NAVAL AVIATION NEWS

OCTOBER 1954
NavAer No. 00-75R-3

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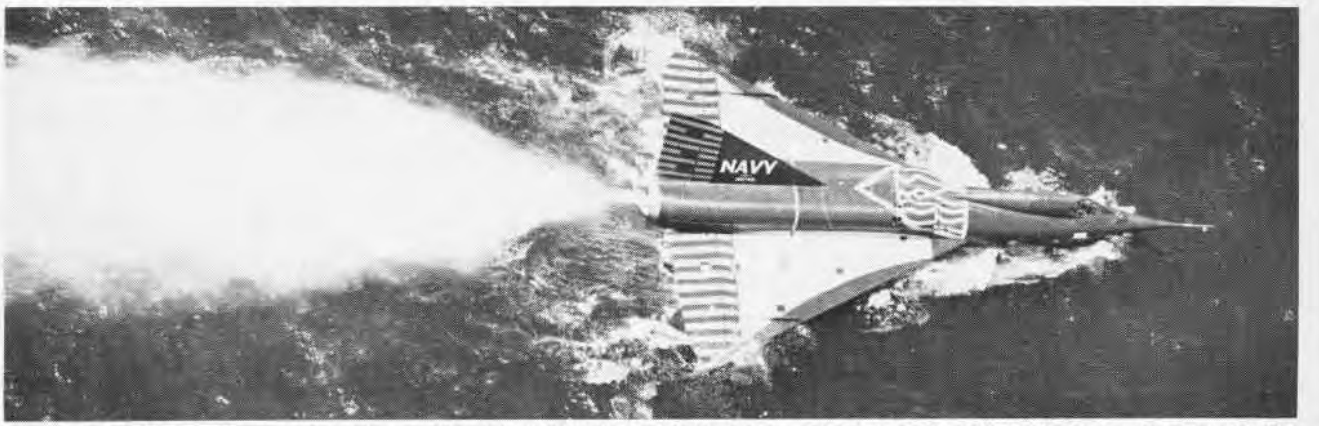
MILITARY RIDERS OF THE SKY TESTED

GRUMMAN F9F-9 TIGER RECENTLY DEMONSTRATED ITS HIGH SPEED, HIGH PERFORMANCE



CONVAIR'S XF2Y-1 PASSED ROUGH WATER TESTS AND OPEN SEA RETRIEVING OPERATION

LOCKHEED YC-130 BEING READIED FOR TEST. TURBOPROP ENGINES PROMISE HIGH SPEEDS

BUILT FOR BATTLE

BEARING the name of the first Secretary of Defense proudly, the USS *Forrestal* is due to be launched in the near future. It is the first of a new class of aircraft carriers planned by the Navy to launch up-to-the-minute, long-range attack planes and jet fighters. It will increase substantially the fighting power of the Fleet.

What is standard equipment on the *Forrestal* has, in many cases, been used only experimentally on other ships. The latest changes were tried out on the aircraft carriers *Antietam* and *Hancock*. The *Hancock* was the first to have a steam catapult and heavier arresting gear. During the Korean war, the *Antietam* was ordered home to have an experimental canted deck installed. The British had been experimenting with canted and flexible decks, and the U. S. Navy was eager to try the slanted design.

This was a major step in the right direction in aircraft carrier design, for it enabled a ship to launch and retrieve aircraft simultaneously. The experiment was successful, and the *Antietam's* unconventional flight deck has been incorporated in the new carrier, designated CVA-59.

As one studies the smooth lines of this great ship, it is clear that much that has long been only dream and promise is realized in this aircraft carrier.

An aircraft carrier is designed with one object in view: to carry the war to the enemy. Had a naval designer jotted down at the dawn of the jet age just what was needed in a carrier to enable it to carry out this mission effectively, these are some of the items he would have listed:

- Greater deck space
- Greater catapult capacities
- Heavier arresting gear
- Improved aviation fuel stowage
- Greater firepower
- Improved flight deck lighting
- Improved habitability

Revolutionary in design and size, the *Forrestal* offers an effective solution to many of the problems that have plagued carrier and aircraft designers since jet planes with their gargantuan speeds and appetites for fuel entered operations. In order to do this, the carrier had to be big—and it is. Statistics spell out that fact:

Length, overall	1,036′ 0″
Length, between perpendiculars	990′ 0″
Breadth, at main deck	129′ 0″
Breadth, extreme at flight deck	252′ 4″
Depth, at centerline flight deck	97′ 4″
Displacement, standard	59,650 tons
Structural steel required	52,500 tons

One other statistic indicates the vast amount of structural planning in such a ship as the *Forrestal*. The builder estimates that some 6,500 design plans were involved.

Into the *Forrestal* have gone the proved features of the *Essex, Midway* and *Antietam* classes as well as modifications which permit extensive jet operations and provide leeway for aeronautical growth. These proved features in the attack carriers enable the Navy to perform its primary mission. The *Forrestal* has been designed to handle aircraft of the future, aircraft with increased speed, altitude and range.

DECK EDGE ELEVATOR. AT RIGHT, POWERFUL 6TH FLEET IN MED

When construction started, the *Forrestal* was to be a flush-deck carrier with a retractable island and hinged stacks so there would be no projection above the flight deck. This was to provide the optimum landing area for incoming planes. But the successful installation of the canted deck on the *Antietam* in the early part of 1953 convinced the Navy that such a deck should be a feature of the *Forrestal*. When the canted deck was incorporated in the *Forrestal* plans, the retractable island was no longer necessary. Plans had to be reworked extensively, since the structure was affected all the way down to the third deck level.

When landing on the canted deck, planes land at an angle of eight to ten degrees from the centerline of the ship, rather than down the center of the flight deck in a fore and aft line. Thus, if a plane should fail to engage an arresting cable, or for any other reason fail to make a landing, the pilot can "pour on the coal", pick up flying speed, and fly off at an angle. This method removes any danger of a landing plane hitting working personnel or parked aircraft on the forward section of the deck.

The canted deck installation gives the *Forrestal* the ad-

vantages of an unobstructed deck landing area for its planes and, at the same time, retains the desirable features of the island for mounting radars, navigating the ship and controlling plane landings. Such a deck also increases the length of the usable landing area and effectively increases the ship's catapult launching capabilities.

While the canted deck is the "new look" from a design standpoint, there is more to the *Forrestal* than meets the eye. Her flight deck is her strength deck. This is in contrast to the *Essex* and *Midway*-class carriers in which the hangar deck is the strength deck, supporting the ship in heavy and adverse weather and serving as a parking area for aircraft.

The flight or strength deck of the *Forrestal* has only two perforations in the armor—the two forward catapults. This gives her added strength along the hull lines when the ship is yawing, rolling and pitching in bad weather. This flight deck armor also increases the *Forrestal's* protection for men and aircraft on the hangar deck during bombing and strafing attacks since its flight deck is an overhead shield.

The canted deck of the *Forrestal* affords her four catapults instead of the two carried on the older attack carriers. In addition to the two forward catapults on the *Forrestal*, there are two waist catapults located in the overhang of the canted deck. The #3 "cat" just touches the strength deck, but does not cut into the armor.

In the *Essex* and *Midway*-class carriers, the overall height of the hangar deck is 17.5 feet, but in the *Forrestal*, the height is 25 feet. This, of course, will facilitate the handling of such large aircraft as the Douglas twin-jet A3D *Skywarrior*.

Elevators have seen some major changes in design and weight lifting capabilities on the *Forrestal*. Designed for four elevators instead of three as in the *Midway* class, the *Forrestal's* elevators have been located at the deck edge to facilitate the rapid handling of aircraft.

During launchings, #1 and #2 elevators handle aircraft destined for "cat" shots from the two forward catapults. Number 3 and #4 elevators handle aircraft from #3 and #4 catapults. During retrieving operations, elevators #1 and #3 will see the most use.

ANOTHER innovation in the *Forrestal* is the steam catapult. This is far superior to the old hydraulic catapult. Capable of launching the heaviest of carrier-based aircraft, this type of catapult will eventually be installed on all the *Essex* and *Midway*-class vessels on active duty.

Until this change is made, however, all carriers using hydraulic catapults will employ "hydrolube," a non-explosive hydraulic fluid with a water base. The *Coral Sea* was the first to use this fluid. Recent explosions aboard the *Leyte* and the *Bennington* have made such use imperative although tests of the fluid were still under way.

With more and more swept-wing aircraft joining the fleet, the power-on approach has proved efficient. As such an aircraft comes in to land, the jet turbine continues to turn up high rpm to facilitate the rapid attainment of power for take-off, in case the arresting wire is missed. The power-on

DOTS OUTLINE DECK LIGHTS ON CVA-59

STEAM CATAPULT IS MAJOR FEATURE OF CVA-59. USS HANCOCK LAUNCHES GRUMMAN S2F

landing technique assures the aircraft a high angle of attack in the landing attitude. The thrust of the engine is a significant factor in avoiding hard, bumpy landings, the vertical component being maintained until the hook catches the arresting wire.

ARRESTING gear installed on the *Forrestal* is a modification of the old design with improved capabilities. Changes have been made which will enable the arresting engines to sustain a weight drag capacity three times that of older carriers.

All arresting wires forward of #6, as well as all barriers and the barricade, have been removed from the *Forrestal's* flight deck plans with the exception of the emergency barricade which can be used when necessary to bring damaged aircraft to a halt. With this arrangement, undamaged planes which fail to arrest themselves on the #6 wire can simply apply power and take off for another approach.

The barricade designed for stopping a damaged plane or one in which the landing gear is not lowered, is made of nylon. The barricade halts the aircraft by acting on the entire wing structure. Consisting mainly of multiple nylon tapes, the barricade is suspended across the canted deck in the same way as the Davis barrier, but at a greater height.

THE BARRICADE features "endless reeving" with no cable ends anchored to the engine. This arrangement is highly advantageous since the cable is free, thereby making it possible for the strength opposing the aircraft to be spread equally throughout the cable system.

Increased fuel handling capabilities are one of the *Forrestal's* best features. During the Korean campaign, it was necessary, during peak operations and good flying days, to meet the replenishing fleet for jet fuel every two to three days. Jet aircraft drink fuel at such a rate that carriers of the *Essex*-class were incapable of sustained jet operations over a longer period.

Looking for a method by which jet operations could be extended, engineers came up with HEAF (heavy end aircraft fuel), a bunker type fuel of low volatility, JP-5, which is stored in the ship's wing tanks. To make it ready for use in jet aircraft, it is blended with aviation gasoline at a rate of about two or three to one. When properly blended, the result is equivalent to JP-4 jet fuel.

Avgas is stored in the saddle tanks. Saddle tanks, used on carriers for many years, are simply tanks in which salt water replaces the avgas drawn off the top. Such a method serves to provide ballast, but primarily it reduces the fire hazard by keeping the avgas tanks full at all times. This eliminates the fume layer atop the avgas tank, which is highly volatile.

HEAF has one more capability that may prove desirable in emergencies. It can be used in the ship's boilers if necessary, by making changes in the boiler's burner tips.

In the matter of armament, adoption of the rapid-fire 5"54 has given the *Forrestal* eight lethal stingers for anti-aircraft protection. The old reliable 20 mm, 40 mm, and 5"38 dual-purpose guns saved ships and men of WW II and in the Korean campaign, but something more effective was needed against jet aircraft.

Although CAP and the "ready" interceptor should take care of most of the attacking enemy aircraft, a few may break through. Here is where the deck guns of the surface ships would play their part.

About a year ago, a special series of guide lights was tested satisfactorily on the *Antietam*. They were designed by BUSHIPS and perfected by BUAER. They are installed on the stern and bow of the canted deck and on the bow of the flight deck. Nine stern lights serve as a beacon by which approaching aircraft can line up their glide path for the final approach. The five bow lights on the canted deck serve much the same purpose for take-off. Three rows of lights on the canted deck outline the landing area.

The adoption of deck surface lights provides a low level of illumination in the area of the arresting gear. Heretofore, the deck resembled a long narrow gully while these lights give the pilot a sense of depth perception when he engages the arresting wire.

A safe parking area has been outlined in lights on the *Forrestal*, and these lights enable deck crewmen to park incoming aircraft properly and safely. These lights, placed 60 feet from the centerline on the canted deck, are not visible from the stern.

Carrier control approach which controls planes returning to aircraft carriers in low visibility is another feature that

has been tested, proved and adopted for use aboard the *Forrestal*. Experimentation of CCA was conducted aboard the *Philippine Sea* about four years ago.

Aircraft returning to a carrier approach what is called the "Eureka" point. Here the plane orbits about a beacon until the traffic pattern is clear. The CCA controller then picks up the plane and directs its approach to a landing.

The CCA gear will project 50 feet above the flight deck of the *Forrestal* during adverse weather recovery operations. This was one of the factors involved in changing the plans for the *Forrestal* from the flush deck design to the present configuration with the stationary island structure.

Still another development looms as a contribution to the landing and take-off of aircraft on carriers. This is a system for boundary layer control. The boundary is that thin layer of retarded air slowed by friction along the surfaces of the wing, tail and fuselage of a plane in flight.

John S. Attinello, a BuAer engineer, has come up with a design that tests at NATC have proved effective in enabling carrier-based aircraft to carry thousands of pounds more payload and to land more slowly.

For example, an F9F-4 equipped with Attinello's boundary layer control system was able to lift 3,000 pounds more than it originally had been able to carry, and the *Panther* landed at a speed 20 knots slower than before.

The design is simple. Air is bled from the jet turbine and blown out over the trailing edge of the wing. Through holes in the duct, the air blows out at high speed and tends to make the normal flow of air hug the skin of the wing rather than "burble" when the plane is near stalling speeds.

By making the flow of air over the wing at slow speeds steady, the lifting capacity of the wing is greatly increased and the safe landing speed is lowered.

Habitability of Navy ships has taken on new importance since the issuance of a CNO directive in June 1951. This listed habitability as a military characteristic.

