

NAVAL AVIATION

# NEWS

RESTRICTED



Training of Pilots  
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RESTRICTED





CROSSED FINGERS IS THE FINAL AID INSTRUCTOR LT. H. STRONG CAN GIVE HIS STUDENT MIDSHIPMAN JOHN W. ROCHE FOR FIRST BEARCAT RIDE

# NAVIATORS



NAAS CABANISS FIELD, CORPUS CHRISTI, FLIES 15,000 HOURS A MONTH; HERE IS TYPICAL LINEUP OF PLANES ON THE MAT AWAITING TAKEOFF



EVERY FLIGHT STUDENT MAKES AT LEAST SIX LANDINGS ABOARD USS CABOT; HERE SHE STEAMS PAST FORT BARRANCAS ON WAY HOME

TODAY'S fresh caught naval aviator with his shiny braid and glistening wings is the same breed of buzzard that has been coming off the line for two generations. He has a fighting spirit and he approaches his flying with knowledge and confidence. But for flying the gadget aircraft of 1950 *he is better prepared than ever before in the history of naval aviation.*

actual carrier landings to his credit on the USS *Cabot*.

What used to be the Operational Training Command is now Advanced Training. Every pilot is qualified in type before he receives his wings. In this respect it somewhat resembles prewar practice but the syllabus is much more thorough. Carrier landings are made on a ship whose only duty is training pilots. PB4Y,

# MK. 1950

It is no mere coincidence that the youthful cadets, midshipmen and student officers are receiving superlative flight training. The syllabus as it operates now combines the careful, unhurried training of prewar years and the innovations of the wartime program when corners had to be cut. With economy a must for the armed forces, efficiency in the training command saves cash yet produces topnotch fighters.

Most oldtimers know by now that all basic training—from primary through tactics and instrument flying—is done in SNJ's. But a look of surprise is forthcoming when they learn that every designated naval aviator, regardless of whether he will eventually fly single or multi-engined aircraft, has at least six

P2V and PBM pilots pile up hours in their big jobs until they are reasonably familiar with their airgoing factories. Fleet squadrons no longer have to completely indoctrinate green newcomers.

Geography, in addition to type of activity, separates the men from the boys. All of basic is at Pensacola, while Advanced is at Corpus Christi. During the post-war letdown Primary was at Corpus Christi for awhile and advanced single engine was at Jacksonville. For a short time advanced multi-engine was the only training at Corpus. Now the two commands are groaning under a peak load. It is expected, however, that the hump will be smoothed out by next summer.



'BE SURE TO ANSWER MY QUESTIONS,' SAYS LT. F. T. STEPHENS

## Ulcer Gulch For Instructors; Upcheck, Downcheck Alley For Fledgling Pilots

PRIMARY training has been known as Ulcer Gulch to instructors since time immemorial. If yesteryear's instructors thought they had it tough in *Yellow Perils* they should consider the lot of the backseat bundle-of-nerves pilots at NAAS WHITING FIELD, Milton, Florida, near Pensacola.

Remember when you rode in the rear seat of a 'J'? In making a turn for a landing a partial view of the landing area can be had. On the straightaway, however, you become as blind and helpless as a newborn kitten. Consider the poor instructor. The landing gear indicator is up front. So is the catch on the gear handle. So are a lot of other things like gas gages, radio tuning, flap indicator—and a human being whose actions at times seem as unpredictable as a chorus girl's.

Somehow, they manage to do a marvelous job. A significant item in getting over the hump of the past summer was the presence of many reserve pilots who came back on active duty as instructors. Most of them had previous experience.

Whiting with its two fields lies 23 airline miles from Mainside, north of East Pensacola Bay and just south of Red Airway 30. There's plenty of room for the operations of Basic Training Units (hereafter called BTU's) One Baker at south field, and One Able and Jet Training Unit



CLEARED BY WHITING TOWER, PRIMARY HOP TAXIES OUT FOR BOUNCE



STUDENT LT. (JG) W. L. CONNELLEE INSPECTS PLANE BEFORE FLIGHT

1 at north field. Cdr. R. W. Slye, the training officer, and his two Officers-in-Charge, LCdr. L. B. Smith and LCdr. H. J. Badger, have 240 instructors to carry out the primary syllabus with which they are charged.

A student is made as familiar with SNJ-4's, 5's and 6's as possible before he climbs aboard. During 19 dual hops, each lasting one hour and 15 minutes, he rides with an instructor and is supposed to learn the rudiments of making like the birds. On hop 18 his own instructor checks him and on 19 a check pilot determines his eligibility for solo. Then he has that once-in-a-lifetime "first"—taking his life in his own hands. Stage B takes him through precision maneuvers—air work, landings, small fields and cross wind, for a total of about 47 hours.

### A STALL IS A STALL IS A STALL

How many different kinds of stalls are there? Instructors argue this point but primary students are given at least the 17 listed below, a far cry from even the wartime days. "Clean" stalls (gear and flaps up) are: power off stall, power off recovery; power off stall, power on recovery; straight climbing stall; climbing turn stall to left; to right; near stall; progressive stall; skidded stall turn to left; to right; steep turn stall to left; to right. With gear down and 20 degrees of flaps they are: straight climbing stall; landing attitude stall; approach turn stall to left; to right. Finally, with gear down and full flaps they go: landing attitude stall; elevator trim tab to stall. Whip stalls are prohibited in 'J's.



IT MUST HAVE BEEN A GOOD HOP; GRIM WARNING DID SOME GOOD



MIDSHIPMAN H. W. WYLIE SHOOTS STARS IN LINK CELESTIAL TRAINER

Students on board at Whiting average 700 now; the summer peak was 900. Instructors fly 3.6 hours per flyable day.

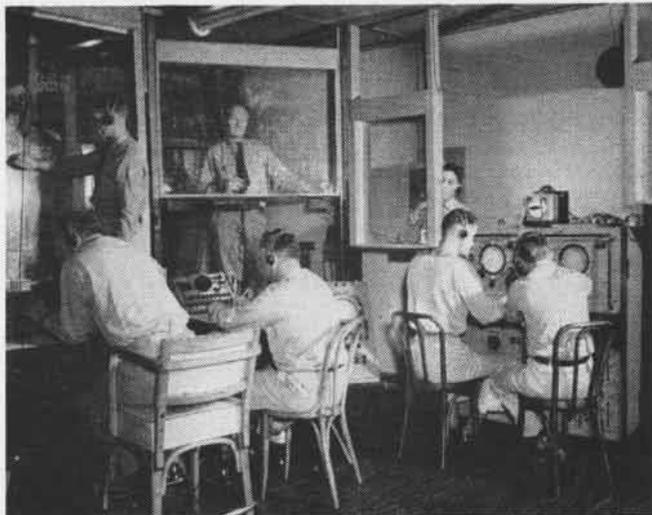
Admittedly, it is harder to instruct in 'J's but the students successfully learn in a faster, more complicated plane.

**ACROBATICS, INSTRUMENTS, TACTICS, CQ**

From the wilds of Whiting, Naviator fledglings proceed to NAAS CORRY near Mainside. Liberty is a little better with Bartel's incomparable fried chicken nearby and the pleasures of the San Carlos hotel available.

BTU-2, under LCdr. Frank Lawlor serves a continued diet of SNJ acrobatics, night flying, and instrument flying. The instrument course is basically unchanged over the past seven years with stress on attitude flight, partial panel and radio range work. For the first time, if he has poetry in his soul, the student will savor the thrill of night flight, with the auto headlights and neon signs forming patterns below. And if it's timed right he may see the full moon rise over Pensacola Bay to make his task easier in its brightness.

Next jump is to NAAS SAUFLEY at the north end of Perdido Bay, formerly the square grass field known as Felton's Farm. In BTU-3 the business of fighting a plane and flying it in military operations is paramount. Formation, with carrier rendezvous, breakups and ABC stressed, is injected in five hops. Then come tactics, a brushup on instruments, a couple of cross-countrys, dogfights and gunnery. Actual air-



MOCK CIC SETUP AT PREFLIGHT SCHOOL TRAINS STUDENTS IN CONTROL

to-air gunnery is an innovation in military basic training. Nineteen hours is spent on this phase. One of five night flights is navigation cross-country. Until recently formation was based on a three plane element but a shift to the standard four is starting now.

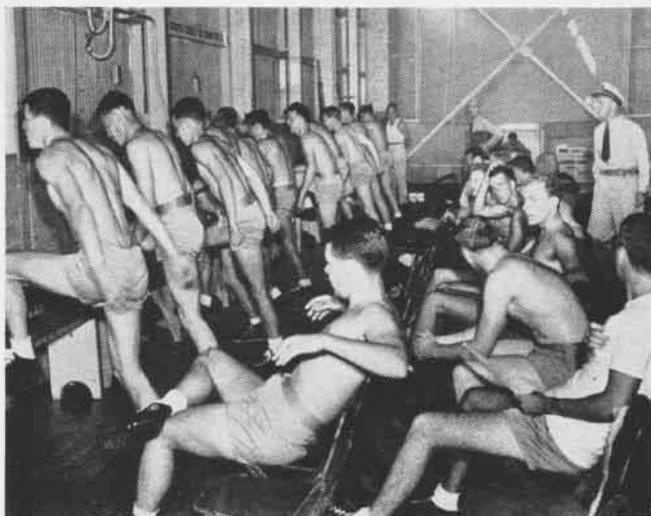
New instructors reporting to Pensacola learn the ropes of their profession at Chevalier Field.

**PREFLIGHT STANDS FOR SURVIVAL OF THE FITTEST**

Prewar cadets shudder at the step test, hand-to-hand combat, rope climb and obstacle course as they recall the one mandatory bit of exercise of their generation—calisthenics on the porch from 0500 to 0505 after 0455 reveille. The muscle boys came into the picture during the war and they're evidently here to stay. They claim to make men of the boys and keep the doctors busy.

Physical training is only a small part of Preflight School, however. Cadets, Midshipmen, and student officers get off to a flying start (figuratively speaking) in professional aviation. For 16 weeks cadets and Midshipmen are indoctrinated in fundamentals of the naval service, study engines, navigation and aerology. Student officers skip the naval subjects. They also bypass PT except for the *Dilbert Dunker*.

Preflight is divided into three departments: academic, military and athletic. Preflight sharpens 'em and gets 'em in the mood. A good example of its sharpness is its drill team which appeared at many football games this fall.



'UP, DOWN, UP, DOWN, ONE TWO, THREE FOUR,' GOES STEP TEST AND—



AT 120 PER MINUTE PRODUCES THIS RESULT; IT MAKES OR BREAKS



NOT MANY STUDENTS WIND UP IN SEAPLANES; HERE IS A LAUNCHING ON THE RAMP AT NAS CORPUS CHRISTI; ANOTHER PBM AWAITS RECOVERY

## Bearcats, Neptunes, Skyraiders, Cram South Texas Air After Postwar Lull

ALTHOUGH located in Pensacola for convenience, CQTU-4 under O-in-C LCdr. R. B. Buchan, by the nature of its work, could be said to belong to both commands. Carrier qualification winds up the sessions in both Basic and Advanced.

CQ comes as sort of a climax to each phase. Students reporting to Corry Field are taken under the wings of 19 instructors, 17 of whom are qualified LSO's. One half or more of the instructors' time is spent in jaw exercise putting across the principles of carrier aviation. There can't be a slip-up so the gassing is a necessary part of the game. First comes 10 hours of field carrier practice bounce at four outlying fields. After each session comes more verbal instruction—no substitute has been found for that.

With the dawn of "CQ" day the USS *Cabot* steams out



LT. H. O. SONES CHECKS INSPECTION OF MID'N HELLE AND HOLT

of Pensacola Bay and every Basic student makes six to 12 landings aboard her in SNJ's. Depending on predicted weather the morning of operations, the first flight is either hoisted aboard the night before or flies on in the morning. There are six planes to a flight, and each day's cruise takes care of 50 to 60 students who rotate in the planes.

Perhaps the hardest working instructors in the Training Command are the CQ LSO's. Two of them go aboard for an eight hour day and wave flags at raw material. The rest of them are at outlying fields doing the same thing. Fleet LSO's take notice. It isn't exactly an easy life.

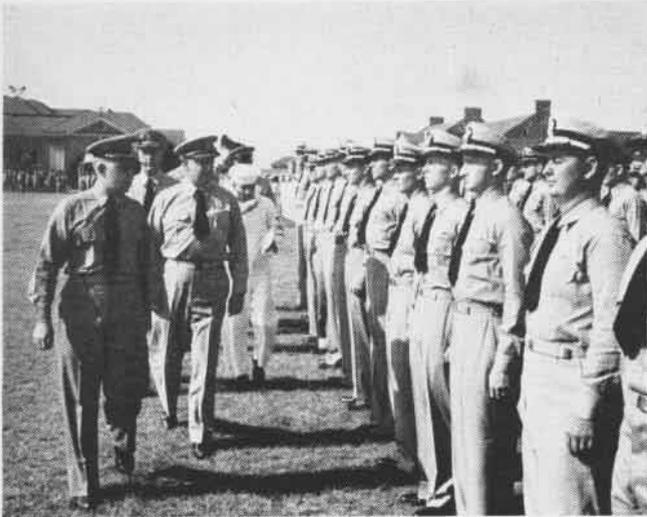
Generally speaking, the LSO's at Pensacola work more carefully than those in the fleet. They never can be sure what a student will do. The unusual is the rule. Eternal vigilance is necessary—they have to hit the net occasionally.

With 200 hours tucked under his belt the student proceeds to Corpus Christi, 550 miles west and south on the Gulf coast. Because of the peak load now passing through the whole command he may have to wait awhile. A slight cut has been made in the advanced syllabus to eliminate this waiting time. Students may fret and fume at such delays but they may rest assured that planners in Washington are doing their best. Fiscal 1950 started with a planned program of 1,500 finished pilots, now revised downward. The "hump" now passing through came from a program of 2,610 pilots to be designated annually.

### MIGRATORY BIRDS AGAIN HAVE COMPETITION

Cabaniss was closed up tight for awhile after the war. Now Mainside and Cabaniss fields are humming with activity. All multi-engined aircraft operate out of Main Station while all single operations are based at Cabaniss, a little closer to the city of Corpus Christi. Many a gallon of paint was used to bring Cabaniss up to its white self again.

At Cabaniss, Cdr. Moe Vose, training officer, has five units under his cognizance. Four of them train students while the fifth gives the word to newly reported instructors. Advanced Training Unit One has *Corsairs*; ATU-2 operates *Bearcats* and *Hellcats*; ATU-4 has AD's and *Corsairs* while ATU-5 has the old reliable TBM *Turkeys*, to be replaced by *Corsairs*.



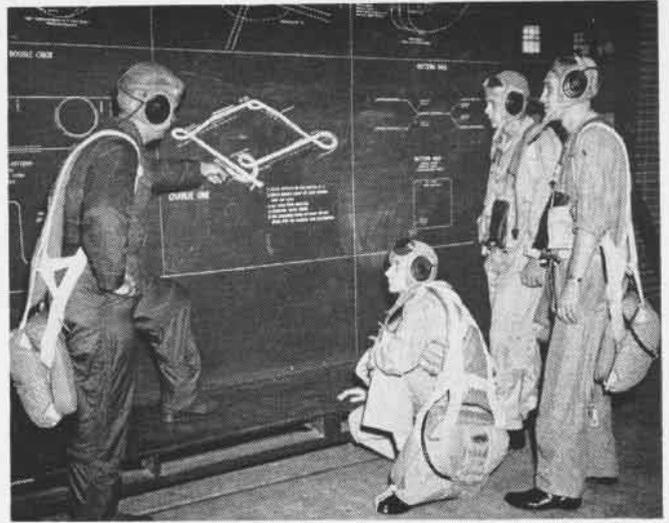
GRADUATION IS HELD AT PENSACOLA FOR SINGLE-ENGINE PILOTS

A typical unit is ATU-2 with the F8F's. The advanced syllabus is the same for all the single-engine units. Since it is more fun to strap a *Bearcat* to your fanny than the others at the field, we will take a glance at their program.

**FIRST TIME IN A HOT JOB ALL ALONE**

Since fighters don't come cheap, considerable care is taken to fill students with the necessary dope before the first flight. Flight instructors themselves take care of ground school in type. Complete familiarity is mandatory before the first flight is made. Every part of the cockpit must be memorized and emergency procedures must be second nature.

Just to make sure the cobwebs are wiped away between Pensacola and Corpus, several hops of bounce and instruments are given in SNJ's. Then come radio-controlled take-offs and landings at Chase Field, Beeville, Texas. Students are talked down. They quickly go into the professional work of formation, do angle calibration and range estimation (ACRE) for gunnery and make 40-degree glides in bombing, radio-controlled. Gunnery covers 50% of the 100 hours in Advanced. A little strafing, rocket firing, overwater navigation, overnight cross country, combat and night formation complete the syllabus. Pilots then return to Pensacola for CQ in type with the same syllabus as in SNJ's.



LT. O'BRYAN SHOWS 'C' PATTERN TO MID'N STARK, KALP AND BURGESS

A slightly different syllabus in AD's stresses dive bombing. Cabaniss flies about 15,000 hours a month. Safety is stressed always. The field was recommissioned last February. The casual visitor is impressed with the concentrated activity he finds there. He leaves with the feeling that the taxpayer's dollar goes far on this flat piece of land in South Texas.

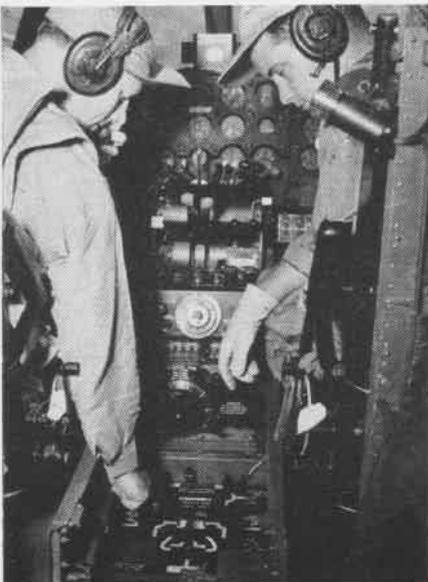
Advanced training in service types has proved two things—it prepares the pilots well and weeds out the borderline students.

At Mainside Cdr. W. R. Stevens is training officer while the O-in-C's are Cdr. H. E. Robinson, ATU-11 (PB4Y's and P2V's), LCdr. Noon, ATU-12 (PB4Y's) and Cdr. C. M. Brower, ATU-10 (PBM's).

Multi-engine training emphasizes navigation and instrument flying. In ground school the students take "hops" in the Link Celestial Navigation Trainer and learn the mechanical intricacies of their planes. Each hop lasts four hours, with two students taking turns at the helm.

Throughout all of flight training the wing-and-wing system is used, with half a day spent in ground school. At each station helicopters are kept busy with rescues. At Pensacola the rescue unit is under Cdr. R. Baxter, USCG.

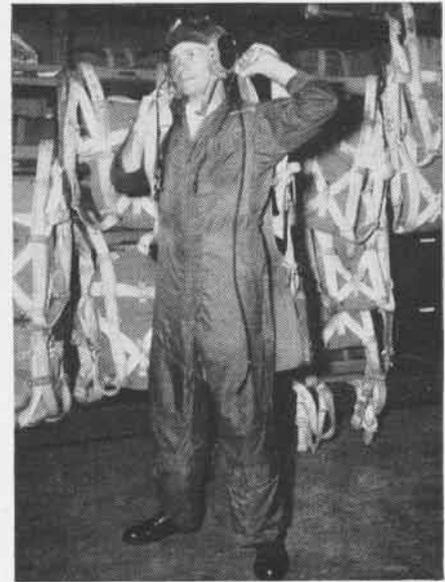
Naviators Mk. 1950 join their fleet compatriots eager for action, members of a fighting team of seagoing pilots.



CDR. ROBINSON INSTRUCTS MID'N WYLIE IN P2V



MID'N YORK DOESN'T FEEL SO GOOD AT 30,000 FT.



INST. LT. MCADAMS FLEW 135 HOURS IN AUGUST

# GRAMPAW PETTIBONE

## Mexican Hayride!

The two Beechcraft pilots had an uneventful flight from San Diego to Litchfield Park, where the junior of the two pilots was assigned to pick up and deliver a JRB-6 to Corpus Christi. Since the other Beechcraft was also going to Corpus, he was to act as follow pilot for the rest of the trip.

After a brief acceptance flight the pilots cleared for El Paso, arriving safely about half hour before sunset. They dutifully sent their "ROVNITE" messages. So far they were going "great guns." They had left San Diego after lunch, taken delivery on the JRB-6 and put about 600 miles behind them by nightfall.

The next morning they were informed that the weather along the authorized ferry route to Corpus Christi was below VFR minimums. They were given a contact clearance to Corpus Christi via a more southerly route. The Ensign who had a total of 1000 hours and approximately 200 hours in Beechcrafts asked permission to lead the flight in order to gain additional navigational training. This permission was granted and the two plane section departed from Biggs AFB, El Paso at 0940 MST.

The senior pilot who was following in the SNB-3 had a passenger and some cargo and found that the JRB-6 kept pulling away from him at the power settings recommended for long range cruising. An hour or so after take-off he heard the JRB pilot call him and tried to answer on all VHF channels and on 3105, but apparently his transmissions were not receiving. He decided that sooner or later the other pilot would slow down and made no effort to keep up with him as that would have involved using additional fuel. He lost sight of the JRB slightly over two hours after take-off. He states that it was about 15 miles ahead and "blended in with the clouds."

After the planes became separated, both turned south looking for better weather. The pilot of the SNB realized after a few minutes that he would soon be deep into Mexican territory unless he reversed his course and looked for a clear area to the north. He did this, and after a short while was able to turn to the east and home on a 50,000 watt radio station in San Antonio. He landed there after 3 hours and 45 minutes and reported that he had separated



from the other plane.

Meanwhile the Ensign in the JRB also reversed course for a couple of minutes to see if he could spot the other plane. When he saw that he was alone and unable to establish radio contact with the other Beechcraft, he decided to stick to a magnetic course of about 150 degrees. The weather seemed to have closed in all around him. He was forced to dodge one thunderstorm after another. He tried to home on the San Antonio range but the static made it impossible to be sure of the station identification. However, the radio compass needle seemed to remain centered on a heading of 150 degrees so he continued on this course.

After another 30 minutes, he saw mountains all around, but was unable to locate his position on the chart. He was lost and he knew it. However, he still had a good deal of gas left and he decided to hold his heading of 150 degrees and land at the next airfield. He was still on this heading an hour later when he noticed that his fuel supply was getting dangerously low. Finally he saw a clear spot to the south and soon afterwards found a small town. Three quarters of the way around town he ran out of gas. Seeing a hard flat field about 1200 feet long, he lowered wheels and flaps and tried to touch down at a slow airspeed. Unfortunately the field elevation was 7200 feet, and he found his ground speed very fast. Half way through the field he had to veer off to avoid a group of burros. He went on through two more small corn fields and finally nosed up to avoid hitting an adobe wall.

The next day an R4D arrived with gas-

oline, two new props, and a repair crew. The JRB was flown back to Corpus Christi where about 500 man hours will be required to complete the repairs.



Gram paw Pettibone says—

Let's take a closer look at this Mexican Hayride.

Fresnillo, Zacatecas, Mexico — that's where he finally landed. I had to break out my World Atlas to find out just where this was. After locating Fresnillo, I decided to trace the chart, so you could see just how lost a fellow can get. One thing we have to give him credit for—he certainly was getting some mileage out of that JRB. With a nose tank I think he would have made Mexico City.

The errors that led to this fiasco are pretty apparent, but let's go over them quickly:

1. The flight should not have departed from El Paso with the authorized ferry route closed due to bad weather. The radio aids on the route via Van Horn and Marfa are of no help to planes not equipped to receive the signals from the VAR stations in that area.

2. Having decided to proceed on the route indicated by the broken line, it wasn't very smart to plan a non-stop flight all the way to Corpus Christi. According to my calculations that's over 700 miles and even with economical power settings the planes would not have arrived with the required one hour margin of fuel.

3. In allowing the junior pilot to take the lead over a route with which he was unfamiliar, the senior pilot was violating instructions contained in ACL 43-49 which defines the responsibilities of a "Lead Ferry Pilot" and clearly states that "The primary consideration in ferrying aircraft is the safe and expeditious delivery of the aircraft and not pilot training."

4. Having elected to stick his neck out in this manner, the senior pilot most certainly should have checked to see that he had voice radio contact with the other plane. He should have flown in a cruising formation, ready to take over the lead should the junior pilot head off course or encounter conditions that he could not cope with. To drag along 15 miles in the rear was inexcusably poor airmanship.

The actions of the junior pilot, once he became separated, deserve a little consideration too. He obviously hadn't spent any time planning this flight or he wouldn't have held to that heading of 150 degrees quite so tenaciously after he realized that he was lost.

When he did decide to make an emergency landing, he delayed doing so until he had exhausted his fuel in flight. Fortunately his guardian angel was right on the job with a flat space within gliding distance.

A mighty poor show all around!

## Will You Be Ready?

During the past few weeks two emergencies arose in flight which necessitated the abandoning of TBM's in flight. Both were at night. Both allowed a short time for the pilot and crew members to get out. In each instance the pilot stayed with the plane until actual altitude was below 1000 feet. Both pilots survived, but three passengers were killed in the first case.

