in the picture, are: Adrian Carter, George Kett, Bertil Jansson, Edward Hesse, Carl Seppala and Charles Bergstrom.

E. W. GOSHORN, LT.
NAS SQUANTUM

SIRS:

In appreciation of the cooperation received from NAS SAN DIEGO and activities based here in the recent filming of *Task Force*, Warner Brothers Studios presented the NAS a check of $1,000.

Presenting the check to Captain L. K. Rice, was Mrs. J. E. Dyer, wife of Capt. J. E. Dyer, USN (Ret.), former head of NATS, Atlantic Division, and now assistant location director for Warner Bros.

Witnessing the presentation were Commander Paul Deranian (MC), head of the family hospital, Ann Dyer and Captain A. C. Smith, (MC), Senior Medical officer. The money will be used to purchase special medicine and instruments for use in the family hospital, where dependents of Navy personnel are cared for.

L. K. RICE, CAPT.
COMMANDING
NAS SAN DIEGO

SIRS:

At Grosse Ile they say Captain James P. Walker packs quite a punch. This is evidenced by the above photo which shows him giving Tony Gallento, former heavyweight boxer a "haymaker."

Gallento, who once gave world's champion, Joe Louis, a stiff battle, will be one of the wrestlers appearing on the station's weekly wrestling show. Proceeds from these shows will be used to improve the enlisted men's club on the station.

D. A. BLACK, LT. CDR.
PUBLIC INFORMATION OFFICER
NAS GROSSE ILE

NAVAL AVIATION NEWS

Published monthly by Chief of Naval Operations (OP-50-D) and Bureau of Aeronautics to disseminate safety, survival, maintenance and technical data. Air mail should be used if practicable, address to: Chief of Naval Operations, Naval Aviation News, Navy Department, Washington 25, D. C. Direct communication can be made to Naval Aviation News, Room 4927, Main Navy Bldg., office telephone extension 61662.

CONTENTS

● PHOTO CREDIT

Three photographs on pages 24 and 25 by Acme Newspictures.

● THE COVER

This month's cover photo shows a covey of Reserve F6F's from NAS Dallas winging over the swampy tidelands of Florida. The photo was taken when the Dallas Reservists were at Pensacola doing carrier qualifications, the first time Reserves had gone aboard a carrier since the war. Since that time Glenview also has had a group of Reserves fly off the Cabot.

● RECOGNITION QUIZ

(Inside front cover)

***Top*—TBM's from NARTU Seattle flying out Straits of Juan de Fuco over the BB *Iowa* and a *Cleveland*-class CL. The planes were from VA-74-A, skippered by Lt. Clem Street; Lt. Bob Skill, XO, led the flight.**

***Center*—FJ-1 *Furies* of VF-51 flying over rugged slopes of Mt. Rainier.**

***Lower*—AM-1 *Maulers* from NAS Quonset Point. The *Maulers* recently completed their carrier qualification tests on the CV *Kearsarge*.**

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James M. Springer
Art Director

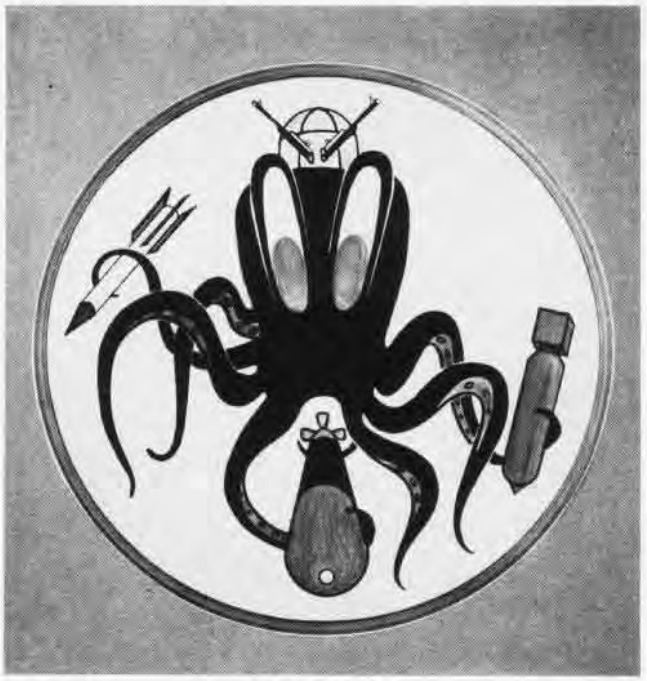
Izetta Winter Robb
Squadron Editor

● The printing of this publication has been approved by the Director of the Bureau of the Budget, 28 April 1945.

SQUADRON INSIGNIA

ANIMALS appear to be the favorite mascot of Navy squadrons when they draft squadron insignia. Two reserve squadrons from NAS Columbus, Ohio, picked animals. VF-53-A a yellow and black cat and VA-54-A an octopus carrying rocket, bomb and torpedo. Composite Squadron 23 indicated its main mission by showing a torpedo plane applying a mallet to the head of a submarine. Another animal (or is it fish?) lover is VP-4. Flying P2V-2's, it naturally took a turtle for its mascot and put King Neptune astride it with an HVAR.

VF-53-A



VA-54-A

VC-23

VP-4

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