The new big carriers are expected to more than meet the habitability requirements. There will be more living space per man, decentralization of sanitary facilities, more showers, larger and better planned messing facilities. "Old Salts" will be surprised to find linoleum-tiled decks in berthing areas and in parts of messing areas.

The carriers will have more mirrors with electric shaving outlets and a real increase in laundry facilities. Improved semi-private bunks, fluorescent lighting, redesigned lockers and bunk reading lights for each man are bound to be popular. Attention has even been given to furniture design and varied color schemes. Pastel colors will be used.

But the biggest improvement of all will be air-conditioning. In tropical areas, the heat can be beaten, and life below decks is going to be much more comfortable. In short, the *Forrestal* would seem to offer a pattern for what women's page editors invariably call "gracious living," but actually the changes have been made for no such frivolous purpose. Each change has been incorporated with a view to raising morale and keeping fighting men in battle readiness.

The present conversion schedule for active carriers offers many changes in design. The canted deck and steam catapult are major changes, and flight decks must be strengthened.

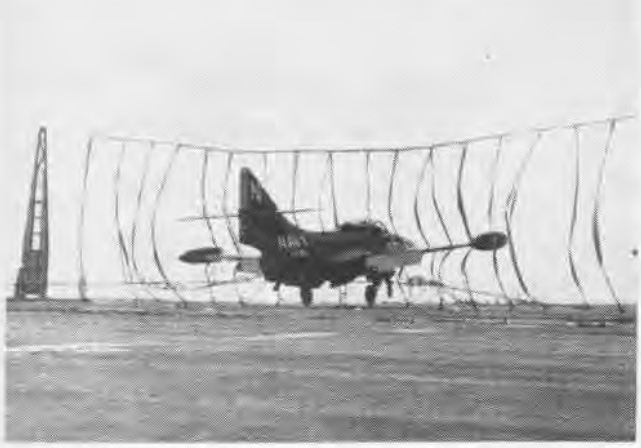
The conversion of *Essex* and *Midway*-class vessels is scheduled to be completed by late 1956. The first nine of the 27A carriers have been completed with the exception of the installation of the canted deck. This will be done during the next overhaul period of the vessels.

Still another program, the 27C, calls for six conversions. The *Hancock* was the first of these with the work completed in March 1954. The second, the *Intrepid*, was completed last June. The balance of the carriers tabbed for 27C conversions will be completed in late 1955. All these vessels are equipped with steam catapults, and three will have canted decks.

Modification of *Midway*-class carriers, to incorporate canted decks and steam catapults is underway. The *Franklin D. Roosevelt*, is currently undergoing a 24-month conversion program at Puget Sound Naval Shipyard, and conversion of the *Midway* has been authorized starting the middle of 1955.

Three other aircraft carriers are slated to follow the *Forrestal;* CVA-60, the *Saratoga*, CVA-61, the *Ranger*, and CVA-62, yet to be named. These aircraft carriers represent the long progress of aircraft carrier design.

George Washington once said, "In any operation, and under all circumstances, a decisive naval superiority is to be considered as a fundamental principle, and the basis upon which every hope of success must ultimately depend." This principle is just as true today. It is to insure such a principle that the *Forrestal*-class ships are being built for the Fleet.



NEW 21 FOOT NYLON BARRICADE STOPS RUNAWAY JET ON HORNET

CREW MEMBERS OF LAKE CHAMPLAIN ENJOY NEW RECREATION AREA

GRAMPAW PETTIBONE

Next Assignment—Mars

A few months ago I tooted the horns of a couple of lieutenant commanders who had racked up better than 5,000 accident-free hours during their Naval careers. For a while it looked as though these lads were in a class by themselves and deserved every bouquet that could be tossed in their direction. There are a lot of pilots scattered around the Navy who have over 5,000 hours, but it's hard to find one who has never had an accident, at least it was until the fact was mentioned.

I've been informed that a little outfit down Corpus way that answers to the name of ACTRU (it was disestablished September 1) has *six* pilots who have 5,000 accident-free hours wired. Not only that, but two of them have over *10,000* accident-free hours! That's about one-and-one-sixth years of continuous flight, which makes them candidates for a trip to Mars.

My first reaction to this was to tell those lads they oughta quit while they're ahead. It reminds me of a shooting match I got involved in years ago. One of the local boys was forever patting himself on the back for his prowess with a rifle, allowing as how he could shoot the head off a match at fifty feet. Well, he did . . . on his second shot. I was lucky the first time and refused to take another shot. That fella swears to this day I couldn't do it again and I'm not about to prove he's right.

But here are two lads who are working on their second 10,000 hours of flying and have never had an accident. I'd be right happy to hear from them personally on just how they accomplished such a feat.

It takes a pretty cool head to keep from being a pilot error statistic in this racket, and it takes downright ability with a little luck thrown in to beat material failure at one time or another. If it didn't, I'd have to go back to shooting heads off matches. Probably couldn't see one at 20 feet now.

No Sky Hooks

An HO4S-3S was returning to the carrier after a local flight. The pilot was signalled to come aboard near the island between two rows of parked aircraft. There was a better landing spot back aft, but, as is usually the case preceding an accident, something didn't work. In this case, it was the radio.

The pilot couldn't argue with the LSO and made his approach to the designated spot. According to the pilot, the approach was fast, assisted no doubt by the fact that the relative wind was from the port side on a port approach. The co-pilot said the approach started out a little high also.

In order to slow down, the pilot tipped toward the relative wind and cut some power. Realizing his mistake when the rate of descent increased, he put the power back on and attempted to recover control. This action gave him enough control to turn away from the flight deck but did not stop the rate of descent. The helicopter hit the water at almost the same time as the power took hold and it climbed back into the air.

There might have been a happy ending to this story if the tail rotor hadn't struck the water causing the tail boom to disintegrate. As it was, the fuselage went into a violent spin. The co-pilot and crewman, who had unfastened their harnesses after the initial contact with the water, made like a couple of ping-pong balls in a wind tunnel. The pilot put the aircraft back into the water where it sank immediately. The pilot and co-pilot were rescued by helicopter.

The crewman, who swears that he met a couple of mermaids during his long trek back to the surface, was rescued by a destroyer a few minutes later.

Grampaw Pettibone Says:

Some days you just can't make a nickel! Low and slow in the turns may be all right for balloons and kites, but not for gadgets that need power to counteract the force of gravity. Wise use of power is mighty good life insurance. Of course, if the helicopters were landed into the wind it wouldn't hurt anything either.

Whether whirlybird or fixed wing,
You'll wind up 'neath a flower
If you persist in making turns
With insufficient power.

Dear Gramp:

It seems to me that after years of preaching on the use of check-off lists and the continuing high rate of accidents for lack of use thereof, it would be well to back up a little and delve into the problem from the pilot's standpoint.

To begin with, pilots are indoctrinated to the word HASTE the minute they first step into an airplane. The pace is set as soon as the starter is energized. The schedule calls for a definite take-off time, and I have yet to see the

pilot who isn't pushed to make it at one time or another.

When the plane returns for a landing, the pilot must fit himself into the traffic pattern, watch for other aircraft, and get on the deck in as short a time as possible. Nothing is more disconcerting than having an approach interrupted by other aircraft, wave-offs, or by making a long, dragged out approach. But as the old saying goes, "Haste makes waste." Since there is no accepted way to avoid haste all the time, it is better to concentrate on a procedure which will eliminate the waste.

The damage is done when the pilot fails to use his check-off list and forgets to put the gear down. The reason for this failure is either lack of time or habit in not using the check-off list. It seems to me that the solution, until something else mechanical is invented, lies in a trick word that is simple yet catchy.

Something is needed to remind all pilots that they may be forgetting something, especially when under pressure. It must be a common word, and it must be all-inclusive. If it isn't, I can foresee many wheels-up landings while pilots are scratching their brains for the word that is to remind them of something they can't remember what.

There is a point in every landing approach where the aircraft must be in complete landing configuration. That point will vary according to pilots' tastes, but it should be somewhere before turning into the base leg. We'll call that *Point X-ray*. Now, all we have to do is indoctrinate all pilots that they must complete *X-ray* before reaching that point.

X—Check-off list

R—Report to tower

A—Altitude, attitude, and airspeed

Y—Yerk

Believe it or not, a secondary definition of YERK is "think hard". A little yerk at the right time has been known to cover a multitude of sins. I realize what a pilot will say to himself if he forgets the last item of *X-ray* and undershoots the runway, and I am sure his diagnosis will be correct. *X-ray* can be used for take-offs by substituting *and* for altitude, etc.

Yours for better yerking,

CDR, USNR

Grampaw Pettibone Says:

Bub, I believe you got something there. If there is anything I like, it is an indication that flight safety is reaching *the* individual. I don't know how long such a word will work or if it will work, but if any of you lads try it for size and find it fits the bill, let me know, will you? I've been "yerking" for years to beat this problem and I am always happy to know that some of you realize we have a problem. With a little more thought in this direction by all pilots, maybe I can switch from aspirin to chewing gum.

Dear Grampaw Pettibone:

The letter in the July issue of NANEWS, presumably written by Chief Turkey Buzzard, Miami Detachment, brings to mind a similar problem we faced here in the Naval Air Basic Training Command with geese. We have licked this problem by the following methods:

1. Forbidding all naval aircraft from flying in a northerly direction in spring and a southerly direction in fall. This is based on the principle that geese have the priority on these directions by virtue of tradition.
2. Requiring all geese to be equipped with red passing lights to improve their being sighted by worried pilots at night and during periods of low visibility.
3. Forbidding all pilots from blowing their noses while in flight, especially during the mating season, as the resulting noise closely resembles the call of one goose to another.
4. Deputizing Pensacola-trained buzzards to conduct schools for geese. It is a well known fact that it is impossible to collide with a Pensacola buzzard. Everyone who has completed flight training at Pensacola can testify to this fact after having chased them all over northwestern Florida and Alabama.

Having adhered strictly to these methods over the past year, we can safely say that the frequency of collisions between geese and naval aircraft has been reduced considerably.

Very respectfully,

LTJG ————, USN

Grampaw Pettibone Says:

What you say may be O. K.
For birds that are migratory,
But in the end it's our settled friend
Who presents a different story.

A flight of geese you dodge with ease,
To decry would be to slander.
The rumor's loose that sauce for a goose
Is also sauce for a gander.

If this be true, let's take the cue
And set a standard rule,
Since the Pensy Bird now has the word
Send PILOTS to their school!

Dear Gramp:

I noticed in the August issue of NAVAL AVIATION NEWS that you were wearing a tunic, while eating watermelon. It seems to me that the uniform of the day in a watermelon patch in August would be an old pair of shorts and a towel. How about it?

Ltjg., USN

Grampaw Pettibone Says:

Son, I get your message. In order to explain, I'll have to let you in on a little secret. I suffer from a rare disease called "accidentitis," the symptoms of which are high temperatures and extreme chills at the same time. They don't show, but there are two sets of woolen underwear under that tunic.

When you've been around as long as I have, you'll find that worrying about you young lads takes a lot out of an old man. Besides, if you'll look at the picture again, you'll notice that I was wearing a bib. While this item is entirely unnecessary, it is considered good practice when imbibing nutriments of high liquidity.

MEMO FROM GRAMP:

In this business of taxiing, you're on firm ground when you avoid soft shoulders and concentrate on the area up front.

VF-44'S GUNNERY *sleeve gets an inspection from LCdr. Judson C. Davis, who set the pace for his fellow pilots with 110 out of 148.*

Welcome Mat for Foreigner

Kingsville Trains Mexican Officer

The first student officer from the Mexican Navy, Ltjg. Carlos P. Rivera, checked in for flight training recently at NAAS KINGSVILLE.

Undergoing training under the terms of NATO, he is one of five Mexican officers scheduled for the course at Kingsville. The other four are still in pre-flight and basic training in the Pensacola area.

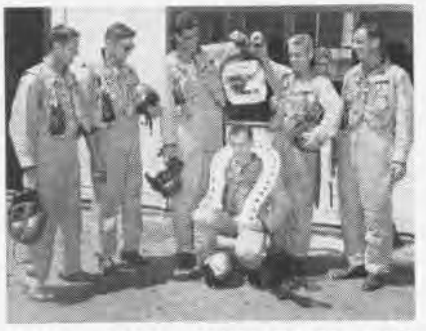
At present Rivera is attending ground school preparing for his instrument training course in the T-28B. After completion of his training with ATU-801, he will receive ASW training in the *Avenger* with ATU-400.

Two Flame-Outs in a Week

Luck and Training Insures Survival

Twice in one week Lt. Robert P. Smith of VC-3 had engine flame-outs. The first time one engine quit; the second time, both.

Afterwards Smith said, "The first time I was glad I had two engines; the second time I considered putting in for B-36's."



FELLOW PILOTS CONGRATULATE SMITH

The first flame-out offered no serious problem. It was daylight, and he had one engine still running. He returned to the field and made a normal landing.

Six nights later, Smith was again in the air over Nevada. The time was 0400. Returning from a successful, high altitude bombing training flight, he concentrated on the instruments. As he began a turn for the landing pattern breakup, the double flame-out occurred.

He elected to make a wheels-up landing and extended his dive brakes to help slow the *Banshee* down. At 180 knots in the inky blackness of night, he hit the paved runway and bounced off to the sandy side of the runway. He says the sand probably put out any fire that may have occurred.

Smith received no personal injuries, and the plane was not a total loss. Although the exact cause of the flame-outs has not been determined as yet, Smith probably owes his life to the fact that in a rough situation, he didn't hit the panic button.

