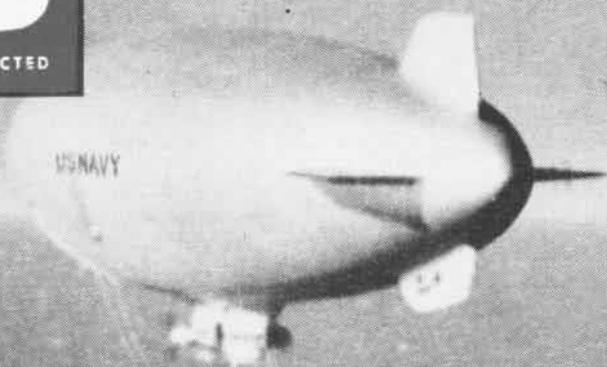


NAVAL AVIATION

NEWS

RESTRICTED

OSR _____
1 _____
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3 _____



Annapolis Aviation
CV 'Card Stunts'
NavAer 00-75-R3

OCTOBER 1951
RESTRICTED





NAVY'S ONE-TWO-THREE PUNCH IN KOREA





Air-Minded Annapolis

All Midshipmen Who Attend the U.S. Naval Academy At Annapolis Learn About Aviation By Actually Flying

IN MANY school systems it is practice to acquaint a student with every specialty so that he can make up his mind just what elective subjects he wants to take later. He soon finds whether he is adept with a saw and plane or facile of tongue with languages.

This same philosophy is behind the sampling of aviation given every Midshipman at the U. S. Naval Academy at Annapolis.

One of the departments of the Academy, on a par with all other academic departments, is the Aviation Department. Under the direction of Capt. O. C. Gregg, the department administers the entire indoctrination program relating to Naval Aviation.

The mission, as stated in the somewhat formal language of the policies set forth by the United States Naval Academy, is to instruct Midshipmen in the

fundamentals of the naval profession specifically relating to aviation . . . and to provide instruction which leads to an understanding of the uses and potentialities of Naval Aviation.

So, whether he wants to become a fly boy or not, he absorbs some of the subjects connected with Naval Aviation and gets a little flight time in N3N-3 training seaplanes. By the time he has finished the instruction he's pretty sure whether or not he wants to follow the air line.

It is not the Academy's purpose to be a flight training activity. Its job is helping each Midshipman make up his mind, see whether he has any aptitude in aviation, and to give him the fundamentals of aviation which will stand him in good stead as he pursues his career in the air or surface Navy, part of a team.



MIDSHIPMAN 2/C Robert B. Eddington is coached for wild ride in Dilbert Dunker by instructor in survival Richard A. Burs, PR3

AS MILITARY strategy has included more and more aviation the careers open to Midshipmen have multiplied. In addition to the traditional surface career with its technical specialties of ordnance, engineering, and seamanship, new paths are offered. Of every graduating class 25% of the members go to the Air Force. One half of that number will take flight training, the rest are destined for ground specialties.

Of the remaining Navy graduates all those who request flight training before graduation and are qualified physically and have passed aptitude tests will be ordered to Pensacola within one year. Also, each year 50 new Ensigns remain at the Academy the summer following their graduation to indoctrinate the new class of Plebes. All of these will go direct to Pensacola the following September. Marine Corps graduates serve at least one year in field forces then their requests for flight training are considered along with non-academy officers.

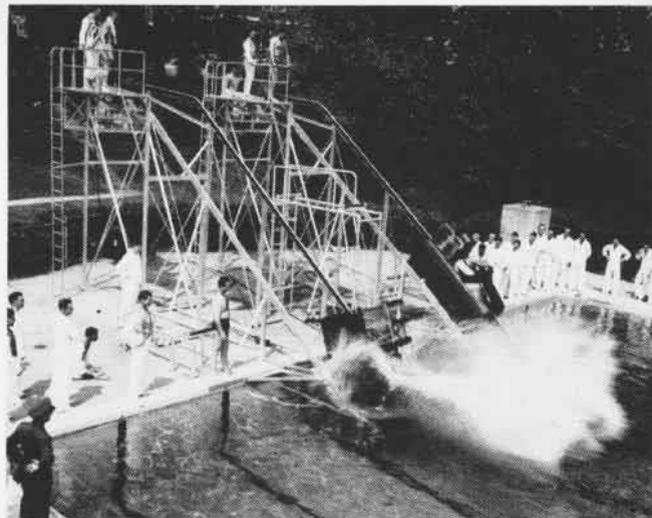
Every Mid'n taking aviation courses can be sure to find at least one expert in whatever line happens to be taught in a course. Attached to the Department of Aviation are Naval Aviators of every specialty—day and night fighters, helicopters, attack pilots, patrol planes, sea and land, and one aerologist. From the Air Force are three officers, two of whom are aeronautical engineers and two of whom are graduates of West Point. There are two Marine Corps billets among the instructors. Attached to the Academy staff are 36 Navy pilots, two Marine pilots and 12 Air Force rated pilots.

During summer months these officers are augmented by all other pilots attached to Academy staff below the rank of Commander or the equivalent to assist in the heavy flight indoctrination program.

Before going into the aviation education of the Midshipmen, a little must be said about the Naval Air Facility at Annapolis. This is the Navy's only continental all-seaplane air station. Annapolis has no paved runway airport and attempts by the Navy to gain authorization for a field in the area failed.

The facility is commissioned primarily to furnish flight indoctrination to Mid'n. An important secondary mission, however, is flight proficiency for the 180-odd pilots of the Navy, Marines and Air Force attached to the Academy staff or attending postgraduate school.

Aircraft at the facility are five PBM-5A *Mariner* amphibians, 18 JRF-5 amphibians, one JR2F-1 amphibian and 35 N3N-3 training seaplanes. Pilots who took their training



EVERY midshipman at the U. S. Naval Academy gets this thrilling ride in the Dilbert Dunker from which he must escape under water

during or before World War II will have a fond memory of the N3N "yellow birds" which were used for primary training. Pilots dating 1940 or before took their primary training in these planes on floats. These N3N's are the last owned by the Navy. Some 50 of them are in existence. Those not at Annapolis are awaiting or undergoing overhaul.

The Air Facility, commanded by Cdr. J. D. Stevens, has 34 officers and 230 men. Located near the Navy Station on the Severn River opposite the Academy grounds, it operates a control tower, fire station, aerology office, crash boats and supply department.

The C.O. reports to the Commandant, Severn River Naval Command. All Midshipman flight syllabus training is administered by the Aviation Department of the Academy.

Summer is the busy time of the year for the Facility. This July saw all records broken when 1336 hours were flown in N3N's during 1288 flights.

The Aviation Department doesn't get its hands on the Mid'n until they have been at the Academy for almost two years. In May of the third class (youngster) year they are given the thrilling ride in the *Dilbert Dunker*.

ALREADY in peak physical condition from the rugged athletic regimen of the Academy, this is more fun than work. Strapped in the *Dunker* cockpits, they zoom down an incline, turn upside down under the water, and then must get out of the cockpit and out of their gear and swim underwater to escape imaginary flames. The *Dunker* is the Midshipmen's first taste of aviation.

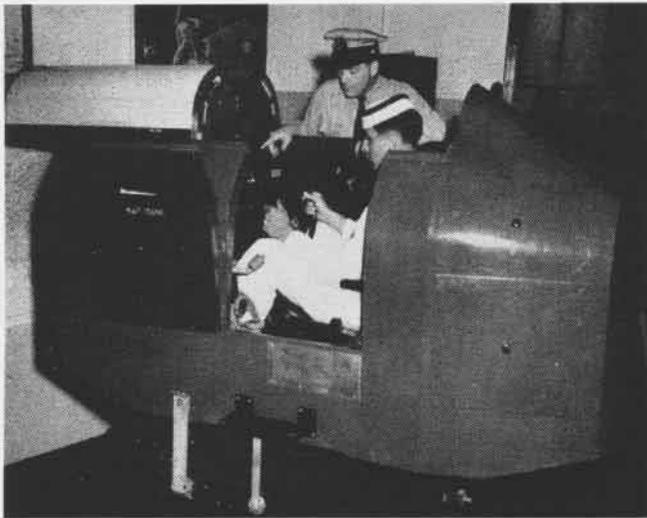
The summer between third and second (sophomore and junior) class years see the first, and biggest dose of aviation. It is divided up into a number of parts, not necessarily in the order given here because the Middies are broken up into small groups.

There are two weeks of flying at the Naval Air Facility, one week air cruise, one week aboard an aircraft carrier, one week in the Norfolk area, one week at the Naval Air Test Center at Patuxent River, Md., and two weeks of amphibious exercises in conjunction with West Point cadets.

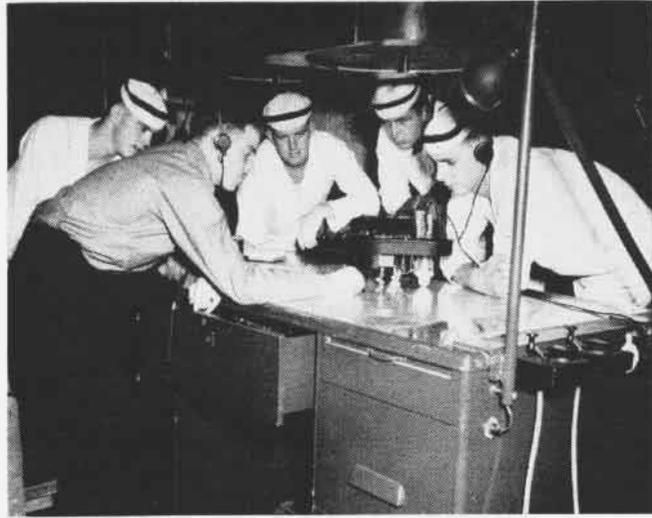
Every pilot in the Aviation Department, attached to the Air Facility or the Academy staff takes hand in the flight indoctrination program. Included are five enlisted AP's.

Each day is divided into four flight periods for PBM's, while N3N hops last approximately one hour each.

When operations start 18 of the N3N's are taken to Sandy Beach, a short distance from the Facility. This procedure is necessary because only one ramp is available at the Facility.



LINK INSTRUCTOR Joseph E. Cox, TDC, shows Mid'n 2/C Frank Liethen some of the answers to mysteries of instrument flight.



WHILE a Midshipman suffers under the hood of the Link trainer, James Berridge, Jr., TD2, shows how crab tracks simulated flight

Planes are beached and operated from the sand.

Before ever getting into a plane the Mid'n are given thorough courses in aviation safety. General prudential rules are emphasized. Then all the details of hazards from fire, moving propellers and other ground hazards are explained. Signals between instructor and student are given. Information on use of life jackets, rafts and parachutes is included.

GROUND training at NAF includes instruction in Loran (long range navigation from shore stations which allow positions to be determined), radar, dead reckoning navigation (this is easy because plenty of it is given at the Academy) and Link Trainer simulating instrument flight.

When a Mid'n reports to his instructor he knows he is going to receive 12 hours of instruction. He learns how to take off, perform the basic maneuvers in the air, and land. He is taken to the point of solo, but this is not included. All taxiing to and from the beach is done by the instructor to save time.

An indoctrination training record card is kept on each student. The record mentions any previous aviation experience, then a space is devoted to each hop. Flight aptitude is graded into excellent, good, fair and poor, as are interest and aviation desirability. This "grease card" records PBM

flight marks and mention of the air cruise and carrier cruise. A typical remark for one student might be, "Could drive a fire truck better. Shows little interest in aviation."

The day before the Midshipmen go for a PBM hop they are given a lecture by an instructor on navigation problems. The problems are done by dead reckoning. Eight students go on a flight. Four of them man observation stations—copilot, radar, navigator and engineer. The other team of four work navigation problems with data supplied them. Teams trade off on their duties during a flight.

Flight instructors for the Midshipmen are pilots attached to the Academy—Navy, Marine and Air Force—and to the Naval Air Facility. Their comments regarding the Midshipmen are that these men are intelligent and eager and for the most part have excellent judgment. Standards set for entrance requirements to the Academy assure that most of the Midshipmen will have little trouble in being physically and educationally acceptable for flight training.

THE air cruise of one week takes groups of Midshipmen via Fleet Logistics planes to aircraft manufacturing companies and other industrial concerns making Navy equipment, and to Navy air installations. Cruises of this past summer covered the eastern half of the United States.



MIDSHIPMEN Carr, Dowd, Bearman, Hall, get practice in reading loran and radar 'scopes



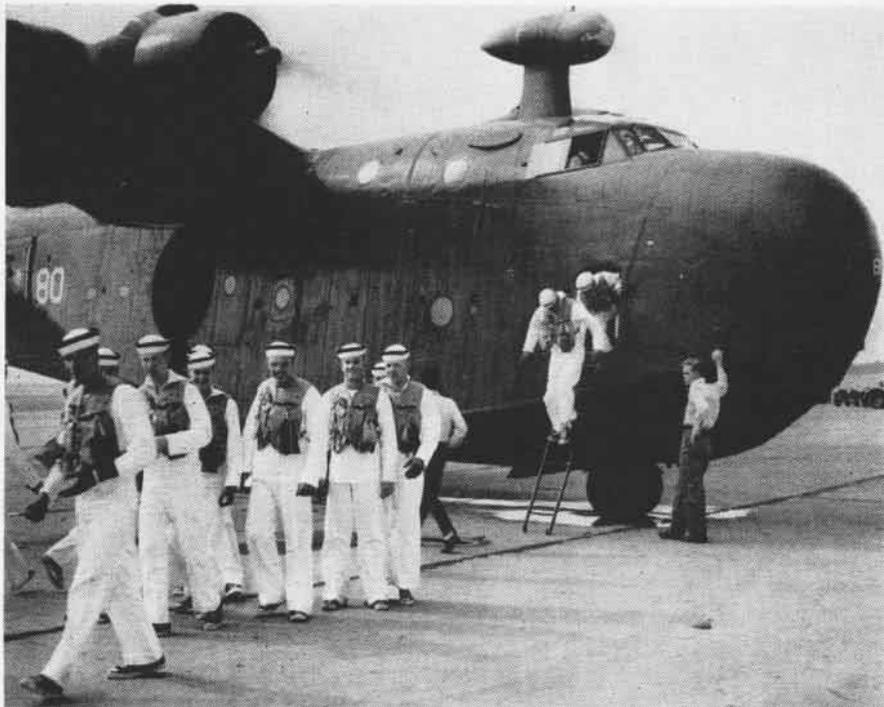
SALTY type of aviation is N3N-3 on floats; instructor Malboit gives Mid'n Randall word



LEARNING "lead" of aerial gunnery by skeet shooting from PFC G. Huet is Mid'n Schmitt



MID'N BEARMAN gets dope on PBM engineer's position from instructor John Dalton, AT3



MARTIN PBM-5A Mariners serve as flying classrooms for midshipmen at Annapolis while flying up and down Chesapeake Bay; planes also serve as transports for summer cruises

Typical of the places visited by one of the groups was the McDonnell Aircraft Corporation at Lambert Field, St. Louis. They saw production of the F2H *Banshee* fighters for aircraft carrier operation, the new F3H Navy fighter, the XHJD-1 laterally displaced twin rotor helicopter and the noisy ramjet helicopter the *Little Henry*.

Aircraft carrier cruises this past summer were made aboard the battle carrier *Franklin D. Roosevelt*. Men had a chance to observe every phase of air and ship operations. They served in every capacity a ship's crew might fill.

One week in the Norfolk area was taken for visiting the Overhaul and Repair shop at the naval air station, the National Advisory Committee for aeronautics laboratories at Langley Air Force Base, the Norfolk naval shipyard, and activities under ComAirLant such as the Fleet Airborne Electronics Training Unit.

A week spent at NATC PATUXENT RIVER includes one day at each of the test divisions—Flight, Tactical, Service, Armament, and Electronics.

For a two weeks period the Midshipmen join Cadets from West Point in amphibious exercises at the amphibious base at Little Creek, Virginia. These CAMID exercises are divided into two periods. The first consists of demonstrations by Navy boat crews and Marine assault troops. Phase two sees the Midshipmen manning the boats while Cadets rush the beaches.

Approximately, a four weeks leave period winds up the aviation summer which has given the Midshipmen a lot of travel, and a lot of new things to think about.

The Aviation Department doesn't see these men again until first class year, when lecture courses are given on the naval aeronautical organization, Air Force organization, Navy flight training, Air Force flight training, air combat intelligence, future developments in aviation, and aircraft procurement.

No examinations are given in these courses. Graded recitation courses are given in aerial antisubmarine warfare and aircraft control. In subsequent years graded courses will be given men in the Academy in aerology and aerodynamics.

Another period in N3N's and PBM's is given first classmen. N3N work is advanced into formation flying and division tactics. In the PBM's more seamanship in seaplane handling is given and more detailed navigation problems are worked.

During their first class year all Midshipmen take the Aviation Classification Tests. Before being assigned to duty at graduation they are notified by the Bureau of Naval Personnel whether they passed the tests. If they were failed aviation duty cannot be requested. It is after this that the Midshipmen state their preference of duty.

The Naval Air Training Command at Pensacola keeps records on every Academy graduate who takes flight training. This information on who passes and who fails and why is sent back to Annapolis. The Air Force does this also.

Thus the Navy, which has stated that its capital ship is the aircraft carrier, sees to it that every officer it produces from the ivy-covered buildings on the Severn has a speaking acquaintance with Naval Aviation. Every duty he is assigned after he has been graduated has some aviation connection.