### Case 1.

The first emergency occurred at an altitude of 5000 feet over rough hilly terrain with an elevation of 1800 feet. The TBM was cruising at 160 knots in level flight when the engine failed following a series of rapid and intense explosions. The bail-out order was given at about 4500 indicated and the pilot received an acknowledgment of "Yes sir" from the bombardier's compartment. The pilot held the plane in a glide and attempted to restart the engine. When his radio altimeter indicated 700 feet he parachuted hitting the ground almost simultaneously with the plane and about 400 feet directly behind it. He suffered only a sprained ankle.

The three passengers did not leave the plane and were killed on impact. All had their harnesses and chutes on and still intact. They were not strapped into the safety belts on the seats. The emergency escape door was in place on the plane and evidently had not been used. The right rear part of the fuselage was not badly damaged and investigators were able to test the door for proper release. When the handle was turned the safety wire broke easily and the door slipped from its hinges.

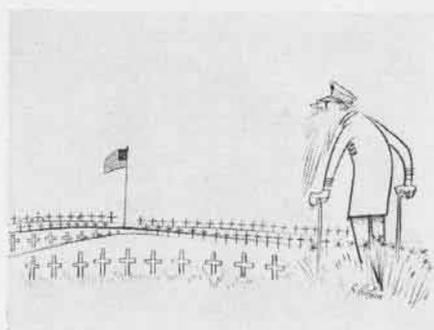
### Case 2.

The following is quoted from the statement of a passenger in the second emergency:

"We were circling the seaplane base at an altitude of 2100 feet, as indicated by the pressure altimeter in the radar compartment. During this time, a definite jar of the aircraft was felt, which seemed to be identical to that experienced when wheels are lowered. Check with the pilot, however, showed that he had not lowered the wheels. The theory that we had struck a bird was discarded due to our high altitude.

"Sensing something unusual about the incident, Chief \_\_\_\_\_ briefly went over the bail-out procedure with me. About 3 minutes after the jar was felt, and while the review of bail-out procedure was just being completed, the pilot broke in on the ICS to say that the plane was on fire and to bail-out.

"Chief \_\_\_\_\_, who had his



### ACCIDENT BOX SCORE

	1948*	1949*
Major Accidents .....	1244	1243
Fatal Accidents .....	104	93
Fatalities .....	180	159
Strikes .....	383	370
Major Overhauls .....	229	199

Note: These figures cover the period from January 1 to September 30 in each year. Flight hours have not been computed thru 30 September as we go to press, but will be 10 to 15% higher in 1949.

hand on the seat-lowering lever, in the act of showing me where it was, released the lever, and I crawled forward to hand him his parachute and stand clear in accordance with bail-out procedure. He fastened on his parachute, pulled the escape hatch lever, forcibly kicked out the panel and disappeared. I experienced some difficulty in snapping on my parachute due to the fact that the snap on the left hand side was stiff and unwieldy.

"A check of the altimeter showed 900 feet of altitude at the time I went through the escape hatch. The plane was in a shallow glide, the engine running steadily. Many sparks, some licks of solid flame and black smoke were shooting back from the engine past the hatch as I went through, diving down and forward. This was probably an oil fire, as my suit later showed oil stains on the legs.

"When I was sure that I was clear of the plane, I held my hand over the top of the chute and pulled the cord. I could detect no reaction except that the chute packs flopped around, so I held my hand on the front of the pack and pulled again, with instant and positive reaction by the chute. The pilot's chute was visible a short distance above me in the light of the burning plane. However, I later lost sight of it.

"I landed in 3 feet of water about 1/2 mile from the nearest shore."



Grampaw Pettibone says—

The pilot, the chief, and the technical observer whose statement is quoted above all left this burning TBM successfully and none suffered any serious injury. I think all deserve congratulations for keeping their heads and acting quickly and efficiently in a tough situation.

Why such different results in the other instance? The first thought of course is, "Did the pilot brief his passengers properly?" I'm very glad to be able to say that he *did* brief them quite thoroughly. You see, when the plane made a refueling stop, a passenger who had been on the plane gave up his place to one of the three who was later killed. He states that the pilot was very thorough and careful in his instructions to the passengers regarding the wearing of harnesses and emergency procedures.

Why, then, didn't they leave the plane when the bail-out order was given? There is no way of determining this, but one possibility presents itself. The pressure altimeter in the aft compartment was indicating 1800 feet (the terrain level) when the impact occurred. They may have been waiting in the hopes that the pilot would restart the engine. However, if such were the case it is difficult to understand why they had not at least jettisoned the door. In all probability their reactions were not as quick as those of a group of experienced aircrewmembers. Possibly they had just reached the point where they were ready to jump when the impact occurred.

It pays to be prepared for an emergency at all times. And remember this—when a pilot gives the order to "BAIL-OUT" that means that in his experienced judgment that's your best chance of survival. Don't wait for another order. If you are in a position where you can see the pilot don't wait for him to jump first. **BUCKLE THAT CHUTE ON AND GET OUT JUST AS FAST AS YOU CAN.**



### Crash Helmet Saves Pilot

The F8F in the picture above was held-off after the cut and flown into the barriers so that the lower half of the main wheels hit the #3 and #4 barriers, which were torn loose. Effective contact was made with the #5 barrier which caught the main landing gear flipping the plane forward.

The nose of the aircraft hit the deck and it then bounced about 12 feet in the air, turned a flip and landed inverted.

As you can see it is going to hit with a mighty mean crunch. Fortunately the pilot was wearing one of the new protective helmets. The impact was hard enough to crack the helmet, but the pilot was not seriously injured in the crash.

# Defense Leaders See Navy



Aboard the *Roosevelt*, the Nation's defense leaders see how the Navy fights. Left to right: SecNav Matthews, Air Force Gen. Vandenberg, SecDefense Johnson, SecArmy Gray, SecAir Force Symington, Adm. Denfeld, Army Gen. Collins, Marine Gen. Cates and VAdm. Blandy, CinLant

ONE HUNDRED miles at sea off Norfolk, the Navy put on a spectacular show of how it proposes to fight a potential enemy. The demonstration was viewed by Secretary of Defense Louis Johnson and all high-ranking civilian and military leaders of the Air Force, Army and Navy.

Sec. Johnson sounded the verdict for the visitors when he declared: "We are tremendously impressed."

The demonstration, held on Sept. 26, was a phase of the fourth Joint Orienta-

tion Conference attended by military leaders, educators, industrialists, labor leaders, press and radio. Previously the group had witnessed Army and Air Force demonstrations at Ft. Benning and Eglin Air Base, Fla.

The one-day show by the Navy centered aboard the CVB *Franklin D. Roosevelt*. Besides Mr. Johnson, Secretary of Army Gordon Gray, Air Force Secretary Symington, Gen. Omar N. Bradley of Joint Chiefs of Staff, and Gen. Hoyt S. Vandenberg of the Air

Force never had been aboard an aircraft carrier. Gen. J. Lawton Collins, Army Chief of Staff, had seen carrier operations in the South Pacific during the war.

Cooperating with the *Roosevelt* in presenting the Navy's way of waging war were the CVB *Midway*, 12 destroyers, a blimp from ZP-1, the submarine *Spinax*, the cruisers *Albany* and *Spokane* and planes and personnel from VC-4, VC-5, VC-12, VF-171, HU-2, VX-2 and VMF-211.

The spectacular demonstration was launched by the arrival at sea of Sec. Johnson aboard a new HUP-1 helicopter on the morning of the 26th. All of the other high officials and military leaders had gone aboard the previous night at Norfolk. Two AEW *Avengers* and four ASW TBM's were launched to locate and "sink" an attacking "guppy" submarine as the first demonstration. The destroyers depth-charged the sub.

Next, four *Banshee* jets, four *Hellcat* night fighters, four *Skyraider* night attack planes and a P2V were launched from the *Roosevelt's* deck, the latter by JATO. The 66,000 lb. plane then flew nonstop to Moffett Field, Calif., to demonstrate the versatility and long range of carrier-based aircraft to Army and Air Force men present.

From the carrier level, the *Banshees* of VF-171 zoomed to 40,000 feet in a few minutes to intercept theoretically an attacking bomber. The P2V, has made that climb in 6.5 minutes, it was announced, has made overhead passes at bombers at 45,000 feet and deflection passes at 47,000 feet.

Spectators on the *Roosevelt* then resisted the inclination to dig fox holes



NANews photographer caught deck crewman of *Roosevelt* hoisted aloft when he failed to let go guide rail when blimp made carrier landing



Secretary of Defense Johnson and other military leaders board the HUP-1 preparatory to hopping to *Midway* for P2V ride back to capitol



In the co-pilot's seat of a Navy Neptune, SecDefense Johnson waves for the benefit of cameramen; plane later flew off FDR to California



Opening up its JATO bottles, a P2V Neptune powders deck with white as it thunders down for takeoff to fly nonstop to Moffett Field, Cal.

in the deck when 32 *Bearcats* and 16 *Skyraiders* from CAG-1 on the *Midway* made a coordinated high speed attack on the carrier while the *Roosevelt's* CAP fought them off. The next demonstration saw VX-2 put a *Hellcat* drone up in the air and send it in two *Kamikaze* attacks on the *Roosevelt* while the ship's battery opened fire with 5", 40 mm. and 20 mm. On the first pass the drone made the attack unscathed, amid applause of the spectators. On its second attack, however, a 40 mm. shell burst inside the windshield and the red drone crashed in the ocean.

A second spine-tingling attack on the *Roosevelt* was made by CAG-6 and other squadrons, consisting of 12 *Banshee* jets, 12 *Bearcats*, 12 *Corsairs*, 14 *Skyraiders* and 2 *Hellcats*. All dived on the ship from different directions. Units of VF-171, VMF-211 and VC-4 bolstered CAG-6 in the show.

At a smoke float alongside the *Roosevelt*, the fighters fired 20 mm. guns, 5" rockets, *Tiny Tims* and dropped 1,000 lb. bombs. The P2V demonstrated its fighting ability by plastering the float with 16 5" rockets, 12 325-lb. depth charges and strafed it with its eight 20 mm. cannon.

THE BLIMP from ZP-1 landed aboard the *Roosevelt* to demonstrate its adaptability to carrier operations. Capt. James Flatley, operations officer of Com-AirLant, previously had told the guests the Navy could not fight submarines without airplanes and that airships are a valuable aid in this warfare because they provide a fine platform for radar and can carry heavier ASW gear than HTA planes. Although slower, the blimps can protect coastal shipping and harbors and have long range.

When it came in for a landing, the blimp fought air currents and on one

occasion lifted a few feet one of the deck crewmen who forgot to let go when the airship surged upward (see photo). When it took off, the blimp hit a burble and headed for the carrier's island. Skillful piloting veered it away in time.

After the air show was completed, Mr. Johnson embarked in the helicopter again and was flown to the *Midway* where he went aboard a second P2V and was launched by JATO to return to Washington. Accompanying him in the pinwheel were several others, including Mr. Symington and Gen. Bradley.

During the demonstration of carrier landings, Gen. Vandenberg of the Air Force and Gen. Collins of the Army went into the catwalk and asked questions about the operation of the arresting gear and barriers.

On the night of the 26th the Navy



SecNav Matthews and Gen. Vandenberg of Air Force, plus SecArmy Gray and Gen. Cates

put on a demonstration of night carrier take-offs and landings with two *Hellcats* and two *Skyraiders*. Flying in pitch darkness with only a few deck lights for guidance besides their radar, the planes made numerous landings which rather baffled spectators who could not see the deck from the island until the lights went on.

Only two minor mishaps occurred during the day-long concentrated operations. One F2H hopped all the arresting wires and ended in the barrier, and an AD did likewise, receiving a bent prop.

GUESTS at the Joint Orientation Conference were given the Navy's point of view at briefings before the air show. VAdm. Felix B. Stump, Com-AirLant, declared that without aviation the Navy would be as useless as a group of defenseless transports.

Adm. Stump reminded the visitors the Navy had developed aircooled engines, the Norden bombsight, the prototype of radar, the influence fuze, aerial torpedoes and many other advances in warfare.

"Other services are vital too," he said. "The Navy could not exist without a combination of surface, air and subsurface forces. We cannot fight a war unless we can support operations overseas, working with friendly nations and coordinating with our own Air Force and Army."

VAdm. W. H. P. Blandy, Commander in Chief of the Atlantic Fleet, told the military leaders and newspapermen that the Navy had a definite role in relation to the atom bomb. He said its long range carrier planes could carry the bomb against enemy coastal areas, harbors and submarine pens without competing or overlapping with the USAF's strategic bombing function.

## NEW CHUTE WORKS AT 500 MPH

THE NAVY recently unveiled the second of its "jet safety twins" when it announced details of a new "extended skirt" all-nylon parachute which has been tested at speeds above 500 mph. Coupled with the pilot ejection seat, it is the Navy's answer to saving jet pilots' lives in emergencies.

The standard Navy 24-foot parachute was usable up to 250 mph but subjected the pilot to 25 G shock when it opened at speeds much above that. The Navy is substituting 28-foot chutes for operational aircraft and plans to have the new nylon chute in all Navy jets early in 1950.

Besides giving the pilot less opening shock at high speeds without splitting, the extended skirt gives more stable descent without pendulum motion common to ordinary chutes. Actual bailouts have been made from the F3D jet at speeds up to 444 mph, with the jumper going out the escape chute leading backward and down from the pilot's seat.

The extended skirt feature was suggested and originally designed by Lt. (jg) A. C. Binder, veteran parachutist attached to the experimental unit at El Centro. He made the first jump in his chute.

Made of "run-stop" nylon, a waffle



WHITE PORTION SHOWS EXTENDED CHUTE SKIRT

weave material fashioned with heavy cross threads to prevent tearing, the extended skirt parachute is 28 feet in diameter. The weave stops a rupture in the fabric before it is extended into a long rip.

With canopy, pack and harness made entirely of nylon, the new chute requires less maintenance than present silk-and-cotton types. It weighs about the same as a standard 24-foot chute and can be packed in the same container.

The *Gardiners Bay* laid a lighted sea-drome by the time the PBM returned and the plane landed and sent the man to the Sangley Point dispensary. Medicos said the rescue save the patient's life.

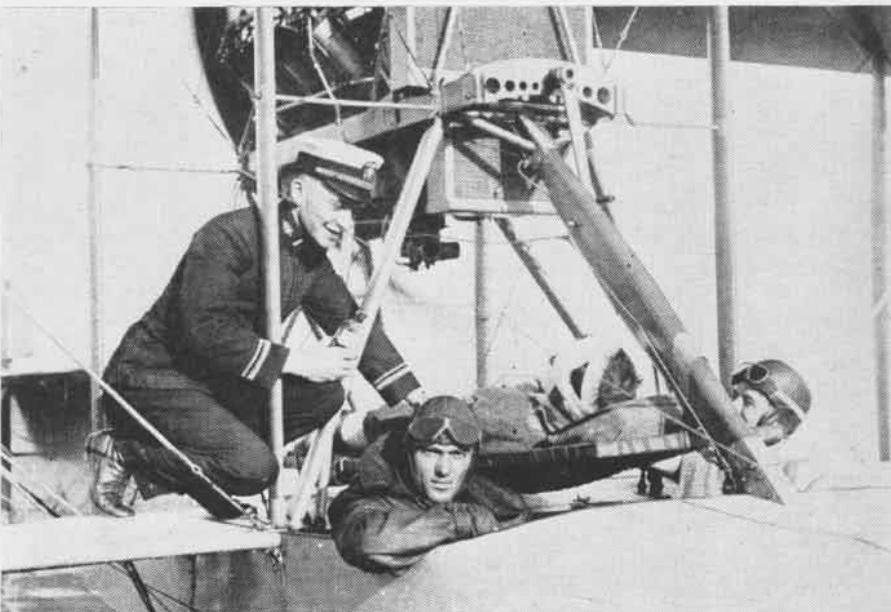
### Search Planes Save Lives San Diego, Philippines See Rescues

Two Navy search and rescue planes assisted in rescues at sea in widely separated parts of the Pacific off San Diego and the Philippine Islands.

A TBM made a crash landing off Los Coronados islands during a night flight in bad weather. VP-51 sent its PB-1W from Miramar, hoping to find the survivors by radar. Results of the radar search were negative, but just at dawn the Navy *Fortress* and a Coast Guard PBM sighted two survivors struggling in the water, without a life raft and in need of immediate help.

Due to the rough seas, the PBM was unable to land and proceeded to the lee of the islands for a landing. Cdr. F. P. Anderson, flying the PB-1W, marked the spot with float lights and circled the survivors. He guided the *Mariner* to the men by radio vectors and they were saved.

In the Philippines, the USS *Pollux* asked a seaplane to take an appendicitis patient to the hospital. The "ready" *Mariner* commanded by LCdr. Rucker of VP-42 from the AVP *Gardiners Bay* was dispatched the 260 miles to rendezvous with the *Pollux*. Despite rough seas, the transfer was made to the plane.



**Do you know** any of the men in the above picture or any facts about the incident? Capt. Wilbur E. Kellum of the Naval School of Aviation Medicine at Pensacola found the photograph. It is believed to be the first Navy hospital aircraft. The event occurred in

### Chute School Reaches '25' Silver Anniversary of Lakehurst Unit

NAS LAKEHURST—Two Navy chiefs walked into this air station on 1 September 1924 on a new and special assignment to develop a parachute riggers school. Twenty-five years later the school still was a going concern and a silver anniversary party was held this year to celebrate it.

Both Navy and Army fliers were required, in the spring of 1924, to wear parachutes and trained personnel were needed to pack, rig and maintain this unusual equipment. The two chiefs, Ford and Star, were sent to the big dirigible base at Lakehurst to set up a school to train riggers.

In the early days there was no rating of parachute rigger, that group not being officially recognized until February 1942. As the activity grew it took on the job of doing experimental testing of chutes and when this in turn grew too big a separate unit was established and moved to El Centro, Calif.

During the war, Waves, Spars, Women Marines, as well as male members of the services, were trained in the classes. Two Free French sailors and a detachment of Brazilian Army officers and men went through. Parachute riggers now take care of aviators' oxygen breathing equipment.

Before a rigger can graduate he has to make a free-fall parachute descent using a chute packed and rigged by himself. In the old days he dropped off a rope ladder dangling below a blimp. Today he bails out of an R4D.

1919 at NAS Key West, Florida, and the plane is an H-1. The patient is well bandaged about the head and leg. Because of its historical importance, more facts are sought. If you know anything about it, write to Dr. Kellum or to NAVAL AVIATION NEWS.



*Paula Doretti of Anaheim, Calif., needs pointers (in smoking regulations) as she offers a light to a dummy Marine pilot at the Orange County Fair at Costa Mesa. Plane and mannequin were part of MCAS, El Toro, aviation exhibit set up at the fairgrounds.*

### AF, Navy Exchange Pilots One-Year Duty Given to 25 Aviators

To promote better understanding between the Air Force and naval aviation, an exchange of 25 pilots from each service has been arranged on a year basis.

Eighteen of the Navy's quota already have been named and sent to join the Air Force for their "exchange duty" on regular orders. The following list gives the pilot, Navy squadron and Air Force base to which he was assigned:

Lt. H. L. Baslee, Basic Williams field; LCdr. F. C. Hearrell, Basic Las Vegas field; Lt. D. Lawson, Basic Randolph field; Lt. J. F. Bauman, VF-52, Selfridge field; LCdr. C. P. Mueckenthaler, VF-52, Langley field; LCdr. W. F. Heavey, VF-172, Shaw field; Lt. T. S. Sedaker, VF-171, Hamilton; Lt. D. S. Laird, VF-171, Hamilton; Lt. (jg) J. H. Wilder, VX-3, Selfridge; Lt. H. S. Siekel, VF-51, Hamilton; Lt. (jg) M. K. Speiss, VX-3, Langley; Lt. (jg) C. R. Bishop, VF-172, Langley; Lt. B. S. Lar-kins, VP-40, MacDill; Lt. A. L. Wozniak, VP-33, Hamilton; Lt. T. H. Adams and Lt. (jg) E. H. Daugherty from Advanced Training, Lubbock and Vancee fields.

Two Marine pilots from Cherry Point will go to the jet base at Sumpter, N.C. They are Maj. Alan J. Armstrong of VMF-122 and Capt. Thomas J. Ross of AES-41.

Naval aviators during October began training eight Air Force pilots in operation of the twin-engined Grumman amphibians at NATC PATUXENT RIVER. The pilots were assigned to the Air Rescue Service of MATS which will get more than 50 of the amphibians by the end of 1951. The Navy is buying six.

Two SA-16A-GR were assigned BUAER to check the men out in. Called the UF-1 by the Navy, the amphibian is about the size of a PBY and weighs 26,000 lbs. It has good rough water characteristics and is expected to operate in waves up to four and a half feet.

# Ejection Seat Saves Pilot

**T**HE FIRST man in the United States to make an emergency seat ejection to escape a stricken airplane.

The fastest speed at which an ejection has been made—experimental or emergency—by any known living man.

Holder of those two records today is Lt. J. L. (Pappy) Fruin of VF-171 who was forced to escape from his F2H *Banshee* at a true airspeed of approximately 600 mph, because of icing and other troubles. The incident occurred in the vicinity of Walterboro, S.C. on 9 August 1949.

Fruin and his section leader were at 39,000 feet, flying in pretty heavy overcast between Cherry Point and Cecil Field, Fla. Fruin's mounting difficulties eventually resulted in his plane entering a "graveyard spiral" and he used his ejection seat to catapult himself to safety.

His starboard engine had cut out between 20,000 and 30,000 feet. As he recalled, his airspeed needle was indicating approximately 40 knots above the plane's Mach needle. Severe buffeting was experienced and his other instruments seemed to be going in all directions.

Fruin about this time decided to use his ejection seat. After jettisoning the canopy, he grasped the two rubber handles and yanked the curtain down over his face. Although anticipating a delay, Fruin found himself immediately out in the 600 mph airstream.

He was somewhat startled by the rapid action, but did not black out. His oxygen mask, helmet and shoes were blown off and somewhere during the operation his Mae West jacket became inflated, making it difficult to reach his parachute release ring.

Immediately after the ejection, the pilot had let go or had the face curtain forcefully blown from his hands. It is believed that wind blast caused the loss of his personal gear. The seat seemed to be well stabilized by its drogue chute and the deceleration definitely was noticeable. Fruin was able to separate himself from the seat readily by opening his lap belt and kicking away from the seat in the prescribed manner.

The inflated Mae West and some gyrating while in free fall hampered his releasing his personal chute, but by placing his hand on his chest and compressing the life jacket, he could see the red handle and pull the rip cord. He estimates he had fallen to 1,000 feet by that time.

Fruin landed in a sitting position in salt water approximately 30 feet from some swamp land. As he started swim-



LT. FRUIN OF VF-171 IN COCKPIT OF AN F2H

ming for shore he felt a pain in his left leg. Local citizens came to his aid and he was taken to a hospital. His plane never was located, apparently falling in deep water.

At the hospital it was found he had a fractured left leg above the knee, chip fractures on the upper arms at the shoulder joint and minor facial injuries. Absence of bruises or abrasions ruled out the possibility that his leg hit the airplane structure during the ejection. Nor is it believed to have been broken by the foot slipping off the stirrup on the ejection seat since that happened to a test jumper at El Centro recently doing 245 knots at 10,000 feet. The latter's leg was not even bruised.

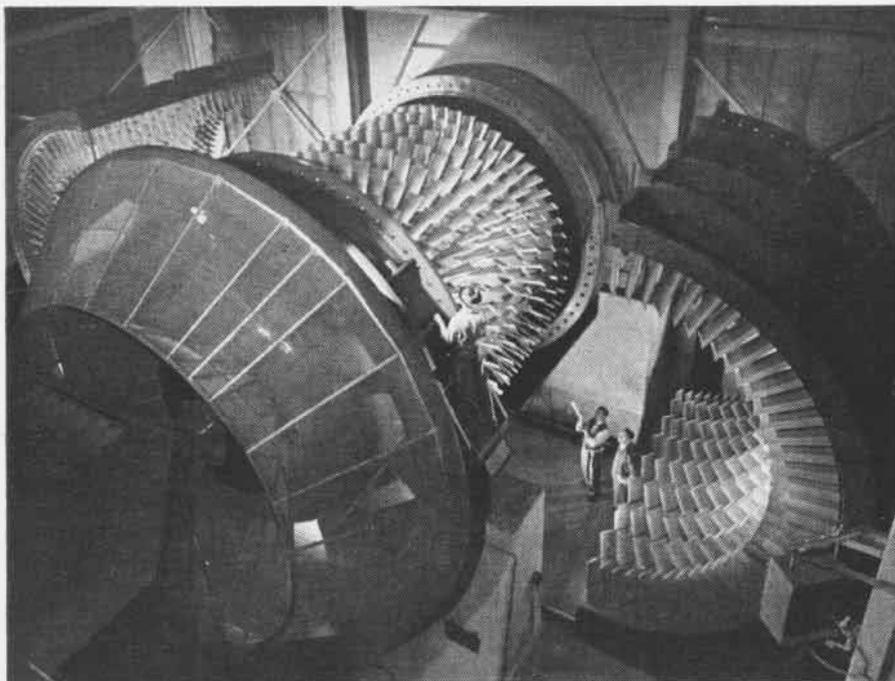
Fruin's 600 mph ejection eclipses an experimental ejection by the Air Force from an F-80 in level flight at 555 mph over San Francisco Bay. He is the first man in the U.S. actually to use his seat to save his life. During the war, German jet pilots reportedly made many emergency seat ejections and an English test pilot recently used his seat to get out of a crippled flying wing plane.