SALTY *Robert Donovan, QM3, of the USS Princeton, seems to be suffering while instructing Marjorie Lord in techniques of semaphore signalling. Miss Lord, a television-screen-radio star visited carrier at San Diego.*

THE BOW *of Convair's 80-ton RAY-2 "Flying LST" opens its huge jaws to receive a small tractor during a recent demonstration of its capabilities at San Diego. The turboprop TRADEWIND has been especially designed to put men and vehicles directly ashore during amphibious maneuvers.*

Jet Training for Ensigns

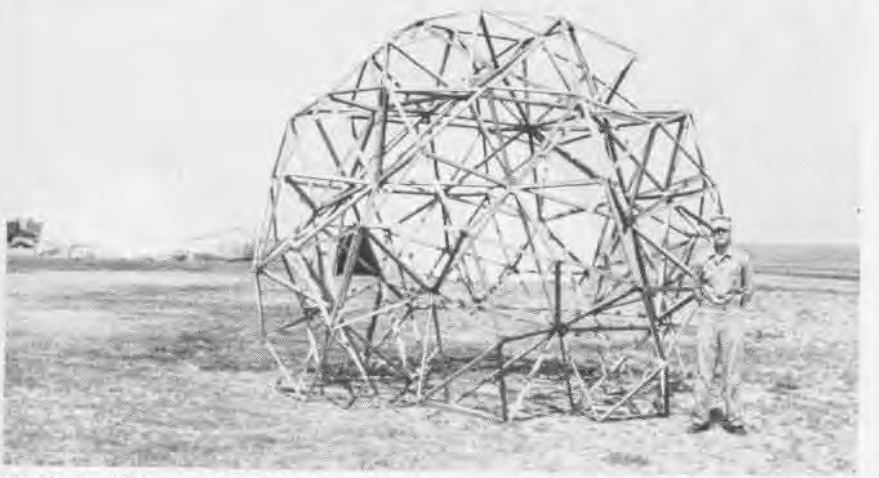
FASRon-5 Door to Gold Navy Wings

Five new ensigns have received air indoctrination training by FASRON-5 at NAS OCEANA.

The newly commissioned officers, all scheduled for flight training, are graduates of the 1954 Academy class at Annapolis. Ensigns H. Holt, J. T. Marshall, R. Gaskill, P. Shimek and S. C. Ager, were given an inside look at the actual operation of the Navy's air arm.

During their six-week stay with FASRON-5 at Oceana, the new men were given their first ride in a jet. Since FASRON-5 is engaged in the maintenance, supply and general overall support of Navy squadrons in and around Oceana and because she also maintains her own operating division of 26 jets and conventional type aircraft, the visiting ensigns received a sound background in naval air procedures and techniques.

NANEWS PRESENTS HEADLINE WINNERS



MODEL OF MARINE CORPS GEODESIC DOME SHELTER WAS DEMONSTRATED AT QUANTICO

THE DOME CAN BE MOVED BY HELICOPTER

CONVAIR'S *Pogo Stick* and the Marines' new Geodesic Dome structure vied for the headlines in recent weeks. And these were not the only achievements worthy of note.

The Marines' new structure is made of magnesium. It is light enough to be moved by helicopter from one place to another while fully assembled. Tests conducted at Quantico, Va., demonstrated the versatility of this structure.

The dome is canvas-covered and can be built to almost any diameter desired. Some domes will be used to house helicopters, while others will serve as administrative offices. A 50-foot dome can house one HRS and two HO5S helicopters with no crowding whatsoever.

PILOT ENTRY IN VTOF IS UNCONVENTIONAL

Convair's *Pogo Stick* made history with its first successful untethered flight at NAS MOFFETT. It has been sent to NAAS BROWN FIELD, San Diego, for further tests and evaluation.

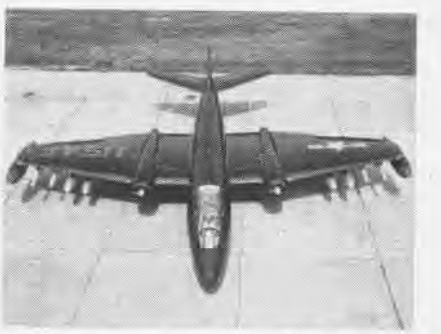
With Test Pilot "Skeets" Coleman at the controls, the XFY-1 made its first free flight to a height of 20 feet. On one of several subsequent flights, Coleman took the experimental fighter to an altitude of 150 feet before landing the delta-wing plane.

TAIL ROTOR VIBRATORY TEST FOR HOE-1

The Navy's HOE-1, tip-mounted, jet-powered helicopter made its first flight at the Hiller factory at Palo Alto, Calif. recently.

The HOE-1 is a two-place rotary wing aircraft with 23 foot rotor blades driven by small ramjet engines located at the blade tips. Power plants have no moving parts whatsoever, and engines may be changed in a matter of minutes with only a screwdriver.

The Hiller *Hornet*, as company officials call it, weighs about 500 pounds, but it can lift more than its own weight.



NEW B-57B HAS MARTIN ROTARY BOMB BAY

THE Air Force and the Martin Aircraft Company have taken the wraps off a new light bomber. A modified version of the B-57, the new jet has been redesignated the B-57B.

It resembles the British *Canberra* bomber with its wing internal mounted twin jet engines. The B-57B incorporates the Martin-designed rotary bomb bay door.

Two crewmen sit in tandem, with the navigator-radar operator-bombardier placed behind the pilot, but at a slightly higher level. This enables the bombardier to be of some assistance to the pilot in seeking out his target.

Major changes in the cockpit include anti-icing, bulletproofing, and elimination of windshield fogging. The new bomber can carry four napalm tanks, eight 5-inch HVAR rockets and mounts eight 50-caliber machine guns.

SHARPSHOOTING PILOTS AND HARDWORKING MEN OF VF-81 POSE FOLLOWING 'DEW JUG' PRESENTATIONS AT MASTER JET FIELD

VF-81 IS AWARDED NANEWS 'DEW JUG'

FIGHTER Squadron 81 has been awarded the NANEWS "Dew Jug" for outstanding aerial gunnery.

At brief ceremonies conducted recently at NAS OCEANA, Capt. R. E. Riera, ComAirLant Training Officer, presented this newest of the brown jug series to Cdr. H. J. "Dixie" Harder, CO of VF-81, for the squadron's marksmanship during deployment.

LCdr. J. W. Lankford with his incredible score of 78.4% hits led the pace that placed the squadron's 42.9% as a new high. He was awarded a miniature of the big "Dew Jug" in recognition of his feat.

VP-81's top performance at Guantanamo Bay is attributed to three main factors—almost perfect climatic conditions, a minimum of squadrons in the Cuban area allowing for more scheduled, and uninterrupted, flights and a full seven-day working week carried out by the squadron.

The ability of the squadron to make such outstanding gunnery scores can be credited in part to the squadron's most popular chief, L. J. Bradley, AOC, and his ordnancemen who worked round the clock to keep the gun and rocket mechanisms in top working order.

Ltjgs. E. S. Caverly and W. N. Phillips tied for second place, and five new ensigns who had been naval aviators a mere six months blasted themselves to an individual "E". They were: Ens. E. L. Schebelt, R. J. Salamanca, M. W. White, D. H. Birch and R. W. Phillips.

Other "E" winners were: Lts. M. J. Service, R. J. Smith, LCdr. T. W. Rhodes, Ltjgs. J. W. Hood, J. R. Burriss, M. J. Condit, J. A. Carmack and Cdr. "Dixie" Harder.

VF-81 stole the squadron honors from VF-84 who had previously held the squadron record with a score of 36.9%. LCdr. Lankford beat Ltjg. J. C. Barrow's record of 72.6% by a substantial margin to win individual honors.

Squadron Honors

Fighting Squadron 81

42.9%

Individual Honors

Ltjg. Sam T. Martin, Jr., VF-22

80.7%

SQUADRON CO ACCEPTS JUG FOR SHOOTERS

HIGH MAN LANKFORD LAUDED FOR TALLY

The "Dew Jug" competition was inaugurated because, each time a squadron wrote in with the "best" or "the firstest with the mostest" claim, NANEWS editors received a flood of claims and counter claims. So to give squadrons and individuals a real target to aim at, the *NANews Shootin' Match* was opened.

Rules for entry are simple:

1. **Air-to-air fixed gunnery: altitudes and airspeed as required by squadron training directives.**
2. **Aircraft: fleet combat types.**
3. **Target: any standard banner.**
4. **Record team: one pilot per allowed aircraft, i. e., 18 plane squadron record for 18 highest pilot scores, or 24 plane squadron record for 24 highest pilot scores.**
5. **Time limit: two flights per pilot during any 30-day period.**
6. **Rounds fired: 50 per pilot per flight is minimum.**

Squadron CO's and group commanders are invited to submit to NANEWS their claims for new records for either the squadron or an individual. Write to the editor and state your claim. We'll check it for you, and if the claim is a new record, you'll get the "jug." We do not, repeat do not, furnish the cost of filling it with dew.

LTJG. S. T. Martin, Jr. of VF-22 shot a record 80.7 percent at 15,000 feet in July. This bettered the old AIRLANT and NANEWS *Shootin' Match* record of 78.4 percent set earlier in the year by LCdr. J. W. Lankford of VF-81.

Martin was flying an F2H *Banshee* at Guantanamo Bay when he turned in this outstanding shooting. A squadronmate, Lt. William M. Russell, was close to the champ with 76 percent.

Sharpshooter Martin won his wings in 1945, but resigned his commission a year later to attend the Naval Academy. Following his graduation from the Academy, he took a refresher flight course and was assigned to VF-22. He flew 20 combat missions in Korea.

• NAS BIRMINGHAM—*Operation Vulcan* entailed all units of the Naval and Marine Air Reserve based here opposing units of the Air National Guard during scheduled bombing, close air support and scouting missions against an imaginary hostile force entrenched in the hills southeast of NAS BIRMINGHAM. Air Intelligence Officers prepared the operation plan, briefed the pilots prior to the strikes, and evaluated the results.

Almost FORGOTTEN EVENTS

LT. HARDISON BROKE FIVE RECORDS WHEN HE FLEW PN-7 PATROL AIRCRAFT

THE BLUE ANGELS OF '24

NAVY Day 1924 really got a kickoff. Four flying Navy lieutenants shattered 17 world records in one day on 25 October 1924 at Bay Shore, Md. This brought back to the Navy 27 of the 32 existing records for seaplanes. The other five were held by France.

Lt. G. T. Cuddihy crossed the finish line in a CR-3 to break the old speed record of 174.07 mph by 14.75 mph. Lt. R. A. Ofstie, in a CR-3, flew the 100, 200 and 300 km course in record speeds of 178.25, 178.25 and 161.14 mph to break the old marks of 129.75, 169.75, and 73.41.

Lt. O. B. Hardison, in a PN-7, broke five records for speed, weightlifting and endurance by carrying useful loads of 3306.93 pounds and 4409.24 pounds, both at 68.4 mph for 100 km. His total flying time of 1h-49m-11.9s set a new endurance record. The old time was 51 minutes.

Lt. G. R. Henderson in a PN-7, also set five records. They were useful loads of 551.15 pounds for 100 km, 1102.31 pounds for 200 km and 2204.26 pounds for 100 km all at 78.507 mph. He covered 248.55 miles in 5h-28m-45s.

VAdm. Ofstie is now DCNO (Air) and RAdm. Hardison is his Special Assistant for Aviation Safety. RAdm. Henderson is ComNAB 11-12 ND. Lt. Cuddihy was killed in an accident in 1929.

LT. CUDDIHY AND LT. OFSTIE MADE THEIR RECORDS IN THE CURTISS RACER

NEW COUGARS OF VR-63'S 'FIGHTING RED COCKS' PARK IN PARADE FORMATION ON NEVADA DESERT AT NAAS FALLON DURING VISIT THERE

VF-63 COUGARMEN HIT FALLON TARGETS

COMPLETING a fleet training syllabus while based in a high density area such as that surrounding NAS ALAMEDA, is a tough job for any squadron. This is particularly true in the case of VF squadrons whose primary mission involves intensive weapons training. Consequently, VF-63 was happy when it was deployed recently to NAAS FALLON, Nevada, for two weeks of undisturbed operations. Located well inland and off the airways, Fallon provides carrier-based squadrons the only means of escape from congestion problems.

Eighteen pilots led by their CO, Cdr. R. H. Benson, headed their new F9F-6 *Cougars* out over Lake Tahoe to Fallon, some 200 miles to the east. The remaining officers and crew were already aboard the station, having been sent in advance to unpack the gear, belt ammunition, and otherwise prepare for the arrival of the aircraft.

It was necessary to curtail flight operations only once during the period when a 40-knot wind sprang up and moved much of the Nevada desert onto the station. This resulted in IFR conditions and created a real estate problem as well.

Operations at the station were conducted under conditions similar to those of an advance base during the latter days of WW II. Headquarters for the line were located in a shack just off the parking ramp. Here it was up to the squadron's chiefs to consider maintenance, ordnance and fueling problems in assigning aircraft for each hop.

This centralization of operations was necessary owing to the lack of communication facilities. The pilots' ready room, located on the top deck of a hangar on the opposite side of the ramp, was without even a field phone. Consequently a system was devised by which the duty officer was able to keep himself and other pilots abreast of the situation.

Using binoculars, the SDO was able to observe the line shack from his vantage point at the ready room window. On the side of the shack were hung the numbers of the aircraft assigned to a particular hop. The large black numbers painted on an orange background could be read easily from this distance. Visual signals also proved their value in the installation of a flag hoist on the shack. The flag "close up" indicated the need for a fuel truck.

Since 20-mm guns were the only weapons of the VF-63 *Cougars*, every effort was made to complete as much of the air-to-air gunnery and strafing as possible. Of the 506 hours flown during the period, 344 were in gunnery and strafing; and the remainder were familiarization, armed recco and night missions.

COMING early in Phase One of the training cycle, as it did for VF-63, this deployment was ideal as far as maintenance was concerned. The 18 *Cougars* assigned had been on board for only a month, so none was due for major checks. With the able assistance of a small night check crew, 86% availability was maintained.

Although a heavy flight schedule was maintained, a wing-scheduling system permitted each pilot a few hours relaxation each day and alternate nights off. The bright lights over Fallon's gaming tables drew most of the *Fighting Red Cocks* as spectators at one time or another. Those who made the rounds for other purposes soon joined their friends as spectators.