MID'N F. H. Mitchell, Mid'n M. R. Rubb, get pointers on bringing planes aboard from landing signal officer Capt. F. T. Watts, USMC



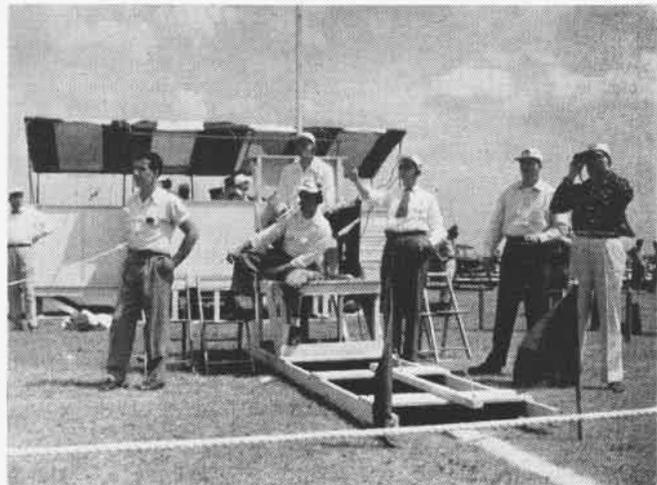
NO MATTER where it goes, the Navy's huge Constitution attracts curious crowds which are given a deluxe conducted tour through

the ship. Air Race visitors at Detroit sometimes lined up in a complete circle around the plane awaiting their turn for tour

RACE CROWD SEES NAVY PLANES



CENTER OF attraction was Chance Vought XF7U-1 Cutlass fighter which was flown from NATC Patuxent for exhibition at Detroit



THRILLING part of the National Air Races are the races of small planes around pylons; here judges and timers watch race intently



POWERFUL searchlight perched on the port wing of Grumman AF-2S Guardian fascinates young visitor at Detroit National Air Races



NAVAL AIR STATION, Grosse Ile, Mich., struck while iron was hot in setting NavCad recruiting booth near Air Race static displays



GRAMPAW PETTIBONE

Unnecessary Risk

The pilot of an F7F took off on a check-out ride after a careful briefing on various emergency procedures and a thorough cockpit check-out. A few minutes after becoming airborne, he called the tower for landing instructions and was cleared to land on runway 18.

After turning into the final approach he called the tower to say that he was going to take it around again as he had a rough-running engine which he wanted to "straighten-out". He then cleared the traffic pattern and climbed to about 5000 feet. Shortly thereafter he again called for permission to enter the traffic pattern, and repeated the procedure of letting down into the pattern, lowering gear, and taking a wave-off in the final approach.

He called the tower a third time and requested permission to make a wide final approach to runway 18 stating that he had a deferred emergency and was at 5000 feet over the field.

Witnesses noticed that the right engine was feathered during this circuit of the field and that the left auxiliary tank had been dropped. The right auxiliary tank was still attached. Approximately five miles east of the field and at an altitude of 500 feet, the F7F rolled to the right and hit the ground in a nose down attitude. The aircraft exploded on impact and the pilot was killed.

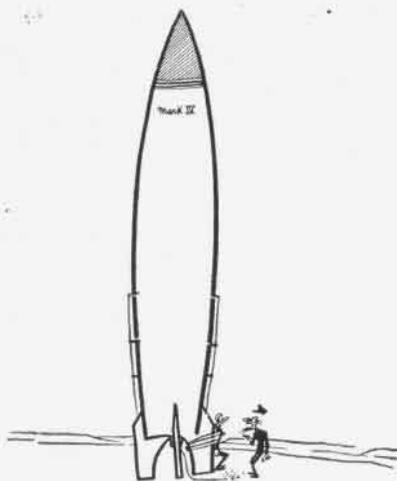


Grampaw Pettibone Says:

Total time in type—one hour—and this fellow decides he's a test pilot. Twice he was all lined up for a landing and each time he took a wave-off to experiment with a malfunctioning engine.

A well qualified test pilot would have landed and let the mechs start looking for the source of the trouble, but this chap decides to "straighten it out" in the air. When he finally had to feather the right engine he was in a critical spot—not much altitude—not much airspeed—and to add to his troubles, his right drop tank apparently failed to release. When he added full power to his good left engine, the plane rolled to the right with insufficient altitude for a recovery.

There's darn little that you can do in the air to correct a malfunctioning engine that can't be done with greater efficiency and safety on the ground. Land at the first opportunity and let the mechs go to work, before you get yourself into a situation that you find you cannot handle.



WORD ABOUT WHEELS

You have just taken off on a two hour training flight and find that you can't get all of your wheels up. Using either the normal or emergency system you succeed in getting a satisfactory indication that they are down and locked.

What should you do now? Try again and see if you can retract them?



Grampaw Pettibone Says:

Perish the thought! I've just finished reading three recent cases in which pilots did just that and had to make belly or one wheel landings later on because they were unable to get all of the wheels down at the same time again.

If there's something the matter with your gear and you are fortunate enough to get it down and locked, for gosh sakes leave it there! Fly around and burn up some gas if you're overweight for landing, but leave the gear alone once you get it down and locked. When you get back on terra firma the mechs can drop check your landing gear and find the source of the trouble.

A wheels-up landing costs Uncle Sam anywhere from \$3000 to \$100,000 depending on the type of plane and extent of damage. In the first eight months of this year we've had 65 of 'em.

Real Safety Record

Just a little over a year ago Fleet Logistic Air Wing, Atlantic Continental was established. During this period over 80,000 passengers have been carried well over 60,000,000 passenger miles. In addition more than 6,000 tons of mail and cargo have been flown from Patuxent to such far away spots as Istanbul, Athens, Rome, Port Lyautey, and Naples.

The Wing has operated without an accident of any sort in its transport operations. VR-1, VR-22, and VR-24 are the three squadrons that set this remarkable first year record for the Wing.



Grampaw Pettibone Says:

You can take my word for it, a safety record like that doesn't just happen. It is the product of team work on the part of all hands. Pilots, navigators, crewmen, maintenance personnel, and those who plan the far-flung operations all have to be right on the ball to accomplish that much flying without an accident. Take a bow, boys. Keep up the good work.

FOOD FOR THOUGHT

(Attention: Green Card Pilots)

It's a lot better to be John Doe, a little late, than the late John Doe.

Numb With Fear

The following excerpts are from the statement of a pilot who crashed on his first take-off in a service-type plane. He had been recalled to active duty after being out of the service for nearly five years. His total flight time was 301 hours, of which 7.1 had been acquired in an SNJ following his return to active duty.

"I reported to the squadron and was informed that the field was open and that I would go for my first hop in an F8F. I went immediately to my locker and changed clothes and then went into the pilot's ready room where I was told to go downstairs and check out for my hop. This I did and spent the next 15 minutes familiarizing with the parachute and the new crash helmet.

"While waiting for my plane to be assigned to me I went over my flight instructions briefly. . . . When the mech came out to help me start the airplane, I asked him to come back in about 15 minutes as I said I wished to go over once again a simulated blindfold cockpit

checkout. I did this, learning all the controls accurately with closed eyes. . . . I adjusted and connected my shoulder harness and safety belt. When the mech returned I started the plane without much difficulty.

"While waiting for the oil to warm up to 40 degrees, I visually checked the operation of all controls, rotating the stick in a circle and testing the rudder for full play. They all checked satisfactorily. I then checked flap operation . . . hydraulic pressure, super charge, carburetor heat and prop pitch . . . and gave the signal to taxi out. . . . I checked my mags at 2100 rpm, noting a satisfactory drop off of rpm . . . again checked my prop pitch. Referring to my flight instructions again, I went over the detailed check-off list for take-off.

In the meantime, the F8F in front of me had taken off, and since no planes were behind me I remained in the standby position for about five minutes checking everything . . . then requested and received permission to taxi onto the runway and hold. As soon as I was lined up I locked my tailwheel, rocked my rudders and while making another visual check of all my levers I received permission to take-off.

"With the rpm still at about 1500 I released the brakes and started. I immediately throttled to about 35 inches. Pushing forward on the throttle as gradually and evenly as possible, I throttled to about 40 inches at which time I began to notice what was to me an unusual amount of noise. About this time, with the stick held in a neutral position, without any effort whatsoever the tail came up, and as I throttled to 54 inches I felt my head move back and the force of the engine pulling the plane forward. I made a straight and uneventful take-off, and as soon as I could see that I was definitely airborne, I reached down to retract the landing gear.

"I experienced considerable difficulty in pulling out the spring lock on the landing gear, and found it necessary to glance down into the cockpit to ascertain if anything was wrong. Eventually I succeeded in raising the landing gear and then looked up to see that I was very low and was not in the climbing attitude which I had expected to be in. The stick was very difficult to pull back, and so I reached down to use the elevator trim tabs to help me raise the nose. It seemed to have no effect so I left it where I had moved it and throttled back to about 40 inches.

"Almost immediately before I throttled back, I noticed myself being thrown to the left side of the cockpit. I reduced my rpm to about 2400 and at

the same time noticed that the ball was clear over to the left side of the bubble, all this time still feeling myself being thrown to the left side of the cockpit and still not seeming to be gaining altitude as I had expected. I tried moving my rudders, but they seemed very tight, and it seemed as though almost any attempted movement of the stick or rudders threw me into an abnormal attitude which was detectable immediately by increased force throwing me to the left side of the cockpit.



"About this time I noticed a great deal of wind and noise entering the cockpit. At the same time the nose seemed to be turning to the right and all controls seemed frozen. The force of the skid made my plane vibrate and swerve violently in about a five degree arc from side to side. Also it shuddered. I remember thinking it might be due to turbulent air. I still did not seem to be gaining any altitude and was approximately 150 feet above the ground. This is only a guess. I was very busy trying to ascertain the cause of the abnormal attitude of my aircraft.

During all reference checks to the cockpit, I kept glancing over the side and noticed that there was no change in my altitude until I felt myself going down and turning more violently to the right. I could not raise the nose, either with tabs or stick. I had lost all reference to my location at this time, and seeing that I was losing altitude rapidly and turning and swerving and skidding violently, I chopped the throttle completely. I do not know why I chopped the throttle just at that time except that I was losing altitude rapidly and had, I suppose, subconsciously decided to go in.

"After chopping the throttle, and until the time when I hit the ground, is a period which I do not recollect at all clearly. I believe that fear had gripped me so as to make me numb, and yet I know that I consciously swerved the plane to the right to effect a reasonably unobstructed landing. Just before I hit the ground, I saw a large mound of dirt and loose gravel some 500 yards ahead of me. When I hit, I immediately noticed the blades of my propeller stop and saw that they were curled. There was

no violent up and down movement but rather a great noise and the appearance of debris flying on each side of me.

I remember yelling like an Indian while all this was going on. Then the mound of dirt appeared, and I hit without any pain. One hundredth of a second after I had stopped, I yelled "emergency—emergency" and cut the ignition and battery switches. I then remembered the possibility of an explosion and vaulted out of the cockpit."

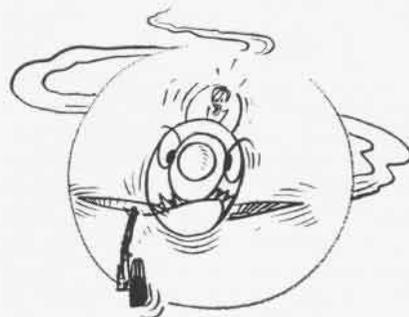


Grampaw Pettibone Says:

Now that you've read a slightly shortened version of the pilot's statement, what would you guess to have been the cause of all his difficulties?

Investigators checking the F8F after the accident found that all controls moved freely and operated perfectly. What caused the accident?

In the period right after take-off, while the pilot was trying to find out how the spring lock on the landing gear handle worked, he was flying with full throttle on in a level attitude. By the time he got the wheel lever in the up position, he had picked up so much speed that only one wheel came up. This caused the F8F to go into a skid which got worse as the airspeed continued to build up. With power settings of 40 hg. and 2400 rpm, one wheel down, and the canopy open, it is little wonder that the F8F began to buffet.



At this time the pilot needed an anti-panic suit, but bad. The violence of the skid, the cockpit noise, and his apparent inability to correct the condition, caused him to trip the panic switch, chop the throttle, and prepare to go in.

Actually as the plane decelerated, the landing gear came up, and the F8F came out of the skid shortly before the impact with the ground.

Five years is a long time to stay away from flying and then get into an F8F with only eight hours of SNJ refresher time. It's hard to predict all the jams that a fellow can get himself into, but it is possible to anticipate a lot of them. In this instance, an experienced F8F pilot, familiar with the feel of the plane and the force of the controls, would have recognized the trouble, slowed the plane down enough to let the other wheels come up, and been on his way without any further difficulty.

As far as I know, this is the first time this particular set of circumstances has cost us an F8F. Let's hope it is the last.

'CARD STUNTS' ABOARD CARRIERS



CARRIER MONTEREY CRUISES INTO NEW ORLEANS SPELLING OUT GREETINGS: MORE THAN 600 MEN IN WHITE WERE REQUIRED FOR THE CARD STUNT



CVE SICILY'S CREW GREETS SAN DIEGO VIEWERS

CARRIERS returning from the Korean war zone are borrowing a trick from college yell leaders and vying with each other to present bigger and better "name spellings."

Each carrier as it comes into harbor lines hundreds of its bluejackets up on the deck in carefully-worked-out patterns to spell out the ship's name or some message. NAVAL AVIATION NEWS conducted a little research and was unable to uncover any evidence of this type of stunt before the *Saratoga* spelled out the letters "NRA" on its flight deck in August, 1933, in honor of the National Recovery Administration of those depression-ridden days. The stunt was put on for a newsreel cameraman.

Three years later the *Lexington*

spelled out "NAVY". The practice seems to have lapsed during the war years until the *Bunker Hill* spelled out its name in two "takes" in October, 1945, as she came home from the wars on a *Magic Carpet* run.

Since then, however, a rash of "card stunts" has hit the fleet and many hours of midnight oil have been burned to ar-

ana (which sometimes calls itself "NOLA" as a contraction).

The *Monterey* reported the stunt required 697 men as originally planned but this number was reduced by slanting off the corners of the "O" and cutting the width of the "A" crossbar. With the use of a miniature scale drawing of the flight deck, it was concluded the letters were to be 36'x24' with 8' between letters and 24' between words.

It then was determined the average man would take up a space of 2'x1' at about 70° angle from the overhead position. Taller men were placed in the background and shorter men in front.

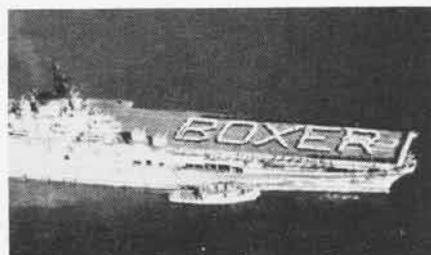
Three men, with a 50' tape measure, hammer and carpet tacks laid out the check points for the letters the night



LEYTE PLACED AVIATOR'S WINGS ON HER NAME

range these spectacular displays. The NEWS wrote to a couple of carriers to find out what sort of mathematical calculations went into working out one of these shows.

At the top of this page, the white-clad sailors of the CVL *Monterey* line up to spell "Hello Nola." The stunt was put on as a greeting when the ship steamed into New Orleans, Louisi-



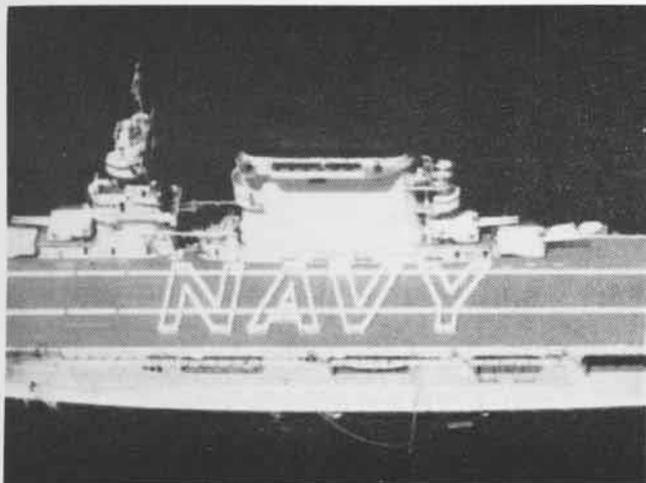
BOXER GREETS ALAMEDA ON RETURN FROM WAR



CORAL SEA'S WHITE-HATS HONOR 40TH BIRTHDAY OF NAVAL AVIATION



STEAMING INTO PUGET SOUND, VALLEY FORGE SPELLS OUT A GREETING



LEXINGTON JOINED SPELLING CLUB THREE YEARS LATER WITH 'NAVY'



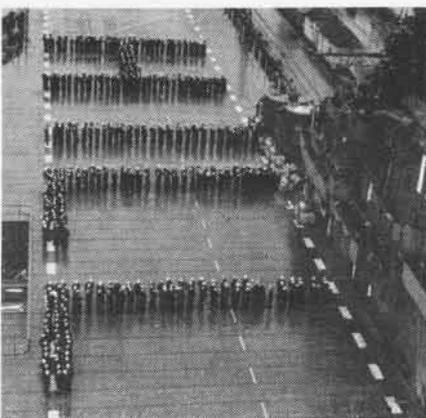
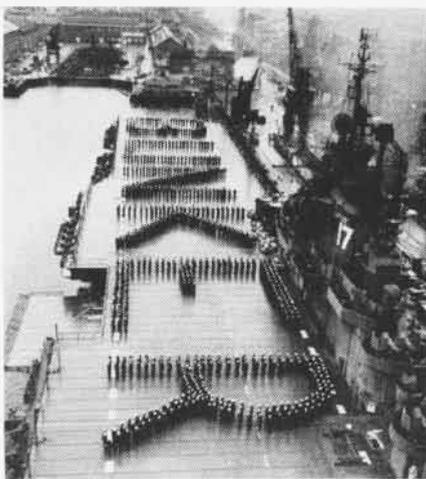
SARATOGA, FIRST CARRIER TO SPELL WORDS WITH 'NRA' BACK IN '33

before the picture was taken. This operation took 30 minutes. Using the check points and a tape measure, a small chalk circle was drawn at the precise point each man was to stand. This took little time. Chalk marks were not drawn too far in advance for fear rain would obliterate them. "The finished product was the result of splendid cooperation of the entire crew before and during the time the picture was taken," the *Monterey* reports.