In Fruin's case, as well as that of the British test pilot, it is considered that escape would have been impossible under their respective circumstances without an ejection device to catapult them out of the cockpit and away from the airplane structure.



VA-115 won the ComAirPac carrier squadron safety trophy for the best safety record the past year. Enlisted men above helped make it possible. They are, left to right: Brunt, Bennett, Mercer, Thompson, Hudson, Prosser, Willett, Wheatley, Gray, Pagie, Netherda, Daffron, Merrow, Brooks, Rhodes, Gates, Musgrove, Spangler, Meredith, Foley, Wernette and Chief J. W. Langston of VA-115.

# POWER . . . Key to High Speed



Are those pygmies working around the axial compressor blades of a jet engine? No, the men are inspecting the giant rotor blades of NACA's new 8x6 foot supersonic wind tunnel

TEN YEARS ago jet propulsion touched off a revolution in the world of aviation. Eight years ago America's first jet plane took off Muroc dry lake bed. The chain reaction resulting from the first jet flight August 27, 1939, has been swift and ever-changing.

Man first flew faster than the speed of sound October 14, 1947, in the X-1. Today operational military jets are fast approaching the 700-mph class and some have entered it. Key to the maintenance of always faster speed is, of course, power . . . power in quantities which even today seem enormous.

A look into the future of this jet parade and how scientists are trying to solve some of the big and little problems that arise daily was given at the 1949 inspection of the National Advisory Committee for Aeronautics flight propulsion lab at Cleveland.

This year, for the first time, NACA put into operation the world's largest supersonic wind tunnel, an 8'x6' monster capable of wind speeds from Mach 1.4 to 2. This monster gobbles up 75 tons of air a minute, 2,000,000 cubic feet. On humid summer days the air is dried by passing through beds of activated alumina, drawing as much as a ton of water a minute out of the air. Three electric motors of 87,000 hp drive the giant rotor blades pictured above.

A flexible stainless-steel throat controls the air flow through which the

supersonic wind stream is directed against model planes (*see photo, right*). Television and Schlieren photographs permit scientists to study shock waves and other supersonic phenomena when the tunnel is in operation.

Let's take a brief look at some of the other scientific investigations underway at NACA Cleveland and how they aim to improve flight propulsion:

**HIGH SPEED ENGINES**—At the bottom of the next page are three hypothetical aircraft. The 400-mph bomber built to fly at 30,000 feet requires 3,000 hp in its engines. Boost this required speed to 1,000 mph and its ceiling to 50,000 feet and you have to increase its power plant to 15,000 hp. A plane capable of doing 1500 mph (Mach 2.5) at 70,000 feet will take 45,000 hp. If the two top planes were to fly at 30,000 feet it would require still more power. Turbo-ram and ramjet engines seem the only way to get this power.

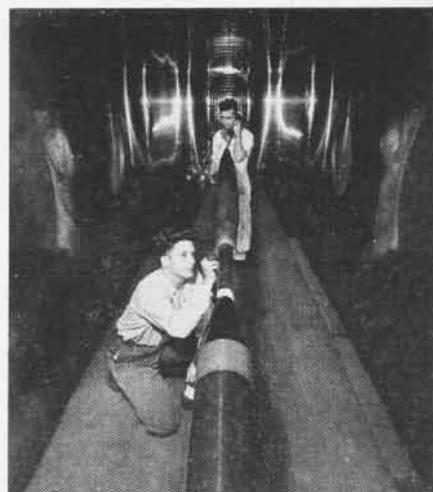
Problems of supersonic engines include efficient compression of the air, combustion of the fuel, and aerodynamic efficiency of the engine. Air passes through a ramjet engine at high speed, so there is a tendency of the flame to blow out. Operating at high altitudes and low pressures makes combustion difficult.

Combustion efficiencies have increased three-fold since 1945, thanks to progress in flame-holding devices, fuel-injection

methods and combustion chamber design. At supersonic speeds, the problem of designing engines having the lowest possible drag becomes important. Air flow disturbances induced by the engine inlet or exhaust jet may seriously change the effectiveness of the lifting and control surfaces of the plane, whether the engine is located in its own nacelle or buried in the fuselage. Twin-jets, side by side, create their own problems.

**JET FUELS**—Gasoline and kerosene are present-day fuels for jets. A barrel of crude oil produces 40% gasoline and 6% kerosene. During a war, this would involve too much waste of the rest of the oil. A new jet fuel blend, JP-3, combines both of those fuels above, plus a fourth of the 17% output of diesel oil from the crude oil.

During the last war, less than a third of gasoline available went into aviation. In a future emergency, aviation would be but one of several heavy users of both kerosene and gasoline. Because of



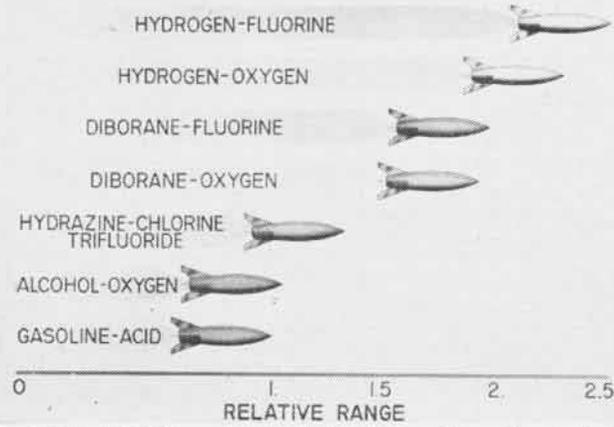
Scientists at Cleveland install a model in the new supersonic wind tunnel for testing

the likelihood of tight supply, studies are being continued to determine minimum requirements for satisfactory jet fuels with regard to supply available.

**ROCKET FUELS**—Rocket engines give tremendous speed but eat tremendous quantities of fuel. Today's rockets burn mostly alcohol-oxygen mixture or gasoline-nitric acid. NACA is studying numerous other combinations of fuels as possibilities (*see chart top of next page*). Some give far more ballistic range in theory than existing fuels, but are harder to handle and scarce in supply.

Rocket fuels, which at low altitudes and moderate temperatures ignite spontaneously and rapidly, at high altitudes may refuse to ignite or explode and

## THEORETICAL RELATIVE BALLISTIC RANGE



Rocket fuels 2.5 times as powerful as the gasoline-acid and alcohol-oxygen mixtures are being studied by NACA for future uses

destroy the engine. NACA is working to keep the engine and fuels sufficiently warm to insure prompt, safe starting and add something to fuels to shorten the ignition lag.

**ENGINE METALS**—During the last war 257,000 aircraft engines were built in a single year. If an emergency arose calling for 100,000 jet engines a year, the United States would have to find new sources for rare metals which are required in jets—columbium, tungsten, cobalt, chromium and nickel. All of these are in critical supply. NACA is trying to develop non-strategic and domestically-available materials suitable for jets. It is trying to work out designs for engines using less of those critical metals.

A third method of attacking the problem is to develop cooling methods which would make possible use of lower-temperature non-critical alloys. NACA found out that water cooling tubes running through rotor blades in a jet engine were most efficient in holding down

their heat, air cooled with internal fins next and a hollow air-cooled core least helpful.

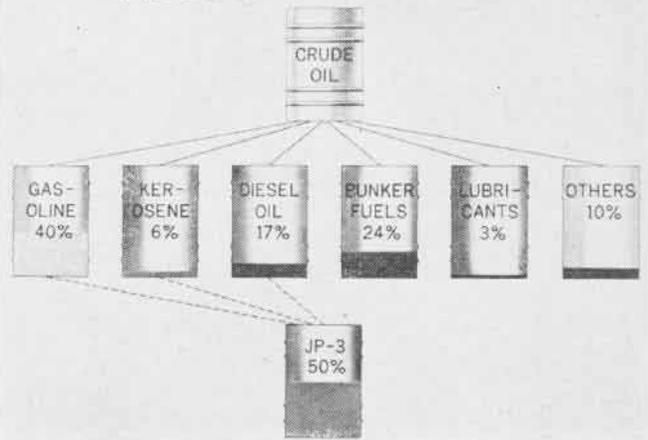
The turbine wheel of a jet engine takes 30% of the critical metal used in the engine and is therefore a focal point in the search in ways to save on those metals. Ceramels and metals have been combined and tested for strength at high temperatures, resistant to heat shock, oxidation resistance, ductility and other qualities.

Considerable progress has been made the past year in developing a design method for insuring that turbine disks are stressed to the level of their maximum capabilities.

Encouraging performance has been secured on a supersonic axial-flow compressor with blades thicker and more sturdy than the finely-machined, razor-like blades of earlier such machines.

Advantages looked for in turbine cooling include increased power, economy and reliability of operation. If operating temperatures are increased

## PRODUCTS FROM CRUDE OIL



New JP-3 jet fuel, combination of gasoline, kerosene and diesel oil, will give nation greater fuel supply in case of an emergency

from today's 1500° F to 3000° F power can be more than doubled. Today, even with the use of heat-resisting alloys having up to 96% content of scarce elements, operating temperatures are generally limited to about 1500° F because of stress limitations.

Using the cooled fins on rotors, mentioned above, containing only 2% strategic materials, it is still possible to operate with gas temperatures of over 2000° F. The problem of how to water-cool or forced-air-cool the blades has not been met but introduces the added problem of more weight for machinery to make those cooling systems function.

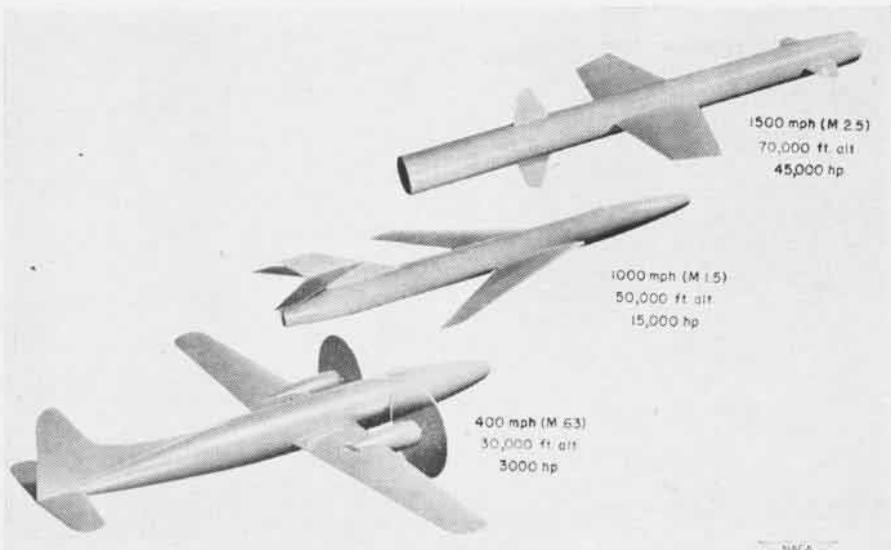
**HIGH ALTITUDE STARTING**—A jet plane flying at high altitude sometimes is troubled with blowout of the flame in its engine combustion chamber. The pilot has difficulty getting it to burn again. It was found that 35 times as much spark energy was required to start the engine at 50,000 feet as at sea level.

One way of improving starting at altitude was to relocate the spark nearer the input of the jet fuel. NACA is working on a spray nozzle which will deliver a fine spray at all altitudes. High up, present nozzles may let the gasoline into the chamber in a dribble.

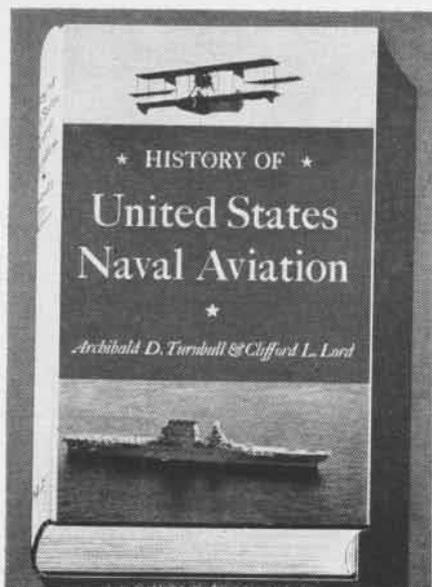
Accelerating a jet engine at high altitude is difficult. At 50,000 feet the engine has only one-sixth of the power available so the pilot has to use his throttle with care lest he blow out his engine by squirting too much raw gas in the chamber.

Another NACA experiment to aid high altitude operation is a variable area exhaust nozzle which can close off the exhaust exit and vary the pressure between the turbine wheel and the orifice.

Navy members of the National Advisory Committee for Aeronautics are RAdm. Theodore C. Lonnquest and VAdm. John Dale Price who is VCNO.



Speed requires power; these artist's conceptions of three models show the horsepower required to push them through air at tremendous speed and operating in high altitude



## Naval Air History Is Told

### New Book Recounts Growth of Unit

A new book, "History of United States Naval Aviation," has been published by the Yale University Press and placed on sale at book stores on 9 November.

The volume recounts the whole story of naval aviation from the day in 1898 when the Navy first considered the adaptability of aircraft to naval operations. It answers such questions as how dive bombing originated, where arresting gear came from, why the Navy was interested in catapults and countless others which have puzzled those whose experience dates only from World War II.

It tells the story of the small band of enthusiasts who had faith in aircraft and of their struggles against misunderstanding and conservatism in their own service and against those outside who sought to deprive the Navy of any air force at all.

Authors of the book are Capt. Archibald D. Turnbull, now deputy director of the Office of Records and History in the Navy Department and executive secretary of the Naval Historical Foundation, and Lt. Cdr. Clifford L. Lord. The latter was in Aviation History unit of CNO during the war and is now director of the State Historical Society of Wisconsin. Cost of the book is \$5. It can be obtained from the Yale University Press, New Haven, Conn., or at book stores.

★ ★ ★ ★ ★ ★ ★

### GCA BOX SCORE

Approaches, August .....	13,537
Actual landings, August .....	300
Total approaches .....	259,242
Total actual landings .....	10,186

★ ★ ★ ★ ★ ★ ★

# NAVY REFITS VITTLES PLANES

VR-44, MOFFETT FIELD—It takes a lot of fixing before VR-6 and VR-8 planes from the Berlin *Vittles* run are ready to resume their peaceful flying for the air Navy.

Here is what the maintenance division of this squadron does when it gets a coal-dust smeared plane from Berlin now that the Airlift is over. The planes have to be reconfigured into a standard cargo job.

As soon as possible after arrival, each plane is preflighted, engine oil drained, and cargo compartment decking removed. Then the damaged scuffboards, side panels, baggage compartment decking, and the *Vittles* head are also removed.

The batteries are taken out and the plane sent to the wash rack where it is washed externally. The inside of the wheel wells also are cleaned. After a fresh water wash-down, the interior is vacuumed and the bilges are cleaned.

Radio and radar equipment is then re-

moved for cleaning and inspection. The prop de-icer shoes are examined for damage and replaced, if necessary.

At this point, the decking, side panels and scuffboards are reinstalled. The fuel tank bulkhead and the fuel tank and lines are put in; a Maxson cabinet is added and the troop seats are installed.

Tires, landing gear and de-icer boots are inspected for wear and tear and appropriate changes made where necessary. The engines are changed if changes are called for, and the oxygen equipment inspected and replaced as required. All metal squawks are taken care of and the interior of the plane is touched up. The MATS insignie is painted on, batteries are installed and the plane is ready for weighing.

After the plane is weighed, it is preflighted and flight tested. Fleet Logistics Support Wing then assigns it to a squadron. This is all part of the price the Navy had to pay for helping feed Berliners during the Russian blockade. VR-6 and VR-8 led all squadrons on the airlift and their planes showed the wear and tear.

## Panther Keeps Fuel Tanks Non-Droppable Type Jettisons Gas

The Navy's F9F-3 *Panthers* are coming out now with new non-droppable fuel tanks from which the gasoline can be jettisoned in flight in 40 seconds.

During the war, fighters sometimes dropped their tanks to improve speed and maneuverability, but with tanks costing about \$800 apiece, economy frowns on the practice.

By using a check valve in the nose of the tank, gas can be discharged at 200 mph in 40 seconds. Actuating mechanism in the check valve includes a pingpong ball. Designed to impart extra lift, the tanks fit snugly against the jet's wing, eliminating drag and friction caused by the conventional droppable kind.

The speed of the plane eliminates any fire hazard and the fuel evaporates before reaching the ground. When the fuel is jettisoned, it can be seen streaming approximately 250 feet behind the

plane. During the Cleveland air races the *Blue Angels* in their new F9F's spewed red, white and blue water out of their tanks in a spectacular aerial show.

## Canadians Fly Off Saipan

### Visiting Air Group Operates On CVL

Units of the Canadian Navy's air arm spent two weeks recently at NAS QUONSET POINT and aboard the light carrier *Saipan* familiarizing their pilots with the U.S. system of carrier operations.

The 18th carrier air group, comprising 30 pilots under LCdr. R. I. W. Goddard, formed the visiting unit which operated off the carrier and ashore. The Canadians flew 18 *Fairey Firefly* fighters.

CAG-18 is an antisubmarine warfare group which ordinarily operates off the *HMCS Magnificent*. It is composed of Squadron 825 under LCdr. J. Stokes and 826 under LCdr. J. Roberts. They operated out of Quonset for six weeks, including a week on the carrier.



PANTHER JETTISONS GASOLINE FROM ITS NON-DROPPABLE WING TANKS, LEAVING VAPOR TRAIL

## Navy Seeks 1,200 Aviators Books Opened to Young Men to Join

The Secretary of the Navy has announced that commencing immediately and extending through June 30, 1950, the Navy will accept for flight training as naval aviation cadets about 1,200 unmarried men between 18 and 27.

The program is open to civilians or personnel on active duty in the Navy, Marine Corps and their Reserve components. Applicants must agree to serve on active duty for four years unless sooner released.

Secretary Francis P. Matthews said the recruiting program was to insure naval aviation a steady flow of young pilots. Applicants must be graduates of a recognized junior college or have at least half of a four-year college course. After 18 months in commissioned service as Reserve officers, the pilots may qualify for Regular Navy or Marine Corps commissions.

## Alameda Has Cat-Eyed Man Spots Hole In Mars With Super Sight

Vitamin C in great concentration flowed in the veins of a tower operator at NAS ALAMEDA recently when he spotted a hole in the hull of the *Philippine Mars* during night training operations.

While taking off, floating debris tore a hole in the forward port hull tank. The tower operator spotted water streaming from the hole and so notified the plane commander—this despite an overcast night. A low pass by the tower confirmed the diagnosis so a landing was made and the plane returned to the dock.

The Fleet Logistics Support Wings, Pacific, newsletter makes the comment, "Super night vision like that of the tower operator must mean a steady diet of carrots for improvement of night vision. After all, you never saw a rabbit wearing glasses."



**RAdm. A. M. Pride** of BUAEER pins the Air Medal on Cdr. Charles J. Eastman for meritorious achievement while flying 134 round trips on the Berlin Airlift with VR-6 between 4 January and 9 May from Rhein Main base to Berlin Templehof

# Navy Wins Airlift Honors



**Bearing the title, "Berlin Air Lift Champs,"** VR-8's last plane back to U.S. with its crewmen, left to right: LCdr. Stanford, Lt. Johnson, Lt. Johansen, Lcdr. Lafferty, LCdr. Hart, pilot; Capt. J. C. Clifton, Ens. Jones, Paul, ADC; Ens. Keenan, Lt. (jg) Robinson, J. E. Lindley, AD2; Smith, AEC, J. A. Mauler, YN2; Stevens, ADC; D. M. Hardin, YN2; Felts, AL3; Kelly, AL2; Algrem, YN2 and LCdr. Deneen. Figures on the fuselage tell record.

**T**HE BERLIN Airlift is over for the Navy, and the two transport squadrons which led the pack in rushing food and supplies to the Germans are back at their old jobs today flying the oceans.

VR-8 returned to the Pacific division of MATS and is based at Hickam AFB Hawaii. VR-6, formerly operating in the Pacific, now flies the Atlantic from Westover AFB, Chicopee Falls, Mass. VR-3, which during the nine months of *Operation Vittles* did trans-Atlantic support flying, operates over continental United States.

While working with the combined Airlift task force in Germany, VR-6 and VR-8 carried off top honors. When the Russian strangle-hold became serious they switched their 24 R5D's to Germany almost overnight from Guam and Hawaii.

In the first two weeks flying the unfamiliar air route from Rhein-Main to Berlin, the combined Navy squadrons carried 6,526 tons of cargo to Templehof. By the end of December, VR-8 under Cdr. James O. Vosseller, was leading all squadrons in the Airlift in every measurable phase of air transport operation. It won first honors in aircraft utilization, total cargo carried, payload efficiency and tons per plane.

For several weeks, VR-6, commanded by Cdr. Harry P. Badger, was engaged in a spirited battle for second honors with the two top Air Force units. By the end of February it forged to the front, equalling and frequently exceed-

ing VR-8 in operational accomplishments.

Performance records unparalleled in the history of air transport were established by the Navy planes and crews in April when the two squadrons flew 8,234 hours in delivering 23,550 tons of food and coal. With each plane making three and frequently four round trips in each 24-hour period, carrying an aggregate of 37.6 tons, utilization was boosted to 13.1 hours a plane a day.

In their eight months in Germany, VR-6 and VR-8 flew 45,990 hours, carrying 129,989 tons of cargo to Berlin and averaging 10.1 hours a plane a day utilization for the entire period.

Returning stateside, the two squadrons gave NAS PATUXENT one of its biggest rushes in history. During the two weeks when the returning planes were going through, 248 flights were logged in and out, carrying 1,835 passengers and half a million pounds of cargo. Last arrival was the R5D of Capt. J. C. Clifton, VR-8 commanding officer, with the impressive statistics of the Navy accomplishments emblazoned on the fuselage.

● **NAAS SAUFLEY FIELD**—Although not near any large center of population, this station drew 1,000 visitors a day to go through the R60 *Constitution* on a recent visit.

● **NAAS SAUFLEY FIELD**—A super model thunderstorm struck here recently. A short torrential rain was driven horizontally by winds up to 52 mph. Lightning struck the R60 *Constitution* giving two crew members violent jolts but not damaging the plane.

# AFRICAN PARACHUTE RIDE

The following narrative, written by Lt. James A. Scholes of VP-26 detachment at Port Lyautey, Morocco, describes a rugged flight and bail-out of nine men from a PB4Y-2 that should interest all aviators.

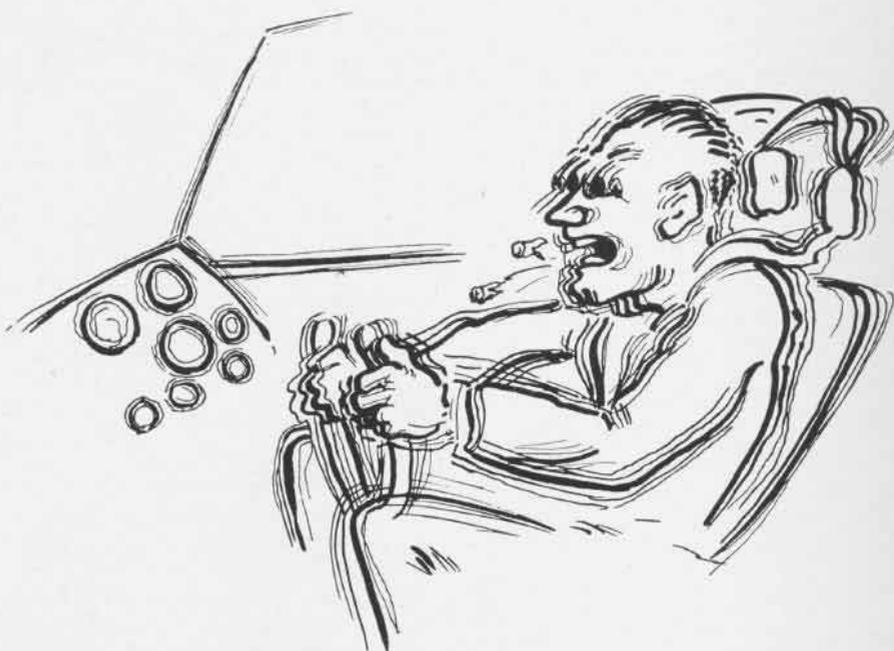
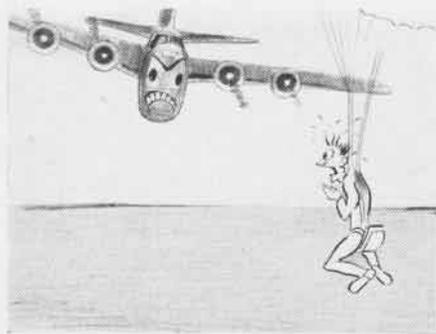
AT 0520Z, I made a night take-off from the Naval Air Activities, Port Lyautey, French Morocco, for a routine mail flight to Athens, Greece. I climbed 9,400 feet, leveled out, picked up 156 knots air speed, and settled down at about 9,000 feet on the auto-pilot.

We cruised along for about five minutes, time approximately 0545Z. Suddenly, without warning, the nose of the plane pitched downward and the whole plane began to shake violently. I thought the bank-and-climb unit of the auto-pilot had tumbled, so quickly reached over and pushed the stem down, shutting it off. At the same time, I grabbed for the yoke to pull the nose back up. The yoke was jumping all over! Got the nose up, and found the yoke traveling fore and aft with a piston-like movement, making a four-inch stroke at about 200 times a minute.