By LCdr. Howard B. Eddy

LINESHACK *"barn" displays numeral and flag signals read by SDO through his binoculars.*

PILOTS *Ltjg. Mann, squadron CO Cdr. Benson, Ltjg. Merkler, Ens. Wisher between flights.*

A GLANCE AT SOVIET AIR CAPABILITIES

Soviet propaganda has for years eulogized Lenin and Stalin as leaders with perspective who foresaw the great future of aviation and the tremendous role it was to play in the fate of the fatherland. Supposedly these men "created conditions essential to the quick development of aeronautical science and the aircraft industry."

LGen. Vassili Stalin (not heard of officially since his father's death), son of the late Marshal, and ex-commander of the Air Force of the Moscow military district, echoed these sentiments some years ago when he stated that none of the world's air forces has experienced such a "glorious history" as that of the USSR.

More recently the West was reminded of the Soviet's air potential by a number of official Air Day articles and announcements emphasizing the "greatness of Soviet aviation." These announcements included a number of assertions such as: Mozhaisky made the first heavier-than-air flight in 1882, 20 years before the Wright Brothers; mention of a jet aircraft designed in 1881 by the man who made the bomb which killed Czar Alexander II; a boast that Soviet designers were beginning to talk about sending their planes around the world without refueling; and the revelation that in a recent test flight a Soviet jet aircraft had attained a speed of 1645 mph.

Such statements, independent of fact, serve to convince the Soviets that they are now flying "better than birds" and that "Soviet pilots fly faster, farther, and higher than anybody in the world."

THIS IS PICTURE OF A NEW BOMBER THAT APPEARED IN SOVIET'S MAY DAY FLIGHT

The twisting of aviation facts intertwined with concrete aviation achievements, such as the recent impressive display of modern swept-wing jet bombers, presents a perplexing picture that is often shrugged off as an example of the great Russian enigma. On leaving this puzzle forest, one is confronted by certain essential facts; the growth of Soviet Air Power and its technological progress.

The steady growth of Soviet Air Power since World War II, was marked by the first appearance of jets over Red Square in 1946, followed in 1948 by the display of copies of the B-29 long-range bombers, and accentuated two years later by the introduction of twin-jet light-bombers.

In May of this year at the air show staged in observance of the Soviet Union's annual May Day celebrations, the Soviet's display of air power reached a new peak with the unveiling of two new jet bombers. Official Soviet releases and photographs revealed one aircraft to be a swept-wing twin-jet *(Badger)* and the other to be a swept-wing four-jet *(Bison)*. Accompanying the *Bison* as it flew over Red Square were a number of new *Mig*-type jet fighters followed by nine of the new *Badgers*.

This much publicized display of Soviet air strength was probably timed to fit the current international situation aimed at impressing the Western World with Soviet military air capabilities. The fact that the Soviets do have large jet bombers is, however, not as surprising as it is significant.

In the light of this development the Soviet Air Forces' capabilities will become enhanced as large numbers of these aircraft roll off the production line. It is now apparent that, equipped with such aircraft as those displayed in May, the Soviet Air Forces in being are among the largest in the world, with approximately 20,000 aircraft, including naval aircraft, assigned to air units.

These Air Forces are constantly being modernized by phasing out obsolescent types and introducing the latest jet types. To quote Defense Minister Bulganin on this subject, "We have tried

THIS LARGE FOUR-JET BOMBER WILL BOOST THE FIGHTING POWER OF RED AIR FORCE

all these years to develop aviation techniques and not to lag behind modern demands. In this endeavor we have succeeded. Our aviation at present is armed with completely modern high speed jet planes."

In considering the use to which such an air force might be put in the event of war with the West it becomes apparent that Allied navies would be confronted by an enemy air force capable of:

1. Concerted air action over merchant convoys or naval vessels within fighter range of Soviet airbases (400 to 500 nautical miles).

2. Making effective low-altitude attacks, including attacks upon merchant convoys and naval vessels, out to 600 nautical miles from Soviet bases using jet light bombers.

3. Locating and attacking shipping beyond 1,400 nautical miles from Soviet bases using *Bull* TU-4 (B-29 type) medium bombers, or twin-jet swept-wing medium-type bombers operating at medium or high altitudes. These planes could also furnish reconnaissance and direction to Soviet submarines in attacks on shipping.

To carry out their objectives, properly, the Soviets have aircraft apportioned among five combatant organizations: Air Force of the Soviet Army (Tactical Aviation); Long Range Aviation; Fighter Aviation of Air Defense; Aviation of Airborne Troops; and Naval Aviation.

Although the Soviets remain essentially a land power, they appear to recognize the importance of enemy sea communications and to be prepared to attack these communications in case of war, not only with improved submarines, embodying late German designs, but with post-war modern aircraft of Soviet origin. In a similar vein Bulganin has said, "I have been continually concerned with the strengthening of the Navy, for the valiant Navy, together with the Army and Air Forces, is the reliable defense of the sea borders of the Soviet government."

It may well be that the Soviets have profited by some of the costly lessons learned by those who have underestimated the influence of sea power in the past. The German and Italian disregard of proper control of the sea lanes by naval air power is a mistake not apt to be repeated by the Soviets. In countering any deficiencies in this type of warfare, much effort has been expended by the USSR, since the end of World War II, in the development of the Soviet Navy, and of naval aviation. Naval aviators have been trained in anti-shipping and anti-submarine attacks as well as in support of ground forces in coastal areas.

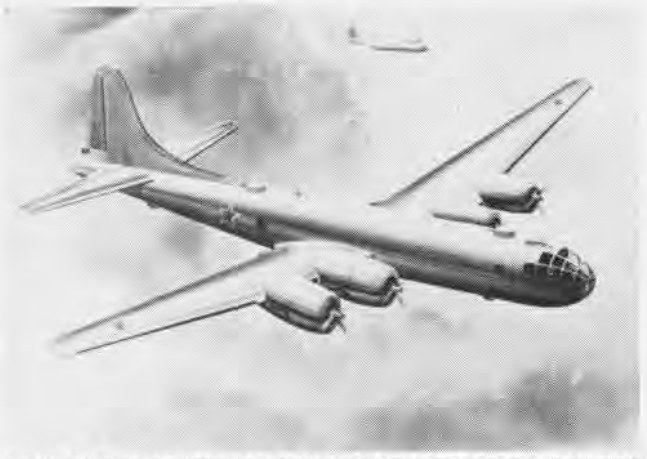
The rise of naval aviation over its relatively minor World War II role of operationally supporting the Army ground forces, was apparent in the February 1950 reorganization, when naval aviation, reverted to the operational control of the Navy. Since this time, increased emphasis has been placed on the strengthening and modernization of Soviet naval aviation. This fact was borne out at the July 1951 Air Day Show when the Soviets openly displayed some of the Navy's new jet equipment.

Naval aviation is an integral element of the Soviet Navy and is, therefore, administered separately from the aviation components of the War Ministry (Tactical Aviation). Over-all technical and administrative control is vested in the Commander-in-Chief of the Naval Air Arm. While the Soviets are not known to have in operation or under construction any aircraft carriers, they are known to have several seaplane tenders, all of which are ex-German ships transferred to the USSR under treaty agreements.

Fleet air forces of the Soviet Navy consist primarily of shore-based aircraft supplemented by a small number of seaplanes. Some of these aircraft are propeller-driven. However, naval aviation is being re-equipped with jet fighters and jet light-bombers. The number in the Navy is upwards of 3,500.

An examination of a few of the many possible Soviet tactics in event of war in Europe reveals that an effective blockade of the Continent may appear unnecessary to the Soviets until after their ground forces overrun the Western democracies. During the land campaigns of Western Europe, the demands upon Soviet air power for close support of the invading armies would be large. Upon the completion of those campaigns, great numbers of aircraft could be released for an attack upon the United Kingdom and its approaches.

On the other hand, if the Red advance were pinned down in Europe, the destruction of Allied shipping would appear an obvious necessity to the Soviets. In this case, however, the Soviet Air Forces would have to be divided to perform both land and sea operations.



COPY OF B-29 BOMBER IS BACKBONE OF LONG RANGE AVIATION

THE BOSUN IS USSR NAVY'S LIGHT TWIN JET ENGINE BOMBER

The Soviets today possess air bases from which they could launch attacks by conventional light bombers on Allied shipping in the English Channel, the North Sea, the Norwegian Sea, and upon every port in northwestern Europe. Most formidable, in respect to present shipping lanes, are the bases in Eastern Germany. Five of the six busiest ports in northwestern Europe—London, Rotterdam, Antwerp, Le-Havre-Rouen, and Hamburg-Bremen—could be reached by jet bombers from these bases in the Soviet Zone of Germany. Three of these ports, Rotterdam, Antwerp, and Hamburg-Bremen, could be reached by escorting jet fighters.

From existing bases, the Soviets could, if they committed sufficient aircraft, harass Allied shipping in the English Channel and North Sea lanes and ports, and possibly reach the ports of Western France.

If, however, the Soviet campaign were to succeed in conquering all of France, the Soviets would acquire submarine and air bases from which they could, like the Germans in World War II, harass merchantmen in all but one of the narrow seas, possibly limiting entry into Great Britain to the "back door"—the North Channel.

In addition, upon reaching the Pyrenees, perhaps they would not halt there, as the Nazi armies did, but would possibly push on into the Iberian Peninsula. A successful campaign in this area would provide the Soviets with Portuguese and Spanish air bases and would make possible attacks upon the Strait of Gibraltar.

The ability of Soviet naval aviation to carry out its anti-shipping mission is limited by its size. If the Soviets wished, therefore, to utilize the *Bull* (TU-4) for naval purposes, they could assign some to the Navy or could order the Bulls (TU-4's) to perform naval missions. The latter is approximately what the Germans did during World War II when they discovered the value of torpedo attacks to perform this mission, which the Navy had previously been forbidden to perform on the ground that it was "uneconomical."

The Soviet's *Butcher* (IL-28) twin-jet light-bomber and a later twin-jet bomber, *Bosun* with approximately the same capabilities can both carry a greater ordnance load at approximately twice the speed of the obsolete *Bob* (IL-4) twin-engined propeller bomber. Within a combat radius of more than 600 nautical miles, these twin-jet aircraft should be formidable weapons in anti-shipping attacks. For distances beyond the 600 nautical mile radius, the larger swept-wing twin-jet bomber aircraft seen in May should be even more formidable with their increased performance.

The tactics developed by Soviet aviators against German convoys in World War II proved highly successful and are an indication of the tactics that may be encountered in any new conflict. The key to their success was coordination of a large fleet of aircraft of several types; fighters, light bombers, and ground-attack planes, though participation of the ground-attack planes was limited by their very small combat radius.

In addition to bold tactics and excellent postwar jet planes, the Soviets have the immediate asset of large numbers of available aircraft and a high rate of production. The USSR would be prepared to enter another war with more than five times the number of aircraft with which Germany launched World War II (3,650). In fact, the number of aircraft in the Soviet Air Forces is about triple the maximum reached by the Luftwaffe during the war (approximately 6,000 in 1943).

It is probable, therefore, that the Soviets possess a still greater capability for launching air attacks upon Allied shipping in the northwest European approaches than the Germans demonstrated in World War II, but the Soviets may also suffer from one of the principal German weaknesses—a failure to understand the strategic importance and tactical requirements of control of the sea and the air above it.

The situation in the Pacific with regard to the approaches to the South China Sea, East China Sea, Japanese Island, Kuril Islands, and the Bering Sea indicates that the Communist Air Forces are in an equally strong position to make attacks on enemy shipping. Just as in Europe, the Soviet and Satellite Air Forces in Asia have the capability of launching these attacks with their jet light-bombers and long-range medium bombers. In Japan alone the entire island group could be attacked by jet light-bombers.

It would seem, therefore, that Malenkov, in perpetuating the example of his predecessors, is determined that the USSR must not lag behind in the development of air power. This resolution is reflected in an old Soviet axiom to the effect that he who doesn't move forward lags, and laggards are beaten.

MIG-15 WAS THE SOVIET'S PRINCIPAL FIGHTER IN KOREAN WAR

BUTCHER, USSR'S FIRST LINE JET BOMBER, APPEARED IN 1950

RESERVES MAKE EUROPEAN TRAINING CRUISE

FIRST peacetime overseas deployment of a Naval Air Reserve unit on annual training duty was carried out successfully when Jacksonville's VP-741 completed a 16,000 mile round trip to Europe. During this two-week trip, the squadron touched down at the following ports of call: Bermuda, the Azores, Port Lyautey, Lisbon, Gibraltar, Malta, Athens, Istanbul, Naples, Marseilles, London, Azores, Newfoundland, Washington. Above scene is at Stephensville.

FIRST *stop was at Bermuda where five* P2V*'s and the* R5D *remained here overnight. Next day was a 1,900 mile flight to the Azores Islands.*

PILOTS *and crewmen 'harness up' before takeoff. PPC, LCdr. James C. Fulton (center) is assisted with 'chute by William F. Beasley,* ADL

AT PORT *Lyautey, they were greeted by a 'Follow Me' camel instead of the usual jeep. The sign is written in both English and Arabic.*

DURING *flight from Lisbon to Malta, rough-running engine forced LCdr. John L. Briggs to land at Gibraltar. Crew made own repairs.*

MEMBERS *of Turkish Air Force and Navy greeted squadron at Istanbul. In front row are: LCol. Ishan Aras, Turkish AF; Capt. John Counihan, group commander; Capt. Sermet Gokdenis, Turkish Navy; RAdm. F. M. Hughes, Military Mission; and Cdr. Charles W. Rogers, VP-741 CO.*

GO, GO, GO! *Capt. Counihan, Officer-in-Tactical Command, checks his watch at Azores. LCdr. Briggs remarks: 'Right on schedule.'*

UPON *arrival at Washington, D. C., men were greeted by VAdm. Ralph A. Ofstie, DCNO(Air) and Capt. Alvin Preil, Air Reserve Coordinator.*

OLD MAN WINTER SAYS . . .
'TIME TO GET ON THE (SNOW) BALL'

REMEMBER, YOU'RE NOT ALWAYS GOING TO BE CLOSE TO HOME

IFR APPROACH, ICY RUNWAY, DOWNWIND COMPONENT, COLD NOSE

It won't be long now until winter rushes in with ice, sleet and arctic blasts. Spring will be very far behind as the long dark months of winter run their course. Alert squadrons concerned with safety are preparing for all aspects of winter operations now—*before* the first snow falls.