Probably the fanciest job of name-spelling was done by the carrier *Leyte* at San Diego. The ship not only spelled its own name but it put the naval aviator's wings and anchor on it, a job that took some precise figuring and a few blueprints. Note also the fancy eagles insignia which the *Saratoga* displayed on both sides of the NRA.

The individual doing the *Leyte* job was Lt. (jg) Max H. Leighninger, who spent many hours measuring various locations on the flight deck to work out details, exact measurements and number of men required. After the blueprint was drawn, the design was chalk-lined on the flight deck, using a 100' tape, with a dot of black paint every 30". This dot represented where each man was to stand and could be made permanent by use of brass tabs or other markings on the flight deck.

In the particular design more than



BUNKER HILL SPELLED NAME IN TWO ATTEMPTS

1,000 men were used. Specific divisions were assigned to furnish men for certain portions of the design. The men were mustered in an orderly manner and marched to their positions. One trial run was conducted prior to the final assembly for the picture to be sure everything was all set.

THESE "carrier deck card stunts" usually are performed in slack periods when crews welcome something to break the monotony. The *Leyte* was returning from many months fighting in Korea, and since its planes were not flying, the deck was free for other uses.

Spelling out their names would have come easy to the old *Lexington* or *Saratoga* since in pre-war days they had the words "Lex" and "Sara" painted on their decks. Stationing men on the letters would have been an easy task. The NEWS will welcome information from anyone about any ship spelling out its name prior to the *Saratoga* in 1933, or any other early attempts at the art.

One boon to this practice has been the addition of helicopters to carrier's plane quotas since photographing of the deck displays is simple from a hovering pinwheel. The *Bunker Hill* photographs were taken from a dockside crane at the Navy Shipyard at Bremerton.



LIGHT CARRIER BATAAN, SINCE BUSY FIGHTING THE REDS IN KOREA, HAS ITS PICTURE TAKEN WITH CREW SPELLING OUT ITS NAME ON THE DECK



THEIR SIDES plastered with close air support attack emblems, two Panther jets off Korea fly over "the fleet that came to stay"

bers to Beethoven, brought a wildly cheering audience to its feet at the end of the concert.

Bold Adventurers

Marines in Korea were amazed to see a Stinson biplane trainer float in for a landing. Painted with drab camouflage, it bore the insignia of the Republic of Korea and the USAF.

Soon the novelty wore off as the beat-up old trainer became part of the daily scenery. Each day, Korean mechanics spread the vitals of the ancient plane over the mud and reassembled it before dusk with one of them making uncertain takeoffs and wobbly landings learning flying in his spare time.

Soon the Marines began going along in the second cockpit just for the ride.

KOREAN AIR WAR

And There I Was . . .

1st. Lt. William G. Siegfried didn't always fly his *Corsair* upside down on combat missions, but one day he regained his senses in that position when a truck he was low-level bombing blew up in his face.

While on a night patrol over North Korean territory, the *Flying Nightmares* pilot spotted a big truck-trailer. Three bursts of machine gun bullets blew it up, his plane being flipped upside down. He could see large chunks of the semi-truck in the air.

His plane was still on its back when he started to climb out of the area,

where he rolled out. The blast was so hard it blew a flare plane, high above, off its course.

No Leg Show, But . . .

The grateful people of South Korea may have no Betty Grable to parade before the boys but they do their best in USO endeavor.

And it was with mixed feelings that personnel at a Marine airbase accepted an offer for a program to be presented by the Korean Navy Symphony and Chorus.

The good crowd that turned out wasn't disappointed. An outstanding program, ranging from Stephen Foster num-

The news got around and each evening a waiting line of brave, adventurous passengers formed.

Curious about the proceedings, a Marine officer asked a South Korean Air Force pilot about the plane. He informed the Marine that the plane was provided for training of civilian machinists. When asked if he flew the trainer, the pilot disgustedly said: "No, it's not safe!"

Indian Trick

Two pilots from the *Bataan* pulled an old Indian trick to wipe out a force of 150 enemy troops hiding in a building near the front lines in Korea.

Capt. Phillip DeLong of the Marine

FAMILIAR scene off Korean coast shows *Bon Homme Richard*, new arrival in war zone, refueling from *Manatee*; *DD* also gets fuel



VADM. C. TURNER JOY, ComNatFE, senior UN delegate at Kaesong peace talks, with MGENS L. C. Craigie, USAF, and H. I. Hodes, AUS



Checkerboard squadron, strafed the building. Enemy began scattering out the front door and windows. Lt. Harold Daigh followed him in and slogged napalm ahead of the scurrying troops, trapping them back into the building.

The flaming jellied gasoline set the building afire. More enemy troops hopped from the back windows and door but DeLong circled back and dropped his napalm tank on them.

"Wow," air controller radioed, "You got the whole bunch of them!"

Another group of *Checkerboard* pilots "called off" a scheduled drill in marching by a squad of Korean Reds north-east of Seoul. The Reds were drilling in the streets when *Corsairs* swooped down. The enemy scattered for cover in nearby buildings. 1st Lt. Austin Brenneman then strafed and rocketed the buildings, probably accounting for a number of hiding troops.

Earns His Money

Sometimes this business of being a forward air controller on the Korean front can be a busy one.

Marine 1st Lt. Richard Roth controlled four strikes on separate enemy targets simultaneously. A large flight of Marine *Corsairs* from the *Bataan* flew over and radioed for targets. He set them to work on hills to his left, left-front, right and right-front.

Then, to add to combat confusion, a lone Air Force F-51 *Mustang* flew over and also radioed for a target. Lt. Roth, who by this time was up to his ears in radio transmissions, told the F-51 pilot to hit an enemy supply dump down the road.

Sorry, You-All!

Four Memphis pilots from the *Boxer's* all-Reserve air group teamed up in a cat-and-mouse game to blast a Communist troop and supply train hiding in a tunnel near Songjin, Korea.

A recon plane spotted the train scooting into a tunnel to hide for the day. Four *Black Knights*—Lt. Robert Pitner, Lt. Dennis Earles, Lt. Henry Champion, and Lt. (jg) Carl Hall, Jr.—were airborne nearby and diverted to deal with the train.

Splitting up, they attacked the tunnel from both ends. Hall laid his napalm bomb right in the northern end of the tunnel and Pitner poured his rockets into the hole.

At the other end, Earles and Champion met AA fire from a large warehouse nearby. Earles skip-bombed his 500-lb bomb into the tunnel entrance. Flame, debris and steam rushed out, rocking his *Corsair* as he pulled out.

Champion then went after the warehouse. Seconds after his bomb smashed into it, parts of the warehouse were

flying past him 600 feet in the air.

The quartet won the *Black Knights* nickname from their distinctive black crash helmets, emblazoned with flaming skull and crossbones, and their midnight blue flight suits. They wear the Stars and Bars of the Confederacy as a shoulder patch.

A photo of the *Black Knights* appears on this page. For another photo, see the inside front cover picture showing Lt. Pitner pulling out of his dive and looking back at destruction of an enemy highway bridge outside of Wonsan.

Fires Guide Jets In

Unaware that two Navy F9F's were in the vicinity, an estimated 1,000 enemy soldiers near Changjin reservoir were busy cooking their evening meals in front of glowing campfires. They were far enough north, they thought, to be safe from air attack.

Spotting the fires, LCDr. William A. Stames and Lt. Waldin Robinson from the carrier *Bon Homme Richard* went in with rockets and 20 mm cannon blazing.

"It was a simple matter after that; all we had to do was pick out the center of the concentration and let go," said Stames. The enemy realized their folly after about 300 casualties were inflicted.

A Plane and a Life

Handling a hot potato will be easy for Corp. Rene Wattlelet, an ordnance man with a Marine outfit in Korea, after he saved a *Corsair* from being destroyed by a burning phosphorous flare.

Another Marine in the cockpit of the F7F was releasing flares while Wattlelet caught them from underneath the fuselage. He pushed the wrong button, and a friction-match type parachute flare dropped underneath the bomb-laden plane a few feet from Wattlelet.

Realizing its white hot flames would leap up in 23 seconds, Wattlelet picked up the 30-pound cylinder, ran a few steps with it and heaved it into an open, safe area. His actions probably saved the plane and the man in it.

Seagoing Lawyers

Five "sea lawyers" from a single Reserve fighter squadron aboard the carrier *Boxer* are busy providing advice to crewmen puzzled about legal problems.

Chief Yeoman Howard Masey, James Ellis, chief electrician's mate; Lt. Henry Boothe and LCDr. Austin Calhoun all are graduates of Southern Law University in Memphis. And Lt. (jg) Dewey Froseth was attending night classes there when his Memphis squadron was called to active duty.

All five of these sea-going counselors brought thick lawbooks and notes with



FOUR STARS-and-Bars boys from Memphis on *Boxer*—Earles, Hall (rear), Pitner, Champion



SEAMAN ANGELL of Los Angeles helps Lt. G. C. George fold raft after ditching rescue



SUDDEN FLOOD in Korea stranded jeep carrying UN staff to Kaesong, roadbed is flooded



FIVE SEA lawyers aboard *Boxer* brush up on law—Calhoun, Boothe, Froseth, Ellis, Masey



THIS AERIAL photo shows Korean bridge repaired after previous Navy strike, heavy timbers shoring up roadbed, end unfinished



ONE DAY later, the railroad bridge looked like this after the Princeton's Air Group 19 worked it over with low level attack

them and spend many off hours in heavy legal debate. Several times a week they hold group study sessions, during which Boothe, Masey and Ellis prepare for their bar exams.

Men aboard the *Boxer* visit the squadron office when they need legal advice. The lawyers have built up a "nice little practice," but of course it's all "for free."

One Man War

Out at the fighting level, the Marines and Army have no trouble making unification work. Working with an Army air controller on the ground, Capt. Arthur Wagner, a Marine pilot in an F4U, was able to shatter an attack of 500 Chinese Communists in Korea.

Flying with an Air Force flare plane one night, Wagner heard a radio call for urgent help north of Seoul. The Army asked the flare plane to "send your little friend over here."

Wagner flew his *Corsair* over the area and tuned in for further directions from the ground. He was advised there was a clump of trees near a railroad bridge. In it were the hiding Chinese troops.

The Marine flier dove down at the wooded area and gave them a short burst of 20 mm. fire. "That's right," crowed the radio. "You've got the place

spotted. Now give 'em all the napalm you've got!"

As the *Corsair* pulled out of a second plunge, more than half the grove leaped into flames. "Now give 'em your bombs," directed the air controller. Wagner did, right in the middle of the trees.

He ran short of gas, flew back to base, refueled and came over again. He needed no directions to find the target, thanks to the flames. He dropped another load of bombs and strafed enemy machine gun positions.

There came a final word from the radio:

"You stopped the attack all right, buddy. Thanks a lot. You saved our bacon all by your lonesome."

Let There Be Light!

Marine pilots of VMF(N)-513 found a way to lick the darkness problem while seeking out Communist convoys on North Korean roads at night.

When weather was cold, the Chinese drivers would usually drive their trucks with lights on and windows shut. This made it hard for them to hear attacking planes until they opened fire.

The enemy set up a warning system. Flyers approaching convoys noticed lights blinking and tracer fire from surrounding hills—warning truckers to

douse their lights. This made accurate pinpointing of the vehicles difficult.

So the Marines got an Air Force C-47 to use as a flare plane and the truck-killing resumed apace. A few problems had to be worked out like method of rendezvous, altitude of flare release and type of attack by the fighter-bombers.

It was found that by close coordination with the flare plane, attacks may be made in the same manner and at the same altitude as those formerly made in the daytime. The desirable flare plane would be capable of remaining on target for six hours, dropping flares at the rate of 90 flares an hour.

Flying Nightmare squadron pilots flew 2,010 night combat hours during March, which may be a new record for an all-weather squadron. Their labors netted 420 vehicles destroyed and 208 damaged. Destruction is not claimed unless vehicles exploded or burned.

Red Deadeye Dick

Two fighter-bomber pilots in the Marine "Death Rattlers" squadron have a healthy respect for a certain Red Chinese machine gunner.

Hidden cleverly somewhere in the area of an enemy ammunition dump, he has scored three hits in two days on the *Corsair* planes of the Leatherneck duo.

ACCIDENTALLY-loosened million candlepower flare starts to burn under Skyraider wing on Bon Homme Richard preparing to launch



WHEN FLARE threatens to destroy Skyraider, James L. Seig, AB, in white shirt ahead of smoke, tosses flaming package overboard





CREWMEN Forbush, Courtney and Rollf of the *Princeton* who removed igniters from napalm

"If we can't kill that gunner, we should walk up there and recruit him!" exclaimed 1st Lt. Burton V. Courchesne. "He's a regular 'Lou Diamond' on the .50 caliber!"

Flight leader Capt. Wm. T. O'Neal also attested to the prowess and skill of the enemy "deadeye." One day he and Courchesne's plane each returned to base with holes attributed to the Communist soldier X.

The next day when they worked over the identical spot, their rocketing run proved too tempting to the Chinese.

From "down there somewhere," he threw up more .50 caliber slugs. Two of them seared through the right wing of Capt. O'Neal's *Corsair*, just four feet from the cockpit.

But the demon marksman failed to keep the fliers from working over the target and knocking out 10 buildings.

Flight Deck Hotfoot

When a Douglas *Skyraider* landed aboard the USS *Princeton* in Korean waters recently, three members of the safety watch spotted an unreleased, unexploded napalm bomb hanging from its belly. (see photo above)

Aviation Ordnanceman E. H. Forbush was first to discover the bomb igniter was activated and apt to explode at any second. Torpedoman Rod Courtney and Aviation Ordnanceman E. H. Rollf and Forbush, knowing they had only seconds before the igniter exploded throwing flaming gasoline jelly over the flight deck, remained on the job.

They removed the igniters, one of which exploded even before it hit the water as they tossed it over the side of the *Princeton*.

Mechs Win Award

The appreciation a pilot feels toward his plane captain upon whom he depends

GRAPHIC aerial photo of Incheon tideflats shows why Navy's vast knowledge of amphibious landings is needed in Korean conflict

Restricted



HIS FACE cut in combat, Cdr. Maulby of VA-55 inspects gaping AA hole in his flap

for correct functioning of his plane in combat seldom takes a tangible form.

However, the Marine *Devilcat* squadron, based in Korea, devised an award known as the *Silver Throttle*, presented monthly to the plane captain whose aircraft was in operation the most during the month.

The maintenance Oscar was presented for the first time to plane captain, Sgt. William Leoniy. Sharing honors with him was Corp. Charles C. Smith, first mechanic.

Everything Happens

Lt. (jg) Val H. Schaeffer, *Princeton Corsair* pilot, is a new member of the "It Never Rains But It Pours Club" after a combat hop over North Korea.

On his 20th strike with his mates, Schaeffer told his section leader he would have to stay over the overcast on a bombing and strafing mission because his windshield was covered with hydraulic fluid and he could not see.

Heading for the carrier, he planned to lower his wheels with the emergency "blow down" gear. He started dumping his ordnance—but one 100-pound frag-



PRINCETON pilot Schaeffer refolds his raft that saved life after rugged day in Korea

mentation bomb refused to leave the rack. He tried pulling out of dives at high G to shake it, but no luck.

Schaeffer arrived over the carrier with the bomb still dangling from his plane. When he tried his "blowdown" gear it would not work. "I guess it just wasn't my day," he commented afterward.

The ship told him to go to an Air Force base on the Korean coast, where he could try a crash landing, bail out or ditch his plane in the water. His plan was to "belly in," hoping the bomb would not explode. He tried to open his canopy as he neared the field, but it would go only part way—enough for him to get out but not so far he could be sure it wouldn't jam shut after a crash landing.

The Air Force made up his mind for him. They said it was their field, and they liked it better without holes, and would he mind dumping his plane and bomb in the ocean. So Schaeffer went out over the water and bailed out and got in his life raft. Some Korean boys swam out and towed him to shore, where most of the Air Force base personnel was lined up to welcome him.





PARADE OF PROGRESS—AIR RESERVISTS FROM NAS MINNEAPOLIS LINE UP A PHANTOM, A CORSAIR AND AN SNJ FOR AN UNUSUAL FORMATION SHOT

JET JOCKEYS FLY AT NAS MINNEAPOLIS

SOME 200 fighter pilots in Organized Naval Air Reserve squadrons at NAS MINNEAPOLIS are now busy qualifying as jet jockeys. Each weekend warrior in the program gets 20 hours of ground school before he hops into one of the six Phantom jet airplanes recently assigned to the station at Wold-Chamberlain field.