The plane was still shaking like a wet dog. The plane captain stuck his head into the cockpit and yelled that the whole tail was shaking off. The copilot grabbed the controls with me, and we tried unsuccessfully to stop the yoke, but even together, we weren't strong enough to hold it. My earphones were shaken off my head.

I started a 180 degree turn to head back to Port Lyautey, which was then about 100 miles away. Got her around on the heading for home, asked the copilot to take it, and looked around. The crew was busy getting into parachute harnesses and strapping on chutes. I found my head set and got on the radio and started calling "MAYDAY" until you would really have thought it was the first day of May.

Couldn't hear anyone answer me, so I told anyone who could receive me that we were in trouble and were returning to Port Lyautey. Switched over to inter-com and told the radioman to



send an "SOS." It was almost daylight now, and I looked out my window back at the tail. I could see the elevator trim tab flopping up and down like a flag in a gale. There was our trouble!

I told the crew to get ready to bail out. No one acted nervous or showed that anything was out of the ordinary—just a routine bail-out drill.

The copilot had had quite a seige of it, so I took the controls for a while, putting down half flaps and lowering the landing gear for stability. The speed dropped to 125 knots. When the copilot took over again, I saw that all of the crew except the plane captain had gone back to the after-station ready to bail out. I looked at the ground and saw that we were out of the mountains near Pettijean and the land was fairly flat.

I looked back at the tail again, and could see the whole after section jumping up and down approximately 24 inches about 200 times a minute. I thought that the airplane must surely be ready to break in two. I rang the alarm bell for about 15 seconds as a signal to the crew to jump. Never heard a word out of them.

I tried to see if they had jumped, but couldn't see that far behind. In fact, I didn't notice much beside the elevator trim tab and that fluttering and jumping tail. I picked up the mike again and called Port Lyautey tower, telling them that I had had my crew bail out, giving the position as somewhere near Pettijean.

I told the tower what the trouble

was, how the plane was acting, what we had done, and finally ended up wishing someone would bring the copilot, the plane captain and me a cup of coffee. The copilot and I relieved each other every few minutes trying to hold the yoke. We listened for the first sound that would indicate the plane was tearing in half. I'll never know why it didn't!

THE THREE of us left on the flight deck began to feel pretty good: we were still airborne, headed for home, and could see the ocean in the distance. When I took over for a while, the copilot showed me his hands. He didn't have gloves, and the palms of both hands were a mass of big blisters that had torn open—blisters received from trying to hold on to the yoke. I was wearing gloves, so (as I found out later when I had time to take them off) my hands weren't torn up but just blistered.

By now, we had the location of the field in sight. I sent the plane captain aft to check that everyone had gone and get ready to jump himself. Just before he went aft, he offered a handful of local Moroccan currency to the copilot and me, so if we got down and wanted to hire a taxi to ride back to the base, we could pay the fare. Then he said goodbye to us, wished us luck and went aft. About 10 miles northwest of the field, I finally heard the tower calling us. As we came over the field, I rang the alarm bell and the plane captain picked up his mike and said goodbye to both of us again.

I called the tower and told them he

was on his way. They replied that they had his chute in sight and that he was coming down fine and would land somewhere on the field. They told me to head the plane out to sea to crash. I informed the tower we'd be down soon and sent the copilot back to get ready to jump. He stopped on the flight deck, picked up a different parachute (he had noticed a loose string on the one he was already wearing and didn't like it), changed chutes, and walked back to the aft end of the bomb bay catwalk. The cockpit entrance is too small to do it gracefully. I couldn't engage the autopilot—the instrument panel had been shaking so much since it all started that we could barely read the instruments and the gyros had all tumbled.

AS SOON as I got out of the cockpit, I turned to see how she was going. The plane was in a shallow right turn. I leveled it up, walked back to the bomb bay, and sat down on the catwalk, about four feet behind the flight deck entrance. Looked down, and thought to myself, "Do you really want to do this sort of thing? Is this trip really necessary?" I waved to the copilot to jump. He nodded, and leaned forward to go out. I couldn't see any reason for my staying around any longer, so I just leaned forward until I lost my balance and found myself sliding off my seat.

Did the first half of a somersault and was stretched out on my back, as comfortable as if I had been in bed. Only for the very first fraction of a second was there any noise or sound of wind in my ears. Now I was just sort of lying there on my back on nothing. I thought, "I might as well get started and see if this thing is going to work," and pulled the rip cord. The ring and cord came right out and I was holding it there in my right hand.

Although the whole sequence takes less than two seconds, I had enough time between events to carry on little conversations with myself. I remember looking at the rip cord and thinking, "what a dinky little thing that is." Then I saw the pilot chute jump out and straight up from me. I thought, "That's nice, but what now?" There was a sort of blinding white flash, and my head snapped back. I heard a loud pop and thought, "Nuts, I've broken my back." But there I was, not too uncomfortably hanging in the harness. The pop had been the chute opening. I moved a bit and felt no pains. Looked at my right hand and discovered I still had the "D" ring and rip cord, so I put it in my jacket pocket and looked around.

The copilot was about a half mile away and about fifty feet above me. The plane was making a nice gentle right

turn again. I didn't seem to be moving at all. In fact, the only sensation I did have was that I was going up. I looked behind me and decided I was about ten miles from the field. When I looked back at the plane, it was coming right for me, but it finally went over the top of me by a thousand feet, still in a right turn.

The copilot was about level with me now, and I could hear him yelling to me. It was very quiet up there. But then I started oscillating. What a sensation! I looked up and watched first one horizon and then the other disappear under opposite sides of the canopy. The chute swung so far, that each time, the bottom side of the canopy gently folded up. I very gingerly pulled on the high risers each time, but because I was so gentle, it made no difference, so I decided to let well enough alone and stopped looking at the canopy. I was more frightened then than at any other time before or after. What if the chute should collapse?

The copilot was now a couple of hundred feet below me. I was drifting with my back to the direction of travel, so I tried to turn the chute around. I could turn myself, but the parachute stayed pointed in the same direction, so I'd always end up with a southeastern view. And still it didn't look like I was any closer to the ground. I began to wish the ride would end soon; it seemed like I had been there for ten minutes already. The plane was still circling overhead, and from here, you couldn't see the trouble with the tail. Yet it must have been almost shaken in two.

FINALLY THE earth looked closer. I saw that the copilot was down already, and that I would land near him. Then the ground fairly leaped up at me! I was still swinging, because when I looked down over my feet, I couldn't see earth; but when I glanced over my shoulder, it looked like it was only 15 feet below me. I just had time to bend my knees slightly, and I don't remember anything more. The plane crashed while I was unconscious.

I landed in a rock and cactus-filled ditch, I found out when I came to. My copilot, who landed nearby, reports I was on my feet but still "out." The first thing I asked him, he said, was: "What happened? What are you doing with that parachute? Did you bail out of a plane?"

After riding in an Arab's bus, a truck and finally a base patrol jeep we got back to the station and sick bay. I learned all of the crew had been picked up; that Cook and Kohlberg had broken legs and Hay a sprained ankle.

The crew was composed of Lt. (jg) Frederick W. Zimmerman, copilot; Ens.

Robert R. Perry, W. B. Cook, AD1; H. C. Golightly, AD3; D. Gerbis, AL1; D. L. Cummings, AL3; W. C. Hay, CT3, and Lt. Harry Kohlberg, flight observer.



A new name has been pinned on the first helicopter ever looped—now the HUP-1, vice XHJP-1. For details on Piasecki's newest see June NANEWS.

NAS NEW ORLEANS—The Argentine training ship, *La Argentina*, visited this station during August. Fifty officers and cadets were flown to Pensacola to tour that training base.

## Training Unit Hangs Culprit 'Dilbert' Dummy Reminds Dopeoffs

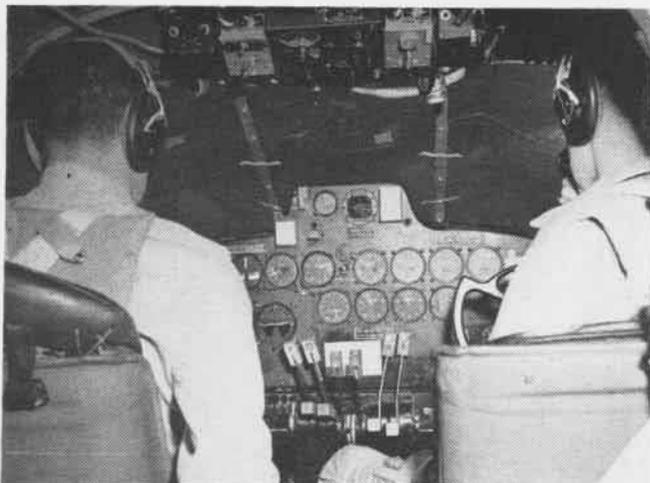
NAAS CORRY FIELD—Another slant on "Dopeoffs' Boner Badges" (NANEWS April) has been initiated by Basic Training Unit Two. "Dilbert Dummy", the pride of BTU-2, is the newest addition to the squadron roster.

With the advent of "Dilbert" it is hoped that the accident rate among the more somnolent pilots aboard will be curtailed. He is used to signify the carelessness and lack of concentration to which many of the minor accidents in the squadron may be blamed. Whenever a boner is pulled, resulting in damage of an aircraft, "Dilbert" is adorned with an appropriate sign and left dangling in the hangar for all students to see.



DANGLING IN HANGAR, 'DILBERT' CONFESSES

# PILOTS FLY ALL WEATHER



LCDR. EASON MAKES GCA APPROACH WHILE LT. (JG) SMITH REPORTS IN



CAPT. TURNER AND LT. ADAIR STUDY WEATHER BEFORE CROSS COUNTRY

INSURANCE usually has to be "sold" to people, but there is one brand of life insurance the Navy dispenses with no strain—training pilots to fly instruments in sloppy weather.

Its supply of instrument flight instructors now comes out of the All Weather Flight School at NAS CORPUS CHRISTI. Formerly located at Atlanta, now a Reserve base, it was known then as Instrument Flight Instructors School (IFIS).

Today it trains Navy, Marine Corps and Coast Guard pilots in the latest techniques of flying in bad weather or at night. World War II taught the Navy the importance of having pilots who did not get lost the minute a few clouds blew in over the Pacific.

In its early days at Atlanta, the school used NH-1 and SNJ aircraft for training



HARTMAN EXPLAINS NIGHT RADIO RANGE HOP

purposes. Gradually experience proved that a more versatile type of plane with a longer range would be better. So the twin-engine SNB was chosen. Present plans now call for the future use of multi-engine and single-engine fleet-type aircraft in the advance phases of the school's training program.

The basic instrument training phases will continue to be given in the SNB, but upon the student's completion of this

work he will switch to the operational type of plane. The school expects to take delivery soon on the SNB-5 which features such new things as dual instrument panel, built-in nose tank for longer range and dual brakes.

A period of about eight weeks of instruction is required for each student. During this time the student spends half of each day in ground school. He learns weather map analysis, theories of radio range flying, airways procedures and the latest developments in the principles of instrument flying.

Experienced aviators, who keep abreast of ground devices by practice, research and liaison with the Air Force and Civilian Aeronautics Administration, teach these ground school subjects. An hour each day, in the Link, gives a student a simulated flight under all kinds of weather conditions. This type of training enables the student actually to participate in all sorts of flying conditions without taking a plane into the air.

The other half of each day is spent in the air where the student goes through two phases of flying. In the basic phase he learns to control the plane by flying the gages. As he becomes proficient in this phase, he moves to the second phase where he learns to

fly on the radio range and becomes familiar with the navigational aids which are invaluable to airmen.

HE LEARNS to approach and land by practicing with the GCA unit stationed at Corpus Christi, and becomes familiar with the instrument landing system. During the entire course of training, students are flown in actual weather conditions as often as possible.

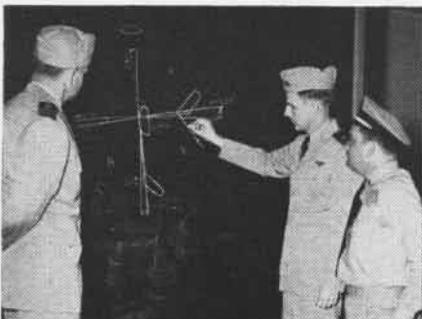
Under conditions such as these, the CAA personnel who man the tower at Cliff Maus Air Field and the Corpus Christi radio range render an invaluable service to the school. Trained operators such as these control the aircraft flying in the Corpus Christi area at night and during inclement weather.

After successfully completing the course at the school, the student is returned to his home station certified as a qualified instrument pilot capable of flying in all types of weather. Back at his home station he often is called upon to instruct in the instrument training program of his own squadron.

Commanding officer of the school is Captain B. F. McLeod. It was commissioned on 2 February 1949 by RAdm. E. W. Litch as the All Weather Flight School.

At present the school is operating at an average of 2400 hours of flight a month, with a full complement of 45 instructors and 149 enlisted men. Each month 33 new pilots are put through the two-month course.

Since there was no literature covering the course of training for an all Weather Flight School, a special board was named to write and publish a syllabus covering both flight and ground training and instrument flight procedures. A student's notebook also was compiled to give the student advance coverage on each flight. General in-



PRE-FLIGHT RADIO RANGE TALK SAVES ON TIME

formation booklets were assembled by the training department for distribution to the students as they checked in.

**A**LL WEATHER Flight School recently held a night radio range stack in connection with the Corpus Christi approach control located in the Cliff Maus tower. The stack involved seven aircraft making approaches at five-minute intervals.

The success of the operation was the result of the school's program to standardize instrument flight procedures including voice discipline. Group aircraft control depends upon perfect radio cooperation. With the CAA manual as a guide and frequent conferences with CAA personnel, the necessary ground work was developed for the successful running of the stack.

The plan was put into effective use through a three-fold training program. Students were first briefed in correct voice procedures, including when to report and standard phrasing, by ground school instructors. The procedures were then transferred to Link practice where the student was given the opportunity to eliminate errors. Third, the school instructors, meeting with members of the training department, standardized their methods of presentation.

Each student is required to take part in two night stacks. A wire-recorder in the tower makes a permanent record of all voice transmissions. The transcription is then played back in the presence of the students, giving them a chance to hear how they sound on an approach control as well as allowing the instructor to point out errors in their voice procedure.

Standardized procedures are then transferred by the alumni of All Weather School to the members of their squadrons.

The All Weather Flight School is strictly a green instrument card school



IT'S NOT ALWAYS FAIR WEATHER FOR SNB INSTRUMENT TRAINERS FLYING OVER TEXAS PLAINS

from the commanding officer, Captain B. F. McLeod to the junior instructor. The checking-out of instructors in instrument flying is a program that has been carried out in conjunction with the regular student training. Since all instructors are all weather pilots, scheduling difficulties are cut to a minimum even when winter bad weather hits Corpus Christi.

Captain McLeod recently completed the entire syllabus, including ground training, to make future plans with the student's viewpoint being given more consideration. As a result several changes in the program were made that eliminated many of the problems encountered by students.

One addition to the regular syllabus calls for 10 hours of "read back" in which the instructor gets under the hood while the student teaches him. Not only is this a wonderful opportunity for the instructors to practice instrument

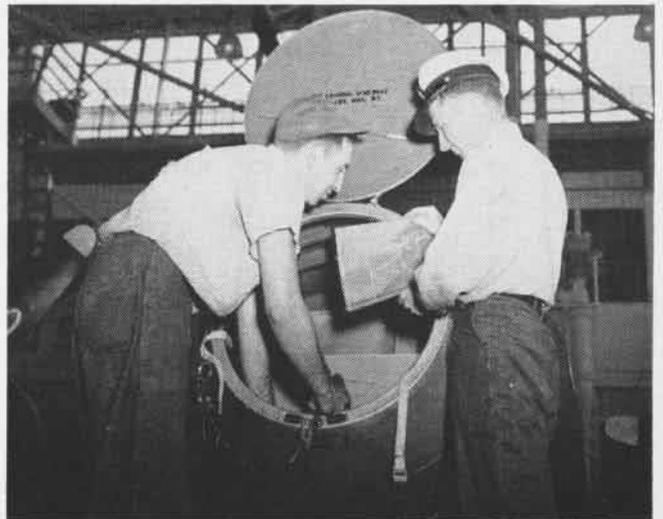
flying, but it also gives the students a chance to observe various patterns and problems being flown by their instructors. These "read back" periods come after the different stages in the syllabus as the student completes each stage, and gives him an opportunity to test his instructing ability.

**S**INCE the school's commissioning on 2 February 1949, 106 special instrument ratings and 167 standard instrument ratings have been issued to All Weather graduates. Through the method of teachers, new techniques and standardized procedures will be disseminated to all activity areas.

Department heads of the All Weather Flight School are shown in the picture below. They are, from left to right; Lt. (j.g.) R. F. Baker, LCdr. D. L. D'Urso, LCdr. H. E. Sorenson, LCdr. W. C. Pack, Captain B. F. McLeod, LCdr. M. J. Burns, Lt. J. T. Douglas, LCdr F. N. Conyne.



DEPARTMENT HEADS OF SCHOOL ALL GREEN INSTRUMENT CARD PILOTS

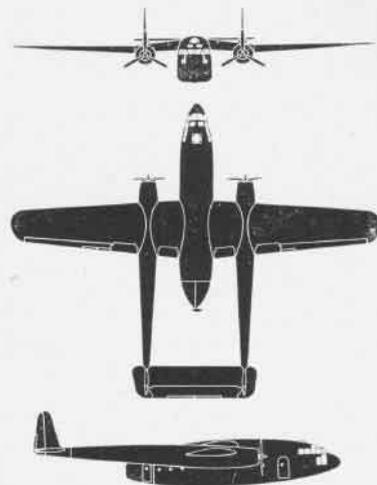


NOSE TANKS ARE INSTALLED IN SNB-55 FOR LONG WEATHER FLIGHTS

# WORLD'S CARGO AIRCRAFT



MARINES WILL FLY THE FAIRCHILD R4Q PACKET WHEN IT REACHES THE FLEET; BIG FUSELAGE, TWIN BOOMS HELP RECOGNITION



THE CLASSIC design criterion for all-cargo type aircraft has been the achievement of low-cost air transportation through simplicity of design and conservative performance. This criterion, embodying the familiar slab-sided, fixed gear, high-wing design, is apparently giving way to a newer concept, based upon experience and extensive analysis of high performance for greater economy.

An illustration and a trend of the newer concept is the low-wing Douglas XC-124A which features whale-snout nose and a thick fuselage profile forward of the wing's leading edge tapering to a rounded section midway and aft to a conical tail piece. Capable of carrying almost any military object except a heavy tank, the XC-124A has a rear loading hatch with an electric hoist in addition to the huge nose door which lets down a ramp permitting vehicles to drive into the hole.

Power is to be provided by four 3,000 hp Pratt & Whitney R-4360 engines designed to carry a maximum cargo load of 50,000 pounds for a distance of 1,000 nautical miles and return at a cruising speed of 220 knots. The prototype is scheduled to fly in November.

**CHASE C-122**—Another new U.S.

cargo type but conforming more to the conventional pattern is the C-122 a twin-engined high-wing cargo plane with a soup-ladle fuselage profile very similar to its predecessor the XCG-18A Avitruk all-metal troop and cargo glider. Two 1,450 hp Pratt & Whitney R-2000 engines are underslung on each wing giving the aircraft an approximate cruising speed of 170 knots at sea level. Its wing span is 86.4 feet.

The XC-122 was flown for the first time on the 18th of November last year. A tricycle landing gear is employed with the two main wheels fixed and the nose wheel retractable. Access for loading is by the after end of the up-swept fuselage which has a maximum capacity of 25,000 pounds. Chase has further developed the C-122 and is now conducting tests with a prototype, the C-123, a smooth version of the C-122 with fully retractable landing gear and more powerful 2,400 hp Pratt & Whitney R-2800 engines.

This aircraft features a number of novel safety devices, including the "cage". The "cage" is a steel tube separating the cockpit from the cargo compartment. In event of a crash it would prevent them from being crushed.

**C-119 (R4Q-1) PACKET**—Late in 1947 a new and improved version of the Fairchild C-82 made its first flight. This version, designated C-119, has increased power and capacity, as well as an all-round improved performance. The principal obvious change is the relocation of the flight deck from the former position on the top of the fuselage to the nose to give improved vision ahead and below for formation flying and troop and supply dropping.

The C-119 fuselage is 12 feet wider and 8.5 feet longer than that of the C-82, permitting an increase from 19,902

pounds to 30,000 pounds of permissible maximum cargo. A troop transport version of the C-82 will carry 41 paratroopers while the enlarged fuselage of the C-119 permits an increase to 64 paratroopers. An additional 3 feet has been added to the wing, increasing the overall span to 109.2 feet.

Performance has been improved by the installation of two 3,000 hp Pratt & Whitney R-4360 engines with an increased cruising speed of 200 knots at 10,000 feet. For loading, the C-82 and C-119 have large full width doors in the rear of the fuselage. At the present the Navy version R4Q1 is under-going evaluation tests to determine its usefulness in Marine transport squadrons.

**BRISTOL 170 FREIGHTER/WAY-FARER**—Often referred to as the Copper Trader of Rhodesia, the British Bristol 170 has a bulldog aspect coupled with a typical Bristol fin and rudder giving it a distinctive easy-to-recognize appearance. Designed to carry a high pay-load on short range flights this rugged cargo aircraft is available in four variants ranging between a cargo version with a capacity of 12,000 pounds and a passenger version with accommodation for 36 passengers.

Two 1,700 hp Bristol Hercules 672



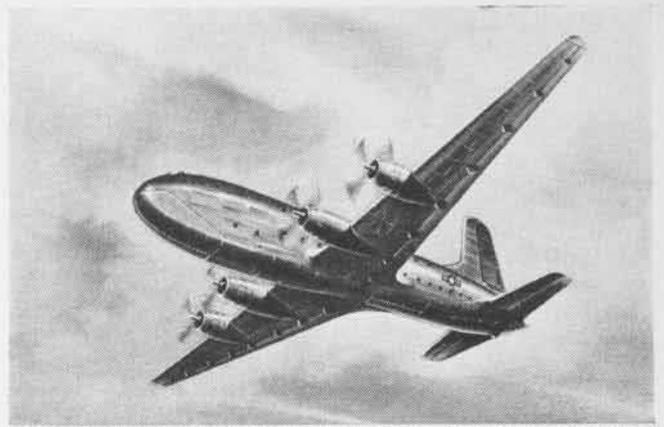
CHASE 122 IS NEW ENTRANT IN U. S. AVIATION



FRENCH C.M. 100 DESIGN ONCE WAS A GLIDER



BULBOUS NOSE OF BRISTOL WAYFARER FEATURES THIS ENGLISH PLANE



DOUGLAS' NEW C-124 FEATURES WHALE SNOUT AND FAT NOSE SECTION

radial engines are fitted and a cruising speed of 140 knots at 5,000 feet is attained with maximum load. A fixed two-wheel type landing gear is attached directly below the engines and the leading edge of the wing. Its wing span is 108 feet; most of those now flying have squared-off wing tips, while the newer models are being equipped with rounded tips. Large twin nose-doors facilitate loading of cargo into the freighter versions.

**MILES M.71 MERCHANTMAN**—The *Merchantman*, the prototype of which flew for the first time on August 5, 1947, is a scaled-up four-engine version of the two-engined *Aerovan*. Designed to carry 4,400 pounds freight or 20 passengers, twice the payload of the *Aerovan*, the *Merchantman* is equipped with more powerful inline engines, 250 hp, D. H. *Gipsy Queen* 30's, and cruises at a 135 knot at sea level.

The landing gear is a fixed tricycle type. For loading freight the whole rear end of the fuselage swings open and a rear part of the floor swings down serving as a ramp. Miles' distinctive designs are certainly a boon to recognition enthusiasts, for it is never difficult to spot them.

**BREGUET 761 DEUX PONTS**—A great deal of thought has been directed by French manufacturers toward the development of specialized cargo aircraft and perhaps their most successful design is the *Deux Ponts* (two decks). It is a mid-wing cargo-passenger aircraft with a retractable tricycle landing gear and is characterized by a very deep fuse-



ENGLISH MILES PLANE UNLOADS FROM THE REAR

lage with a flattened-ellipse cross section and a high twin-tail.

The wing span is 136.8 feet. Various internal arrangements can be provided according to requirements. A standard arrangement includes a maximum cargo of 31,000 pounds with seating arrangements for eight passengers in a small cabin forward on the top deck. Loading is from the rear of the fuselage where four large doors fold upward making possible simultaneous loading of both upper and lower decks.

The prototype is powered by four 1,530 hp Gnome-Rhône radial engines and has a cruising speed of approximately 175 knots. Production versions, however, will be powered by four 2,000 hp Pratt & Whitney R-2800 engines which will increase its carrying capacity about 8,000 pounds and give it a cruising speed of approximately 195 knots.

**N.C. 211 CORMORAN**—Probably the only analogy between the French N.C. 211 and its aquatic namesake, the cormorant bird, is the lack of grace and

proportion. The shoulder-wing N.C. 211 is powered by four 1,600 hp Gnome-Rhône radial engines providing a cruising speed of approximately 170 knots at 10,000 feet. A combination of seven passengers in an upper deck cabin and 30,000 pounds of freight, loaded through an opening nose, can be carried.