Even those squadrons not located in a cold weather belt are taking note of the special problems winter presents. Many crews at southern stations will have missions requiring them to cope with cold weather hazards. Flexibility of operations requires that entire squadrons from warmer climates be able on short notice to go to rugged areas which require peak performance to survive.

One admiral has significantly pointed out that safety is not something that just happens. This is the way he puts it: "Safety is the end product of good planning, training, and leadership. In perhaps no aspect of Naval Aviation are these elements—particularly planning—so critical as in cold weather operations."

Planning should start this month. Pilots and air crews—and who has a greater personal stake in a fine winter safety record?—can review problems encountered in their area of operation, checking methods, survival techniques and equipment.

Maintenance personnel should review cold weather starting techniques. Survival and Aviation Equipment officers will indoctrinate all personnel in survival and arrange for them to have proper cold weather clothing and survival gear.

Air station personnel and carrier deck crews can make plans for removing snow and clearing off ice. Flight surgeons can brief both flight and maintenance crews on the problems of exposure and the ways to maintain health in cold weather.

Safety officers will advise personnel on special problems and outline specific responsibilities in cold weather.

Learning to operate in cold weather is in many ways just like checking out in a new type airplane. There is much to learn, but there is nothing insurmountable if you are prepared for it. To help you review your responsibilities, here are two checklists.

Checklist for Pilots

1. Before every flight, check weather carefully to determine freezing level, inflight icing to be expected, nature of pilots' reports, etc.

2. Remove frost and snow before take-off.

3. Check controls (including trim tabs) for restrictions to movement that might have resulted from partially melted ice, snow, or sleet.

4. After run-up in fog or rain, check wing and tail section for ice in propeller blast area.

5. Don't take off in slush or wet snow if it can possibly be avoided.

6. Use pitot heater from ground up when flying in rain, snow, or clouds, as well as in areas of known icing.

7. If encountering wet snow or freezing rain, notify ATC and request a change of altitude, as soon as possible.

8. Anticipate propeller ice—use de-icer prior to getting into known icing areas.

9. Use full carburetor heat to clear ice, consistent with proper carburetor temperature for your aircraft. (If icing is expected, carburetor heat should be used in advance on those aircraft which have installations supplying only sufficient heat *to prevent icing*. Aircraft equipped with manifold absolute pressure regulators may develop serious icing *unknown to the pilot*. Use carburetor heat or alternate air to maintain proper inlet temperature at all times to prevent such situations.

10. Watch your airspeed—stalling speed increases with ice. Don't climb at low airspeed. If you have a load of ice, don't make steep turns.

11. Check wing de-icers before take-off; use them properly. Do not land with de-icer on.

12. Don't try three-point landings, if iced-up. Fly in with power. Before starting landing approach, move throttle back and forth slowly to make sure

ICE ON AIRSCOOP INDICATES HEAVY ACCUMULATION ON WINGS

PREPARING FOR EARLY MORNING TAKEOFF AT FALLON, NEVADA

carburetor is free of ice. (Know runway condition and obstructions and request surface wind direction, particularly if landing out of the wind.)

13. Use carburetor heat during approach and change to cold just before flare-out.

14. Before take-off, check anti-icing and de-icing equipment.

15. Double-check all radios for operation.

16. Don't take off with sluggish instruments.

17. Watch your general health. Keep in good shape.

18. Know your true altitude. Get accurate reading by applying temperature correction at your altitude. Error can easily be 1,000 ft.

19. Know oil dilution procedure and *inform maintenance* when it has been used, as special maintenance is required after use.

20. Above all, use common sense.

Certainly of no less importance are the responsibilities of maintenance and line personnel.

Checklist for Maintenance Crews

1. Observe all starting and warm-up precautions.

2. Know oil dilution procedure, practices and problems for your aircraft as well as oil venting system for certain engines.

3. Cover aircraft properly to protect from snow and ice.

4. Beware of frostbite, snowblindness, and other exposure hazards. Be sure of your footing.

5. Know techniques of snow and ice removal—wings and empennage as well as struts and actuating cylinders. Use proper fluids for removal and prevention. Exercise caution for fire and fumes.

6. Watch for fuel contamination. Avoid filling tanks completely full outside if aircraft is to be moved into a hangar or other shelter—gas will expand and overflow, creating a hazard.

7. Maintain your general health.

8. Use proper equipment, in good working order. (Watch for carbon monoxide from improperly adjusted ground heaters.)

9. Know instructions for meeting special problems of your type aircraft and accessories.

10. Work on heated engines or in heated conditions if at all possible. It's usually faster and safer in the long run, and you avoid breaking brittle metal, and wire installations.

11. Know proper taxi directions to give pilots, and observe great caution in moving aircraft on ice or snow.

AIRMAN CHIPS ICE ON ORISKANY PLANE

12. Plan your outside work so as to minimize time with bare hands.

13. On carriers, snow is less frequently a problem, but it is a real problem when it occurs, as our Far East Forces will testify. In below-freezing weather, outboard gasoline lines, fire fighting equipment, and catapult tracks require attention.

14. Above all, use common sense.

THERE are numerous publications available on the subject of flight and ground problems encountered in winter operations. BuAer Technical Note 38-52 is a comprehensive collection of general information and instructions concerning cold weather operations of ship and shore-based aircraft. For detailed instructions concerning each aircraft model, pilots and maintenance personnel should refer to the individual Pilot's Flight Handbooks and Erection and Maintenance Manuals.

More than 40 publications, movies and other data are available. Some of the cold weather operating information publications include *Aleutian Sense, Arctic Sense, Carrier Cold Starting Sense, Carrier Cold Weather Flying Sense, Polar Guide, All Weather Flight Manual, Naval Arctic Operations Handbook* (1949) and the Aerology Series.

These are the training films: MN-2644, *Cold Weather Operations of Aircraft;* MN-3819, *Personal Health in Snow and Cold;* MA-2727, *Land and Live in the Arctic;* MN-6666, *Canadian Arctic Operation;* MA-6659, *Task Force Williwaw;* MB-5393, *Exercise Polar Bear;* MB-5394, *Exercise Eskimo;* MC-6376, *The Secret Land;* MA-6661, *Exercise Musk Ox;* and MA-6667, *TF Frigid.*

FIGHTING *Squadron 62's "Gladiators" rocketed to new fame recently when five pilots from the squadron won the coveted Navy Battle Efficiency "E" at Switzerland Target. Paced by Ens. H. Wilson's "four of four" bull's-eyes, this raised the total number of individual "E" winners to 12 for pilots of VF-62. Here are Ens. R. Johnson, Ltjg. E. Amende, Lt. H. Joines, Lt. R. McAllister, and Ens. Wilson. Wilson's four tied the ComAirLant Record. Pilots flew the F2H.*

VP-23 Training Pays Off

ORI Observer Aboard at Ditching

Few crews can boast the presence of an operational readiness inspection observer during an actual ditching procedure.

While Crew Seven of VP-23 was undergoing an ORI recently, and was returning from an operational flight, the port engine quit. Aboard was Lt. Binkley, an observer from FAW-3. Cdr. A. W. Jones, VP-23's exec, was at the controls and ordered the crew to prepare for ditching.

The crewmen thought it was a drill and hastily manned their ditching stations. Jones asked the nearest GCI the course to Quonset Point. He then applied power to the starboard engine, and after a few coughs, it quit also. Advising the GCI station that he was going to ditch, Jones switched on his emergency IFF.

The water landing was smoother than most normal field landings, but the plastic nose was carried away, and the crew found themselves in three feet of water.

They evacuated the plane and climbed into life rafts. It was then discovered that only one man had suffered any injuries—a piece of flying debris had struck him in the face.

Although 110 miles at sea, a rescue plane from Brunswick, Me., picked up the crew just 90 minutes after the ditching.

This is one crew who received a 4.0 on ditching procedures when the ORI observer wrote out his report.

IFR-IQ?

Which of the following conditions would allow you to use an airport with a radio range as an alternate?

A. Ceiling 1000 ft., visibility ¾ mile.

B. Ceiling 900 ft., visibility 2 miles.

C. Ceiling 900 ft., visibility 1 mile.

D. Ceiling 800 ft., visibility 1 mile.

E. Ceiling 600 ft., visibility 2 miles.

Answer on Page 32

Grads of Special Course

25 Ensigns End a Four-Week Study

Twenty-five ensigns, all graduates of the Naval Academy or NROTC courses in colleges, slated for preflight in the near future, attended the Aviation Ground Officer's School, NATTC JACKSONVILLE, in July.

The recently commissioned officers were attached to squadrons of ComFAirJax and FAW-11, awaiting their convening dates for preflight classes at Pensacola. It was decided by Fleet authorities to schedule training for them.

The AGO School, which is designed to train junior officers in the foundations of the Naval Aviation Establishment and various billets for aviation ground officers, designed a four-week, streamlined course for the attached officers.

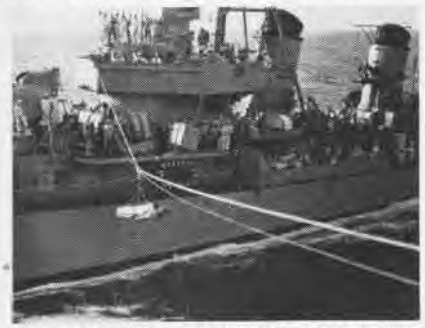
FOUR ENSIGNS STUDY JET ENGINE CUTAWAY

The first class for future aviators convened July 6 and was made up of 25 future pilots. Pilots came from squadrons VC-62, VP-3, VP-5 and VA-15. Ensigns from VA-175 will attend later.

Although this program will be carried on only for a short time, officers are expected to gain knowledge valuable to them in the years to come.

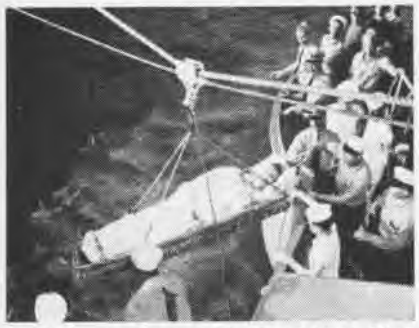
ORPHANED *wards of the Portuguese Navy on board the USS Siboney at Lisbon. The 35 youngsters, dressed as sailors, are wise to the ways of the Navy. They live on board a historic frigate anchored on the Tagus River. The Siboney participated in the 1954 Summer Middy Cruise.*

HIGH LINE RIDE TO A CARRIER SICKBAY



WOUNDED MAN STARTS HIS BREEZY RIDE

A SERIOUS injury to a man aboard a destroyer at sea presents a critical problem since there are not adequate medical facilities aboard a tin can. But when the DD is travelling in a convoy



BARNETT IS GLAD RIDE IS ALMOST OVER

with an aircraft carrier, almost any emergency can be met. Recently in the Sixth Fleet in the Mediterranean, Douglas Barnett, SA, suffered a severely broken arm. Luckily the DDE *Murray*

ARM IS IN CAST SOON AFTER THE MISHAP

was in convoy with the fast attack carrier, USS *Randolph*. Here are scenes which occurred in rapid succession when Barnett was transferred to the *Randolph*. In no time at all, the arm was set and he was resting comfortably.

ACTRU 'Out of Business'

Logs 42,880 Accident-Free Hours

The Acceptance, Transfer and Training Unit at Corpus Christi closed its doors 1 September after nearly four and a half years' service to naval transport aviation.

The first class of students—13 in all—started their training on 7 March 1950. As the ground school syllabus became more streamlined and the flight instruction became highly standardized, ACTRU was able to increase the number of students in its monthly classes to as high as 30.

On 12 March 1950 the first R5D was received by the unit for induction into progressive maintenance. Since that time 693 R5D's and 23 R6D's have completed the maintenance cycle.

Having conducted 59 classes since its commissioning, ACTRU has put 1,466 students through its instruction and training syllabus. Over 29,500 hours of flight time have been given by flight instuctors. Altogether ACTRU has amassed 42,880 accident-free hours which, totaled up, come to over 8,500,000 miles.

Fire Fighting Symposium

Port Hueneme to be Conference Site

The Bureau of Yards and Docks will sponsor a symposium on Fire Extinguishment Research and Engineering on 16, 17 and 18 November at the U. S. Naval Civil Engineering Research and Evaluation Laboratory, Port Hueneme, Calif.

Broad in scope, the symposium will explore and discuss military requirements, and future developments in the field. Topics such as "Fire Fighting Problems in Crash-Rescue Operations," and "Extinguishment of Ammonium Nitrate Fires" are to be included.

The various military services will be represented as well as interested governmental agencies, research centers, educational institutions, and equipment manufacturing firms.

VC-3 Promotes Goodwill

Lee Apologizes to Local Citizens

Late in July in a morning fog, LCdr. Clyde Lee of VC-3 was forced to fly low over Sunnyvale, California.

An irate housewife called the station and reported the annoyance to the duty officer. The tower was able to pick out Lee's flight of three planes by the time given and he was notified of the incident.

After he had been notified, Lee made a personal call on the Sunnyvale resident and introduced himself. He explained to the lady that pilots always make every effort to avoid non-conformance with regular traffic pattern procedures which are designed to cause the least possible disruption of civilian routine, but sometimes in foggy weather it was unavoidable.