Then comes the takeoff and the pilot is on his own. One hour and 250 gallons of fuel later he is back at the base—a confirmed jet enthusiast.

Actually the Reserves will fly conventional propellered planes again, but with this jet initiation behind them, they will be better prepared than ever to do a job if their squadron is called to active duty on the fighting front.



CHIEF DAVIS GIVES ORGANIZED SQUADRON PILOTS THE WORD ON JET ENGINE PECULIARITIES



'I'LL TAKE A JET INSTEAD' SAYS PETERSON



PILOT SOLBERG CHECKS FH-1'S GUN MAGAZINES



DAD EXPLAINS JET THEORY TO C. SCHMIDT JR.



WHY AIRCRAFT CARRIERS?

EVERY NAVY MAN at one time or another finds himself in the position of explaining the reason for the existence of his service and especially its air activities. There are straightforward answers to any question.

Control of the seas is the basic answer, denial of the sea to the enemy and its free use for our own ships.

Three quarters of the earth's surface is salt water—we face east on the Atlantic and west on the Pacific. In effect we are an island power which must ship for healthy economic life.

The economic well-being of the United States is dependent upon its ability to use the sea lanes of the world and to deny their use to the enemy in time of war.

This is true for the Atomic Age just as it was in the eighteenth and nineteenth and early twentieth centuries, and as it was for other nations from the first recorded history. It's one of the facts of our national life that we must have seapower.

As a big agricultural and industrial nation, we have a surplus of goods. We can sell them, and when we do, we must ship them.

But rich as we are, we are not completely self-sufficient. There are many

materials, particularly nonferrous metals, that we must import.

International trade, export or import, is something we cannot easily live without. The oceans are our shipping lanes, and we want them open for commercial shipping. The pocketbooks and livelihood of each of us are daily affected by the flow of goods through our seaports.

In the event of war, it is more urgent than ever that we keep them open. The high seas are highways, and victory depends upon who controls them. The supplies of war and peace must still move by sea. The rivers of gasoline, the food and the weapons must move by this low-cost transportation. Airlift, an extremely expensive procedure, is reserved only for emergency supplies.

The converse is true—that denial of the sea to the enemy deprives him of the advantages of its use.

No matter how much land transport the enemy has his power is multiplied if he can use his own coastal sea lanes. Sea transport is still the cheapest transport on a ton-mile-per day basis.

We gain as much by denying the sea to the enemy as we do by using it ourselves. Both are necessary for survival.

Control of the sea has always been obtained by mounting the weapon of

the day on a ship, whether that weapon was sword, gun or airplane. The capital ship, upon which control of the sea is built, has changed from galley, to ship of the line, to battleship, to aircraft carrier. Other types are necessary, but the large ship with the long range weapon was always the foundation upon which control of the sea was built.

With each change came new tactics, doctrines and concepts, but the basic mission of the Navy—control of the sea—still holds. That is the Navy's part in sustaining our existence as a nation.

OF THE many facts which must be taken into account today, three stand out:

1. Ships without air cover are nothing but a collection of vulnerable targets. Control of the sea depends upon the control of the air over the sea.
2. Since the law of gravity has not been repealed, what goes up must come down. In short, bases are a critical need. The nearer its base the more effective is airpower.
3. Atomic warfare does not change the basic mission of the Navy—control of the seas, nor is control of the sea less vital than before.

IN THE world today, the combined power to hold control of the seas involves air cover. Before World War II, there were murmurings that carriers were sitting ducks which could be picked off by land-based attacking planes. The voices of doom were ready to say—and did say—that aircraft carriers could not operate within range of enemy land-based aircraft.

On that December day in 1941 when World War II opened for the United States, the Japanese used a Pacific highway to launch a surprise attack. That carrier-delivered Sunday punch left us reeling at Pearl Harbor. It didn't knock us out, but if any argument were needed as to whether carrier-based planes could hit a land base hard, it was clinched by the enemy.

In the long run, we turned the very weapon our enemy used to open the attack—the aircraft carrier—against him. In fact, we went far beyond anything the enemy dreamed.

After the first nine months of the war, our carriers operated almost entirely against land-based air power with uniform success.

In all, we had 110 carriers. Of these 33 were fast carriers. All together these fast carriers had 3,300 days in which the ships or their aircraft engaged the enemy in combat. They were in the forward areas for a joint total of 465 months.

ONLY FIVE of these fast carriers were lost: four to carrier aircraft and one to a submarine. Not one was lost to land-based aircraft.

World War II proved that carriers can meet land-based airpower, and not only survive, but carve out victory from an enemy they first make prostrate.

"But that was World War II", some will say. Granted. But then came Korea. In 1950, when the United Nations was challenged in the Far East, there was

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.

—George Washington to Rochambeau via Lafayette

no move to leave the carriers in their mothballed state. We had just 17 active carriers, only one of which was in the west Pacific. The order was to get more carriers out—demothball them, unzipper them, get them ready.

No, seapower must include its airpower. Our carrier forces went on duty in enemy waters.

Make no mistake. The enemy knows they are there. Our Navy and Marine aircraft are flying 40% of all combat missions in Korea. Korea confirms World War II. The power to fight overseas, bringing full support to ground forces, is based on a Navy with tremendous carrier strength.

Many say Korea is a special case. Actually every campaign has been a "special case". One thing we can always be certain of is that each war will have something different from the last. On the other hand the most recent war is more likely to have points of similarity to future wars than to earlier wars.

CONSIDER the Mediterranean carefully and you see the same basic pattern. The carrier is going to be needed to control that sea and it can do it. Consider the Atlantic, Pacific and all the seas that border the enemy where ships may go. To deny him the use of those seas, the carrier is needed.

Were the shade of Admiral Mahan to be consulted, he would have no reason to change his basic tenet. In all major wars, the ability to use the sea lanes and deny them to the enemy has

been decisive. The fact that air supremacy over the sea is essential is only an additional consideration—the modern application of the long range weapon of the day to the problem. It does not change the fundamental truth of Mahan's thesis.

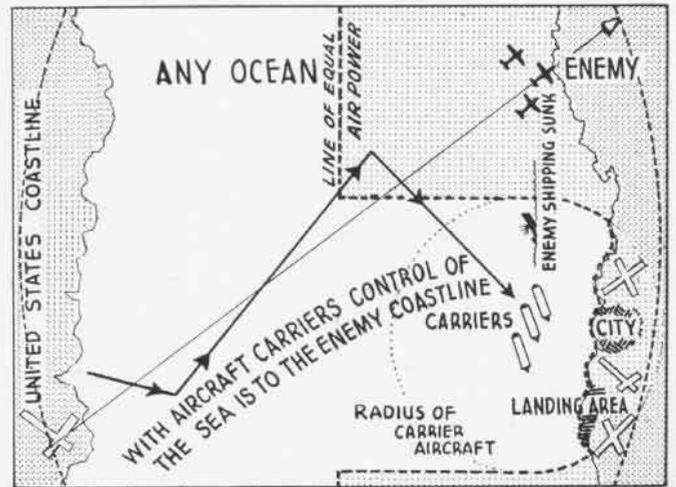
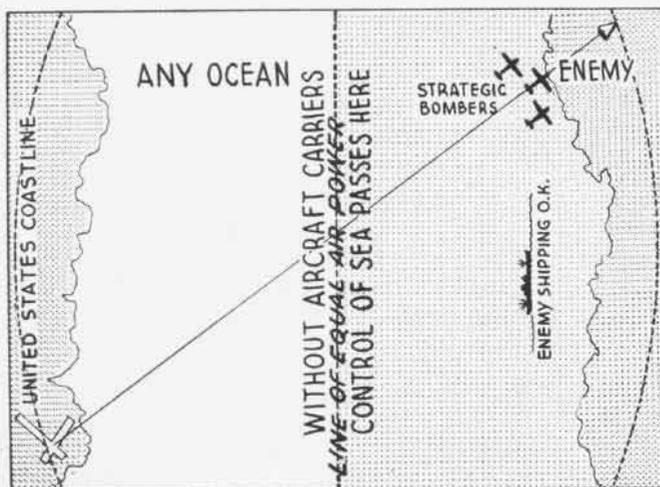
Since that principle remains unchanged, we make every effort to use the dominant offensive weapon in naval warfare. Years ago, long range guns were the principal offensive weapon. The Navy mounted them on ships and took them to sea. Today the long range weapon is the airplane, and the Navy has successfully put them on ships and sent the carriers into battle. In World War II, they were ships of the line.

Imagine for the moment that there are no aircraft carriers—only strategic bombers and further assume all other land-based planes capable of crossing the ocean and returning.

IN ORDER to control the sea, we must control the air over it. Now this control is based on planes in the air at the point of contact, not on planes enroute or on the ground. Other factors being equal, the side which can maintain the most aircraft over a certain point controls the air at that point.

If each side has the same number and type of aircraft, control of the air passes at the midpoint of the ocean. In such a situation, stalemate is inevitable. Each side controls only the half of the sea, adjacent to its shores. The side with the greatest shoreline controls the greatest area of the sea.

Suppose that the ocean is 2000 miles wide and that we are determined to extend our control. It is clear that the further we penetrate enemy territory, the more we must increase the number of aircraft, even if all aircraft could fly the necessary distance. Within 100 miles of the enemy coast, the prevailing ratio of our strength to the enemy's must be



WITH AIRCRAFT CARRIERS, CONTROL OF THE SEA (LINE OF EQUAL AIR POWER) IS SHIFTED FROM THE OCEAN MIDPOINT TO THE ENEMY COASTLINE

ABILITY to control the seas and the airways which cross the seas is essential to our security, and to our struggle to prevent any hostile power from so dominating all of Europe, Asia, and Africa as to menace our survival. Our national security . . . requires that we maintain a balanced team of fighting services and you may be sure that the Navy is and will be a vital element in the fighting team—a vital necessity in our national life.

—Admiral Forrest P. Sherman,
U.S.N., Late C.N.O.

19 to 1. In short, every mile from our own home bases is a disadvantage which can only be overcome by increasing the number of airplanes we use.

Yet even if we had 19 times as many aircraft as the enemy, there would still be a lane 100 miles off shore where the enemy could operate ships with safety. The enemy is at home and can make one plane do the same work as 19 of ours shuttling back and forth from base.

Until we gain air superiority in enemy territory, we cannot send our cruisers or destroyers to attack the coast because the enemy controls the air. Without air cover, these ships cannot carry out their missions. The enemy close to his own bases clearly has the advantage and can hold our surface forces off with airpower.

But now take the same situation when aircraft carriers are used. They bring airplanes to bear where they are needed. Control of the air around them passes to the carrier. Since our carrier aircraft control the air, battleships, cruisers and destroyers can join them in an all-out attack. We take the fight right to the door of the enemy, then push on in.

Aircraft carriers have great advantages. These mobile bases can be here today and gone tomorrow, and the enemy has no idea, the wrong idea or only a general idea of where they went. They are much smaller and more difficult targets than airfields.

The land-base is fixed and its location known. It is really something to shoot at, and it stays put. Although it can eventually be repaired and opened for operations once a bombing raid is over, aircraft and facilities have been destroyed, operations have been cancelled, and then it can be bombed again!

During World War II, carrier-based planes destroyed as many planes on the ground as they did in the air. Since not one fast carrier fell to enemy land-based planes, it is clear where the advantage lies.

However, fast aircraft carriers, to be effective, must operate aircraft of com-

parable performance to the land-based aircraft they will meet. This determines the size of the carrier.

The fighter aircraft required were just as critical as the attack aircraft in determining the size of our new carrier, the *Forrestal*. This carrier was designed primarily for control of the sea. Bombing of enemy targets is only a means to accomplish that primary mission.

THE PROPHETS of doom have seized upon atomic weapons as a reason to discount the advantages of the carrier. It is true that an atomic bomb can sink a carrier, but the fact that a ship can be sunk is not enough reason in itself that we should abandon ships, a man can be killed but no one argues that we should therefore not have soldiers. Aircraft can be shot down. We do not use that as a reason for abandoning aircraft. The need for the weapon must be balanced against its vulnerability. On that basis we can not afford to do without the carrier since the lack of it (regardless of the number of land-based aircraft we have) will mean loss of over half the seas of the world.

Carrier task forces normally have intervals between ships which would result in not more than one and possibly no ship being damaged should an A-bomb fall in the task force area. Furthermore, the advantages of the moving base over the fixed base continue to operate in the carrier's favor. For an enemy to be on the alert for carrier attack off its coast would require a tremendous number of defending aircraft spotted at intervals along the coast. No defending or attacking aircraft could be sent into the air until search planes located the carrier task force. Here we have one mobile force occupying the attention of a much greater force of

OCEANS are formidable barriers, but to the nation enjoying naval superiority, they become highways of invasion.

—General George C. Marshall,
U.S.A., Secretary of Defense

land-based aircraft. Thus the carrier task force, although subject to atomic attack, would make itself a tremendously expensive target, forcing the land-based enemy to stock many atomic weapons along its coastline along with many aircraft to carry them. Thus the carrier task force will force the enemy to divert his strength to defend his coastline.

The use of atomic weapons makes it more than ever necessary that the Navy should keep the enemy pinned to his home bases across the seas from us.

On 2 December 1949, Admiral Forrest P. Sherman, late CNO, in an address to the cadets at Annapolis said: "The development of atomic bombs will actually increase the requirement for overseas operations."

Whether or not we are ever denied bases abroad, our aircraft carriers must be ready. But were we without the land-bases abroad, the carriers could still carry the struggle to the enemy.

It's the air cover that counts in the control of the seas. To build up an effective air cover for the oceans from land-bases on one side of those oceans has been shown to be impossible. After all, the Navy has proved there's a better way to do it—movable bases against immovable targets.

Both aircraft carriers and strategic bombers have their uses and are necessary. Both should be allowed to continue their development unhindered.



THE CYRANO de Bergerac of the airplane world is this new F2H-2P Banshee photographic aircraft. Its long nose is packed full of cameras for use in high and low-level aerial mapping. Some of the highest aerial photos ever taken were shot from a Banshee flying 51,000 feet over Washington, D. C. The Banshee night fighter version also is a long-nosed plane.



BAGS, BOLTS, AND WIRES

WHEN A PILOT gets caught in the five o'clock traffic jam on his way home from the air station, he's likely to think that there is absolutely nothing to be said in favor of earth-bound forms of transportation. Waiting for a red light to change, he may even start wondering when they'll have an inexpensive, family-model, helicopter on the market.

Nevertheless busses, trains, cars, and even motorcycles have at least one common desirable feature. If you have an engine failure in any of these, you can always get out and walk.

The same occurrence is a lot more critical when you're cruising along in a carrier type aircraft. Unless you can do something to get the engine going again in a hurry, you've got a big decision to make. If the terrain doesn't look too good, you may decide to bail-out. If you happen to be flying one of the later models, you can trip the "panic switch" and have this done for you automatically. On the other hand, if you happen to be over a level Kansas wheat field, you may decide to ride your reluctant broomstick in for a wheels-up, flaps-down emergency landing.

In such an emergency, the Navy expects you to choose the course of action that is most likely to allow you to survive with a whole skin. You are expected to take whatever action you can to prevent your plane from crashing into a populated area. Aside from that, you're the one to decide whether you wish to get out or ride it down.

Aircraft accident statistics indicate that the likelihood of your plane being repairable after an emergency landing isn't very great. For example, the figures for the last twelve months show 219

cases of forced landings following loss of power, of which 132 resulted in "strike" damage to the aircraft.

Let's take a quick look at three recent emergency landings which were attributed to faulty maintenance:

Case #1

O&R flight test pilot was assigned an F6F-5N for a routine test flight. The pre-flight check was normal and the pilot was cleared for takeoff. The aircraft became airborne after a 1200 feet of take-off roll and the pilot retracted his wheels

at an altitude of about 50 feet. The engine suddenly lost power. At this time about 2000 feet of runway remained. The pilot put the landing gear lever back in the "Down" position, placed the arresting hook switch in the "Out" position and attempted to land the F6F in such a manner as to engage the emergency arresting wires which were installed further down the runway.

Neither the landing gear nor the hook extended before the plane made contact with the runway at an estimated speed of 65 knots. The F6F hit the deck before reaching the arresting wires, skidded through them and slid another 350 feet to a stop. The pilot turned off the battery and ignition switches before clearing the plane. He attempted to go back to turn off the fuel selector but noticed that the plane was on fire.

The crash and fire crews extinguished the fire, but not before the F6F-5N had suffered strike damage.

Subsequent inspection revealed that a one-half pound bag of dehydrating agent had been left in the carburetor air intake duct. The cloth bag had apparently split along one side and was wedged against the carburetor deck screen. The plane had been in a preservation status which called for four bags of dehydrating agent to be placed over the carburetor deck screen. Evidently in preparing the plane for flyaway, only three of these bags had been removed. The O&R inspection group's pre-flight check showed that the engine cut out with auto lean mixture at 30 inches manifold pressure and with rich mixture at full throttle. Maintenance personnel then changed the engine fuel feed valve and this apparently corrected the discrepancy. The plane



This wire is worth 230 thousand dollars!



was then flown for an hour and no discrepancies were noted. The accident occurred on the second test flight.

Additional tests on another F6F-5N showed that the engine would develop approximately 2680 rpm and 45 inches of manifold pressure with a full dehydrating bag placed on the carburetor deck screen. The engine stoppage evidently occurred when the bag split and the silica gel was introduced into the induction system.