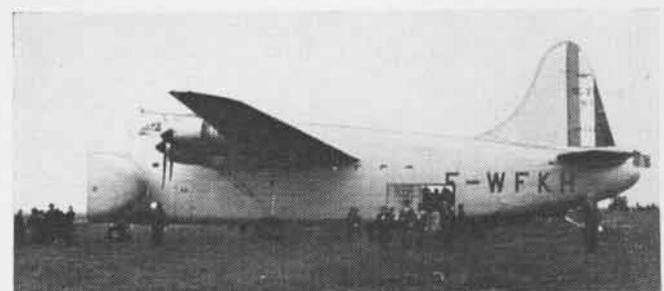
The wing span measured from its rounded tips is 144.3 feet. A tricycle landing gear is fitted with the main unit retracting forward into the inner engine nacelles. Trouble has been experienced in testing of this aircraft, resulting in the loss of the first prototype owing to lack of stability after the lowering of the flaps. Nevertheless, production of the *Cormoran* is still planned and further tests are being conducted.

**C.M. 100**—The C.M. 100, built by the French firm Fouga and designed by Castel-Mauboussin, is a powered version of the C.M. 10 transport glider, and structurally and dimensionally both aircraft are identical in every respect. This same idea was employed by the Chase Aircraft Company in their C-122 which was described earlier. Either aircraft can be arranged as a cargo or as a passenger carrier to accommodate a maximum of 15.

All versions retain the opening nose, which hinges just aft of the pilot's cabin in providing an easy access for loading both passengers and cargo. The cargo version, powered by two 580 hp Renault inverted Vee air-cooled engines, is capable of carrying a useful load of 4,500 pounds at a cruising speed of 135 knots. It has a wing span of 87.5 feet.



BREGUET 761 TWIN RUDDERS AND THIN AFTER FUSELAGE DISTINCTIVE



NOSE OF FRENCH CORMORAN OPENS UP FOR LOADING, UNLOADING CARGO



LCDR. HIRST OF JAX DISCUSSES SPRAY DEVICE WITH FULTON, SNOW



LT. MURRY ADJUSTS TIMING DEVICE CONTROLLING INSECTICIDE SPRAY

## DEBUGGING NAVY PLANES

THE NAVY, in cooperation with other government agencies, has developed a highly-efficient automatic system for killing insects aboard planes flying between the United States and foreign countries.

A liquid insecticide, containing 2% DDT and other ingredients, is contained in a central pressure bottle, similar to an oxygen cylinder. Through a system of 1/8" stainless tubing and spray nozzles, the insecticide can be sprayed in all parts of a plane likely to harbor mosquitoes, flies, cockroaches, fleas, agricultural insects and other pests whose transfer from one country to another is undesirable.

The spray system was developed and tested by BUAER airborne equipment division, with the cooperation of BUMED, the U. S. Public Health Service and Department of Agriculture. Preliminary tests were conducted in a PBM-5 airplane at NAS BANANA RIVER and final tests in an R4D at NAS JACKSONVILLE.

In these tests, more than 2,000 specimens of the pests were taken along in wire cages and open glass jars as "victims," to test efficiency of the system. During one of the tests, heavy flying weather resulted in breakage of some of the jars, freeing the insects in the plane and giving the spray system a thorough check under normal operating conditions.

To date, all tests have been so successful that DCNO (Air) is being requested to evaluate operationally service test installations of this system in Mars flying boats and in R5D's. The installation in the JRM aircraft would provide 25 appropriately placed spray nozzles throughout the plane, while the R5D installation would have 20 nozzles. It is interesting to note that a

service installation of 11 dispensers in an R4D weighs about 16 pounds.

Weight of the systems in the other planes would increase by about 1/2 pound for each added dispenser, so the systems would result in no significant weight increase for either cargo or passenger aircraft. Since high concentrations of DDT spray might be harmful or uncomfortable for passengers, a new insecticide solution was developed by the Department of Agriculture's bureau of entomology and plant quarantine. It provides a maximum of bug-killing power with a minimum of irritation to the human respiratory system. This spray will kill the bugs without having any injurious effects to persons, or a damaging effect to materials and fittings of the plane.

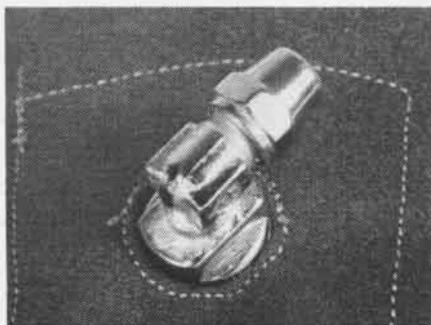
Need for an automatic, uniform spraying system long has been recognized by the Navy, as well as commercial airlines whose planes fly to Hawaii, Puerto Rico and other bases. All planes flying between the U. S. and other countries are required by law to be thoroughly disinfected. In the past and at present, plane baggage is inspected and the interior of aircraft hand-sprayed with aerosol containing DDT to eliminate insect "stowaways." The spray-

ing program is particularly important in case of planes from Hawaii, where living adult oriental fruit flies are found frequently in planes arriving in the United States.

HAND-SPRAYING, however, is subject to individual carelessness and inexperience on the part of the spray-wielder. The automatic system is aimed to eliminate these factors and uniformly spray the plane, including such seldom reached areas as the fuselage aft of the rear baggage compartment, space beneath the floor, the wheel wells, and large spaces within the wings and nacelles. All of these areas are potential hiding places for insects and will be sprayed thoroughly by the Navy system.

The pilot controls the release of the insecticide from the cockpit. Inside the storage tank, 500 psi pressure forces the fluid throughout the plane where it is released through the nozzles. Quick disconnect fittings make it possible to replace or clean these nozzles with a minimum of effort or time. The Navy system has been developed to a point where a minimum of spraying will be required, before and after take-off, to kill any insects or agricultural pests.

The equipment in its original form was developed by Donald L. Snow, USPHS, and Lt. Clayton S. White, Navy medical corps. This equipment has been developed further over a period of several years through cooperation between the various government agencies.



MANY OF THESE NOZZLES IN PLANE KILL BUGS

● VF-151—Tired of seeing the conglomeration of uniforms most pilots wear when they man their planes on the flight deck, this squadron has required all to wear standardized "new look" flight gear. Green flight suits, new crash helmets, tan gloves and squadron insignia on right shoulder are used.

# RESERVES + CARRIERS = 4.0

WITH THREE years of peacetime training behind them, Naval Air Reservists went all out during their cruises this summer and proved that they were a combat-ready outfit.

Biggest challenge faced the 13 Organized Reserve air groups which were scheduled to take carrier refresher training. Pilots in these groups had not flown from a carrier in three or four years. Many of the seaman recruits and airmen in the squadrons had never even been aboard a capital ship. Add to this, the hazards of weather and the fact that the whole cruise for each group had to be jammed into a short two weeks, and you get some idea of what the Reservists were up against.

In 1948, a composite group from NAS DALLAS had pioneered successful requalifications aboard the *Wright*. This spring, two groups from NAS GLENVIEW, CVEG-71 and CVG-87, had operated proficiently aboard the *Cabot*. Yet the question still remained—could untried air groups from various stations under the Naval Air Reserve Training Command run off a whole series of equally successful carrier cruises.

The weekend warriors met the test squarely. Salesmen, executives and shop workers, including some 1549 enlisted Reservists, arranged their hard-won vacations so that they might take their cruises at the assigned time. As a result, the 13 Reserve air groups were able to operate as self-sufficient units and to pile up an outstanding record.

During the carrier phase of training, Reserve pilots showed that they still had their combat-acquired know-how. They accomplished 4742 carrier landings, 4648 carrier take-offs, 372 catapults and 4655 hours of carrier flying, which included intensive training in tactics and operational exercises.

Some 463 pilots were requalified or



RESERVIST HILDEBRAND OF ANACOSTIA'S CVEG-65 MAKES 22,000TH LANDING ABOARD THE FDR

qualified in carrier flying. Yet not a single Reservist was injured or hurt on any of the 13 cruises and, except for one accident due to structural failure, aircraft damage was limited to the minor variety caused by occasional barrier nips and the like.

A good chunk of the credit for this record, of course, must be given to the hard-working men in the squadrons, who kept aircraft availability averages ranging for the most part between 90% and 100% and who serviced and armed the planes.

Carrier refresher training given the Reserve air groups was of two types. On the one, the air group operated from the carrier, itself, and on the other the air group operated from the beach.

Highlighting the Reserve cruises was

the one which NARTU NORFOLK's Air Group 62, complete with Noel Davis champs, VA-62-E, VF-62-E and FASRON-65, took aboard the *Saipan*. Not only was this cruise set up for a solid two weeks of carrier operations, but this was the first time that an Organized Reserve air group was scheduled to take operational training aboard a Fleet carrier.

ON MONDAY, August 29th, LCdr. J. A. Harper, CVEG-62 commander, shoved off from Norfolk with a flight of six F6F's and six TBM's for the first qualifications aboard the *Saipan*.

Ready to receive and service the planes were the supporting members of the squadrons, under Cdr. Frank A. Sheek, who had already come aboard



VA-80-A PILOTS FROM WILLOW GROVE ARE BRIEFED BEFORE OPERATIONS



NAS MINNEAPOLIS CVG-65 AND FASRON-62 MUSTER ABOARD CABOT



CVEG-57 MEN RUN FOR CATWALKS AFTER PUSHING F6F INTO POSITION



HERE THEY RUSH PLANE MOORING LINES ACROSS WRIGHT FLIGHT DECK

and taken their places beside the ship's personnel. Also ready was Lt. (j.g.) Stallings of the CNAResTra staff, who had worked the boys on their field carriers landing practice the previous weekend and who was to serve as LSO.

At approximately 1515, Lt. W. B. Gunnels, CO of VF-62-E, dropped his stubby F6F to the deck for the first landing. The tail hook of his plane grabbed the first arresting cable for a 4.0 landing and CVEG-62's cruise was off to a fast start.

Brown, yellow, and red jersied men swarmed about the plane. In a few seconds it was airborne again, with the deck cleared for the next pilot.

With clock-like precision, *Hellicat* after *Hellicat* was plunked down, visual checked and sent on its way.

Then came the *Avengers*, led by LCDr. J. A. Brakefield, CO of VA-62-E. Their pilots were equally efficient.

In all, 98 landings were made and 13 pilots were qualified before darkness cut off operations.

The next day, despite choppy seas that set the deck heaving, the remaining 17 pilots were qualified for a 100% squadron total. Included were Lt. (jg) R. Hunt, who was making his first landings

in a TBM and several former F4U pilots who were now qualifying in F6F's.

With all planes safely aboard for a perfect availability score, the *Saipan* set her course for Bermuda on the morning of the 31st. Then followed four days of intensive operational training during which the air group engaged in tactics, CIC exercises, gunnery, rocket firing, bombing and navigation problems in accordance with prescribed syllabi.

Weekend liberty in Bermuda was cut short to avoid the hurricane which was sweeping up from Puerto Rico. Out to sea again, the *Saipan* steamed toward New York. Reservists resumed their hard-hitting operations. Then came a day of liberty in New York City to make up for the one they had lost. And once again the *Saipan* was Norfolk-bound. On Saturday, there was the last group launch, and the men disembarked.

During the cruise, the weekend warriors scored 383 carrier take-offs, 457 carrier landings and 64 catapults, without even blowing a tire. Pilots averaged 32.5 carrier hours.

All along the line, Reserves in the squadrons and USN personnel assigned to the *Saipan* worked side by side as members of the same team.

Commenting on the cruise, Captain Oliver, skipper of the *Saipan*, said that carrier operations by the Reserves were outstanding and that he would like to have CVEG-62 assigned to his ship.

The six air groups that took operational training this summer aboard the *Cabot*, the carrier assigned to the Naval Air Training Command, also rated "Well Done."

Schedule for these cruises called for four days of advanced base operations, jammed with field carrier landing practice, at Ellyson Field, Pensacola. Then came two days of carrier "quals" and finally a week of operational training aboard the *Cabot* with time out for liberty.

CVG-67 from NAS NEW YORK set the pace for the summer season of *Cabot* cruises by making 505 carrier landings, 504 take-offs and 39 catapults during its operations. TBM pilots caught the interest of Edward R. Murrow, the well-known CBS announcer who came aboard to watch the Reserves. He later announced over the air, "I was particularly impressed with their glide bombing, which equalled or surpassed that which I've seen done by some Regular Air Force squadrons."



CVG-51 RESERVES GET WORD IN CATAPULT ROOM ABOARD THE SIBONEY



ATLANTA'S CVLG-57 OFFICERS CONFER WITH CABOT EXEC MERRICK



SQUANTUM'S INSERO AND RYAN REVIEW FLIGHT

Next came CVLG-53 and FASRON-63 from NAS NEW ORLEANS, led by air group commander LCdr. F. R. Wolff, and squadron CO's Lt. J. C. Ely, Lt. H. C. Thomas and Cdr. O. M. MacRobert. Some 250 officers and men turned out for this cruise, which featured a 99.2 aircraft availability average and the landing of one group of 20 planes in 11.8 minutes. Liberty port was Miami and all hands enjoyed the hospitality of the Reservists at the air station there.

It took nine transport planes, some of which had to be borrowed from other stations in the Reserve chain, to transport the supporting personnel of CVG-65 and FASRON-62 from NAS MINNEAPOLIS to Pensacola for their cruise. Counting in the pilots, who flew down their own planes, 350 Reservists made this trip. Naturally, carrier landings aboard the *Cabot* again went above the 500 mark. Liberty port was Galveston, Texas.

Top spot on the *Cabot* scoreboard, however, was chalked up by the pilots of CVG-59 from NAS GROSSE ILE who made 606 landings. They were aided and abetted by maintenance men in the squadrons and in FASRON-57 who kept aircraft availability at 98%. Two days

liberty in Fort Lauderdale was a feature of this cruise.

Other successful operational cruises were registered by VF-79-A, VA-80-A and FASRON-72 of NAS WILLOW GROVE and by CVLG-57 from NAS ATLANTA. During the latter cruise, an F6F crashed into the island when its tail hook broke as it was landing. This was the only major accident during all the carrier cruises and was due to structural failure not to careless maintenance.

While these air groups were busy taking refresher operational training, six other Reserve air groups on two-weeks cruises were getting in three days apiece of requalification flying aboard Fleet carriers.

CVEG-65 under LCdr. W. H. Paine from NARTU ANACOSTIA pioneered this type of cruise. Rain almost washed out the first week's schedule. Only by arranging for Reserve pilots to get in the necessary field carrier landing practice at Patuxent and at the Air Force's Andrews Field was the group ready to take off for NAAS OCEANA, base for the second week of training.

Once the air group crew set up their spare part and maintenance business at Oceana, pilots started on their requalifications aboard the mighty *FDR*, which was cruising offshore. In the first 90 minutes they made 90 landings and then, in the next two days, chalked up 194 more. Captain G. L. Kohr, NARTU CO and a wartime patrol pilot, flew aboard with the group in an F6F and stayed to watch their A-1 operations.

Requalifications on the *FDR* also highlighted the two-weeks training of CVEG-56 from NAS SQUANTUM. Reservists in this group perfected their techniques at NAAS CHARLESTON, R. I. and then operated from NAS NEW YORK to keep their rendezvous with the *FDR* off Block Island. Although some sturdy souls had never before landed on the deck of a carrier at sea



NAS NEW ORLEANS RESERVES CHECK CORSAIR

the pilots made 222 landings.

Bad weather hampered the drive of CVEG-57 from NAS SQUANTUM and CVG-51 from NARTU ANACOSTIA to better these records. Nevertheless during their operations aboard the *Siboney* which was steaming off Atlantic City, 28 Anacostia pilots were requalified and 8 were partially requalified. Squantum's VF-57-E was able to make 148 landings aboard the *Wright* before the rains came.

CVG-95 from NAS NEW YORK fared better during its three days of operations aboard the *Leyte*. They managed 269 landings and also got in some intensive practice in group tactics, fighter direction problems, bombing and strafing before the weather closed in.

Willow Grove's CVLG-59, commanded by LCdr. T. J. Rennemo, wound up the summer schedule with three days of requalifications aboard the *Siboney*, during which 185 landings of the usual 4.0 variety were recorded. On this cruise, as in all the others, the fine support given by USN personnel aboard the carrier helped make the whole operation a successful joint enterprise.



REVVING UP—VF-68-A PILOT GETS SET TO TAKE OFF FROM THE CABOT



LIBERTY IN BERMUDA—NORFOLK AIR RESERVISTS SHOP FOR SOUVENIRS

# Marine Reserves Set Record



RESERVE CORSAIRS BORE IN AT TREETOP LEVEL TO FURNISH CLOSE AIR SUPPORT TO GROUND MARINES AT EL TORO, CAL., SUMMER TRAINING

THREE times Marine Air Reserves have held their two-weeks summer maneuvers at Cherry Point and El Toro and each year the training cruise has eclipsed the previous year in manpower and flight time.

Flying Leathernecks this year did it again to set new records. Twenty-seven Marine Reserve fighting squadrons and four Marine ground control intercept squadrons (radar) went to the two Marine Corps air stations. At Cherry Point they flew 10,694 hours, a sharp increase over 1948's total of 7,756 and 5,235 hours in 1947's maneuvers.

When the squadrons west of the Mississippi gathered at El Toro they flew 12,493 hours, compared to 9,764 hours for last year. A total of 1246 officers and 3112 enlisted Reservists took part in the battle problems.

A new thing was added in this year's maneuvers. For the first time pilots from each Reserve squadron, selected on the basis of their year-long record, were given checkouts in the famed Marine jet fighter planes and received training with regular Marine jet squadrons. Those at Cherry Point flew Marine *Phantoms* while those at El Toro checked out in *TO-1 Shooting Stars*.

Experienced jet pilots from VMF-122, commanded by Maj. L. D. Everton at Cherry Point, and VMF-311, commanded by LCol. Paul J. Fontana at El Toro served as instructors. Pilots logged about 12 hours in the jets and another 40 hours of classroom training. These men now are primed to pass along the word on jet flying to their mates against the day when they will fly jets.

The photograph at the bottom of the

next page shows the first 14 Marine Reservists to check out in *Phantoms* at Cherry Point. They were, left to right, kneeling:

Lt. E. J. Cieszko, VMF-233, Norfolk; Lt. E. A. Zeager, Jr., VMF-451, Willow Grove; Lt. G. H. Bradley, VMF-235, Squantum; Lt. J. P. Murnane, VMF-321, Anacostia; Lt. J. W. Robinson, VMF-144, Jacksonville; Lt. A. A. Paulis, VMF-232, New York. Second row: Capt. F. M. Keenan, VMF-351, Atlanta; Capt. R. J. Kiernan, VMF-132, New York; Lt. W. E. Briggs, VMF-217, Squantum; Lt. J. J. Diner, VMF-244, Columbus; Lt. D. G. Lynch, VMF-121, Glenview; Lt. J. W. Ver Plinck, VMF-142, Miami; Lt. W. F. Moore, VMF-217, Squantum; Lt. J. W. Rogalski, VMF-231, Akron.

Climax of the Cherry Point maneuvers was a spectacular two-day joint air-ground assault mission undertaken with units of the 2nd Marine division.



MINNEAPOLIS' KNOTT, NELSON AND JORGENSEN AT EL TORO MANEUVERS



GEN. BRICE GREET'S PFC RAWLINSON OF DALLAS, TEXAS, AT EL TORO



PALE MINNEAPOLIS MEN ROMP WITH BRONZED CALIFORNIA GALS IN SEA



MCDONALD, WHITLEY, STOVAL OF MEMPHIS VMF-124 HEAD UP ROCKETS

from Camp Lejeune. Flying Leathernecks were assigned the job of furnishing close air support to ground Marines annihilating an "enemy force" established along the coast 25 miles east of Cherry Point.

Flying their *Corsairs* so low they practically parted the infantrymen's hair with their props, the Reserves bombed and rocketed the enemy positions. By evening of the second day, the "enemy" collapsed and the island was declared secure.

Air Reservists at El Toro successfully staged similar close air support battle problems with Marines from Camp Pendleton. Skill displayed at both maneuvers by the Reserve pilots and ground crewmen were praised by Brig. Gen. William O. Brice, Commander of Marine Air Reserve Training. An interested spectator at the maneuvers was Gen. Clifton B. Cates, Commandant of the Marine Corps.

Another highlight of the maneuvers this year were the activities of the ground control intercept squadrons which utilized their mobile radar units

to track and plot approaching "enemy" planes and vector Reserves to meet them.

When the final score was added up, Cherry Point's maneuvers drew 2,241 men and 232 aircraft, an increase in personnel of 16.2% over 1948. El Toro's mark was 2,117 men, a slight increase over last year.



LT. DAVIS EXPLAINS TO-1 TO THONE, LEAPER

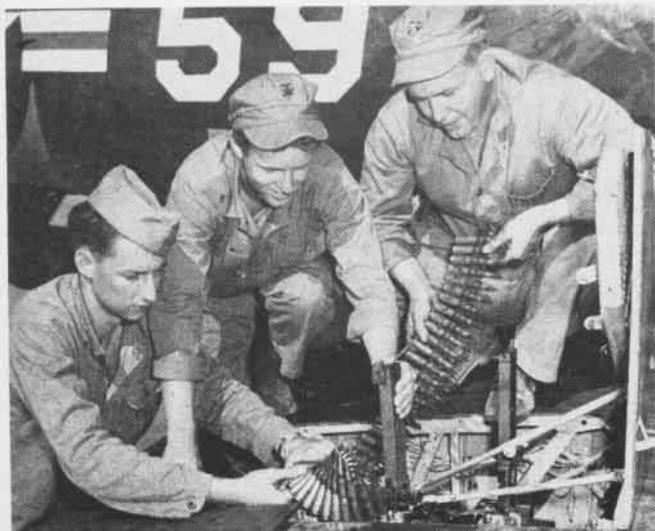
## MARINE AIR RESERVES

### CHERRY POINT

- VMF-121, Glenview—Maj. Robert J. Bryson
- VMF-132, New York—Maj. John C. Misselman, Jr.
- VMF-232, New York—Capt. Thomas S. Ferdinand
- VMF-142, Miami—LCol. Roland F. Smith
- VMF-144, Jacksonville—Maj. Thomas S. Mobley, Jr.
- VMF-217, Squantum—Maj. Edward J. McGee
- VMF-235, Squantum—Maj. Edward F. Cameron
- VMF-231, Akron—Maj. Frank S. Hoffecker, Jr.
- VMF-233, Norfolk—Maj. Robert W. Johannesen
- VMF-244, Columbus—Capt. Jack B. Gifford
- VMF-251, Grosse Ile—Maj. William A. Carlton
- VMF-321, Anacostia—Maj. Robert T. Kinsbury
- VMF-351, Atlanta—Capt. Richard J. Webster
- VMF-451, Willow Grove—Maj. Henry S. Miller
- MGCIS-22, Glenview—Capt. Lester C. Pertle
- MGCIS-21, Squantum—Maj. Frank A. Metz, Jr.

### EL TORO

- VMF-111, Dallas—Maj. John A. Reeder
- VMF-112, Dallas—LCol. James A. Embry
- VMF-123, Los Alamitos—Maj. Donald L. Clark
- VMF-241, Los Alamitos—LCol. Edward J. Moore
- VMF-124, Memphis—LCol. Horace A. Pehl
- VMF-141, Oakland—Maj. Grant W. Metzger
- VMF-143, New Orleans—Maj. Frank C. Drury
- VMF-213, Minneapolis—Maj. Jacob A. O. Stub
- VMF-234, Minneapolis—Maj. Thaddeus P. Wojcik
- VMF-215, Olathe—Maj. Clyde W. Masheter
- VMF-216, Seattle—Maj. Eystein J. Nelson
- VMF-221, St. Louis—Capt. J. H. Wehmer
- VMF-236, Denver—Capt. Leslie C. Reed
- MGCIS-18, Los Alamitos—Maj. Sam A. Gardner
- MGCIS-16, Minneapolis—Maj. C. G. Gordon



MOORE, WINFIELD, TUTT OF MEMPHIS FILL AMMUNITION CANS ON F4U

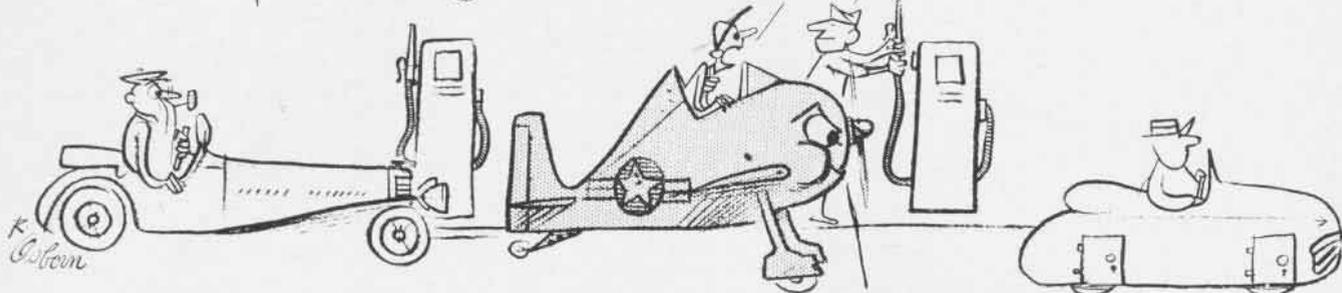


THESE EAST COAST RESERVES CHECKED OUT IN FH-1 AT CHERRY POINT

# Suppose You Bought The Gas!

That'll cost \$38.90

Yipes!! I only flew 2 hours!