The conversation ended with pleasantries and a new Navy friend, all because an explanation was rendered to explain an unavoidable circumstance. (Could be that VC-3 should give LCdr. Lee another collateral duty, that of Public Information Officer.—Editor)

BOEING'S *707, America's first jet transport, has made its first successful test flight with test pilot A. M. "Tex" Johnson at the controls. Flying high over Mt. Rainier, the 707 has logged over 20 hours flying time since last spring when it suffered damage incurred by the port landing gear giving away. Powered by four P&W JT-3L jet engines, the 707 flies at 550 mph or Mach .8. As a military plane the new Boeing will be called the Jet Stratotanker, and be capable of aerial refueling the newest and fastest jet fighters and bombers in use by Navy and Air Force.*

Major Disaster Is Averted

Jax Sailor's Courage Saves Lives

Navy men around the Jacksonville area have a new hero.

Gerald H. Smith, AD3, averted a near disaster recently when he jumped into a burning jet-fuel truck and drove it from an aircraft parking area where some 20 freshly-fueled Navy *Banshees* were concentrated.

Members of Smith's gas truck crew were refueling a group of fighter planes when one of the plane's fuel tanks overflowed and burst into flame. Smith immediately ran to the fuel truck and shut off the emergency gasoline valves.

"When I looked up," Smith related, "I noticed the aircraft's plane captain [L. K. Grossi] jumping from the jet. His clothes were on fire. I figured that the only possible way of avoiding an explosion that would have killed all of us was to get the truck away from those planes. I kept thinking that I'd be just as dead 50 feet away from the planes as I would be sitting there."

He drove the truck 200 feet from the plane parking area and began putting the fire out. While he was fighting the fire on the gas truck, the NAS fire crew arrived and extinguished the flaming jet.

Both Smith and Grossi are members of VF-22.

First Furies Hit Hawaii

Red Devils of MAG-13 Recipients

The *Red Devils* squadron of MAG-13 will soon be completely equipped with the *Fury* jet fighter. Right now they are flying *Banshees*.

Col. B. C. Batterton, CO of the 1st Provisional Marine Air-Ground Task Force, made the announcement of the transition to *Furies* from his headquarters at Kaneohe Bay, T. H. MAG-13 is the aviation element of the task force.

This will be the fifth type of aircraft to be flown from the Kaneohe strip by MAG-13 pilots since their arrival at Kaneohe. They have flown the prop-driven *Corsair*, the *Panther* jet, the *Banshee* and the Sikorsky transport helicopter.

The *Fury* is a step-brother to the famed *Sabrejet* with a few minor modifications. Folding wing and tail hook make the *Fury* adaptable for carrier-based operations.

TRÈS *bien, Gilbert, c'est à moi, maintenant. G. L. Aubrey (l.) seems all entranced with wonders of Sixth Fleet as Pierre C. S. Vossot makes an attempt to get a look-see. They are aboard the Randolph as part of advance party for carquals of 14 French pilots in the Med.*

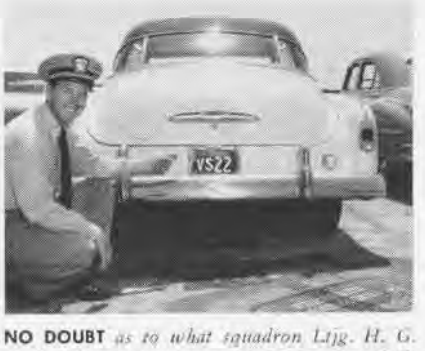
CIC Changed to FADTC

San Diego School Gets a New Name

On 1 July, the CIC Team Training Center was redesignated the Fleet Air Defense Training Center. Its mission is to coordinate and utilize all offensive and defensive measures efficiently during an air attack.

Last February naval officers in the San Diego area attended the opening of the training center. The ultimate installation is scheduled to be completed about January 1956. It will include six ship mock-ups with CIC director and target designation systems. Other buildings and facilities will be included in the ultimate installation.

When completely activated, the FADTC will give Pacific Fleet units realistic training against aerial attack, showing them the latest techniques in fleet air defense, air control, and other CIC functions.



NO DOUBT *as to what squadron Ltjg. H. G. Engle belongs. Serving as Line Operations Officer, Engle was employed by the Pennsylvania Highway Dept. before he entered the Navy. He asked a friend in the state license bureau for a special auto tag. He is proud to display it.*

VX-4 Sets Record for GCA

One Wave-off in 143 Approaches

NAMTC Pt. Mugu's VX-4 claims a new record. Flying F3D *Skyknights*, the squadron places the following information on record as a result of normal squadron flying commitments maintaining that it might possibly establish a record regardless of aircraft type.

For the month of May, 26 VX-4 pilots flew a total of 242 sorties, 143 of which involved actual day and night instrument GCA approaches. Of these, 128 GCA approaches were made when the field was below VFR minimums. Frequently they were just above GCA minimums. These flights were not scheduled as GCA, but were flights comparable to the squadron's mission.

One wave-off was recorded during the 143 GCA approaches. It was not pilot error, but due to another unidentified aircraft reported by Pt. Mugu GCA. Persons familiar with Pt. Mugu weather conditions in the summertime know that a 500-foot overcast and less than three miles visibility is routine. The month of May was no exception; only ten days were partially VFR, and only three days were completely CAVU.

"Champ" CarQuals Meyer

First Civilian Test Pilot Passes

Another first for the USS *Lake Champlain*, and also for a civilian test pilot was accomplished recently during carrier qualifications.

Corwin H. "Corky" Meyer, test pilot, has been with Grumman for 12 years and is the first civilian pilot to qualify for carrier landings and take-offs aboard a Navy vessel.

His presence aboard *Champ* came about through approval by CNO and BuAer. The primary purpose of his present "duty" is to enable Grumman to have an experienced carrier pilot on the testing end of their production program.

It was through the initial efforts of the CO of the squadron, Cdr. Jon Thomas, that Meyer had the opportunity to qualify aboard a carrier.

Throughout the past 18 years, Meyer has flight-tested such aircraft as the F4F, F6F, F7F, F8F and the XF9F-2. During the early part of WW II, he did much of the compressibility diving work on the F4F, F6F and F7F.

ICE BREAKUP STUDIES MADE

SCIENTIFIC GROUP HAD TO USE HELICOPTER FOR TRANSPORTATION

SEARCHLIGHTS ASSIST IN NIGHT PASSAGE THROUGH BERING SEA

NAVAL AVIATION is playing an important part in the continuing study of ice breakup in the Arctic regions. The recent passage of the icebreaker USS BURTON ISLAND through the last unexplored link of the Northwest Passage was assisted materially by Navy helicopters.

Smashing through frozen wastes of the Far North, the Navy's *Burton Island* and the Coast Guard icebreaker, USS *Northwind* were on an expedition which left San Diego in July. While in the Arctic, scientists and technicians collected specimens of ice and sea water, which were packaged and sent to the Navy's Electronics Laboratory at San Diego for further tests.

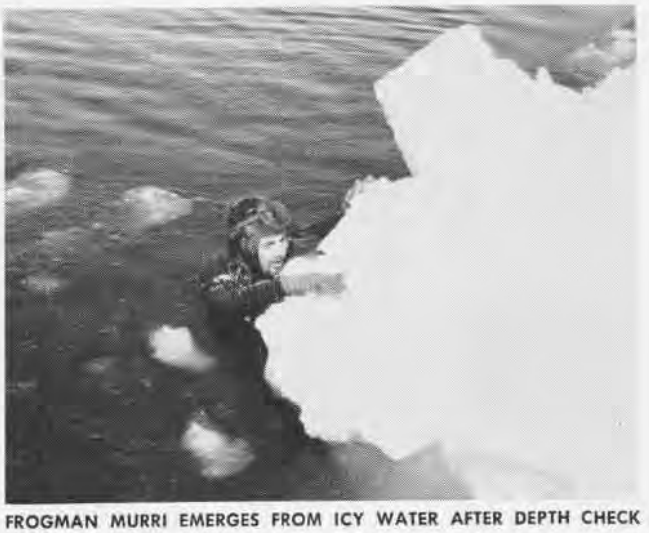
During previous trips to the Arctic, crewmen were able to walk ashore on the frozen ice, but this year, owing to erratic melting conditions, helicopters became a necessity.

Frogmen assisted the scientists in checking the depth of ice fields, tested photography equipment designed for cold weather use, blew up ice floes with various types of explosives to determine ice breakup, and tested other special types of equipment designed for extensive cold weather use.

During the navigation of the Bering Sea and Bering Straits, the *Burton Island* utilized flood lights as she cautiously picked her way among hundreds of ice floes, seeking the safest passage to her destination. Frozen pressure ridges of ice often blocked the *Burton Island's* passage through floes. These studies supplement our knowledge.

VARIOUS TYPES OF EXPLOSIVES WERE TESTED

HERE FROGMEN PREPARE TO CHECK THE DEPTH OF ICE FIELDS



FROGMAN MURRI EMERGES FROM ICY WATER AFTER DEPTH CHECK

THREE THOUSAND FEET WITHOUT A PARACHUTE

No one would dream that a man could fall 3,000 feet without a parachute and live to tell it. Yet that is what happened to NavCad Don McPherson when he was lifted alive from swampy ground about 11 miles north of Pensacola on July 14. He had sustained a cut right ankle and three cracked lumbar vertebrae. He not only survived but recovered rapidly without permanent injuries.

A victim of a mid-air collision over one-half mile in the air, he was a casualty of one of the ever present dangers found in close, high speed formation training. Cadet McPherson and Ens. Friou, both trainees in their tactical flight stage, collided during a reverse turn maneuver while flying their fifteenth formation flight about four miles northwest of Saufley Field.

On impact, the left wing of Friou's plane and the right wing of McPherson's immediately sheared off. Both planes started breaking up, and the air was filled with flying sections of aircraft. The engine of McPherson's plane flew past Friou's head, and metal debris scattered in all directions showering the area with dangerous missiles.

As soon as the collision occurred, Lt. Henry Chanaud, their flight instructor, ordered the men to bail out. Although McPherson could not hear him over the radio of his crippled aircraft, the lack of positive force that he immediately noticed in the plane's controls convinced him that it was time to hit the silk.

He bailed out after Ens. Friou, who parachuted to the ground safely, but as McPherson's 'chute streamed out to catch the air, he felt a rude jolt that knocked him unconscious for a few seconds. He later recalled that "the shock seemed excessive for a parachute jump and he didn't have a floating feeling." When he looked up he knew why.

Cadet McPherson's parachute had streamed into the broken tail section of Ens. Friou's plane, and the shroud lines had become hopelessly entangled in the mass of wreckage. The parachute itself refused to billow, and McPherson helplessly oscillated at the end of the nylon cords as the 'chute entwined itself more and more securely around the jagged portions of the fuselage.

OF *course, no photographer was present when it happened, but composite photo shows plight.*

McPherson quickly discarded the idea of freeing the parachute, but instead of giving up hope or speculating on the force with which he would hit the ground, he concentrated on releasing himself from his parachute harness straps before he struck earth in order that the wreckage, which was still above him, wouldn't crush his body as it followed him down. He released his two leg straps, folded his arms to retain a hold on his chest strap, and planned to throw off his remaining chest buckle about thirty feet above the earth. He then hoped to remain conscious long enough to roll away from the plummeting mass.

Before he was close enough to the ground to effect his free fall, however, he struck the top branches of some trees and was knocked unconscious. Fortunately, the metal fuselage missed him as it crashed a few feet from his body. The area where he was found indicated that he went through tree branches, heavy brush foliage and high marsh grass before coming to rest in the soft mud bed of Eleven Mile Creek. Luckily, the shallow area where he landed prevented him from being drowned.

It is estimated that he was unconscious from 20 to 45 minutes. When he came to, he felt as if a "tremendous weight was on his chest," and he had great difficulty in breathing. His crash helmet probably saved him from head injuries. He released his 'chute harness and pulled himself onto a nearby log by grabbing a branch of the log, and slowly inching his way out of the mud.

Meanwhile, Lt. Chamaud had notified the Air-Sea Rescue Team and the rescue helicopter and PBY search patrol plane from nearby Corry Field were at the scene within a few minutes after the accident occurred. It was approximately an hour before McPherson was found unexpectedly alive in the dense growth.

The lucky lad is recovering nicely, expecting to fly again in a few months.

By Ltjg. Walter R. Thomas

SMILING *McPherson impatiently awaits his discharge from hospital. He will fly again soon.*

SecNav Takes Jet Flight

Gen. Shepherd Also Has His First

Secretary of the Navy C. S. Thomas and Gen. L. C. Shepherd, Commandant of the Marine Corps, have both taken their first jet rides in an F3D *Skyknight* at MCAS El Toro. Pilot on SecNav's 400 mph flight was LCol. Andre Gomez, CO of VMF-542(N).

Upon landing, Mr. Thomas stated that the 20-minute, round-trip flight to Los Angeles was one of the thrills of his life. "It's an experience I will never forget," he said.

Maj. T. J. Bardeon was the pilot of the *Skyknight* when the Commandant took his first jet ride.

EARLY *graduation jumps were made from open-gondola airships and later, training and patrol airships were used. Picture made in 1937.*

DEPENDABLE *R4D's serve as the present graduation platforms, and each cry of "Geronimo" is lost in the slipstream over NAS Lakehurst.*

EVERY ALUMNUS WORKS TO SAVE NAVY LIVES

It was the year 1924, just thirty years ago last month—Lindbergh had not yet flown the Atlantic; sound movies were unknown; television was a wild dream; to back up your car you pushed the center pedal on the floor; and liquid refreshments were mixed in the bathtub.

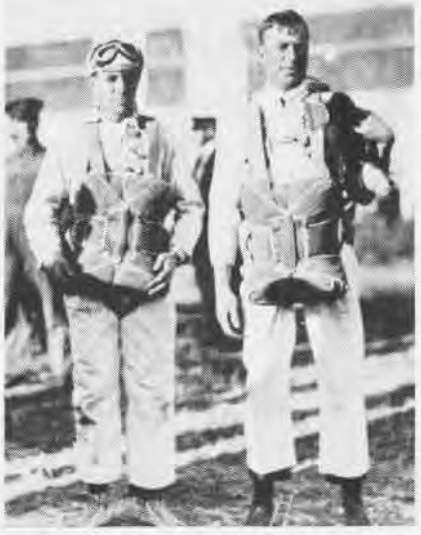
Two U. S. Navy chiefs checked in at NAS Lakehurst on a new and special assignment. For several months they had been training at Chanute Field, Illinois, and McCook Field, Ohio, for the important job of teaching Navy men the intricacies of a brand-new specialty—parachute rigger.