Case #2

Student pilot was scheduled for a gunnery flight in an F8F-1. Prior to this flight he made a visual check of fuel and oil levels in his aircraft. During the warmup and preflight checks all pressure and temperature readings were normal.

Seven minutes after take-off, he advanced power controls to effect a rendezvous but there was no increase in engine power. He immediately checked his gauges and noted that his oil pressure was zero. Turning back towards Cabaniss Field, he called his wingman and told him of his trouble, then shifted to the tower frequency and informed the tower of the emergency. At this time he was about 5 miles from the field at 3,200'.

Almost immediately after completing the turn back towards the field, his power was so reduced that he had to lower the nose of the aircraft to maintain 120 knots airspeed. At 2,500 feet he realized that he was not going to be able to make Cabaniss Field and he began to prepare for a belly landing. He cranked the canopy to the full open and locked position and continued his glide towards a cultivated field.

As his altitude decreased, he judged the wind to be from 70 degrees and turned to that heading. At 300 feet, he dropped full flaps. At 100 feet, his propeller stopped turning. He then turned off battery and magneto switches and gas selector and landed straight ahead.

The terrain was rougher than it looked and was thick with mesquite trees. The F8F tore a path for a distance of approximately 250 yards through the mesquite, swinging around to the right as momentum was lost. There was no fire and the pilot cleared the aircraft and signalled to his section leader that he was uninjured. The aircraft suffered "strike" damage.

The investigation of the accident re-

vealed that the engine oil drain valve was open and no safety wire was at the valve. A piece of wire approximately



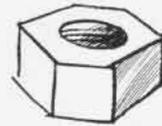
This NUT isn't worth a darn!

maintained closed during the warm-up and preflight, but vibrated open during take-off. The valve on the F8F-1 is a type that can be turned by hand.

The check crew leader was tried by summary court martial for improper performance duty.

Case #3

The pilot of and F8F-1 arrived back over the field and attempted to lower his wheels preparatory to landing. He noticed that the starboard wheel indicator showed that wheel to be in the "UP" position. Repeated efforts were made to lower the starboard wheel with both normal and emergency procedures but



This nut is worth 543 thousand dollars!

eight inches long, similar to that used for safety wiring was found in the bottom of the accessory section. The wire was not twisted at either end, as it would have been had it been used for safety wiring the valve in the closed position.

It was determined that the oil had been drained during a 60-hour check on the night prior to the accident. The oil drain valve was apparently then closed, but not safety-wired. Engine oil was replaced and the check crew leader signed the check sheet certifying the security of the engine oil system without checking the oil drain valve.

The aircraft was released to the flight line. Standard procedure calls for immediate safety wiring where required when any valve is closed. This was not done. It is believed that the valve re-

to no avail. The right wheel well door would not open.

When the plane's fuel supply was down to 20 gallons, the pilot was ordered to land wheels up. The pilot was uninjured but the F8F required a new prop, and engine overhaul, and repairs to the flaps and underside of the fuselage.

Investigation showed that this accident was caused by a missing clevis bolt which allowed the actuating cable to the up-lock latch assembly to part. This bolt had been removed to make adjustments to this cable assembly during the previous 120-hour check. The check crew leader does not remember looking at the clevis bolt to see if it was properly secured with a cotter key.



These careless Mechs are making me into a head hunter!



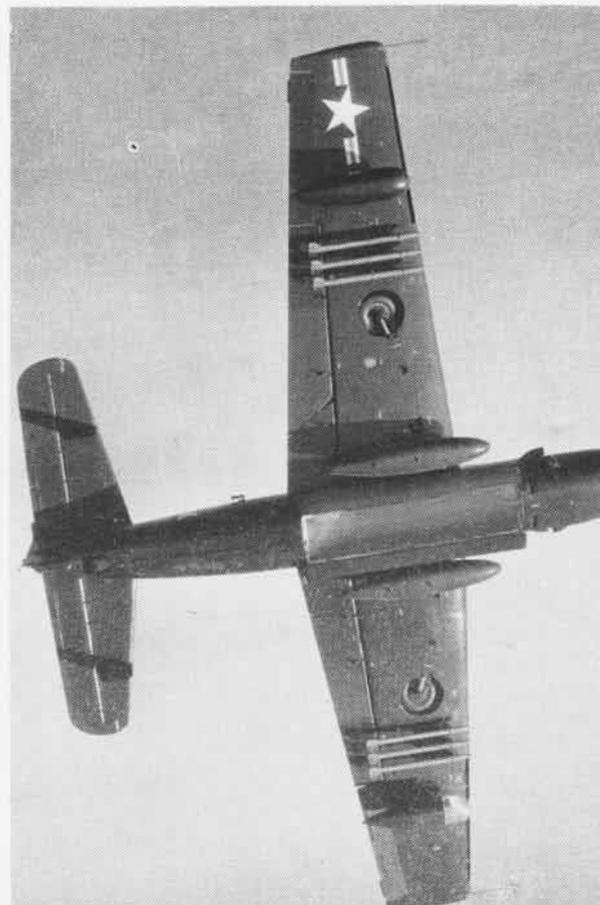
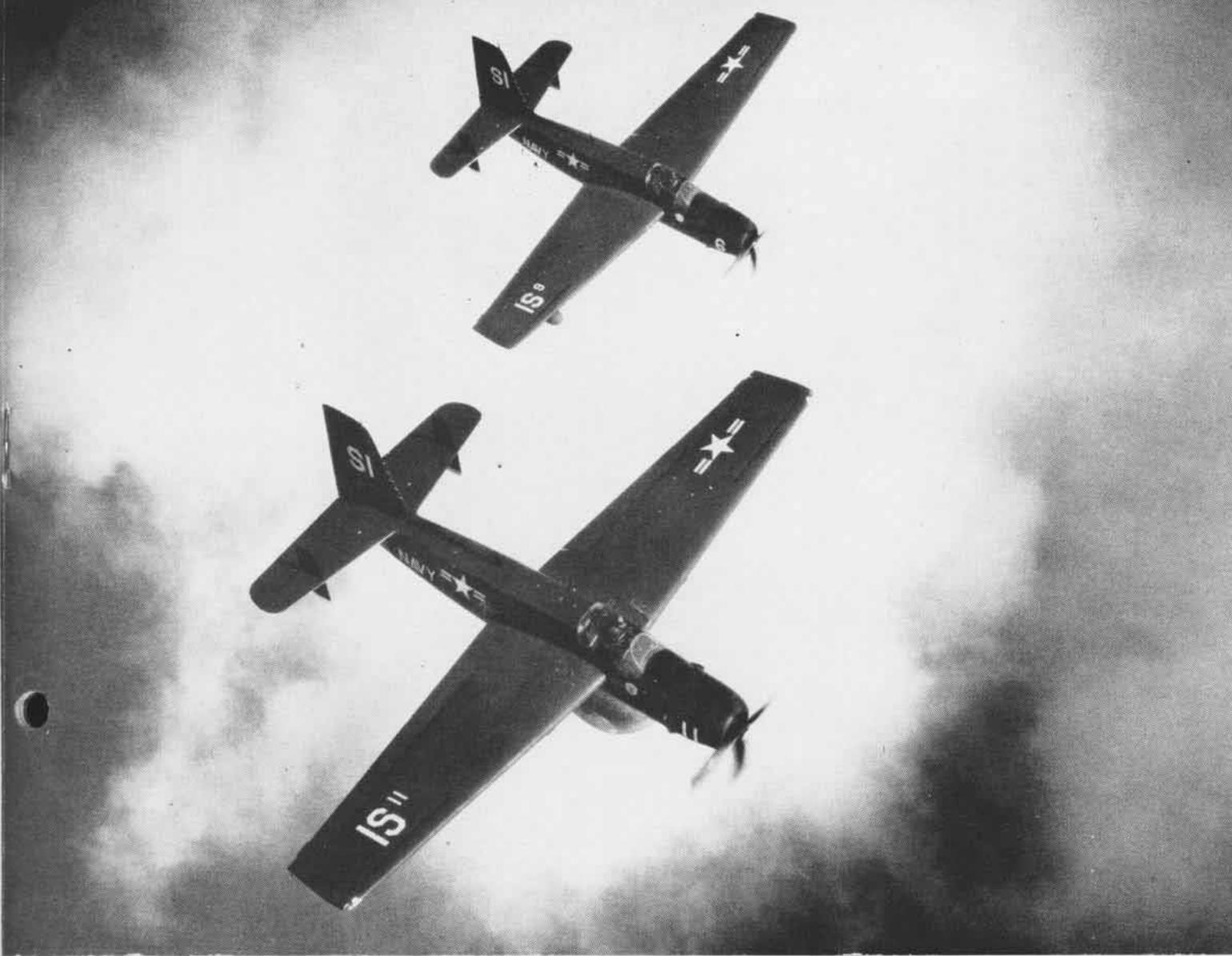
ANTISUBMARINE DUET



NAVAL AVIATION NEWS presents here a recognition spread on the Navy's antisubmarine team, the Grumman Guardians. The AF-2W with the radar guppy

seeks out the subs and the AF-25 carries out the attack. The Guardian is the world's heaviest single-engine aircraft, with P&W R-2800-46 engine, weighing 25,000#.





NAVY'S ANTISUB AIRCRAFT



AD-4W, SEARCH PLANE OF THE DOUGLAS ANTISUB DUET, HAS THREE TAILS WHILE AD-4S HAS NOT

SINKING submarines is one thing; finding them is something else. In order to do both jobs a lot of electronic search equipment is required as well as a considerable load of ordnance material that is not only lethal but weighty.

Getting all the search gear and all the required weapons aboard a single aircraft means using a plane so big that carrier operation, at least with existing carriers, is impossible. The alternative is to use not one but two smaller planes, each specialized to do its own particular part of the job when working together as a hunter-killer team.

The Grumman *Guardian*, pictured on the preceding pages, is a plane with a split personality especially well adapted to this purpose. The AF-2W carries the electronic gear necessary to find the sub; the AF-2S has just what it takes to sink same. Aside from the bulging radar installation under the "W" version, the two inseparables look pretty much alike. The shape of the wings and tail surfaces bring to mind the venerable TBF/TBM.

As in the *Avenger*, blunt tips mark all extremities except those of the stabilizer. The *Guardian* has something the guppy version of the *Avenger* had in the form of two small additional fins which extend both above and below the horizontal tail plane.

Somewhat resembling the search half of the AF team is a "W" version of the Douglas *Skyraider*. The AD-4 carries a "guppy" under the fuselage to house the radar required for airborne early warning and submarine search missions. It, too, has a pair of extra fins mounted on the stabilizer. Principal recognition

differences between the AF and AD "W" versions are in the latter's low wing mount and configuration of the cockpit canopy which has a long opaque extension faired back into the fuselage, quite unlike the bubble type of the basic AD design.

When seaplanes or large land-based aircraft are used in ASW operations, it's not too difficult to load them up with all the search paraphernalia necessary and still provide for a useful load of packaged devastation. PBM's, P2V's, and PB4Y-2's can patrol singly with full assurance that they can cope with any hostile submarine discovered. Into this self-sufficient category falls also the

more recently developed P4M *Mercator*.

The Martin *Mercator* has all the load carrying characteristics required for anti-submarine missions plus a degree of speed not previously available in aircraft of this type. A flight of three from VP-21 not long ago covered the 460 statute miles between San Diego and Alameda in a neat hour and a quarter.

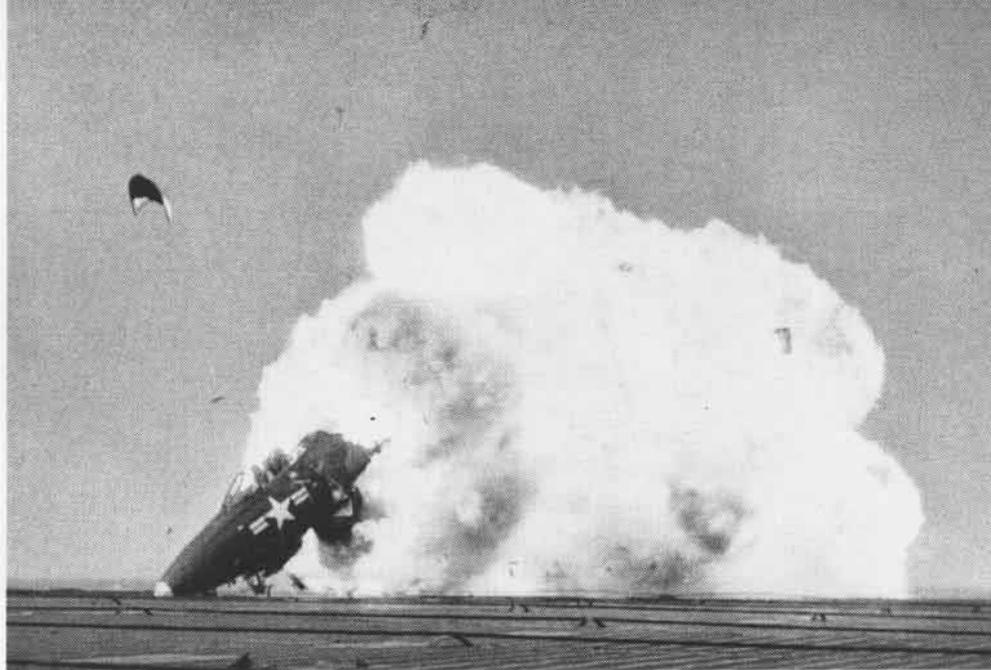
The P4M has a decidedly slender look as both wings and fuselage appear long and narrow. The blunt-tipped wings are shoulder mounted amidships, producing the effect of a long, thin nose. A single tail is fitted, the fin curving forward just before it joins the fuselage. Turrets are located in nose and tail, and topside just forward of the fin; radomes extend prominently below the underside.

Each nacelle contains a conventional Pratt & Whitney R-4360-20 piston engine as well as an Allison J-33-A-10 jet. The latter is mounted below, just aft of the long cowl of the radial engine, and forms a marked break in the lower part of the nacelle's outline. Seen in plan view, the two nacelles stick far out ahead of the wings while the jet exhausts at their rear are cut off flush with the trailing edge.

The *Mercator* is one more reminder that in modern aircraft the number of engines is not always what it seems. It also emphasizes the fact that for recognition purposes the important fact to remember is not how many engines an aircraft has as how many it looks as though it has.



FOUR-ENGINE MERCATORS OF VP-21 PHOTOGRAPHED ON WESTERN HOP HAVE LINES LIKE LIBERATOR



LOW AND SLOW WRECKS AN AIRPLANE

THIS spectacular series of photos shows an F9F hitting the ramp after coming in too low. Note the canopy fly-

ing off in the second shot, the wheel rolling up the deck beside the forward part of the plane in the third photo and the

crowd of deck crewmen pulling the badly burned pilot out. Final photo shows rear half of the plane on the after end.



SWAMP BUGGY, WEASEL RESCUE AVIATOR



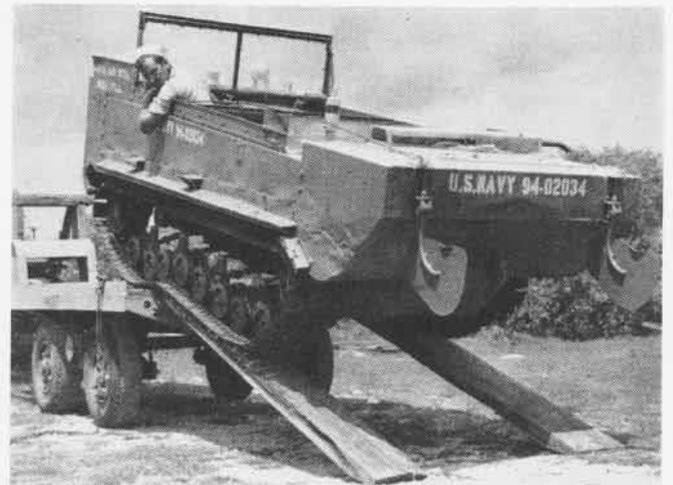
CRASH ALARM goes off at NAS MIAMI when a plane goes down in the Everglades; Capt. P. Henry plans rescue with Lt. T. D. Wallace



ONCE THE plane wreck has been pinpointed, all units proceed to scene; near the spot, the propeller-driven "air buggy" is unloaded



BECAUSE OF its slight draft, the swamp buggy speeds up Everglades waterways at 60 mph to a position where pilot is known to be



ANOTHER RESCUE unit, the Weasel, is taken as far as possible by truck and unloaded; note prop, rudders and caterpillar tracks



THE WEASEL operates on water as well as land and descends into a canal choked by water hyacinths; triphibious rescue facilities are necessary in marshy land of the Everglades



COAST GUARD helicopter, unable to land in heavy undergrowth, helps locate the wreck



LOCATED AT last, the "injured" man spotted by helicopter is picked up by the Weasel; snakes, alligators plentiful in test run area

RESCUERS LOAD the "victim" aboard stretcher and place it on Weasel; Army developed this vehicle for combat use in swamp areas

WHEN a Navy pilot goes down in Florida's snake-infested Everglades, rescue operations can be set in motion immediately, with helicopter, propeller-driven swamp buggy and amphibious *weasel* on continuous duty if needed.

In a test rescue, staged in a fairly inaccessible area of the swamps, the "injured" man was picked up in slightly more than two hours from the time

NAS MIAMI received the "aviator down" call. The swamp buggy and *weasel* are loaded aboard trucks and hauled to the spot nearest the crash scene.