In FULL RICH!!

"DURING WEEK ENDING NOVEMBER SEVEN EACH NAVAL AVIATOR ORDERED FLY TWO-HOUR TRAINING FLIGHT IN TYPE AIRCRAFT REGULARLY EMPLOYED X PURPOSE FUEL ECONOMY TRAINING X GASOLINE COSTS FOR THIS FLIGHT TO BE CHARGED AGAINST INDIVIDUAL AVIATOR'S PAY ACCOUNTS X SPECIFIC TRAINING MISSIONS TO BE ASSIGNED BY LOCAL COMMANDS"

What reaction would a dispatch like this cause?

Brother, there would be one tremendous shortage of *Pilot's Handbooks* and *Supplementary Operating Instructions*. Fuel consumption charts would be in as much demand as tickets for "South Pacific" or the Army-Navy Football game. Naturally everyone would reason that he "usually flew SNJ's" unless, of course, the station had an OY tucked away somewhere.

Imagine the howls from the jet boys! After all how would you like to buy the gas for an F2H. The handbook says to allow 157 gallons for warm-up and take-off.

Fortunately for our pocketbooks there isn't any chance that such an experiment will be conducted. Unfortunately there is still a wide variation in the amount of thought given to fuel economy in the various commands.

Perhaps you would be interested in a few rough figures on how much gasoline the Navy buys? In fiscal 1949 the amount was slightly over 170,000,000 gallons. Incidentally that figures out to about 11,900 gallons per pilot on active duty. Another 41,000,000 gallons were purchased for the "Week-end Warriors" in the Naval Air Reserve.

Don't get the idea that the taxpayers are the only beneficiaries when you use economical cruise settings, run an idle mixture check, or do a little manual leaning. Such is not the case. Every dollar that can be saved by fuel economy can be used for additional flight training. In each of the last two years it has been necessary to curtail flight operations near the end of the fiscal year. There simply wasn't enough Allotment BAKER (gas-oil-line maintenance) money left to continue operations at the desired level.

Navy and Marine Corps pilots on active duty and in the Reserve components fly close to two million seven hundred thousand hours per year. With this figure in mind it is not hard to estimate how much additional worthwhile training could be accomplished if every single pilot would become a real "Fuel Miser." The fuel conscious pilot will burn at least 15% less gasoline than *Dilbert* who rarely remembers to

shift out of auto rich or to reduce his RPM to the correct economical setting for the mission that he is assigned.

The smart pilot realizes that he is also forming safe flying habits when he learns to conserve his expenditure of gasoline. Ask any pilot who has been lost and forced to ditch offshore or land in the boondocks, and he will tell you how important it is to keep an accurate check on fuel consumption and how handy an extra 15 gallons would have been.

Here are a few of the ideas that are in current use to separate the "Fuel Misers" from the "Fuel Wasters":

(a) One squadron has the fuel requirements carefully figured out for each flight in its training syllabus. Each pilot is required to leave the line with his tanks topped off. When he returns from the flight he assists the refueling crew and then reports to the operations officer the exact time that he was in the air and the exact amount of fuel burned. The squadron maintains a log to show which pilots and which planes are delivering the best milage. In addition to providing an incentive to the individual pilots to operate economically, this log indicates which planes may be in need of carburetor adjustments.

(b) COMAIRLANT has recently published comparative figures showing the "BAKER" NSA operating costs per hour of flight for each squadron and Carrier Air Group. In addition, charts are distributed showing the average hourly cost by type of plane. A drop in the average hourly operating costs from \$20.96 in June to \$18.03 in the following month has been noted. Inasmuch as this command logged over 51,000 hours in July that amounts to a saving of \$150,00.00 in a single month.

(c) In the Naval Air Reserve the same computations and comparisons are made on a station by station basis. On several stations the hourly cost has dropped by as much as \$3.00 per hour between 1948 and 1949. The average "BAKER" cost for the entire program was \$13.09 per flight hour in Fiscal 1949.

Next time you go out on a flight—try to imagine that you are going to have to reach down in your pocket and pay for the gasoline when you get back. If you're leading a formation of several planes, brief the junior pilots on the economical cruising settings that you plan to use. Take advantage of favorable winds by choosing the best altitudes for cross country flights.

Remember these savings all add up to more flight later on in the year. Perhaps this year we won't have to curtail flight operations when next May or June rolls around.

## TENDER ENJOYS ALASKA CRUISE

ALASKAN duty, regarded by some as one jump ahead of Devil's Island, can be beautiful, especially if you like to fish and don't yearn to be a devil in the night spots. At least a newsletter from the seaplane tender *Pine Island* makes it sound like good duty.

Let them tell the story of a recent tour of duty in the north:

The ship arrived at Sitka in due time to sweat PATRON 47 into the sound through some mighty doubtful weather. The seaplane tender anchorage was so completely shielded by hills and islands that it was impossible for the *Pine Island* to assist the aircraft with TCA (tender-controlled approach) without getting underway to the open sound.

It was only after the ceiling rose that it was fully realized just how beautiful a setting for flight operations Sitka Sound is. The town provided a picturesque and pleasant liberty for all hands. The Chief of Police arranged for a dance in the community hall in honor of the visiting sailors. The Elks, Moose, and local churches offered their facilities for the pleasure of the ship's company. Even the local nine offered to trim the ship's team on the dampened diamond—and did!

Monti Bay, a portion of larger Yakutat Bay, is another beautiful operating area with a background of impressive 19,000-foot mountains and "Rhode Island" size glaciers.

... The town of Yakutat consists of a shut-down cannery and a few scattered homes, so liberty hours were spent for the most part in luring salmon out of the bay. The ship's chaplain arranged for a successful recreation party to a distant trout stream in "Lucius Beebe style" on the flatcar of the Yakutat and Sitka railroad of the Libbey salmon cannery.

The quaint little 1907 engine would roar, spit out sparks, and spin her wheels at the slightest incline, causing the engineer to give a timely kick at the sand chute. All hands were genuinely thrilled.

Kodiak offered an NAS, NOB, small town, clubs, a good seaplane area with ramp, an excellent GCA team, a low drizzly ceiling and some excellent trout fishing. The latter item was especially choice for some 50 men of the ship's company who were able to visit the NOB recreation camp at Afognak island.

The last port on the schedule was Cold Bay, home of Thornbrough Air Force Base with its few remaining personnel completely devoid of female company and in apparent exile. It was similar to Yakutat in respect to lack of dress liberty facilities and similar in respect to superb fishing. Cold Bay provided the *Pine Island's* freeze locker with a bountiful supply of salmon and trout and the *Pine Island* sailors with thrills of fishing they never before experienced. Skipper of the tender is Capt. W. C. Asserson, Jr.

## GUAM FLIERS TRACK TYPHOONS

VP-22, GUAM — Flying typhoons and patrolling in weather fit only for deep sea divers helped break the monotony for this patrol squadron as it opened its six-month tour at Agana air station.

The squadron started out hell-bent for leather, winding up with two "well done" citations in the first two weeks and flying 96% of total flight time at night during August.

To help build up its reputation of never canceling a flight for weather, the skipper, Cdr. A. F. Farwell had crews out flying fleet exercises in the Philippines almost before they had unpacked their toothbrushes.

Rain day and night forced the pilots to fly at low level at night, with mountainous coastline brushing their elbows at all times. Crews flew with ponchos and heavy weather gear because the driving rain forced into every crack of the planes. Take-offs and landings were made on instruments.

Maintenance during "Operation Rain" was a king-sized headache. Rain shorted the radio and electronic gear, soaked parachutes and hampered the flight crews, who had to do their own maintenance. The squadron opined the "well done" from ComNavWesPac was mainly for the crews' ability to tread water.

PPC's were Farwell, LCdr. W. R. McDowell, Jr., and Lt (jg) J. N. Lindsley.

Back on Guam, VP-22 crews found the typhoon season in full swing and the squadron was promptly called on to track typhoon "Hester." Roaring winds of 85 knots were recorded with turbulence and heavy rain bouncing the planes of LCdrs. P. H. Speltz and Robert J. (Medals) Monahan around the sky.

A third typhoon recco flight was ordered with Lt. William (Pinky) Adams given the dubious honor of twisting its tail. Fortifying himself with every flight aid known to man, Pinky was off to do or die in the latest thing in typhoons.

Hours later with no typhoon to speak of, he suddenly burst into its "eye" and recorded a nerve-shattering seven knots of wind. The disturbance was promptly named "Ferdinand"—and a crest-fallen Pinky wended his way home—consoling himself with the fact that he probably was just too much for a normal typhoon.

During August, the squadron adopted its night-flying technique with a vengeance, to use every gallon of gasoline to the best training advantage.

● VA-134—After an 11-months layoff from air-to-air gunnery, six pilots from this squadron racked up a 14.8 percent of hits. Lt. Hal Ewing was high man with 28% on one hop and 22.5 for an over-all average.



Prototype for Grampaw Pettibone, shown here with his creator, 1st Lt. Andy Burt, Signal Corps, USA, interjected racy Pettibone comments via the voice of Michael King during the regular Reserve training telecast from Special Devices Center at Sands Point, L. I.

## Reserves Win at Air Races Navy Men Capture First Three Places

Three Naval Reserve pilots walked off with the first three places in the featured Thompson trophy race at the Cleveland National Air Races Labor Day.

LCdr. Cook Cleland set a new record for the race at 397 mph to win first place for the second year in his F2G. Lt. Ron Puckett, who has been attached to the Naval Air Material Center at Philadelphia, carried off second place and Lt. B. W. McKillen placed third. It was the first time in Air Races history that Reserves of the same service, flying one plane took all three places.

Another feature of the Air Races was the invasion by 12 Curtiss *Commandos* from VMR-153 and VMR-252 bearing ground Marines for a simulated attack on the Cleveland airport. Piasecki helicopters from MCAS QUANTICO assisted in the "invasion."

● NAS PENSACOLA—Two lieutenants of the British Navy are students at the landing signal officers school at Corry Field, first British personnel trained here since 1944.



When the Navy's Constitution visited St. Louis recently, carrying 87 midshipmen on a nation-wide tour, the F2H Banshee perched alongside gave the appearance of mother and baby whale. Here McDonnell Aircraft officials' view both on the ramp at Lambert field.



OTERO, ROGERS, MAYS, MANEKSHAW, REEVES

### Foreigners Complete Course Flight Surgeons From 3 Continents

Medical officers of three continents were designated flight surgeons recently by VAdm. J. W. Reeves, Jr., Chief of Naval Air Training.

Squadron Leader Jeni Manekshaw, first member of the Royal Indian Air Force to complete training at the Navy School of Aviation Medicine, was among those who received their certificates.

Others were LCdr. Oscar O. Otero of the Argentine Navy and Lts. (jg) J. L. May and David R. Rogers of the Navy Medical Corps. The presentation climaxed 36 weeks of training in which the students qualified as pilots of multi-engine aircraft.

### Panama Chief Reaches '30' Brown Served on Many Naval Craft

NAS COCO SOLO—Thirty years ago October, the same month NAVAL AVIATION NEWS published its first edition, L. A. Brown joined the Navy as an apprentice seaman for landsman. Now

retiring, VP-44's leading chief has served on as many carriers probably as any CPO.

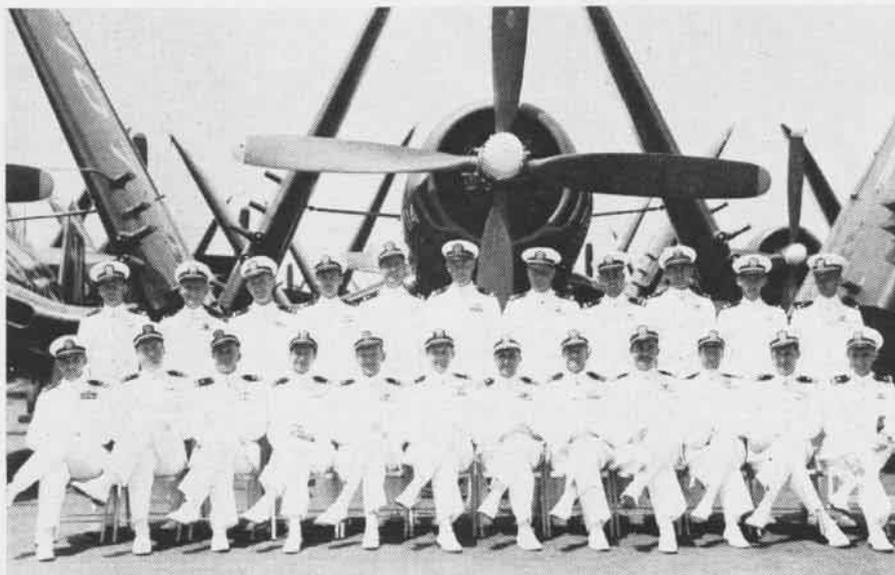
He first worked on NC-4-type boats at San Diego. During his Navy career he was aboard the *Langley*, *Lexington*, *Saratoga*, *Santee* and *Wasp*, not to mention the *Maryland*, VP-101, *Chicago*, *Raleigh*, CASU 22, CASU 23, NAS JACKSONVILLE and BANANA RIVER.

During his earlier days, Brown made many rear seat flights with the *Maryland's* float plane pilots—Lt. (jg) Arthur W. Radford, Lt. (jg) Apollo Soucek and Lt. (jg) Thomas A. Sprague. Today they are all big-name admirals.

Kite or free balloons often were used at San Diego to get flight time. "We would go up a couple of hundred feet, hang there four hours and be hauled down again. Real nice way to get flight time in," Chief Brown commented.



**It has come to the attention of this command that some of the jet pilots seem to think flying in the old days was a cinch. . . . So!**



Riviera here we come! All decked out in whites is VF-22, when it was en route for the Mediterranean for an extended cruise aboard the CVB Coral Sea. This month's squadron picture brings us, front row, left to right: Lts. (jg) Schmieder, Dawkins, Smith, Havron, Berg, Lt. Lovegrove, Cdr. Brown, skipper; LCdr. Bruning, exec; Lts. Ballance and Moyers, Lts. (jg) King and Shafer. Rear row: Ens. Wilroy, Babin, Comingore, Lt. (jg) Armstrong, Ens. Skinner, Lts. (jg) Watson, Howard, Ens. Wade, Masek, Pillgreen and Laurence.

### Bail-Out Practice Pays Off Bearcats Provide Ground Instruction

Bail-out practice has decreased time required for pilots to leave their aircraft by one third in VF-53.

Whereas the average pilot took nine seconds to hit the silk when he first tried the training setup on the ground, a number of jumps improved his ability to leave the cockpit by three seconds.

Two F8F-2 aircraft are used by the squadron in the training tests, one behind the other. By the rear plane a table and an ammunition wagon covered with wrestling mats were lashed to the wing. In operation the forward plane turned up while the pilot leaped from the cockpit of the rear plane.

Many combinations of gear and chutes were tried with and without the forward plane turning up. The squadron encountered several difficulties. Among them were: the life raft had a tendency to become wedged between the armor plate and the canopy; failure to throw shoulder straps back resulted in becoming entangled in them; articles hanging on the Mae West were torn off in scapling over the side of the plane.

One pilot who had actually made an emergency jump from an F6F declared that his ideas regarding bailing out were radically changed by the practice and now believes in the method used in the tests.

Here is the recommended method: jettison the canopy, disengage all straps and cords and throw back the shoulder straps. Rise up so as to lift the raft off the seat and turn slowly to the left. Place the left foot first then the right on the seat making sure the raft doesn't catch. Keeping the head low, lean forward, push with hands and feet and dive for the wing root. You won't hit the wing.



**Good old Smith, he's our best test pilot. He always tries to salvage some of the plane!**

## JO's & CPO's Go To School Specialists Get Broadened Training

Chiefs and junior officers are "Catching up with their buttons" in Fleet All Weather Training Unit Pacific activities by going to school.

Designed to enable the officers and CPO's to acquire the versatility of skills their prewar counterparts possessed, the courses include some given at a nearby university, Air Force evening classes and classes taught by visiting instructors.

Many jobs held down during the war were narrow in scope. For instance one chief on the *Enterprise* spent more than four years manning the starboard catapult. He and many others are deserving but when placed in other jobs were found lacking. The training will fit them for more rounded service.

For officers the university is offering courses in functional speaking and meteorology and will follow with public relations in government service, Russian history through Russian films, writing for publication, and psychology of learning.

For CPO's special attention is being given to train them to teach the younger generation by reviewing and refreshing in the courses of the lower ratings.

Some chiefs resented the courses at first, especially those who anticipated failing the third class test, but in the long run most found that they built up confidence and enjoyed the feeling that they "rated the buttons."

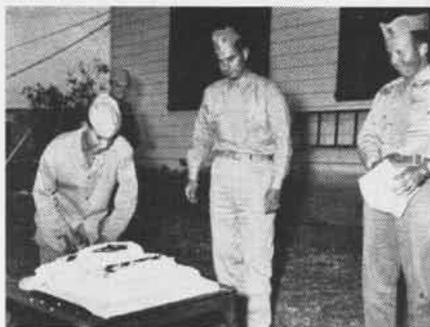
## Speed in the Cold Arctic Adak, Kodiak In Loading Contest

VR-5, ALASKA—Two detachments of this squadron staged a battle of minutes recently, trying to see which could load and unload cargo planes fastest.

An R5D arrived at Adak five hours late. All hands of the detachment turned to the instant the plane arrived at the ramp. Working on the double, the Adak crew offloaded 30 passengers and baggage, plus 4,000 pounds of cargo, refueled the plane, ran through a pre-flight check, loaded two dozen passengers and 6,000 pounds of cargo, and dispatched the flight in a total elapsed time of 43 minutes.

Adak then sent a triumphant message to Kodiak, calling attention to the record turn-around. The Kodiak detachment, nettled, resolved to better the Adak performance. With a flight relief crew standing by, the ground crew offloaded 2,000 pounds of Kodiak cargo, replacing the maximum ACL with Seattle cargo, refueled the plane and sent it out in 41 minutes ON TIME!

Adak still insists it is champion, claiming Kodiak was still tying down cargo while the plane taxied out.



YOUNGEST MAN IN VMF-214 CUTS BIRTHDAY CAKE

## Marines Hold Double Fete Black Sheep Squadron Honors Birth

VMF-214, EL TORO—This famous *Black Sheep* squadron had a double celebration during July, first in honor of its seventh birthday and second when Maj. Arvid W. Blackmun made the 6,000th landing aboard the *Rendova*.

The squadron was formed in Hawaii in 1943 when Maj. Pappy Boyington, leading Marine ace of World War II, took a group of supposedly unwanted pilots and whipped them into a first class fighting outfit. Even after Boyington was captured by the Japs the squadron continued to distinguish itself. It was the first postwar squadron to win the Navy battle efficiency "E."

The photo shows Pfc. Adan Z. Reyes, youngest man in the squadron, cutting the birthday cake while the CO, Maj. S. G. Cortelyou looks on. Others in the photo are Maj. Joseph W. Mackin (behind Reyes), and Lt. Eugene S. Kane.

● VR-32, SAN DIEGO—Keep oil out of the inside of your oxygen mask. Lt. R. B. Seidell was fatally burned when he turned on his oxygen and it ignited some oil in his mask.

## Aviation Mule Sprays Guam Marines Fight Biters with DDT Spray

VMF-218, GUAM—Among the many things a man has to contend with here, one of the worst is mosquitoes. So this squadron decided to do something about it.

Although the NAS AGANA medical department sprays the enlisted living area regularly, old demon mosquito always seems to appear after taps. Per-

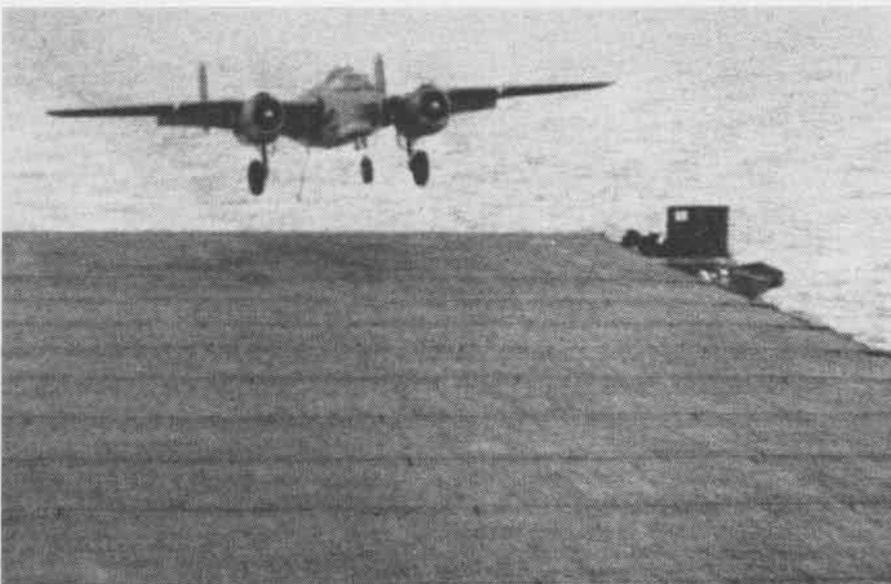


TRACTOR SERVES AS DDT SPRAYGUN ON GUAM

sonnel complained they could not sleep at night.

To counteract this problem, the leading Chief, M/Sgt. J. J. Napp, devised a DDT spray to be used with our aircraft tow tractor. The living area is only about 300' from the squadron working area and every evening this sprayer is operated throughout the area for about 10 minutes. According to the men, the spray now allows them to catch their "40 winks" without constant attack from the "mosquito air arm".

● VR-3—War was never like this. Two CPO's and two parachute riggers spent a day rigging for use on MATS planes a bassinette that was both light and easily stowed.



What is the heaviest plane to land aboard a carrier to date? Although the AM-1 Mauler whose fighting weight is 25,000 pounds is a heavy aircraft, the biggest is believed to be the B-25C shown landing on a CV deck above. This plane weighed about 27,000 pounds for the tests. The B-25's that flew to Tokyo off the Hornet grossed more than that, due to bomb loads and gasoline. The Navy's new AJ-1 will gross considerably more than this B-25.

# TECHNICALLY SPEAKING

## Truck Speeds Refueling

Delivery will be made this month of the first of a limited number of new airplane refueler trucks, which are being built for the Bureau of Aeronautics by Butler Manufacturing Co., Kansas City, Missouri. Larger than any military refueler trucks now in service, the vehicles embody many features designed to furnish the Navy with the most modern and efficient fueling equipment available.

The one-compartment tank has a capacity of 3000 gallons, compared with the 1600 and 2000 gallon refuelers now in service, and is coated internally with a gasoline and moisture resistant plastic resin.

Fuel is delivered from the tank to the airplane through two 50' lengths of 1½" collapsible hose at a rate of flow from each nozzle of approximately 80 gallons a minute. This will permit more rapid fueling than has hitherto been possible with Navy refueling vehicles. Defueling of airplanes is accomplished simply by operating a switch on the fueling nozzle which electrically actuates a valve and causes the fuel to flow from the plane through the pumping system and back into the truck tank.

Many safety features are incorporated in the fueling system. Filter-separator units are installed to insure the removal of all entrained water and solid contaminant from aviation fuel. In the event that a large quantity of water passes through the pumping system, controls will automatically place the system in the defueling position, thus preventing the flow of contaminated fuel to the airplane.

The possibility of fire during the fueling operation due to failure to equalize the static electric potential between truck and airplane has been eliminated. Unless the nozzle grounding plug is connected to the airplane, the pumping system will not function.

A few of the new refuelers will be placed in service for use with current aircraft, in order to obtain service evaluation data. However, the vehicles have been designed primarily for high-speed "under-wing" fueling. This system will enable airplanes to be fueled at rates of flow in excess of 200 gallons per minute. New aircraft, which will be in



TRUCK DESIGNED TO SPEED UNDERWING FUELING

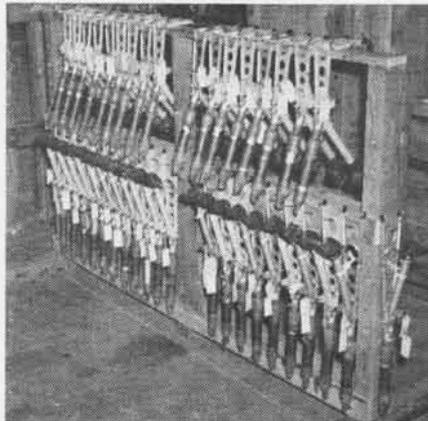
production within three years, will contain fuel tank outlets on the underside portions of the airplane. By replacing the 1½" collapsible hose with a larger diameter hose and a special nozzle and by changing the pump impeller, the refueler will be equipped to fuel "under-wing."

In high speed fueling, the truck operator needs only to attach the hose nozzle to the airplane fuel tank fitting by means of a quick connection, and then flip a switch on the nozzle. When the fuel tank has been filled to capacity, a control inside the tank will cause the nozzle to close and the pump will drain residual fuel from the hose back into the truck tank. The operator thus must carry only the empty hose from truck to plane, a decrease in weight over the solid type hose of approximately 80%.

### Rack Aids in Strut Storage

A storekeeper at MCAS EL TORO, has submitted to the Navy Beneficial Suggestion Program an idea for an improvement in the storage of aircraft struts.