Class number one, consisting of 15 men, convened 1 September 1924 in an old unheated shed, with barely enough equipment with which to work, and the two chiefs, Alva F. Starr and Lyman H. Ford (now the president of one of the world's largest parachute companies), started their exacting task.

From the year 1495, when Leonardo DaVinci sketched and described his version of the parachute, until World War I, the 'chute was considered to be a dangerous invention used only by exhibitionists and thrill seekers. Experiences during and subsequent to WW I proved the life-saving value of the billowing canopies, and in the spring of 1924, all Army and Navy fliers were ordered to wear them. But trained personnel were needed for the proper packing, rigging, maintenance, and use of the new equipment.

From the outset, the trainees were steeped in the creed of the parachute rigger: "No job too great, no detail too small, to save a life." The traditions and inspirations of those pioneers still hold good.

The school gradually expanded until, during the war years of the forties, a new building was especially designed and constructed to fit the needs of the school, but, even so, its activities overflowed into four more buildings.



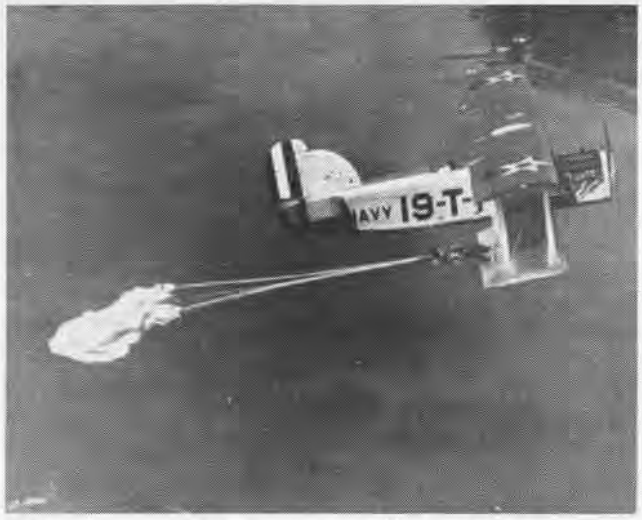
AVIATION *Chief Riggers Lyman H. Ford and A. F. Starr set up the Parachute Rigger School.*

At first, being a "parachute man" was merely a collateral duty of other rates such as Aviation Machinist's Mate, Aviation Rigger, Carpenter's Mate, etc., with the honor of wearing a small parachute specialty badge on the left sleeve. The tremendous development of naval aviation, the greatly expanded carrier fleet, and millions of over-water flying miles during WW II changed all that, and attention was focused on the importance of modern survival equipment.

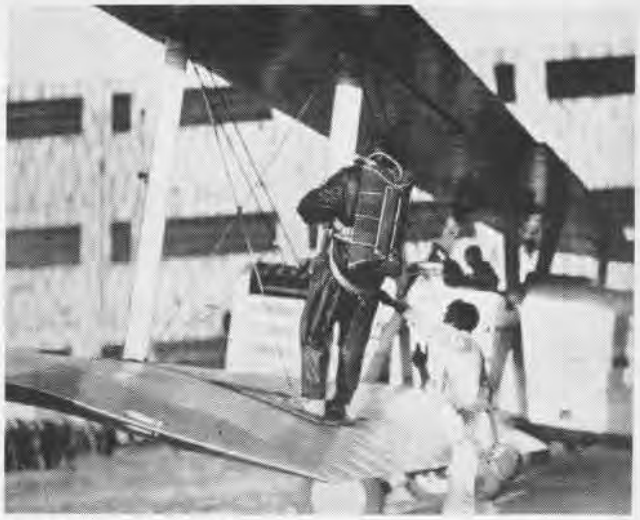
Parachutes were improved and new types were developed. Flying over water created a need for life rafts, life vests and other items of a life saving or of a prolonged survival nature.

As a result of added responsibilities for the "parachute man," the rating of Parachute Rigger was established in February 1942, and shortly afterward, the school was placed under cognizance of CNATC.

Classes grew in size until the maximum of 120 was reached. Waves, Women Marines, Spars, Marines, Paratroopers, and Coast Guardsmen, as well as sailors, were represented in most of the classes. Enrollment of Free French sailors, Brazilian Army officers, Canadian sailors, including a Canadian Wave officer, and an Australian officer, required at times the services of an in-



FIRST *trainees jumped from wingtip of biplane. One jumper would not release grasp on strut, pulled it from wing when 'chute opened.*



STUDENT *receives final instructions before graduation jump. He clutched wing strut until reaching altitude and then opened 'chute.*

terpreter for the capable Navy, Marine and WAVE instructors.

As aircraft became capable of flying at higher and higher altitudes, oxygen equipment became a necessity. Parachute Riggers were given the responsibility of caring for the equipment involved. So important has this factor become to safe flying, that the original course in oxygen training has expanded to the point where it has become necessary to establish an advanced course in the maintenance of oxygen equipment of various types.

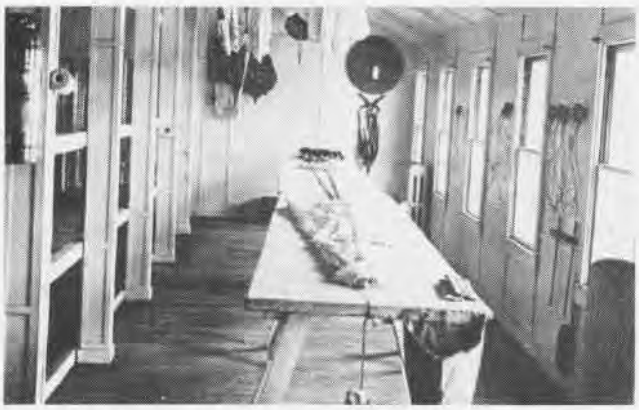
DURING the present 15-week course, instruction is given in the proper methods of packing, rigging, repair, and maintenance of parachutes, plus oxygen and survival equipment. Survival equipment includes items such as life rafts and equipment, life vests, pararafts, safety harnesses, and exposure and anti-G suits. The sailor still plies the needle and thread as in the days when "flying was for the birds," but the modern "rigger" must learn to use and maintain a sewing machine.

Every graduate of the Parachute Rigger School is required to make a free-fall parachute jump with a parachute that he himself has packed. During WW II, a blanket waiver of this rule was given to WAVE trainees, but recently the regulation was changed, and in 1950 the first WAVE made a qualifying jump. Since that time, 19 WAVES have leaped into space, proving their confidence in themselves and their instructors.

At the present time, over 9,000 jumps have been made by the instructors and trainees, with only two fatalities, neither of which was attributable to the parachute. At first, graduating trainees jumped from the wing tips of a biplane. Later, they let go from short rope ladders suspended from open gondola airships. These were replaced as platforms by training and patrol airships.

Today, an R4D assists in the graduating plunge. Seventy-three experimental water jumps into the Atlantic Ocean led to the acceptance of new types of equipment and water jumping techniques, and resulted in a commendation from the Chief of BUAER.

Thirty years have brought the Parachute Rigger School a long way from its humble beginning. The school's fine progam has developed not only well-trained parachute riggers, it has given its graduates the satisfaction of knowing that they have saved the lives of thousands of naval flying personnel.



THE SINGLE *packing table used in 1924 was covered with canvas, given three or four coats of wing dope to make it smooth.*

PACKING *tables in one of several present day classrooms. Each beginning student works with instructor and then students pair up.*

IN 1942, *paratroopers trained at Lakehurst. Such trainees staffed Marine paratroop school installed at New River, North Carolina.*

AIRSHIPS *were still being used at times for graduation jumps in 1942. Student has just pulled rip-cord, pilot 'chute is emerging.*

TEN *high and ten to go. Graduates of Parachute Rigger School had much to do with training Marine paratroopers. These wait for turn. Graduates also formed nucleus of personnel for the Naval Parachute unit at El Centro where parachute improvements are devised, tested.*

JUMPER *must learn to spill 'chute quickly on landing or it's awfully hard on the stomach.*

COULD *be he was preparing to sow a crop, but in a moderate wind, 'chute acts like big sail.*

END *of a thrilling ride for this trooper. He had trouble collapsing parachute. Note furrows.*

FASRON-5, FLEET'S SERVICE STATION

COUGARS, *Banshees, Panthers and TV-2 trainers are but a small part of the aircraft kept on hand at FASRon-5's jet pool at NAS Oceana. Supplying fleet operational units with planes is primary mission of this squadron, which also operates an instrument training section.*

AMERICAN motorists drive along super highways throughout the United States and seldom, if ever, think of car trouble. If anything goes wrong, all they have to do is pull into the nearest garage or service station and have repairs made. But it is no such simple matter for modern jet aircraft.

One of the Navy's prime concerns is keeping its war birds ready for service. Typical of the numerous commands that maintain and service these planes is FASRON-5 at NAS OCEANA, one of the Navy's master jet base complexes in the United States.

For FASRON-5, maintenance is a prime consideration. It not only affects the supported Navy squadrons at Oceana and FASRON-5's own "high time" instrument training division, but it also includes an AirLant jet pool. For instrument training, the squadron has two TV-2's and two SNB's.

FASRON-5 personnel also man and operate a target facility on the coast of North Carolina 90 miles south of NAS OCEANA. Known locally as "Navy Duck and Caffee" for some unrevealed reason, the target keeps 15 men busy maintaining it and controlling individual aircraft making runs there.

It would be impractical for the Navy to try to operate an air force without spare aircraft in the hands of the Fleet. Planes wear out, become damaged and are lost in peacetime, just like private automobiles. These aircraft have to be replaced—not next month or later—but right now if the Navy is going to keep an efficient air arm operating.

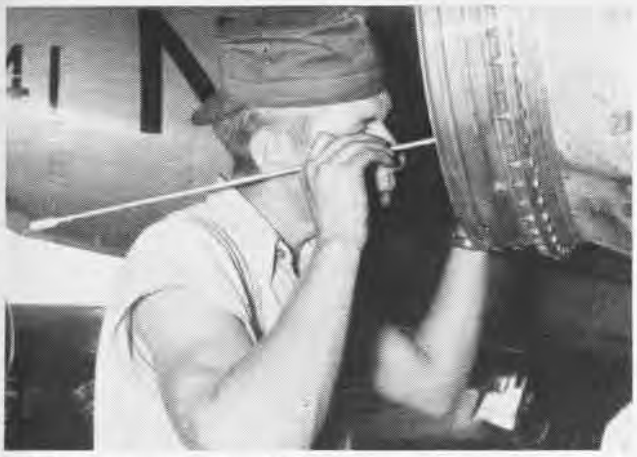
When an operational squadron loses a plane, it can no longer operate at peak efficiency. The plane must be replaced. Here is where the plane pools play their major role.

In order to keep these squadrons ready for any emergency, plane pools have been set up throughout the Fleet. The pool at NAS OCEANA operates under the maintenance control of FASRON-5 and the allocation control of ComAirLant. Aircraft enter the pool from many sources. Included among these points of pick-up are manufacturers, O&R activities and operating squadrons scattered throughout the country. Upon transfer from the pool, the planes can be delivered to one of the sources of pick-up, but generally they go to a squadron.

In the matter of transfer and pick-up, the operations department works closely with the maintenance department. With the help of VR-31, the planes are ferried to and from the pool.

Maintenance is not a routine job. The variety of the types handled makes it complicated. For example, in the past year, 140 aircraft of nine different jet models and five piston-engined types were processed through the pool. The work is further complicated by the fact that the aircraft, while in the pool, must be checked at least once a week and are under constant maintenance.

Every item must be checked for accuracy, status and proper configuration. The paper work involved is a real load since it involves keeping track of all the log books accompany-



BURNER *basket and turbine blades are given a 60 hour "B" check by J. R. Newbold, AD2. Engine is Westinghouse J34-WE34 from F9F.*

JET SHOP *chief, V. L. Sutton, ADC, points out advantages of squadron's engine test stand. ChMach. A. J. Tidd was designer of the novel stand.*

ing the aircraft, all modifications and changes made to the aircraft while in the pool, and all communications involving transfer and delivery of the plane. Each plane is accompanied by some seven to 10 log books that must be kept up to date.

But the real core of the job is maintaining the work on the aircraft themselves. As each plane enters the pool, a complete inventory of the aircraft and an acceptance check are made. The same check is made again when the plane is made available for transfer.

Ingenuity has played its part in efficiency. ChMach. A. J. Tidd, FASRON-5's power plants officer, got together with his jet shop gang to design an engine test stand to accommodate J-33, J-34 and J-48 engines. Testing, following engine overhaul or modification, has been considerably eased by the use of this portable stand.

WHILE the aircraft are in the pool, all current changes and modifications made on a particular type in the Fleet must also be made on pool aircraft. Thus all aircraft in the pool are put in a state of operational readiness electronically, mechanically, structurally. In every way, the aircraft with its equipment and ordnance is made ready for the activity scheduled to receive it.

The scope of this operation is better understood when it is realized that the pool consists regularly of from 15 to 60 aircraft. One section of FASRON-5's maintenance department schedules and records this work.

When a squadron is deployed to a carrier or an overseas base, all excess aircraft are turned into the jet pool for upkeep and modifications, if needed. Squadrons which lose or damage aircraft can draw on aircraft in the pool to bring them up to operational strength.