A Coast Guard helicopter and a *Piper Cub* piloted by Everglades expert LCdr. Holley Stirling fly to the area to attempt a rescue if possible and to guide the ground forces if they cannot land near the pilot.

Because of the swampy terrain in much of the Everglades, the amphibious *weasel*, driven by propeller or caterpillar treads, proves valuable to get over land and water. The swamp buggy, powered by an aircraft engine and propeller, can do 60 mph anyplace where a few inches of water is available. Once the pilot is picked up by the *weasel* he can be transferred to the air-boat for swifter transportation to the nearest highway.



AT 60 MILES an hour, the air buggy rushes the "crash victim" to hospital after the Weasel has delivered him from accident spot;

Seminole Indians in Everglades and fishermen use this type craft to navigate the shallow waterways found in this part of Florida

JETS TAKE OFF IN 2000'

TWO PILOTS with VF-781 in Korea proved that it is possible to get a jet aircraft off the ground without requiring an 8,000-foot runway.

Lt. Rod Sprigg, flying an F9F from the *Bon Homme Richard*, took a incendiary high explosive hit in his 20 mm cannon breach near Kangnung, South Korea. The explosion severed a hydraulic fitting on the nosegear retracting cylinder, making it impossible to retract the nose wheel and causing loss of all hydraulic fluid.

Sprigg and his wingman, Lt. (jg) Robert Scully, decided to land at K-18 airstrip owing to the danger of losing the nose section while making an ar-

rested landing aboard ship and also of having to make the return flight with landing gear in down position.

A no-flap landing on the 3,050-foot marston matting presented quite a problem. Sprigg rolled down two-thirds of the strip and realized his brakes would not stop him, so he casually steered off the runway onto some sandy loam. This stopped him. Scully made a carrier approach with flaps full down and made it with no strain.

Cdr. H. N. Funk, commander of CAG-102, flew off the carrier with M. O. Bunnell, ADC, VF-871's engineering chief, in a *Skyraider* with tools and parts. Both planes were serviced for

water injection and the damaged F9F repaired. Two guns from each plane were removed, as well as all ammunition.

Inasmuch as K-18 had no facilities for starting jets, Chief Bunnell improvised a method. Using a jumper wire from a shipboard jet starting jeep, he connected it from the AD's generator to the F9F.

When the jets finally lit off and their piercing whine filled the countryside, curious Koreans appeared from nowhere to investigate the strange sound. When takeoff time rolled around, the Air Force was out in full force too, with skeptical looks on their faces.

Here was the situation—six knots of wind, 2,000 pounds of 100-octane fuel aboard, temperature 75°.

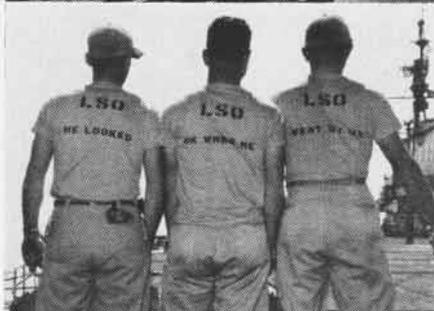
The pilots wound up to 100% engine speed before releasing brakes and did not cut in their water injection until they were going 80 knots. When the water injection took hold, the planes raised out of their oleos and seemed to leap into the air, becoming airborne in less than 2,000 feet.

These were the first jets of any type to use this field and the Air Force men were truly amazed that the *Panther* jets could get in unscathed, let alone fly out. Since this event, VF-781 has had two more F9F's land at K-18. They too made safe landings and flew out successfully with water injection aid.

● VR-31—During the first seven months of 1951, VR-31 and VR-32 ferried 2,785 planes, flying 4,881,978 miles.



A COUPLE of the Navy's newer jet aircraft are shown in the pictures above landing and taking off from the CVB Midway's deck. In the top one, the F3D Douglas Skyknight comes in for an arrested landing. The middle picture shows the F7U-1 Cutlass being catapulted. Note the nose-high attitude at which this high-speed jet with swept wings takes off. This same attitude is strikingly shown in the bottom photo, with the F7U catching a wire as it lands. It is the Navy's first operational swept-wing plane and when it landed it was the first time a swept-wing jet had come aboard, although British have landed that type.



THE THREE landing signal officers attached to the staff of ComCarDiv One have jerseys bearing a message to all Air Group One pilots. The phrases are gentle reminders to be continually on the alert for proper technique during their carrier landing approaches.



ONE OF THE Navy's newest helicopters is the HO4S, a 10-place pinwheel built by Sikorsky Aircraft. This photo, taken at NATC Patuxent River, shows the big plane with metal floats installed. Note placement of the engine in the plane's nose section.

Navy Men Learn of Defense Newcomers Get Refresher Training

VR-8, HAWAII—This MATS transport squadron, based at Hickam AFB, has a new Division X which is at least interesting if not popular with all newcomers to the outfit.

Whether he is an airman apprentice or an aviation machinist's mate first class with nine years service, all are assigned to X division for 40 hours indoctrination on the squadron and taking refresher courses on subjects and drills he had in the Navy at one time or another.

Such "salty" expressions as "Boot-camp again?" or "Watineel do they think I am, a ree-kroot?" are soon lost in the shuffle as the men launch into the following: 10 hours of weapons training, close and extended order drill with two hours of squad combat drill tossed in for good measure, four hours of interior guard drill, two hours of first aid, movies on radiological, biological and special munitions, four hours of field fortifications and two hours on firefighting in warehouse and barracks areas.

The division was formed on orders from 1500th Air Transport Wing to all Hickam squadrons to participate in base defense training. Head of the new division of Lt. (jg) J. P. Barber and Fred Cartwright, AD1, defense training petty officer.

As high as 80 men are in the division at one time. Men showing a complete lack of interest in the training remain in the division for another week—but this has never happened. Nobody wants to risk having to "troop and stomp" for two hours a day for another week.



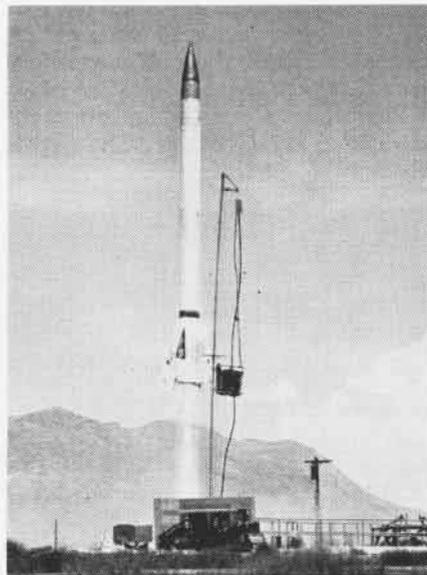
NEWEST jet plane in the Navy's fighter stable is this McDonnell XF3H-1 Demon, which made its first flight of 24 minutes in August. The plane is powered by an undisclosed Westinghouse jet engine in the fuselage.

Viking Sets New High Mark Navy Rocket Soars 135 Miles Into Air

The Navy holds the world's record for single-stage rockets today after one of its pencil-thin *Viking* rockets soared 135 miles into the air over White Sands, N. M., on 7 August.

Seventh of a series of 10 rockets being built by Glenn L. Martin Co., for the Navy, the rocket reached a top speed of 4,100 mph. The 135 miles cracked by 21 miles the previous single-stage rocket record set 17 December 1946 by a rebuilt German V-2 fired from the same site. Highest mark reached by a rocket is 250 miles, recorded 24 February 1946, by a WAC *Corporal* rocket fired about 20 miles in the air from the nose of a V-2.

Highest previous record set by a *Viking* rocket was 107 miles, set last November 21. One reason the latest rocket reached the new high was that it was refueled after a delay evaporated 20% of its liquid oxygen fuel supply. The oxygen evaporates at about 20 pounds a minute in the hot desert sun. With ethyl alcohol, liquid oxygen makes up the *Viking's* 8,000-pound fuel load at takeoff. Its rocket engine was built by Reaction Motors.



VIKING STARTS UPWARD ON 135-MILE FLIGHT



MURPHY GETS 'AIRLIFT' TO DECK OF USS BAIROKO

Army Gets a Navy Transfer Corporal Put on CVE via Breeches Buoy

Army Corporal Roy E. Murphy was spending a 10-day leave with his brother, an HMC aboard the DD *Rupertus*. Then it developed that the *Rupertus* was ordered elsewhere and would not be returning to port.

There was nothing to do but get Murphy transferred to the USS *Bairoko* to expedite his return to Yokohama. This was accomplished by breeches buoy transfer.

Murphy enjoyed life aboard the carrier, but he was still definite about preferring "terra firma" to the rolling decks.

VR-5 Rushes Aid to Kansas Flies Water Purification Tablets In

VR-5, MOFFETT FIELD—When contaminated drinking water was a problem in the Kansas flood area, VR-5 rushed halizone tablets in from San Francisco to purify water for consumption.

The U. S. Public Health Service communicable disease center in Atlanta, Ga., searched the country for immediate means to purify drinking water in the flood zone lest a plague break out. Sufficient halizone tablets to purify 5,000,000 gallons of drinking water was found in San Francisco.

A hurried call went out to government and civil agencies for transporting them to Kansas and Missouri disaster areas. VR-5 volunteered to do the job. Received in bulk form at 1900 on 18 July, the tablets had to be packed into smaller waterproof containers for easy dispersion to individuals. Volunteers worked all night repackaging and at 0700 the next morning 1,860 pounds of halizone had been stowed aboard a plane and headed for Olathe, Kansas.



DURING BAIL-OUT DRILL AT OLATHE AIRCREWMAN HARRIS HITS TRAMPOLIN IN GOOD STYLE

OLATHE BAIL-OUT DRILL

COMBAT AIRCREWMEN in VA-889 at NAS OLATHE recently took part in a parachute bail-out drill that will pay off if they ever have to make a real jump.

For the test, a TBM was jacked up to flight attitude and then tied down securely. A trampoline was then secured next to the bilge door of the aircraft. The door itself was removed to prevent damage which might occur if it were jettisoned. Several men were stationed around the trampoline to guard against the "jumpers" getting hurt.

In each drill, two crewmen boarded the plane and took places, one in the turret and the other in the seat in the radio compartment. Each put on his chute harness, safety belt, and headset. Chutes were in their normal places, one over the door and the other on the floor of the compartment. (These were surveyed chutes, and they were fixed so that they would not open.)

The pilot at the controls ran the engine up to 2000 rpm to provide a realistic wind effect. Then he gave the bail-out order.

After acknowledging the bail-out order, the crew had to get up, put on their chutes and bail out.

Tests were given to four crews. Then Lt. (jg) Stone, under whose direction the drills were being run, and Chief Ogden tried it to find out why the first crews took from 25 to 30 seconds to get out.

In analyzing the mistakes, several points were noted. The first crew tried to fold the seat up against the bulkhead, which cost an extra 8 to 10 seconds. The

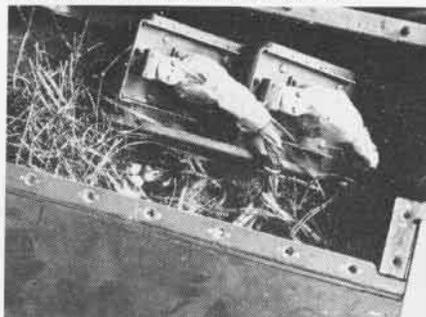
next crew operated correctly, but were just slow. The third and fourth crews lost time in fumbling with their chutes. The biggest bottleneck was caused by the man on the seat handing the turret man the chute fastened above the door. The turret man then had to wait several seconds before he could even start to put on his chute.

When Lt. (jg) Stone made his test, he grabbed the chute on the floor and tossed it to the chief as he came out the turret. Stone then put on the chute over the door and managed to get out of the plane in 15 seconds with the chief following right after him.

The first four crews then made second tests. All managed to correct their mistakes and get their time down to 20 seconds.

In both sets of drills, all hands put on their chutes correctly and no one got hurt.

Those taking part in the tests were aircrewmn Reed, Ramirez, Clark, Powell, Schell, Bark, Harris and Cox.



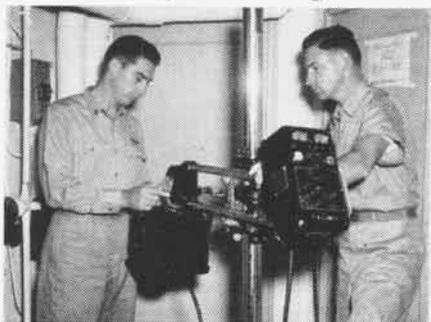
VP-8 GETS REPUTATION for smooth flying—Two sets of birds have selected home sites in its P2V's; this family nests in a wing tip and the other in a vertical stabilizer

Reserve Fixes X-Ray Break Repaired Machine Photographs Berner

USS PINE ISLAND—The worth of the Navy's large Reserve corps was proven on this seaplane tender recently when an injured pilot called on his civilian profession to help cure his own injury.

Lt. Harold J. Berner of VP-731, stationed at Sangley Point, Cavite, P. I., hurt his back in a rough water landing. Reporting to sick bay on the *Pine Island*, he was told by reluctant medical men they could not x-ray his back. The machine, they said, had been damaged by typhoon *Iris* near Okinawa. Aluminum arms employed to hold the x-ray tube in place had been broken.

Berner, as it turned out, was the right man at the right time. He was told an all-purpose aluminum welding rod and special flux were necessary to repair the machine. These, the lieutenant was told, were really difficult to get in such



BERNER (LEFT) REPAIRED BROKEN X-RAY UNIT

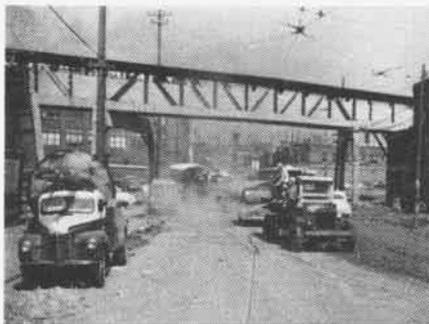
a remote area and even if obtained would require highly-skilled workmanship.

Berner went to his stateroom and came back with a small kit. It just happened to be an all-purpose aluminum welding rod and special flux. It seems that his civilian job before being called back to active duty was salesman and demonstrator for the Eutectic Welding Alloy Co., in Kalamazoo area. He was one of about 200 men in the country fully qualified to repair a malfunction like that.

So the patient turned workman and repaired the cast aluminum breaks and in short order the machine was working again. Then the medics took the x-ray pictures of Berner's back.



HE WAS FOLLOWING US A FEW SECONDS AGO!



JAX MALARIA UNIT SPRAYS KANSAS FLOOD AREA

Navy Sprays Flood Areas Insect Control Unit Rushed from Jax

NAS OLATHE—Six power spraying units from NAS JACKSONVILLE and men of the malaria and mosquito control unit were flown to this station to aid the flood-stricken Kansas City area fight against the aftermath of the flood—flies and mosquitoes.

Health conditions in the area were bad following the raging floods. Dead livestock from the tremendous packing industry, together with silt and debris from the 300-mile Kaw watershed mixed with grain and hundreds of other products from the marshalling yards created bad insect-breeding potentialities.

The spray unit, under LCDR. John M. Hirst, mounted its gear on 1½-ton trucks obtained locally and covered a wide area when flood waters receded. The unit has been called out 11 times the past two years on various insect control projects, but this was the first time it had worked in a flood disaster.

FAETUPac Gives ASW Course 3-Day Refresher at Command Level

A new ASW course, designed primarily for command level officers of the Navy, is now being given by Fleet Airborne Training Unit Pacific at NAS SAN DIEGO.

This three-day course has a twofold purpose: to relay to senior officers the latest information on antisubmarine equipment and tactics and to serve as a refresher course for officers who have been away from ASW and have been ordered to responsible posts in this field.

Among those who have completed this course are Commander Carrier Division 17 and his chief of staff. They attended the command level course in May and were followed in later courses by other key officers of the staff.

Salient aspects of the following tactical phases are included in the course: (a) search phase, including radar and ECM applications; (b) tracking, utilizing MAD gear and sonobuoys; (c) attack, with lectures on depth bombs, aerial mining, rockets, and special weap-

ons; and (d) high points of conducting coordinated operations.

At the end of the course, the relative importance of each of these phases is demonstrated by the presentation of an ASW operation on a tactical floor area. This game, operated by ASW instructors, is a graphic display of a concerted antisubmarine operation—surface, sub-surface, and air—which makes the exercise highly realistic.



MGEN. CHRISTIAN F. Schildt, head of the First Marine Air Wing in Korea, is shown here after a check-out in an AD-1 belonging to Attack Squadron 121 at MCAS El Toro. The Skyraider is one of the few planes in Marine aviation he had not flown. With him here are MSgt. A. B. Greathouse and LCol. Alfred Gordon, squadron commander.

VF-11 Claims Jet Record 210 Sorties Without Accident Is Claim

VF-11, ATLANTIC—A claim for a jet flight record was registered by this squadron operating off the *Coral Sea* when it made 210 launches without a "dud."

The record was made during May



CHAMPION MECH TEAM HELPS VF-11 SET RECORD

and part of June when the outfit flew its F2H's 415.2 hours in the former month with 208 carrier landings. Full credit was given the maintenance gang under Lt. R. G. Puckett for making this record possible.