It was noted at MCAS EL TORO that the



IMPROVED STRUT RACK FOR VERTICAL STORAGE

former method of storing struts in a horizontal position proved impractical because the resulting oil level in the strut cylinder after storage allowed the submersion of only part of the packing. The part not submerged dried out, and upon installation leaks and failures resulted.

The rack (see accompanying photo) devised to remedy this situation stores struts in a vertical position. The 2" x 6" studding connecting the two 6" x 6" uprights provides hanger bases for the struts. The struts are hung on spikes driven into the 2" x 6" studs.

This device accommodates 70 struts as compared with the former rack which held only 15. It is more accessible, requires less floor space, and facilitates the issuance of the struts.

### Marines Do Speedy Snapping

VMP-254, EL TORO—This photo squadron turned in a swift job of photographing a forest fire in Camp Pendleton area on 26 August, getting a request to do the job at 1115 and turning over a complete mosaic—still a little damp—at 1705 the same day.

An F7F-3P with K-17 12" vertical mount and a K-17 6" camera mounted at 30° did the job. The pilot flew to Camp Pendleton where he was briefed at 1230. The mission required a rough mosaic at 1/20,000 scale. The pilot was back at El Toro at 1355.

The film was processed and the mosaic rough laid at the squadron photo lab. Total elapsed time of about six hours appears to be some sort of a local record considering the type of mission and the necessity for rapid coverage and delivery.

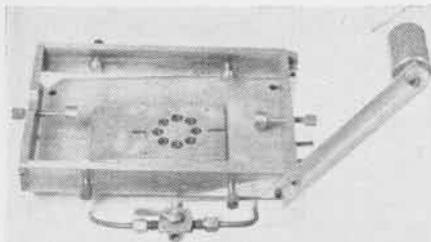
### Marines Design Pix Computer

A computer which solves the mathematical problems confronting the photo pilot, especially oblique photography, has been designed by M/Sgt. George H. Brown and M/Sgt. Edgar M. Murray, Marine Photographic Squadron 354, MCAS CHERRY POINT.

The computer covers vertical Sonné cameras, and solves for time interval in fixed installations for mapping as well. While it was primarily designed for K-17 series cameras using 9" film, any width film or any focal length lens may be added to the computer with a minimum of work.

Circular in shape, the computer takes into account focal length, altitude, ground coverage, ground speed, scale, interval, overlap and side lap. It solves in one simple operation.

▲ *BuAer Comment*—Photographic personnel of VMP-354 have done a good job developing their computer. However, the BuAer calculator for vertical aerial photography (Stock No. R-18-C-68) and the Sonné camera computer will do the same job. BuAer does not contemplate adapting the VMP-354 calculator at this time.



FIXTURE SPEEDS ACCURATE PAINTING OF DIALS

### Silk Screening Instruments

An improved method of silk screening instrument dials has been developed under the Navy Beneficial Suggestion Program by John A. Savage, MCAS CHERRY POINT. It consists of a fixture designed to hold instruments so that they can be repainted accurately.

The problem of applying several types of paint on a dial requires that the dial be located in precisely the same position upon each application. With the suggested fixture, the dial is held in place by vacuum during the application of paint and released by air pressure after application. The dial is positioned accurately by means of two center lines on the adapter. Each silk screen made for a dial has a dart located at each cardinal point. The darts are centered on the center lines of the adapter which can be seen through the screens.

This device has proved to be a substantial time saver and its accuracy is unquestionable. Interested activities may obtain a copy of the technical drawing No. PE-194 and additional details by contacting the originating activity, MCAS CHERRY POINT.

### Jet Mech Develops Wrench

VMF-311, EL TORO—The ingenuity of M/Sgt. H. S. McClung resulted in development of a spanner wrench which works satisfactorily in replacing brake seals on the TO-1 jet.

It is the policy of this squadron to encourage personnel to develop such tools when standard issue equipment fails to meet the needs of the engineering section. This proved to be a profitable step inasmuch as several time-saving tools have been modified or invented the past year.

NAVAL AVIATION NEWS has printed drawings of many of these modifications during recent months, and in so doing it has encouraged the enlisted men concerned to a high degree.

▲ **BuAer Comment**—This is a clever emergency spanner wrench that others may have a use for.

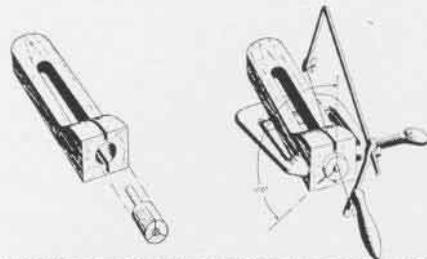


SPANNER WRENCH  
MODIFIED FROM MONKEY WRENCH  
USED IN REPLACING BRAKE  
SEALS ON TO-1 A/C.

### Gyro Pivot Repair Device

NAS MOFFETT FIELD—The instrument shop here has developed a pivot lap holding fixture which enables a mechanic to make saw cuts in the lap exactly 120° apart. Use of the fixture precludes any damage to the lap while holding it in the vise during the cutting operation.

There are two types of laps used in refinishing cone pivots in gyroscopic instruments, the roughing lap and the finishing lap.



### MOFFETT LAP HOLDING DEVICE AIDS PRECISION

Purpose of lapping pivots is to insure that the ball path is smooth and concentric and that it has the mirror finish required for most efficient operation of these units. Laps usually are made of boxwood and used in conjunction with "Star Dust" lapping compound or a comparable abrasive made of levigated alumina and instrument oil.

The roughing lap used after the pivot has been stoned or ground differs from the finishing lap in that it is split in three places. A coil spring around the bottom of the lap, plus the fact that it has been split allows it to expand as it goes down over the pivot, thus increasing its cutting action.

### "Fix" Stops Engine Failures

Engine attrition in VR squadrons has been markedly decreased by a "fix" which has almost eliminated engine failures in the R-2000 series.

Studies were made of *Vintles* operations by Fleet Logistics Support Wings Staff and as a result engines being overhauled have the oil jet plugs opened and the upper five pistons are replaced with new ones. This has resulted in a marked decrease of attrition caused by failure of the top pistons of the rear bank, numbers 1, 3, and 15.

Toward the end of the Airlift Navy *Vintles* planes required four engines per week with little or no replacements in the pipeline. With the "fix" incorporated Navy MATS units have at least 20 extra engines on hand. No failures have occurred in the engines overhauled by VR-44.

### Emergency ICS for PBM's

Launching a PBM requires use of the ICS system. Imagine what would happen if that intercommunication failed.

That very thing happened in PatRon 40 on one occasion when the ready plane was called to go to the scene of a crash. In short order, however, the radioman had rigged an emergency system. It is now a standard procedure in the squadron.

It consists of permanent jumper wires and jacks with jack boxes appropriately marked to prevent any mistakes. The system uses the modulation and amplification features of the ARC-5 receiver.



THREE-WAY AIR MANIFOLD HELPS SHOP WORKERS

### Handy Utility Air Manifold

NAS NEW ORLEANS—The utility air manifold, shown in the picture, has proved very handy when working with several air tools at one time at locations some distance from an air source. If a plane in a hangar, well remove from the metal shop, for example, were undergoing extensive metal repairs, one air line leading from the shop to this air manifold, thence to the various air tools, could more effectively do the job.

### Static Wire Saves Air Hoses

Life of air hoses and their grounding wires is lengthened through application of a new system at NAS NORFOLK.

Heretofore, the standard method of grounding static electricity in a hose was to wrap the hose with wire and cover it with friction tape. As a result the life of the wire was short and wires were easily broken due to handling and contact with the ground.

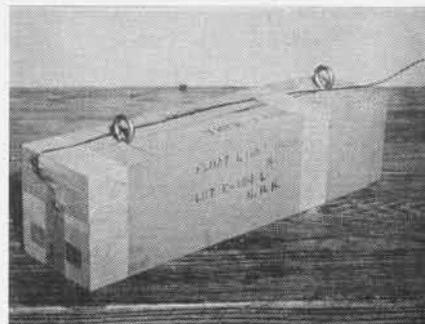
The same elimination of dangerous static discharge is accomplished now by running a stranded copper wire inside the hose and soldering the terminals to the inside surfaces of the hose fittings. It is reported that a considerable saving has been effected.

### Coral Sea Develops Target

USS CORAL SEA—VA-24 has developed a smoke float for use in gunnery exercises which it feels other ship-based carrier squadrons will be interested in.

The Mk 6 Mod 2 smoke float was modified so that it could be carried on a plane's Mk 5 rocket rack adapter and dropped on the surface of the water like a bomb.

This smoke float was used successfully in bombing, strafing and rocket training operations. The installation withstood catapult launchings and arrested landings. The long-burning characteristic of the Mk 6 Mod 2 smoke float, about 45 minutes, makes it an ideal target for any type of training operations.



SMOKE FLOAT HANGS FROM LAUNCHER BY RINGS



ALUMINUM HOOK HOLDS GEAR ADAPTER IN AD

### Hook Protects AD Adapter

VA-15, ATLANTIC—To eliminate the possibility of lowering the pilot's seat on the personnel gear adapter on AD-type aircraft when the adapter is not in use, Ens. W. J. Streetman designed a simple but effective hook.

The device is made from a piece of 2487 040 aluminum  $3\frac{3}{8}$ " x  $3\frac{3}{8}$ ", and is secured between the microphone headset extension plug holder and the pilot's armor plate. The photo shows the adapter on the hook. Time required to build and install 16 hooks was 3.2 man-hours.



ANGLE IRON STAND ENABLES JAR TO BE TILTED

### Tilt Stand for Acid Pouring

SMS-33, EL. TORO—The accessory shop has experienced difficulty and waste in obtaining acid from the heavy carboys in which supplies are delivered. To overcome this, T/Sgt. Harvey W. Kreuger, former NCO in charge of the shop devised a tilt stand.

With it, acid can be obtained from the heavy jar with the least danger, waste or difficulty. A stand of angle iron was made, with sufficient strength to carry the acid jar and all joints welded.

On the acid jar box, two holes were drilled about 2" above the center line, causing the jar to stay upright regardless of the liquid level. After drilling the holes, insert the box bushings in the holes. Raise the acid box so the holes line up with the pivot shaft bushings on the stand and push in the pivot shafts. After these are in, secure them by inserting the pivot shaft keeper pins.

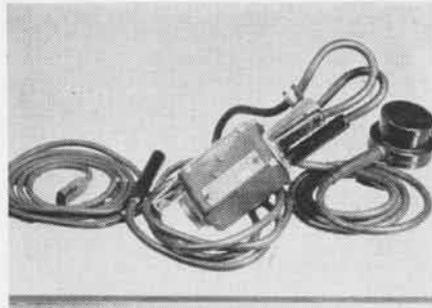
### Sonne Camera Gives Trouble

An RUDM from NAS NORFOLK to BUAER has advised the bureau about troubles met in operation of their Sonne camera unit.

According to FAETULant, the focal roller speed became unstable and could not be controlled by the servo unit during recent tests in which the automatic film speed synchronizer was used. Besides this trouble, the  $7\frac{1}{2}$ -ohm 10-watt brown devil resistor

used in the governor circuit became excessively hot.

Although this trouble appeared after two hours of operation, and fortunately, from a classroom bench, BUAER believes the problem encountered in this test is an isolated instance and not necessarily warranting additional tests and evaluation. However, if other activities have experienced similar problems, BUAER would appreciate additional information on an RUDM.



NAS ST. LOUIS' EARPHONE AND MIKE ANCHOR

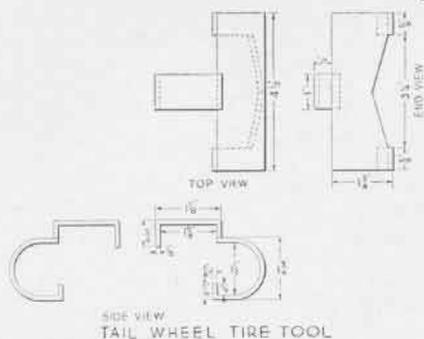
### Earphone and Mike Anchor

NAS ST. LOUIS—The handy earphone and mike anchor, shown in the accompanying picture, was developed by men of the electronics division at this station.

Easily constructed of .049 sheet aluminum with holes drilled to match the phone and mike jacks, the anchor is secured by removing nuts from the jacks, inserting the anchor and replacing the nuts. Rubber insulated hose clamps and a small nut and bolt serve to hold the cords securely to the anchor.

Since the device has been in use, there have been no mike failures or lost mikes at the station.

### Vise Assists Tire Removing



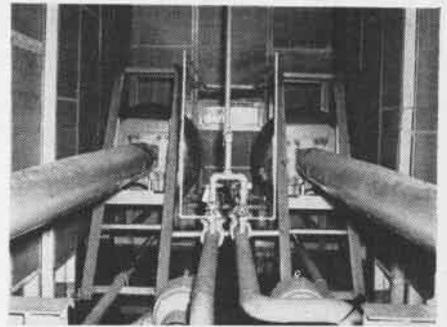
MARINES SOLVE PROBLEM OF REMOVING A TIRE

VMF-218 PACIFIC—Engineering department has designed a tire tool to be used in removing old or installing new inner tubes in tail wheel tires.

Due to the stiffness of eight-ply tail wheel tires used, difficulty was encountered in spreading the beads far enough apart to allow easy removal or installing of inner tubes.

Two clamps of molybdenum steel SAE x 4130  $\frac{1}{8}$ " thick were used with a 41-V-184 vise. These clamps were designed to fit on each jaw of the vise. The tire is then placed in the open vise with the lip of each clamp fitting inside the bead of the tire.

The vise then is opened, spreading the tire beads far enough apart to allow easy access to the inside of the tire for repairs.



WATER SLOWS THE PROJECTILE IN GUN BARREL

### Indoor Test Range Set Up

Abandoned engine test cells have been put to new use at NAS NORFOLK. Instead of roaring engines the rattle of .50 cal. and 20mm is heard, but subdued.

They have been changed into indoor, almost sound proof firing ranges.

A cell is divided into two rooms, divided by a fire wall. At the wall in one room is a mount for guns to be tested. In the other room and on the other side of the wall is an ingenious device to absorb the shock of explosion and slow down the projectiles,



FIRING END OF RANGE SHOWS 20 MM. MOUNT

utilizing water instead of dirt or sand.

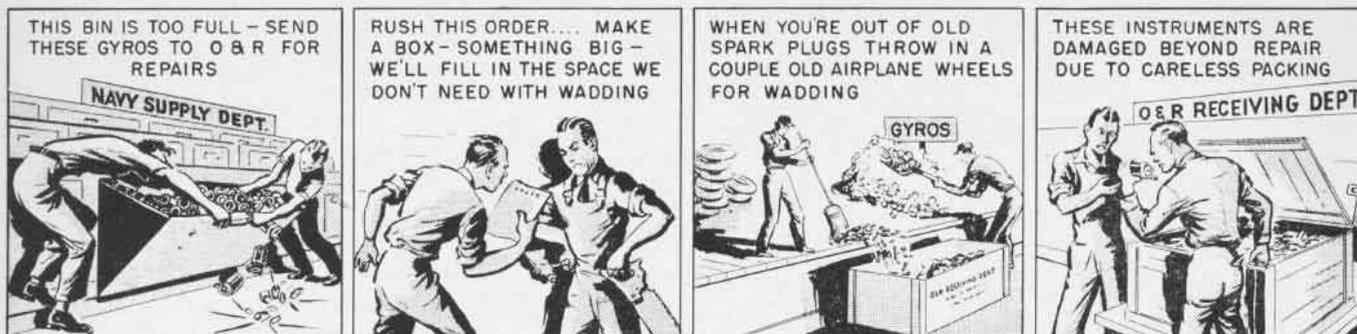
As the projectile emerges from the gun initially it passes through a 6" section of chromium molybdenum pipe. Between this pipe and a conventional 5" gun barrel are inserted two 13.00 x 20 truck tires housing water nozzles. These nozzles jet 400 gallons of water per minute in a circular motion which swirls down the gun barrel. Passing into this water field the projectile assumes a circular motion and circles down the gun barrel, losing its momentum, eventually winding up in a reservoir containing a retrieving net. The tires not only act as housing for the nozzles but also absorb much of the initial shock of the gun blast.

Three ranges, similarly equipped, are now in operation at Norfolk.

▲ **BuAer Comment**—This is a time, space, ear and possibly life saver. Many other stations, however, may not have abandoned test cells.

VF-12, ATLANTIC—On a recent gunnery practice, Ens. J. H. McConnell scored six consecutive bullseyes with rockets, establishing a squadron record and entitling him to an appropriate liquid reward.

NAS PENSACOLA—BTU-3's excellent safety record came to a halt on 15 August when Mid'n John Cooper was killed when his SNJ crashed. It was the squadron's first fatality since 2 February 1948. During that time it flew 143,299 hours without fatality.



## BAD PACKING RUINS INSTRUMENTS

AFTER A moment's hesitation, BUAER assumed that the spark plugs shown in the photograph to the right were used as wadding and cushioning material for expensive flight instruments—hardly an economical way to handle delicate devices.

The assumption was based on the fact that the box was divided in half by a pallet and the lower half contained nothing but instruments without wadding of any type, not even used spark plugs.

It is hard to visualize anyone so flagrantly abusing government material, but a naval activity actually shipped valuable and delicate aircraft instruments exactly as pictured above. This indicates a definite lack of common sense as well as complete disregard of instructions issued by this bureau. BUAER Manual Section 8-108 states that Class 265 material shall be handled and packaged in a manner to prevent further damage during transit.

Numerous directives have been issued from time to time on packaging and handling of aircraft instruments. Several articles have been published in *Naval Aviation News* and the Chief of BUAER has, by official letter, advised that unless there was an immediate reduction in the number of instruments damaged as a result of rough and careless handling there would be no alternative other than recommending that disciplinary action be taken in individual offending cases.

Apparently the activity making this shipment did not get the word or did not believe any action would be taken by the bureau. They definitely have the word now and, as previously stated, the Chief of BUAER has directed that a complete investigation be made and that a full report of findings and disciplinary action taken be submitted for review.

Practices such as this will not be tolerated, and any and all instances of negligence in handling and packaging aircraft instruments reported to the bureau will be investigated completely



WERE THE INSTRUMENTS OR THE SPARK PLUGS USED FOR WADDING IN THIS TIDY LITTLE PACKAGE?

and appropriate disciplinary action will be recommended. In this connection, all activities receiving materials improperly packaged are encouraged to submit immediately a *Report of Shipments Received in Unsatisfactory Condition* to the Bureau of Supplies and Accounts on Form NavS&A 712. This is necessary so that corrective action may be taken to insure that the negligent party or parties will not commit a similar error in the future.

As everyone realizes, funds reported to maintain and operate naval aircraft are limited and will, in all probability, be reduced even further in future fiscal years. This means that funds needlessly and wastefully spent to maintain naval aircraft proportionately reduces the funds available to operate these aircraft and will require a cut in operations.

To obtain maximum operational value from Navy aircraft, it is necessary that everyone connected with naval aviation obtain maximum usability of mainte-

nance materials. To do this, it is necessary that materials be handled, packaged and maintained properly and that all consider importance of such action.

### Training Program Pays Off "Each Man Teach Another" System

A total of 108 men, or 33% of the enlisted personnel of Composite Squadron Eleven, completed training courses in one recent three-month period.

The squadron, based at San Diego, founded its education program on "each man teach another." Division was made into small groups by rate and further subdivided so that a first class or chief instructed a maximum of ten men. Two mornings a week were devoted to training and men were encouraged to study in free time.

Results at advancement time showed the effectiveness of the program. Out of 347 men aboard, 71, or 20% were advanced in rate in three months and 251 men submitted training course papers.

# SERVICE TEST

## INTERIM REPORT DIGEST

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

### F2H-1 (196 Hours)

**Wing Fold.** New wing fold hinge bushings eliminated the previously reported vertical movement of wing tips.

**Engine Electric Disconnect.** Improper mating of engine electric disconnect negative contacts and high resistance. (0009 ohm) of disconnect assembly caused following damage:

1. Paint on engine mount trunnion bolt washers and fuel control drain lines was burned.
2. Fuel control drain lines bonding wires and fuel control safety wiring were burned.
3. Rivets in rod assembly, P/N NAS 364-2AA-990, were melted and could be removed easily.

Engine disconnect assembly ground resistance of .0009 ohms was greater than maximum of .0004 ohms specified by McDonnell, and the high current during starting cycle tended to flow through path of least resistance, causing damage listed above. *Recommend* that satisfactory engine electric disconnect assembly be provided.

**Aileron Control Door.** To remove outer wing panel it is necessary to remove the aileron control door assembly. The four stop nuts securing the door assembly are so inaccessible that a special tool is required for removal. If anchor nuts were used in place of stop nuts the time required to remove the door assembly would be cut in half. *Recommend* that anchor nuts be provided for attachment of aileron control door assembly to center wing panel.

**Nose Gear Switch Box.** Metal of which nose gear limit switch box is fabricated is so thin that only 1½ threads of the 8-32 screws which secure the switch box cover are engaged in the threaded holes in switch box. During service the cover loosens. *Recommend* installation of anchor nuts on nose gear limit switch box to provide adequate security for switch box cover.

**Riveted Assemblies.** Inspection of fuselage and wing assemblies showed loose rivets as follows:

1. Four rivets in front main skin stiffener of port and starboard wing center panel between buttock lines 102.40 and 106.80 were loose.
2. One of rivets which attached center wing section undersurface to rear main spar approximately 2" inboard of buttock line 197.00 was loose.
3. Three of rivets which attach leading

edge engine air duct bracket to fuselage at fuselage station 165.25 and buttock line 23.00 were loose. *Recommend* that cause for loose rivets be investigated and corrected.

**Power Control Assembly.** Assembly, Westinghouse P/N 22E473-5 (J34-WE-22 engine) with fuel control (Serial No. 421) was removed because of internal binding of control arm at a setting of 60% RPM. Two new power controls were installed in effort to obtain satisfactory engine operation. These controls were malfunctioning as follows:

*Serial No. 933:* With fuel control "flat spot" properly adjusted and the idle adjustment set for maximum idle, the engine idled at 26% RPM. Attempts to set maximum RPM at 101.5% resulted in a momentary speed of 106% RPM (overspeed) and then a stabilization at 97% RPM.

*Serial No. 840:* With fuel control "flat spot" properly adjusted and idle adjustment set for maximum idle, engine would not idle but stopped when throttle was moved to idle stop. Any attempt to set maximum RPM adjustment for 101.5 RPM resulted in an RPM of 108% (overspeed).

Similar fuel control discrepancies have been reported previously. *Recommend* that satisfactory fuel control be provided.

**Fuel Control.** During initial ground test of engine after installation of fuel control serial number 1130, fuel leaks were noticed at fuel outlet body gasket and the selector valve body gasket of the fuel control. Gaskets were replaced but leaks did not stop.

### F9F-2 (142 Hours)

**Shroud Installation.** During a routine check, a crack 3" long was discovered in the shroud (exhaust unit and tail pipe, P/N R82-GR-133201). Crack ran fore and aft along seam on left side. *Recommend* that satisfactory shroud installation be provided to last service tour of aircraft.

**Hydraulic System.** Inspection of nose wheel actuating hydraulic system after malfunctioning in flight disclosed several steel shavings lodged in restrictor. Nose wheel actuating cylinder also contained steel shavings. Source of shavings not determined, but it is believed they were left in system during assembly. *Recommend* that hydraulic components be thoroughly cleaned and inspected before assembly.

**Generator Brushes.** During routine engine check brushes of generator, P/N R86-WXT-P-7-C-3610, Model A-19-A6125 Westinghouse, were found to be worn. *Recommend* that satisfactory brushes be provided.

**Aileron Boost Cylinder.** Access plate to

aileron boost cylinder is secured in place by 49 gang channel nuts and 6 elastic stop nuts. Three of the elastic stop nuts are positioned on the trailing edge and three are placed on the rear inboard corner of the plate. During removal of the access plate it was found that:

1. Five gang channel nuts in leading edge were out of the channel.
2. The mechanics were forced to bend the access plate to reach the three elastic stop nuts on the trailing edge and prevent them from turning.
3. Time required for two mechanics to remove and replace the access plate was three hours. Only half this time would be required if anchor nuts were used for securing the plate. *Recommend* that anchor nuts replace the elastic stop and gang channel nuts used to secure the access plate.

**Wing Jury Struts.** After one week's use the jury struts were so badly corroded that it was necessary to clean them with crocus cloth. *Recommend* that jury struts be cadmium plated.

**Wing Tip Caps.** Movable leading edge tip cap, P/N 130156, wing tip cap, P/N 130016, and aileron cap, P/N 130848-6, were drawn from Supply and installed in place of wing tip tanks. Several caps did not fit properly and it was necessary to trim them prior to installation. *Recommend* that parts be manufactured with closer tolerances to insure interchangeability.

**Rudder.** General specification SD-24-E, paragraph 204, states that removal and installation of complete rudder shall be accomplished within .5 hours by 2 men. Actual removal and installation was accomplished in 2.4 hours by 2 men. Excessive time was required to remove and install the center bolt through the fitting, P/N 137360, because of inaccessibility of securing nut.

Access plate at station 405 is approximately 8" forward of bellcrank. Bellcrank and push rods would be more accessible if plate were moved farther aft.

*Recommend* improving accessibility of nut which secures the center bolt through the fitting, P/N 137360, of the lower rudder section, and relocating access plate at station 405 farther aft to improve accessibility of bellcrank and push rods.