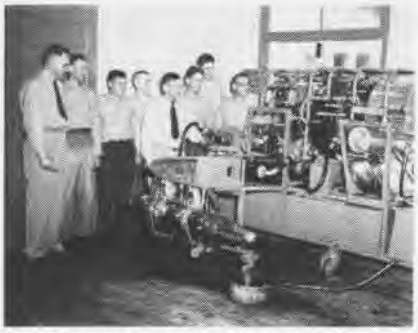
Through the efforts of the "Service Station" organizations, the Navy is able to keep its planes in a state of combat readiness that is absolutely essential to the defense of the nation.

FASRON-5 *personnel use new jet starter preparatory to turning up a Panther aircraft for engine test. Servicing, maintaining and making modifications to jets and piston-engined aircraft is a never ending job for the squadron's personnel. Squadron is based at Oceana.*

MOBILE TRAINERS REALLY DO A JOB

PRE-FLIGHT instruction at MCAS CHERRY POINT has really paid off. Pilots of VMF-122 of MAW-2 were ready to take the FJ2 *Fury* aloft before any of the carrier-adapted versions of the Air Force's *Mig*-killing *Sabrejet* were available.

Responsible for this success in aviation and mechanical instruction is the Naval Air Mobile Training Unit located at the station. Mechanics, aircraft electricians and hydraulic technicians had studied the most complex parts of the *Fury*. They had seen their specialties in actual operation and had been instructed in repair work long before the first *Fury* was delivered.



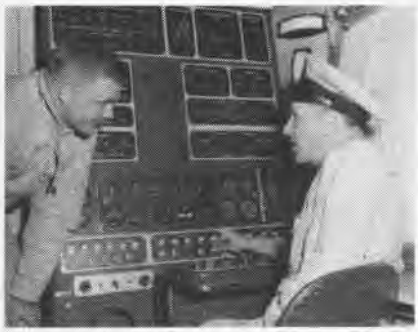
ENS. FOLEY AND STAFF STAND BESIDE PANEL

Each unit of instruction consisted of a series of panels and devices to teach students the function of particular parts of the aircraft.

Ens. Edmund Foley, officer-in-charge and his 36 enlisted assistants, operate five units: two maintenance trainer units, one for the F2H-3 *Banshee* and one for the FJ2 *Fury;* two operational flight trainer units, one for the F3D-1 *Skyknight* and one for the F9F-5 *Panther;* and one munitions/ordnance and rearming unit. The latter unit contains such items as bomb fuses, armament, basic electricity.

The operational trainers are extensions of the old Link trainer idea. Permanently enclosed in a trailer van, the operational trainer consists of functional duplicates of the aircraft cockpit and mazes of electronic gear.

To the rear of the pilot in the operational trainers, on the other side of a partition, sits one of Ens. Foley's assistants who, by punching appropriate buttons, causes functional failures to occur and observes, through a duplicate



CHIEF MEDLEY SHOWS LT. SIMPSON PANEL

set of instruments, the corrective actions of the student pilots.

Units are retained at the station as long as student attendance is high. When utilization becomes too low, the unit is sent to another air station requesting it.

Jet De-arming Time Cut

By the use of a little imagination and Yankee ingenuity, a resourceful AD1 has come up with a novel idea in cutting the de-arming time of jets.

Alexander Newing of NAS CECIL FIELD's VF-174 just got plain tired of totin' canvas bags full of empty brass around from his *Cougars* to a disposal area, so he sat down in his off-hours and built a small portable trailer type cart.

In Navy parlance, de-arming means unloading live ammunition from an aircraft cannon, machine guns, and rocket launchers plus emptying expended cartridges or "brass" that has accumulated inside a plane during a gunnery or combat mission.

Before Newing came up with his novel device, three or four VF-174 sailors spent a great deal of their time collecting brass in canvas bags, carrying it to the disposal boxes, returning and repeating the process until all the *Cougars* were completely harmless.

With the "brass collector" in full-time use this time-consuming operation has become relatively simple. It is a 55-gallon drum cut in half and joined on either end to two one-inch V-shaped pieces of round stock iron.

Two bushings that fit snugly between the V are mounted on both sides of the drum to permit the drum to rotate, facilitating unloading. Both pieces of stock iron are welded to a platform constructed of angle iron. Attached to each of the four corners of the platform base is a caster.

Only one sailor using this mobile unit now completes the job in a fraction of the time it formerly required.

VP-40's New Test Trailer

A gas turbine power unit test trailer has been designed by the APU crew of VP-40 at Sangley Point. The trailer helps the crew to locate trouble quickly.

It was designed and built with the assistance of FASRON-119 under the supervision of J. E. Miller, ADC. Because it was built mostly from scrap, the cost of the trailer was nominal.

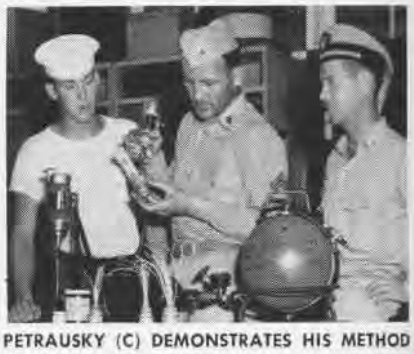
By using the test trailer, the crew is able to build up "quick change" units, thereby making a unit change possible in approximately one hour where normally it has taken four to ten hours depending upon the unit's operating condition at installation.

Marine Designs New Tool

A device for MIL-S-8516 (AER) Sealant Compound which makes the application a simple and neat process has been developed by Marine MSgt. Matthew Petrausky, an instructor in Aviation Electrician's Mate School Class A at the NATTC JACKSONVILLE.

Petrausky used a discarded hydraulic cylinder, modified with a suitable discharge nozzle, control valve and an air supply of approximately 100 pounds. Recently he modified his device so that it can be operated with one hand and the connectors held in the other. This simplifies the application of the compound so that a novice can do it.

The nozzle is inserted between the cables and well down into the connector to be "potted." The process is especially efficient where a number of connectors are put into position. Where only a few are to be "potted," a spatula is used to spread compound.



PETRAUSKY (C) DEMONSTRATES HIS METHOD

SMITS IGNITION SYSTEM DEMONSTRATED

THE SMITS low tension ignition system, recently developed in the Netherlands, is being studied for important naval application by technical personnel of the Navy.

Mr. W. Beye Smits, the inventor, and Mr. C. J. M. van Bergen, British representative of the Smitsvonk Company, Holland, were invited by the Inventions Evaluations Branch, Office of Naval Research, to make a demonstration of the system in the United States. Two demonstrations were staged, one at the Naval Experimental Station, Annapolis, Md., and one at the Marine Corps Base, Quantico, Va.

The system which Smits has developed represents a highly significant departure from conventional systems. In contrast to well known "high tension ignition systems," this is a "low tension ignition system."

There has been a need to develop an ignition system which would be able to keep pace with the advances anticipated for engines of the future. Higher compression ratios in future engines will require higher voltages in the ignition systems. This will necessitate additional space and weight, and for aircraft engines in particular, such increases are undesirable.

The Smits system, because of its low voltage, can use much lighter cables and insulators, a factor which is especially advantageous for aviation purposes. A saving of approximately 66 pounds may be realized by using the low tension system for an 18-cylinder aircraft engine.

Since aircraft engines are required to operate under conditions of extreme cold, one demonstration was of particular interest to naval technicians. Four spark plugs were submerged in a container of water and then reduced to solid ice. While still submerged in the solid ice, they fired instantaneously upon contact with the low-tension ignition.

Another outstanding feature of the system was the ability of the system to continue to perform without any interruption when thoroughly drenched with water. This demonstration consisted of plying a continuous stream of water from a hose to all parts of the ignition system, the top of the engine and the spark plugs without any apparent diminution of engine performance.

WHITE-COATED SMITS POURS ON WATER

The engine continued to perform until all parts became thoroughly dry and only ceased to run when the ignition key was turned off and removed from the car. A Chevrolet pleasure car and a military jeep were utilized and each performed equally as well in this demonstration.

Another feature of the system was witnessed when grease, oil and abrasive dirt were used to foul the electrodes of a spark plug prior to installation in a one-cylinder, two-cycle engine. After the plug was installed in the engine, the ignition was accomplished through a section of water-filled hose. The engine started in a matter of three seconds and continued to operate without hesitation or interruption of any kind.

This demonstration pointed up the fact that Smits low tension ignition can cope with high concentrations of lead, graphite, and copper in fuels, and also operate efficiently regardless of the most adverse atmospheric conditions.

Many of the advantages of the low-tension ignition system are applicable wherever spark plugs are used. Economy of construction and maintenance, ease of operation, adaptability, universality—only this one type of plug is needed — quicker combustion, slower idling and higher top speeds can all be attained.

These advantages prompted the Office of Naval Research to arrange the demonstrations of the Smits system.

Fuel Nozzle Safety Device

Since VC-62 has been assigned F9F-6P aircraft recently, four wing fuel cells have had to be changed because of fuel leakage. This leakage was caused by a "cut" in the fuel directly below the filler neck access.

VC-62 maintenance personnel decided that the cuts occurred during fueling operations when the fuel hose nozzle was allowed to make contact with the fuel cell.

On the *Cougar*, the base of the wing fuel cell is approximately nine inches below the wing filler neck access. The diameter of the wing filler neck access is three inches. Since the fuel nozzles extend nine and one half inches or greater, the nozzles made contact with the fuel cell during fueling.

To prevent this, S. H. Clark, Refueler Repair Shop at NAS JACKSONVILLE, modified the nozzles by clamping on a bar that prevented entrance of the nozzle to the point where it could contact the wing filler neck access. The bar may be adjusted to any desired point.

Seat Firing Pin Is Tested

Alton T. Williams at MCAS CHERRY POINT has developed a way of testing the ejection seat firing cap assembly which has been approved under the Navy Awards and Incentives Program.

Under the old method of testing, there was no positive indication that the unit was adjusted so that the firing pin would travel the distance necessary to fire a "live" cartridge. These units were accepted in this condition since it was reasonably certain that the mechanism would function properly.

The new method devised by Williams is as follows: A thin, flat, metal disc is placed in position in the cartridge chamber so that when simulated firing takes place, the plunger passes through the disc, thus indicating whether or not the unit is operating properly.

This suggestion has been approved by BUAER for optional adoption.

LETTERS

SIRS:

While reading through a book entitled "The Beautiful, the Wonderful, and the Wise," published in 1891, I ran across the following item in the chapter entitled, "How We Shall Travel in the Future":

"The air-ship, at first, will be used for the transmisson of the mails and light express packages, and especially for their swift conveyance over sea; but soon the more adventurous and resolute, and finally, all classes of travelers, will avail themselves of the great passenger aerobats, and enjoy the unsurpassable luxury of flight, experiencing thrills of wonder and ecstasy, and a sense of power, freedom, and safety, to which all former delights of travel may well seem tame by comparison.—Edmund C. Stedman."

I thought you might be interested in this item. H. H. HOLTON, CDR.

SIRS:

The article entitled *Sense* in NANEWS, September 1954, was most interesting to those of us in BUPERS who joyfully pirated the Sense Pamphlet idea some years ago for our own purposes. This issue will be carefully preserved to be brought forth the next time we have to do battle for the Sense Pamphlet idea.

There are two minor comments that could be made in the interest of accuracy:

1. I believe the pamphlet Jim Smith wrote for Vigoro was entitled *The Languid Gardener*.

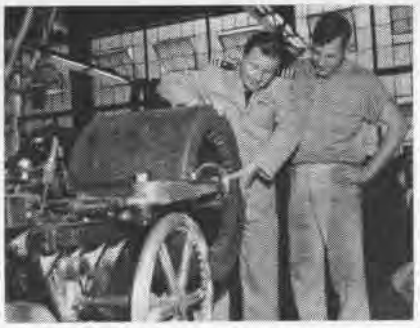
2. USAFI was not the sponsor of *Stay in School*. That pamphlet was done for the Recruiting Division of BUPERS, as was also another entitled *Career Plotting Sense*.

THOMAS J. MORIARTY, CDR.

IFR - IQ?

According to the All Weather Flight school, answer is "B."

Ref: CAR Part 60, Para. 60.42(a).



WHEN *Cdr. L. L. Booda, NAS Akron, visited the Seiberling Rubber Company plant, Lt. Jim Hollinger, weekend warrior and former carrier pilot, showed him how truck tires are made.*

SIRS:

I noticed in your August issue that an enlisted man had taken ten correspondence courses. Here at Corpus Christi, I claim to beat his number by four.

I have completed 14 courses: Aircraft Engines, Aircraft Fuel Systems, Aircraft Instruments, Aircraft Materials, Flight Engineering, Aviation Supply, Aircraft Propellers, Aircraft Structures, Introduction to Aircraft, Bluejackets Manual, Military Code of Justice, Mathematics Vol. I, Aviation Electrician Vol. I, and Use of Hand Tools.

Can anyone beat that?

LESTER V. SMITH, ADAN

THE PROOF *is in the puddin'. R. W. Daughty, CSI of the USS Wasp prepares to cut into a 10-ft. 11-inch blue shark he hooked while fishing in Subic Bay. To capture the monster, he used a length of chain for leader, beef bait, and the ship's winch to hoist the 800 pounder.*

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The most welcome sight a pilot sees returning to his carrier is "Paddles," the Landing Signal Officer.

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Editor

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DILBERT'S OFF AGAIN!

You won't be in the position of making a number of foolish accusations, blaming anyone and everyone else for your blunders if you read Grampaw Pettibone. Rely on his wisdom to help you guard against careless errors. Save your plane and save your life.

GET DOWN TO EARTH

GET down to earth with safety. The 'chute rigger school at Lakehurst has a birthday this month. It has made Navy flying safer for thirty years. These youngsters, some of them perhaps naval aviators of the future, keep their eyes on the sky watching a 'chute ease towards the earth. The work-a-day world of naval aviators keeps them sharp in their jobs, but they and their crewmen look to NANews for the broad picture of what's new in naval aviation. You too can keep your eyes on the sky by getting your own copy of NANews each month. Send two dollars to the Superintendent of Documents, Washington 25, D. C. for your personal year's subscription.

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