During the whole period, all flying was free of pilot-error-caused accidents. The only accident was caused when the starboard wheel assembly of Ens. G. Huelsback's plane shattered during catapulting, damaging the inboard flap (NANews, June, Letters page). He brought his plane in on two wheels with only slight damage, the plane being "up" three hours later.

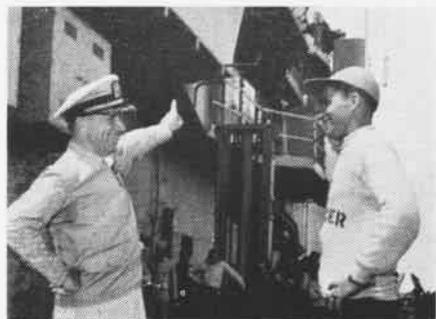
This squadron uses a system of organization which speeds up flight deck operations. To facilitate speed and dependability of launches, assisting pilots and last-minute trouble shooting, the men are divided into four teams, each responsible for four aircraft.

As a result, each individual looks on his aircraft with personal pride. Teams develop a competitive spirit which is excellent. The outstanding team during May, is shown in the photo: Standing, B. F. Hanson, D. E. Stewart, J. L. Carter, R. E. Winstead, B. L. Grimes and J. W. Walker. Kneeling, R. W. Vittum, W. W. Massey, Jr., E. M. Perway, team captain; R. W. Marcus and T. L. Blich.



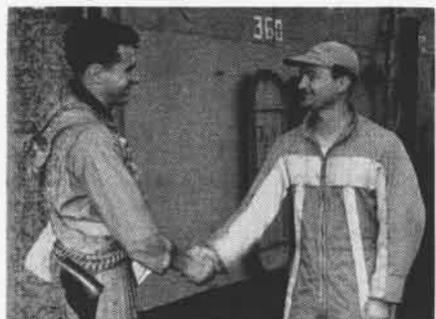
A LITTLE thing like a two-bit cap on a belly gas tank can be mighty important—especially if it comes off when the plane is making an arrested landing. Here is what happened to 1st Lt. Burcher V. L. Sheard of VMF-323 when he landed aboard the *Sicily*. There was just enough gas left in the tank to spray the hot exhaust stacks, resulting in the blossom of flame shown here. Needless to say, all tanks now are being emptied before coming aboard. Damage to the plane was slight and with new elevators it was in the air again in a few days

Landings and Cakes Make News



CAPT. BRIGGS SHOWS MORGAN WAY TO POST

NAVAL AVIATION NEWS recently swore it was not going to run any more pictures of routine cake-cuttings as a result of thousandth landings on carriers, but along came two stories which are unique enough to be news.



BOXER LSO, MANHART, CONGRATULATES RINES

Lt. (jg) Robert N. Johnson brought his VF-31 Panther jet aboard the Leyte on 5 July for the 32,000th landing aboard that carrier. That wasn't anything unusual, but it became news when it turned out that Johnson was the pilot



CAPT. DUDLEY OF LEYTE GIVES JOHNSON CAKE

who had made the 32,000th landing aboard another carrier—the Wright—back on 12 October 1950.

When the Boxer's Reserve air group makes a 1000th landing, it is usually routine, but when Lt. (jg) Mel Rines landed his Panther on 6 July it called for an extra celebration. It was the Boxer's 45,000th landing, highest mark for any carrier in the active fleet.

A former week-end warrior at Glenview, Rines was called back to duty last summer. An unusual incident was staged for Rines' historic landing. Aviation Boatswain's Mate Second Class Clarence

I. Morgan, a veteran plane director on the carrier flight deck who has seen 25,000 landings on the Boxer, temporarily switched jobs with Air Officer LCdr. J. E. Shew. Morgan took Shew's plane in Primary Fly directing landing operations while the Air Officer went to the flight deck to guide the taxiing Panther forward.

That evening a party was held in the wardroom in honor of the landing. RAdm. W. G. Tomlinson, ComCarDiv Three, presented him with a cake. Adding another chapter to a new Boxer custom, a cake was awarded the carrier's helicopter detachment for their plane-guard work, with Lt. (jg) Henry Buerckholtz accepting for the crew. The Boxer "angel" has now rescued 10 downed pilots from Pacific waters during the present cruise. So he got a cake with an angel on it, riding on a cloud.

Merchants' Stores on Ship Hong Kong Salesmen Visit Pine Island

USS PINE ISLAND—A new way to handle souvenir shopping by members of the ship's crew in a foreign port was tried out successfully by this seaplane tender while in Hong Kong harbor.

Instead of the crew going ashore to shop, merchants were brought aboard to sell their wares. From an approved list of merchants furnished by the station ship, USS Albuquerque, a selection was allowed to set up shop between 0800 and 1800 each day on the seaplane and hangar decks. Close watch was kept to see they stayed in their area and no unauthorized boarders came on.

After five days operations, the Pine Island's "bazaar" permitted the ship's crew to buy all it wanted of chests, leather goods, linens, suits and souvenir items. A Chinese vaudeville show entertained on two evenings.



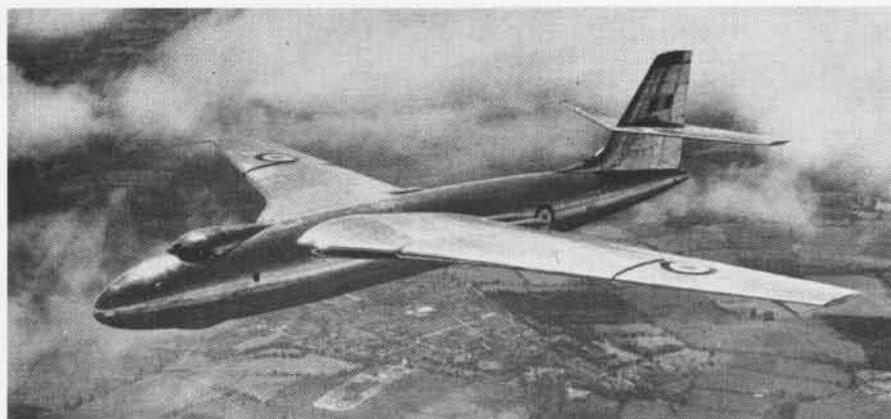
FIGHTER SQUADRON 112 returned from Korea to find new pilots reporting. Midn. D. I. McGinnis, recent Pensacola graduate and brother of Lt. (jg) T. R. McGinnis, was on the roster. "Big" McGinnis checked "Little" McGinnis (cockpit) out in the F9F-2



ABOARD the Boxer off Korea, former Reserves from NAS GLENVIEW, Pronevitz, Edney, Livingston, Sitarz and Leonard learn workings of turbojet control from a P & W man.



FANCY SHOOTING with a .45 cal. pistol has won for Thomas D. Elton, AO1, of NAS Alameda's pistol team 44 medals in his first year of competitive shooting.



GREAT BRITAIN, noted for her sleek jet bombers like the Canberra, has come up with another in the Vickers Valiant. This is Britain's first four-jet bomber and a substantial number for the Royal Air Force has been ordered. The Valiant is powered by four Rolls-Royce Avon jet engines. Note jet intake in leading edge wingroot and two jet exhaust orifices aft.

AIRPAC BAILOUT TRAINER SAVES LIVES

THE TIME-HONORED saying that "what goes up must come down," is poor consolation to a pilot parting company with a disabled aircraft with no impediment to his downward passage other than wind resistance.

On the other hand, the best parachute in the world is useless unless the pilot can free himself from the aircraft in time to use it. It is at this point that Air Force Pacific Fleet can step in with its bail-out trainer and possibly provide the margin of safety.

The trainer is believed to be the only one in the Navy that is both portable and adjustable. Other models in use at various stations are permanent fixtures utilizing one definite and grounded aircraft.

AirPac's trainer—at this writing—can be used with either the F4U *Corsair* or the AD *Skyraider*, both planes representing practically all types of aircraft excepting the jets.

One man can push the trainer into place against the side of any operational aircraft and, within one hour, be set up to handle students. Adjustments are made by the use of hydraulic jack, constructed from salvage material. The completion of the trainer has forged one more link in AirPac's survival program.

Scrap material and salvage were used to arrive at a simple but sturdy construc-



MATTRESS, COVERING RESTS ON WOVEN NETTING

tion, such as could be built at any base with the help of metalsmiths and parachute riggers. The safety of pilots undergoing training was of primary importance in every phase of the construction and necessitated several modifications and changes before the final product was evolved.

A special netting made of 21-thread manila line was woven over a metal frame and covered with pads made from mattresses. Ordinary cargo netting proved too large a mesh. Also, the hand-woven netting had more spring in it to take up the shock of the pilot's weight.

In addition, a shock-absorber effect was obtained in the compression fea-



STUDENT DIVES OUT OF CORSAIR COCKPIT ONTO PRACTICE MAT OF AIRPAC'S BAILOUT TRAINER

ture of two pairs of pipes sliding into one another on the adjustable frame and creating an airlock.

Each pilot receives a thorough briefing before being run through the trainer. This includes movies of jumps made by previous students, pointing out their mistakes.

The plane's engine is revved up from 2100-2400 rpm, according to the weight of the man. This provides a slipstream of 100 to 140 mph and blows the pilot into the padded trainer, rather than on the wing where mutual damage to both man and plane could result.

The slipstream also more nearly simulates an actual bail-out and clearly shows

up errors in bail-out procedure. The throttle is controlled by a long line leading to a man standing on the deck and is cut at the instant the pilot hits the padding.

What do the pilots think of it? At first they're skeptical but it takes only one unexpected delay in bailing out that would have spelled death in an actual emergency to sell them on the idea.

One pilot left his flaming *Skyraider* at El Centro, Calif. only two weeks after completing the course and attributes his speedy departure from the plane to the bail-out procedure taught him.

The trainer provides every condition that would be encountered in an actual bail-out, with one exception—if the pilot jumps out wrong, he goes back and tries again.

The Marine Corps used a somewhat similar bail-out trainer idea at Cherry Point several years ago to check the time required by pilots to go over the side in an emergency. The research project investigated things pilots did wrong and ways to correct weakness of bail-out technique.

All of the Navy's jet fighters are equipped with pilot ejection seats, so that the necessity of bailing out over the side of the fuselage is small. Such a maneuver, in fact, probably would be next to impossible unless the jet was slowed down greatly. On the other hand, most pilots abandoning their jets in an emergency today use their ejection seats successfully and with confidence.



P. R. BARKER, PRI, OPERATES HYDRAULIC JACK

KOREA JET STARTING IDEA

CARRIER Air Group 102 reports a novel solution to the problem of starting a downed F9F where no auxiliary 28-volt DC starting power was available.

Lt. R. S. Spriggs and Lt. (jg) R. L. Scully of VF-781 made emergency landings on an auxiliary airstrip in Korea. After repairs to the plane, the problem of starting arose. Initial requirement was for 800 amperes to operate the F9F start, above the capacity of the majority of aircraft in service in the area.

Cdr. Funk, the Air Group Commander, recruited assistance of LCdr. Don Webb, maintenance officer, and Lt. L. A. Bailey, electronics expert, to figure it out. Bailey studied the possibilities of the 28-volt DC power of the AD-4Q furnished by two NEA-5 generators in parallel.

Each generator is rated at 200 amperes and two in parallel could furnish 400. He felt that a 100% overload needed to furnish the 800 amps to start the F9F would be permissible if for a short period. The power required for operation of the starter falls off rapidly after the initial start and is within the amount two generators normally can furnish.

DOG-50, Cdr. Funk's favorite workhorse, was sent to the emergency strip equipped with a cable to take the power developed by the two generators directly from the common bus and connecting it to the power outlet receptacle on the F9F. When the AD was operating at 1900 rpm, the output of the generators was connected to the F9F. Starting was easily accomplished with no apparent adverse effect on the AD power system.

If the initial starting of the F9F is not done in 30 seconds, the try should be halted to permit generators to cool. During the trial, power was taken direct from the bus to the power receptacle on the F9F. Review-

ing the method though indicates that the mil area of the cabling from the bus in the AD-4Q to the auxiliary power outlet is of sufficient size to permit taking power direct from this outlet.

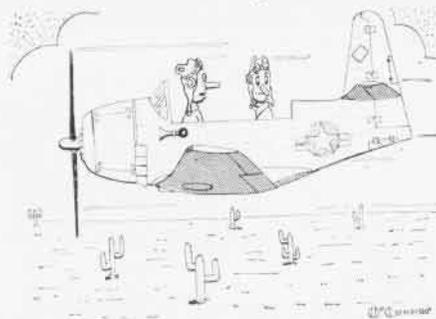
Water injection fluid had been brought to the planes. By using it, sufficient power was developed to permit the aircraft to become airborne in 2200 feet.

Patrol Outfits Lead Pack

Safety Awards for No-Accident Marks

NAS NORFOLK—By flying a full year without an accident, five patrol bomber squadrons in Fleet Air Wings Atlantic command led 100 other Atlantic fleet aircraft units in safety achievements.

Squadrons winning the honor, and their commanding officers, were VP-661, LCdr. T. G. Monahan, Norfolk; VP-49, Cdr. E. J. Fisher, Bermuda; VP-3, Cdr. L. E. Decamp; VP-861, Cdr. E. A. Rodgers and VP-5, Cdr. R. W. Warner. The latter three squadrons are P2V *Neptune* outfits and are based at NAS JACKSONVILLE. The other two fly *Mariners*.



ARE WE STILL ON THE NEW YORK BEAM?



FLEET PILOTS PASS WORD TO RESERVE FLIERS

Fleet Pilots Aid Reserves

Alamedans Explain AD to Olathe Unit

VF-194, ALAMEDA—"Passing the word" was the purpose of the visit of Lts. Don Brubaker and Harley Myles of this squadron to VA-881 at NAS OLATHE, Kansas. Under the ComAirPac liaison plan between fleet and Reserve squadrons, two AD's were flown to Olathe for inspection by 881's pilots.

ComAirPac has assumed liaison responsibility for Organized Air Reserve squadrons to improve readiness of those squadrons for ultimate assignment to the fleet. This is being accomplished by having fleet squadrons sponsor Reserve squadrons and bring the latest word, with lectures and demonstrations of modern carrier aircraft, current tactical doctrines and practices.

VA-881's most pressing need, according to its officers, was for an indoctrination in the latest administrative methods, as the functions formerly performed by CASU units now are being handled by squadron personnel.

Great interest was shown in the AD-type aircraft, which is being used in Korea. As one of the 881 pilots put it, "It's sure a lot of airplane!" In the accompanying photo are Lt. H. F. Brubiss, Lt. J. C. Harrison and LCdr. J. E. Keefe of VA-881, and Lts. Myles and Brubaker.

Mariner Unit Sets Record

New Safety Mark to ATU-10 At Corpus

NAS CORPUS CHRISTI—Advanced Training Unit 10 established an all-time high in flight safety records for multi-engine units in advanced training when it won the safety trophy for fiscal 1951.

The former record of 1.02 accidents per 10,000 hours of flying set by the All Weather Flight School last year was lowered to .85 accidents by ATU-10, flying Martin *Mariners*.

Only one accident marred an otherwise perfect record in the 11,513 hours flown in the 2,785 syllabus instructional flights during the year. The Advanced Training Command safety record was subsequently lowered to a new mark of 3.82 accidents, primarily as a result of ATU-10's record. Officer in charge of the the training unit is Cdr. B. Snipes.



RADIO DISCIPLINE, always a problem in peace or war, gets double emphasis aboard the carrier *Princeton* off Korea. Here pilots of VF-23 listen in their ready rooms to a radio discipline analysis recording of their first strike day in which they flew close air support to United Nations forces. By hearing their own talk played back, they can correct improper radio procedure and learn how it should be done. To the left and right of the recorder are the executive officer, LCdr. W. Laliberte, and the CO, Cdr. R. C. Mueller.



CONTRARY TO aviators' desires, para-rfts are not coming out with the above standard equipment in them. Marines at El Toro put Miss Totty Ames, Los Angeles model, in one to try it out for size. A night-fighter squadron there picked her as Miss Night Fighter.

Skyrocket Sets New Mark World's Altitude Record is Eclipsed

The Navy has announced its research aircraft, the D-558-II, has established an altitude record of "more than 73,000 feet", highest mark that an occupied aircraft ever has flown. Previously, it had been announced that the *Skyrocket* had flown higher and faster than any other plane.

The new world's record eclipses that of 72,395 feet set by a balloon occupied by Capt. Orvil Anderson and Albert Stevens of the Army Air Corps. The pair made their ascent from Rapid City, S. D., on 11 November 1935.

A B-29 carried the *Skyrocket* to about 35,000 feet. Upon release, the Douglas plane, piloted by Test Pilot William Bridgeman, zoomed up well above the balloon record, using its rocket engines for power.

Blimps Move to NAF Glynco ZP-2 Transfers Base from Lakehurst

NAF GLYNCO—Airship activities at this Georgia facility took a rise this fall with the transfer of ZP-2 from Lakehurst to Glynco, bringing 30 officers and 200 men, plus an undisclosed number of blimps here.

Glynco was an active blimp base during World War II and since then has been a way stop for airships of RAdm. Richard F. Whitehead's Fleet Air Wings command. One small ZX-11 detachment of blimps has been stationed here permanently. With the arrival of ZP-2, Glynco is on a nearly fully activated basis. Cdr. F. N. Klein is commanding officer of the squadron. Other blimp bases are at Key West, Fla.; Weeksville, N. C., and Lakehurst on the east coast.

● VR-21—The detachment at Itazuke air station in Japan reports the carrier on-board delivery unit made 112 flights from shore to carriers to deliver 27,704 pounds of freight in a month. They fly converted TBM's.