**Altitude Difficulties.** During this interim 47 arrested landings were made and many high altitude flights conducted. No difficulties were encountered during arrested landings. On every high altitude flight the cabin pressurization failed completely between 35,000 and 40,000 feet. Since modification of aileron boost system by Grumman Aircraft Co., the main hydraulic system has failed repeatedly at various altitudes above 35,000 feet. Failures are being investigated.

### AD-4 (72 Hours)

**Acceptance Check Discrepancies.** The following discrepancies were found on the acceptance check:

1. Idle mixture setting was too rich.
2. Front bank oil pressure was set at 60 lbs. psi rather than at the prescribed 30 to 40 lbs.
3. Battery was dead.
4. Main inverter was inoperative.
5. Automatic cowl flap controls were not

properly adjusted, and cowl flaps were operating erratically.

6. Alternate air door operated intermittently because of a short circuit in the actuating switch.

7. Hydraulic fluid was leaking from filler cap because cap seal was torn.

8. Hydraulic pressure lines to the brakes were cracked.

9. Hydraulic lines from main hydraulic pumps to first manifold junction boxes were cracked.

10. Air bottle pressure for emergency operation of canopy was low because of leakage from loose filler neck valve.

*Recommend* that new aircraft be inspected and tested more thoroughly before delivery to the service.

**Hydraulic Pressure Line.** During engine turn-up a leak developed in hydraulic pressure discharge line between port hydraulic pump and manifold junction box, and a blister formed on hose outer covering. Outer skin of hose contained many small cracks. Hose data tags indicated that this hose was manufactured in Feb. 1948 and had been pressure tested to 8000 lbs on 7-1-48.

*Recommend* that hydraulic lines be provided to last service life of aircraft between overhauls and that more rigid inspections of aircraft prior to delivery to the service be initiated.

**Main Brake Lines.** On acceptance check the main hydraulic brake lines were found cracked. *Recommend* more rigid inspection before delivery, and hydraulic lines which will last the service life of aircraft between overhauls.

**Auto Pilot.** Investigation of failure of P-1 auto pilot showed that power transformer in amplifier unit had short circuited in high voltage secondary windings. *Recommend* that satisfactory amplifier unit be provided.

**Inverter Installation.** Main and alternate inverters and inverter changeover relay are located in starboard wing root. To reach them it is necessary to remove an access plate secured with 78 screws. Total removal and installation time for main inverter is 2 hours 5 minutes.

Since inverters have to be removed and checked at each routine maintenance inspection, time is considered excessive.

Subparagraph D12b of Specification AN-E-17-9 requires that all inverters be located in fuselage section. It is believed that inverters and vacuum tube operated changeover relay will be subjected to much greater shock in their present location near the starboard landing gear than if they were in fuselage section. Inverters and changeover relay are not provided with shock mounts but are secured directly to aircraft structure.

*Recommend* relocation of main and alternate inverters (including inverter changeover relay) in fuselage to improve accessibility and to comply with Specification AN-E-17-9.

**Bungee Shield.** Access door to the inverters cannot be removed or replaced unless the shield for the elevator load feel bungee is bent out of position. Length of the shield in the AD-4 is greater than that of the shield in the AD-2. Approximately 1/8 inch of lower inboard side of shield was removed to allow clearance for removal and replacement of

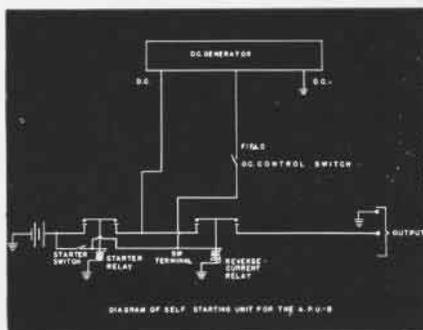
access door. *Recommend* that shield be provided for elevator load feel bungee which does not interfere with removal and replacement of access door to inverters.

**Main Inverter.** During acceptance check it was noted that main inverter circuit breaker opened when circuit was energized. Investigation showed that main inverter was drawing a current of 80 to 100 amperes. Maximum current specified on inverter data plate is 18 amperes. *Recommend* that inverters with the service life required by paragraph F-5u of Specifications AN-1-10b. Initiate more rigid inspections of aircraft before delivery to the service. Return inverter to contractor for investigation.

### Starter Unit Saves Muscle

VMP-254, EL TORO—This photo squadron devised a self starter for an auxiliary power unit, putting into operation a heretofore seldom used piece of equipment.

S/Sgt. F. E. Lowry and Sgt. C. D. Lester,



under supervision of T/Sgt. A. D. Hope, worked out the system for the auxiliary power unit-B model. This particular APU-B was started originally by pulling the gasoline engine through with a starting rope.

By using a 28-volt battery and connecting a starter switch and relay, the self-starting unit is ready for use. The starter switch is given a single throw at which time the starter relay energizes and current from the battery starts the DC generator. This supplies starting torque for the gas engine.

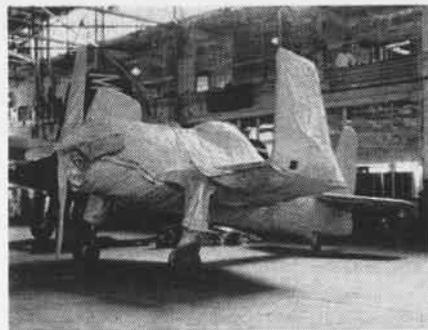
After it starts, the switch is opened and the engine is now driving the generator. Output from the generator field will energize the reverse current relay and close the battery relay, thereby keeping the battery charged at all times. The DC control switch can be in either position to start, but must be in the positive position to charge the battery and have output to the aircraft plug. The switch must be in the negative position to stop the power unit.

### Zipper Bag for VF Planes

FASRON-3, NORFOLK—This unit recently made a test installation of a new type preservation envelope for an F8F, consisting of two sheets of special plastic coated fiber-glass cloth sandwiching a sheet of aluminum foil.

The envelope is tailored to individual aircraft types and installed by zippers which then are sealed with strips of the same envelope material and cemented with liquid plastic. The envelope provides an effective moisture barrier.

Desiccant is placed in various parts of the aircraft to maintain an RH of 35% or less. The test plane was put on a carrier flight deck where it remained during a six-weeks



TIGHT-FITTING ZIPPER SUIT GUARDS BEARCAT

cruise. Regular checks were made of relative humidity inside the envelope via special indicators which can be viewed through inspection windows.

Preliminary tests indicate that it may be possible to maintain relative humidity inside this envelope at or below 30%. If the test being made is successful, the envelope may be used on aircraft in storage pools to defeat the effects of moisture.

Of particular significance is the fact the packaged plane can be towed or hoisted without affecting the air-tightness of the package. The installed envelope also makes an effective deterrent to petty pilfering and cannibalization.

### Marking Airfield Equipment

An idea submitted by R. J. Willingham of the Bureau of Aeronautics under the Navy Beneficial Suggestion program is expected to be helpful in increasing the visibility of airfield equipment under night conditions.

The suggestion proposes that the rear of "Follow Me" and other type field equipment be treated with a reflecting material such as wide angle "scotchlite" on which the contrasting patterns may be applied. Air stations trying the suggestion recommended the addition of a half-shielded tail light or two small reflector lights (one red and one green).

### Alameda Readies for F9F's

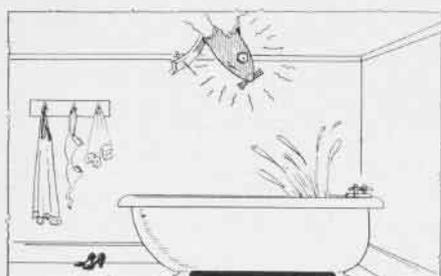
NAS ALAMEDA—With this station slated to base F9F-2's in June 1950, advance preparations for maintenance and operation got underway in August for 50 officers and 150 enlisted men of AG-15, VF-151 and VF-152.

Civilian employes have been attending jet indoctrination classes, many on their own time, since early last year when Alameda was named the Navy's West Coast jet overhaul base. Officers and men at Alameda have been attending jet engine instruction classes sponsored by manufacturers.

If appropriation of \$950,000 requested for jet overhaul facilities expansion is granted to NAS ALAMEDA by Congress, a new 45,000-square foot building will be erected to augment present facilities and two jet engine test cells will be added to the existing three cells. About 14 jet engines are overhauled monthly by existing facilities.

The first contingent of 34 Panthers is due in December. The first assembly line for jet fuselages went into operation last July at O&R. Initial jets destined for the new line are 15 FJ-1 Furies in for routine repair and overhaul. These jets are designated for training Navy pilots and will be replaced in the squadron lineups by the F9F Panthers.

# AVIATION ORDNANCE



## Cartridges Need A Bath Too

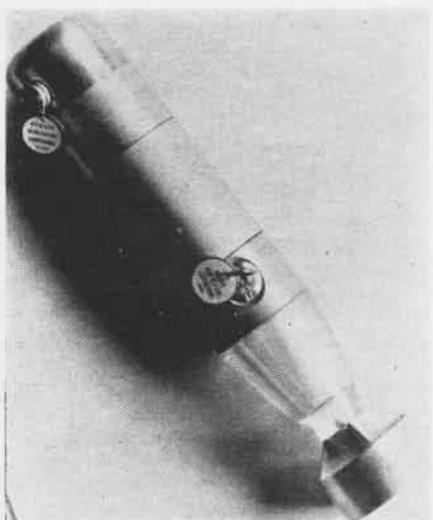
During production proof tests, a condition of excess varnish was discovered prevalent on the electrical contact surfaces of bomb ejector cartridges Mk 1 Mod 2. The varnish was present in a sufficient quantity to prevent closing the circuit and resulted in failure to fire.

When the contact surfaces of the defective cartridges were cleaned, satisfactory contact was made. Although as far as can be determined, this condition is confined to certain lots, all of which are being examined and cleaned, it is recommended that all bomb ejector cartridges be closely inspected prior to use. All suspected cartridges should be reported to the Bureau of Ordnance for disposition.

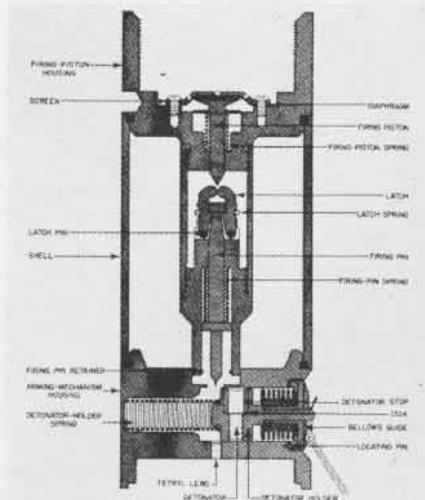
**Precautionary Measures:** Personnel concerned should be cautioned that the varnish used on the first lots is *colorless and difficult to detect*. Varnish with a red dye will be used on new production cartridges.

## Underwater Sound Signals

To meet the requests from service activities for a suitable aircraft launched underwater sound signal to be used by aircraft in indicating attacks to target submarines during antisubmarine training and exercises and tactical evaluation, BUORD has developed the depth charge (practice) Mk 15 Mod 1, shown in the accompanying illustrations.



BUORD DEPTH CHARGE (PRACTICE) MK 15 MOD 1

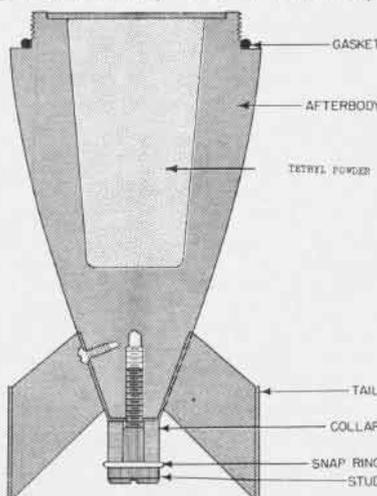


BODY AND ARMING MECHANISM SUBASSEMBLIES

This depth charge is a modification of an existing depth charge (practice) Mk 15 Mod 0. It is a finned, bomb shaped, missile approximately 15" long, 3" in diameter and weighs about 8 1/4 lbs. It is hydrostatically armed and fired. It arms at approximately 20 ft. of water and fires at 50 ft.

As will be noted, the firing system consists of a diaphragm-operated firing piston and a firing pin assembly released by the piston. Directly below the firing pin assembly is the arming mechanism housing, which contains an out-of-line detonator safety device. The device arms by hydrostatic pressure acting on the bellows moving the detonator assembled in the holder in alignment with the firing pin and with the tetryl lead-in pressed in the back of the arming mechanism. In the armed position, the detonator holder spindle projects out the side of the body and the safety cotter pin assembles in a radial hole in the end of the spindle, locking the arming mechanism until the charge is to be used.

Assembled on the arming mechanism housing is the afterbody which consists of a plas-



AFTERBODY IS PLASTIC EXPLOSIVE CONTAINER

tic, cone-shaped explosive container on which a shrouded, finned tail is assembled. The explosive consists of approximately 2.3 ounces of tetryl.

In operation, when the depth charge is launched and reaches a depth of 50 ft., the firing pin is released, firing the detonator, which in turn fires the explosive by means of the tetryl lead-in.

A preliminary test has been made by VX-1 of this device, using 12 units, all of which functioned. It appears that the explosive is sufficient to give a listening range of approximately 12,000 yards. It is expected that a more complete evaluation of this device will be made during forthcoming training exercises by both CinCLantFlt and CinCPacFlt. At present, the depth charge (practice) Mk 15 Mod 1 is being produced by the Naval Ordnance Plant, Alexandria, Virginia. Release for service use is being held in abeyance pending the outcome of the service evaluation.

## Flight Check of AFCS Mk 5

Some concern has been expressed by field activities over the accuracy of the lead computation of the aircraft fire control systems Mk 5 and 6. While this concern can be appreciated, the Bureau of Ordnance does not consider the existing test procedures inadequate. If a sight unit can satisfactorily meet existing checks, full reliance can be placed on its lead computing properties.

A quick check to ascertain proper qualitative operation of the lead angle computed by the AFCS Mk 5 and 6 can be made in flight. First, a ground check of the voltage regulator should be made because, even though the system is apparently operating properly, a voltage variation outside the limits prescribed on page 42 OD 6332 will produce an incorrect lead angle.

If the voltage regulator checks satisfactorily, the pilot while in flight with the system operating on "GUNS" position should enter a turn and maintain an approximately constant rate of turn. While in the turn, the pilot should rotate the ranging throttle from maximum range (caged position) to minimum range. The gyro-pip should momentarily increase the lead angle and then, as the ranging throttle is moved to minimum range, decrease the lead angle.

## Flash! Hellcat Has Kittens Delivery Scratchy But All Doing Well

FASRON 108, COCO SOLO—While F6F-5 BuNo. 79090 was undergoing its 120-hour check recently four kittens were born in the tail section. Removing the kittens and mother required some first rate diplomacy backed up with heavy leather gloves.

We believe that this is the first case on record of a *Hellcat* giving birth to little *Hellcats*.

● VF-172—This squadron has a British Royal Navy pilot attached to it, rotating between departments to check out on jet squadron operations. He is Lt. R. D. Lygo, and his ready wit and subtle humor add zest to every readyroom gathering of fellow pilots.



# SUPPLY NEWS

FROM ASO AND SUPPLY DIVISION BUAER

## ASO Catalog Section 0002

The Classification Index of Naval Aeronautical Materials (Section 0002) has recently been revised, and distribution is now being effected by ASO. This section helps to clarify the "accountable-exchange" problem and provides a workable basic source to meet requirements of BUAER and BUSANDA for accountability and for free exchange of items peculiar to the aviation supply system. This section will be revised yearly.

## PK2 Kit Container Improved

All parafrat kits PK2 manufactured prior to 1 January 1949 shall have the containers replaced as soon as possible with the new and improved containers R83-C-8695. This new container is heavier and stronger than the one previously used. The old container R83-C-8693 formerly supplied with the PK2 kits is now obsolete and should be disposed of in accordance with existing regulations.

## Disposition of Engine Boxes

Wooden engine boxes, whether containing engines or empty, are not a complete part of any engine. Receiving activities should take up the containers separately and expend them on a priced invoice when transferring them to another activity. This information also is applicable to steel engine containers. Complete information concerning engine boxes soon will be issued by ASO.

## Propellers and Governors

When ordering propellers and governors, activities are urged to include the plane application on interim requisitions. In addition, it should be realized that propeller and governor assemblies cannot be furnished on the basis of *past* usage but must be furnished on *actual* usage. These materials are one time procurement items, which means that after the original amount purchased has been expended additional supplies must be procured from Class 265.

Consequently, field activities *should not* attempt to maintain a nine-month stock level of these items. It is important that when this material falls into Class 265 status, it be moved expeditiously to the designated overhaul points.

## Squadron Mechs Set Record

VF-22, CORAL SEA—On a tour of the Mediterranean with the *Coral Sea*, this squadron had 100 percent availability during July, flying 162 sorties, making that many landings and putting in 450 hours of flight time.

All this was done with F4U-4's on their final service tour, winning a "well done" for Lt. Wilbur C. Ballance and J. K. Boyette, ADC, of the maintenance department.

The squadron got excellent results in getting gunnery targets off the flight decks. The lines were fastened on a board with bungee cords as noted in a recent NAVAL AVIATION NEWS and the tow plane was catapulted. Tows later were dropped across the bow of a designated recovery destroyer and brought back aboard by helicopter.

Recommendations for addition of a gun charger retainer to 20mm. guns on the F4U-5, by Lt. (jg) A. H. Schmieder were included in the recently issued F4U-FG *Aircraft Service Change* #319.

## Records of Flight Clothing

Prior to January 1943, a copy of each invoice covering the issue of flight clothing to pilots was forwarded to the Aviation Supply Office for inclusion in a record maintained to show the articles of flight clothing in the custody of each pilot.

The maintenance of these records was abandoned in December 1942, and at the present time the aviator's log book is the only record of flight clothing in the possession of each pilot. Therefore no inquiries should be made to ASO concerning articles of flight clothing charged to pilots, nor should ASO be requested to adjust records upon returns of an item to a supply officer. Clothing turned in to a supply officer shall be receipted for in the aviator's log book by the supply officer.

Paragraphs 26242 and 28230 of the BUSANDA Manual contain instructions pertinent to flight clothing in the custody of pilots.

## ASO Circular Letters Listed

A listing of the ASO circular letters distributed during the current month was published in the 15 August 1949 edition of *Info from ASO*. This feature will be included in all future issues to keep the field posted on the latest ASO C/L's being distributed.

## Spares Arrive With Planes

A record worthy of imitation was established recently by a contractor when all concurrent spare parts were delivered 30 days prior to delivery of the last P2V *Neptune* against Contract Noa(s) 9272. The aircraft produced on this contract were divided into five increments, and upon delivery of each increment 20% of all spare parts ordered were required. 100% of all parts ordered were delivered concurrently with the planes, with the last of these spares being delivered in early May. The last of the P2V-2 *Nephtunes* were to be delivered in June.

## Tie Rods — Requisition Data

To expedite the delivery of tie rods, activities should conform to the following procedure:

The alternate design tie rod (short threaded ends) as originally specified in the design of an aircraft, such as AN676 AC-14275 for a streamline tie rod 142 $\frac{3}{4}$  inches long, or AN706 AC-5150 for an internal tie rod 51 $\frac{1}{2}$  inches long, is not ordinarily carried in stock, as this would necessitate carrying an unlimited number of various lengths of tie rods.

Consequently, the standard design (long threaded ends) tie rods, available in increments of 5 inches in length, are carried as standard stock. These tie rods are designed with sufficient length of thread at each end to permit cutting off any excess thread to come down to the next lower stock standard length.

Activities should check requisitions for

alternate design tie rods to determine if the particular length required is available in stock. If *not*, a tie rod of the standard design which is slightly longer than the one required should be selected and used.

## ASO Catalogs Declassified

All but 14 sections of the ASO Catalog have recently been declassified from "Restricted" to "Official Use Only" in accordance with provisions of ACL #72-49 dated 24 June 1949. A listing of the ASO Catalog Sections which still retain a "Restricted" classification can be found in the 15 August 1949 edition of *Info from ASO*.

## Planning and Logistic Info

ASO C/L # 257, dated 8 July 1949, lists planning and logistic publications which will be distributed to supply officers of aviation activities. ASO welcomes suggestions and recommendations regarding additional information desired or changes in methods of presentation to best meet the specific requirements of field activities.

## List of Operating Aircraft

ASO recently released a tabulated list which covered the deployment of operating aircraft. Enclosure 1 of this list shows all operating aircraft in alphabetical-numeric sequence, and signifies under each aircraft model designation the number of aircraft to be operated at each activity during a three-month period.

Enclosure 2 lists alphabetically each activity at which reporting commands have advised aircraft will operate. Under each activity are listed the number and type of aircraft to be operated there during the three-month period.

Any discrepancies in this list should be called to the attention of ASO, inasmuch as this document is important for implementing sound supply support.



# LETTERS

SIRS:

Who among us has not found himself on an unexpected RON near an attractive liberty town, but with not enough cash for bus fare. To avoid frustrations arising from such horrifying circumstances, the following tactical procedure is submitted for careful consideration by all hands:

After securing your aircraft you (1) Meander into the nearest ready room or coffee mess populated by aviation personnel. (2) Hide any electric fans which may be in evidence. Do this without attracting attention to yourself and in as stealthy a manner as possible.

(3) Bum a cigaret. (4) Settle back and tell about the blundering mech on your last carrier who somehow managed to attach the prop unit backwards on the shaft of a single-engine aircraft. No changes were made in the engine and the pitch was not altered from the setting which existed before removal. Upon completion of this job, this plane was elevated to the empty flight deck and preparing to take off for test when the error was discovered.

(5) Assuming no one had caught the mistake, you wonder—in a clearly audible conversational tone—whether take-off throttle would have moved the plane (a) down the deck in a normal direction or (b) tail first in a deep six off the fan tail.

If there are several present, discussion will ensue at this point and firm opinions on each alternative will arise. You then (6) Step out and borrow a few bucks from the engineering officer—who should know a sure thing when he sees it—and (7) Return to cover the sucker bets.

While a third party holds the cash you bring out the electric fan, reverse the blade group, prove your point, pocket the money, and light out for town. As for paying back the engineering officer—that depends on (1) How big he is, or (2) Whether you'll ever see him again.

Oh, yes, which way will the plane go? Well, uh, let me see now—just stand by while I scout up a screwdriver and an electric fan.

L. R. HUMPTON, LT. (JG).

NAVAL HOSPITAL  
ST. ALBANS, N. Y.



SIRS:

We read with interest your article on the passing of the old SB2C (*Helldiver* Dives Its Last, *NANEWS*, August 1949) as we are an ex-Beast outfit ourselves.

We would like to pride ourselves on being the only operational *Able Mable* squadron as the article reported, but, unless our eyes deceive us, three other squadrons here in Jacksonville, VA-84, VA-85 and VA-45 are flying AM's also.

All four squadrons are carrier qualified and

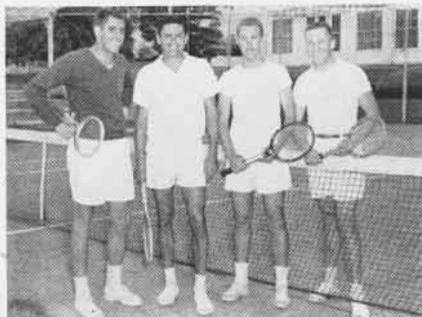
expect to be seeing the sunny shores of the Mediterranean before long, so it's quite a surprise to learn you haven't heard of us yet.

F. C. AUMAN, I.CDR.  
EXECUTIVE OFFICER

VA-44



Soap box kiddy-cars are not indigenous to the most berserk of air stations, but NAS Whidbey Island recently hosted the Oak Harbor Cub Pack's annual derby, Lt. (j.g.) Bingham dubs winner, Fred Walrath, in his speedy "8:30 Bedtime."



Cdr. Edward Pawka and Lt. Gordon Hodgson left pair, teamed up to cop AirPac tennis doubles championship at Coronado, Calif. recently, winning from Ens. Charles Kirbow and Seaman Clarence Powell. Hodgson also won the singles title in the meet.



## ● RECOGNITION QUIZ

(Inside back cover)

Top—The FH-1 Phantom flying with the Marines at Cherry Point is pictured in three different angles in this excellent photo by S/Sgt. P. L. Dagenais.

This particular shot shows the Marines' jet exhibition team.

Below—F2H-1 Banshee. Chief recognition features are the straight tailplanes and the under-nose guns.

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### ● THE COVER

One of the finest photographs of a fighter plane is this shot of the new F4U-5 night fighter with radar bulb on the wing, ARC-1 VHF stub antenna post behind the rudder and ARC-5 radio range receiver antenna extending above the fuselage aft of the pilot. Photo by Leo Terlaga of Chance Vought Aircraft Co.

### ● BACK COVER

Mt. Rainier's 14,480 summit provides a backdrop for this photo of 10 Naval Air Reserve TBM's in formation. Planes were from VA-74A based at NARTU Seattle. Picture was by V. E. Meuser, AF1, with a Fairchild 56 camera from an SNB. Skipper of the squadron is Lt. Clem Street, flying #150.

### ● THE STAFF

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## PICK YOUR GHOST

These two planes are sisters under the skin. Can you spot them and give their names? *Answers last page*





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