Bare Panthers Test Paint Job



SOME PAINTED, SOME UNPAINTED, F9F'S REST ON DECK OF FDR DURING MEDITERRANEAN CRUISE

SEEN ANY naked *Panthers* on your carrier decks lately? What is the Navy doing sending out unpainted fighter aircraft to operate with the fleet?

The question has arisen as to whether Navy planes should be painted their present deep blue (a color which was selected for morale and recognition purposes), some other color, or remain clear aluminum metal like the Air Force.

The Navy, recognizing the great risks and the problems which may arise from corrosion, and in light of the protection afforded over many years of paint, is proceeding cautiously in running service tests to resolve the question of shall the Navy paint carrier planes or not?

While it is not considered possible to remove paint completely, because of factors such as the presence of highly corrosion-susceptible magnesium, possibility of eliminating some paint is being explored.

The Navy is sending 100 additional *Panthers* out for fleet operations without their customary blue paint coat. Instead, they will carry only an anodized film on the metal, which makes the surface harder and more scratch-resistant and also provides a limited amount of protection. The results of these large scale service tests will help to answer the question on paint. Reports from the Fleet on the bare *Panthers* will be awaited with interest.

Paint used on the exterior of a fighter plane weighs about 18 pounds a 1000 square feet. Because salt water has such a bad corrosive effect on metals, the Navy has had to combat the problem far more than the Air Force. The latter's planes sometimes are flown with surfaces bare and sometimes covered with aluminized lacquer. When AF planes are ferried overseas, as they have been in



AIR FORCE F-84'S IN JAPAN ON SITKOH BAY

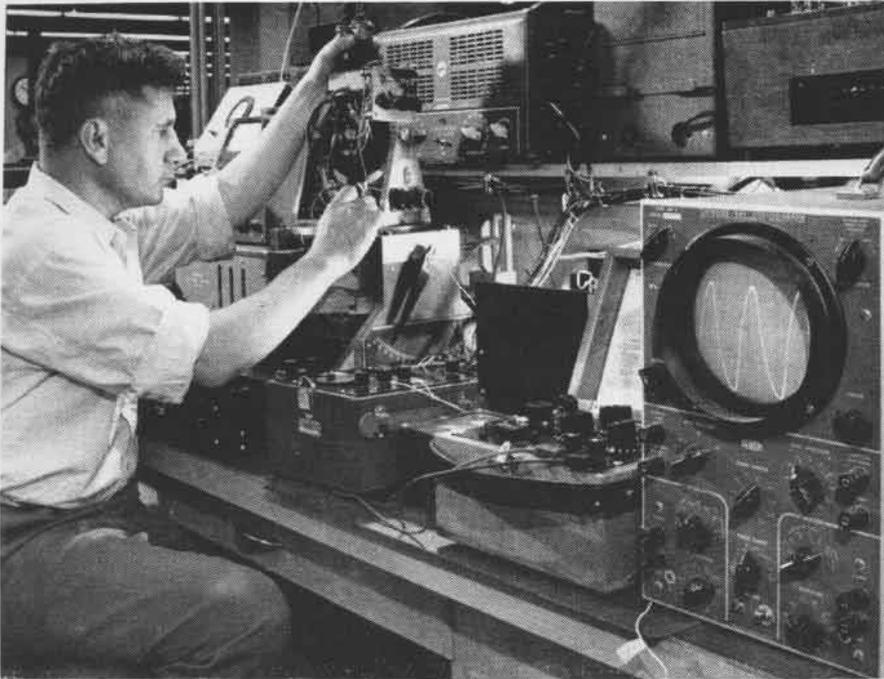
large numbers during the Korean war because of the jets' short range, usually they have to be protected against corrosion by cocoons of plastic material or by other means, which is not the case with Navy planes, which are protected at source against corrosion.

During the early days of World War II, the Navy painted many of its patrol planes in two tones, light on the under surfaces to blend with clouds and darker on top to merge with water when seen from above. Some were all white. This antisubmarine camouflage, however, was done away with later in the war and all Navy aircraft carried the same dark blue protective paint job.

● VP-8, QUONSET—When a sudden torrential rain made a two-foot pond in front of VP-8's hangar, enterprising officers staged a survival ditching drill, complete with inflated life raft.

● NAS PATUXENT—Fleet Logistic Air Wing, Atlantic/Continental has flown 4,000,000 miles without accident since it was established in September, 1950. It carried 6,000 tons or cargo and 75,000 passengers.

FUEL GAGE TELLS TIME



EQUIPMENT USED IN TESTING GYROSCOPES OF AUTOPILOTS TOOK ONE YEAR FOR DEVELOPMENT

JET PILOTS of today are fuel conscious. With a power plant that drinks it at a great rate, time is important.

No longer do gallons of fuel mean anything. It is pounds of fuel, because a certain amount of energy can be derived from a pound of the fluid which varies in volume according to temperature.

But converting pounds into time remaining is another chore. Ticks of the clock for remaining in the air matter.

A "time remaining" feature has been incorporated in the capacitance fuel gage developed by the engineers of the Minneapolis-Honeywell Regulator Co.

No matter what throttle setting is used, the time remaining indicator adjusts to the situation.

This Honeywell development is one of many to be incorporated in Navy and Air Force aircraft. Announcement was made when the company recently formally opened its aeronautical division. The company, primarily a control systems manufacturer, has found its aviation business so expanded that a new factory was constructed in Minneapolis to provide control systems for aircraft. The capacitance fuel gage which indicates fuel remaining no matter what shape the tanks or attitude of the plane, is only one of many aviation products produced by the company.

One long time Navy project was the "Look, No Hands" series of planes which developed completely automatic landings utilizing ILS approach systems. One R4D and one F7F were so equipped.

The system was tied in with the automatic pilot.

New features of autopilot operation include an altitude control. In developing test equipment, the company's engineers had to make an instrument more than usually sensitive to altitude changes. Result is a device that is sensitive to three inches change in altitude.

John Sigford, Honeywell's Chief Aeronautical Engineer, said the controller figuratively puts a tripod under aircraft at any desired altitude. It fits into a box no bigger than a two pound coffee can and feeds its information into the automatic pilot.

"Easy Joe" is another gadget designed to save the pilot work. When the autopilot is engaged and the human pilot wants to make a change in course or perform another maneuver, he doesn't have to reach up, turn off the pilot and horse the plane around. All he does is grab the wheel and make his change. The wheel feeds into the automatic pilot with a light touch, and after the maneuver is completed the plane resumes straight and level flying. "Easy Joe" gets its name from the ease of control pressure.

Other developments of the company include center of gravity control in fuel systems and positive temperature control in jet plane cockpits—accomplished by having sensing elements in many points of the ventilating system.

Sigford stated that Honeywell expenditures on research have increased five-fold in the past four years.

NAS Nola Propeller Mock-up

The technical training department at NAS NEW ORLEANS has designed and built a Curtiss electric propeller mock-up to teach Organized Reservists how to do propeller testing and trouble-shooting. The device tests the student's knowledge of theory and his ability to do the job simultaneously.

The device has three switch panels, two for the student and one for the instructor. The large center panel contains the selector switch and warning light. The small panel contains controls of the miniature aircraft and the plane's variable resistor. The instructor's panel contains 11 trouble switches, which can operate in combinations to show 50 different sources of trouble.

The miniature plane climbs, dives and assumes various attitudes. Changes in attitude cause the governor to control the propeller, demonstrating how the prop responds in flight.

The prop relay is mounted on the table top, allowing access for checking clearance and trouble-shooting. The cannon plugs are laid out in schematic form, but marked the same as actual plugs. All wiring except plugs, brush assembly and switch panels, is located beneath the table. So are drive motor relays.

By means of this device, Reservists may observe the flight characteristics and emer-



INSTRUCTOR CLARY AND HIS PROPELLER MOCK-UP

gency operation of the propeller in flight. They are also taught how to trouble-shoot the Curtiss electric propeller system. And they learn proper procedures for removal and installation of the propeller, its brushes, relays, governor and switches; adjustment of clearance, servicing and inspection, bench-testing and setting of pitch.

Instructor Edgar M. Clary, Jr., ADI, was responsible for developing the mock-up.

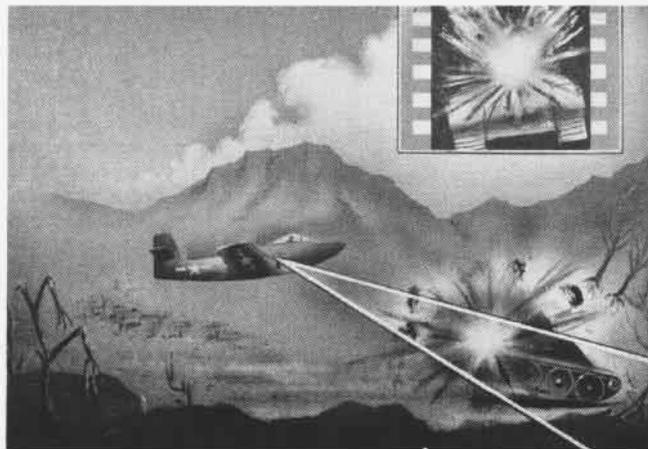
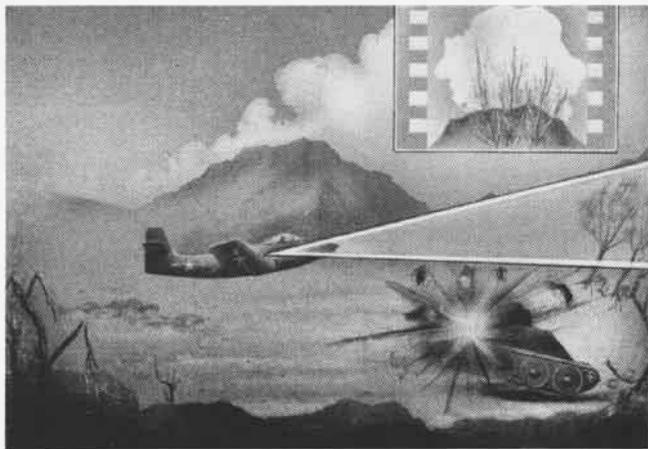
Field Brush Replacement Out

Usage data on starters on both reciprocating and jet engines indicate that a high percentage of replacement is caused by overheating.

In most cases, the heat was caused by chipped brushes, inadequate contact surface between the brush and armature or raised commutator bars or a combination of these conditions. Whatever the condition may be, it can be aggravated by field replacement of brushes.

The contractors have insisted on eight to ten hour run-in of brush and armature under no-load conditions to insure as nearly perfect brush seating as possible.

This procedure in most cases, can be accomplished only in an O&R shop. It is, therefore, clear that brush replacement should be only an emergency task in the field.



FIXED GUN CAMERA AIMS STRAIGHT AHEAD IN PULLOUT, MISSES HITS WITH TILTING ADOG LENS AXIS, PLANE CAMERA RECORDS HIT ON A TANK

ROCKET CAMERA CATCHES HITS

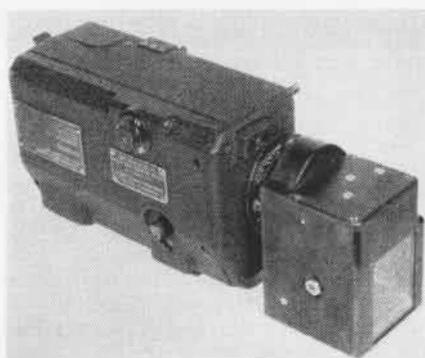
THE NAVY has solved the problem of getting gun camera moving pictures of rocket hits in Korea and is procuring 300 units of the new invention for use in the field. The lightweight unit uses mirrors tilted by G forces to shoot downward when the attacking plane pulls out of its dive.

Thousands of feet of gun camera movies shot in Korea had failed to give any data on hits because the plane's camera was pointed upward in the pullout at the time the rockets hit the target. Pilots' claims were believed to be "too optimistic," and the Operations Analysis Office of the USAF demanded a better system of recording rocket hits.

At the same time, Dr. Charles H. Harry, head of BUAER's Research division mathematics section, ran into the same trouble. After viewing gun camera film, he could only ask "What did the rockets hit?" Fixed cameras filmed machine gun fire but the rockets would first appear in the field of the camera lens and fall out of view. The rapid pullout plus the greater trajectory drop of rockets caused the trouble.

What appeared to be an obvious solution—a wide angle lens—was discarded because the image size was prohibitively small. Space in a modern fighter wing permits little mechanism more than a camera itself. Complicated electronic or mechanical gadgets were frowned on for operational reasons, and any appreciable weight increase was "out".

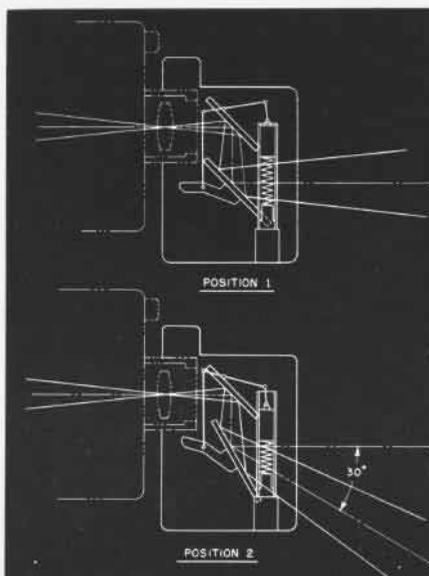
Dr. Harry and John S. Antinello, research engineer in the supersonic section and a camera hobbyist, went into a huddle and came up with the mirror-tilting idea. Such obviously complicated measures as gyro-stabilized cameras and mechanically-rotated cameras were discarded. Prisms produced optical aberrations and were unsatisfactory. A system deflecting only the camera optical axis



SIMPLE ADOG UNIT ATTACHES TO GUN CAMERA

was considered and special mirrors, silvered on the front surface, used.

To determine the angles the optical axis must be depressed to photograph rocket hits for both propeller and jet aircraft, a series of computations was made. It was found a required range of deflection angles of 0 to 30° was necessary to insure that the unit would work on all planes.



LOWER DRAWING SHOWS DEFLECTION OF MIRROR

The problem of moving the mirror exactly at the right time to record hits next was considered. Mechanical and electrical systems were discarded, and the inventors decided an accelerometer sensitive to plane pullouts would limit the action of a movable mirror. So they came up with the Automatic Depressor of the Optical Axis of a Gun Camera, which Navy-wise soon became ADOG.

A DEVELOPMENT project was established at Aeronautical Experimental Photographic Laboratory at NAMC PHILADELPHIA. There Arthur Kaplan, Donald Hoyt and Ed Christian simplified and reduced the physical size of the ADOG unit. Tests on a cleverly-rigged pendulum device, imitating plane pullout forces, showed it promising. Actual tests with live rockets at NAS PATUXENT RIVER proved the system workable at diving angles of 15 to 40 degrees.

The final ADOG unit weight is only a few ounces, fits in a man's palm and requires no attention from the pilot. When the fighter pilot fires his machine guns or cannon, the camera operates as a fixed, forward-looking camera.

If he chooses to fire rockets, the ADOG unit is immediately energized and compensates for the rocket ballistic drop and plane pullout. Although the unit will be continually under development for further improvements, the first 300 ADOG units are being made at the Naval Gun Factory, Washington, D. C., for immediate use in the field.

The drawing accompanying this article shows how the lower mirror is pulled upward by G forces, tilting the lens axis downward 30 degrees (position 2).

● VR-21—All records for planes and wounded handled by the Midway detachment were broken during July. Previously MATS C-97's overflowed Midway islands, but unfavorable winds forced them to refuel here.



PATCH ON SIDE OF PBM RIGGED FROM A CHAIR

Bosn's Chair Aids in Repair

USS CORSON, PACIFIC—Emergency repairs to the hull of a PBM damaged when hit by a rearing boat in heavy seas were made by S. L. Campo, AM2, of VP-731.

While attempting to transfer crew members from the boat to plane, a swell caught the boat and threw it against the aircraft with sufficient force to rip the skin 18" fore and aft and 22" vertically.

The vertical damage extended 6" below the waterline, and continuous use of the bilge pump plus bailing by hand was necessary to keep the water out of the waist compartment. Condition of the water precluded use of a boat to assist with repairs, so Campo suggested using one of the Navy's oldest rigs, the bosn's chair, to do the job.

As shown in the photo, Campo repaired the damage in true Navy style and in time to get the plane out on schedule. The photo, however, was made after the seas subsided.

Jet Stand Built at Cecil

FASRON-9 at NAAS CECIL FIELD boasts the only "on the spot" manufactured jet engine stand in the Navy.

The stand was started by FASRON-6, but when Six received one already assembled, they turned the unfinished device over to Nine's Don McMillan and Ken Renfro. In three weeks, these two chiefs had the fixture re-wired and a complete fuel system installed.

The stand is capable of testing and recalibrating the many overhauled engines sent from the squadrons through the squadron jet shop. When the operating squadrons leave their engines to be overhauled, they are put through a Class C overhaul which involves a complete change of turbines, combustion chambers and fuel nozzles. When these steps are completed, they are put on the stand and re-checked.

With a crew of experienced jet specialists on hand, Chiefs Renfro and McMillan state, "We can test and calibrate two engines a day unless major difficulties occur."



TOP-NOTCH JET SPECIALISTS WITH TEST STAND

Silica Gel Critical Item

Recently silica gel has become a critical item. In a campaign to prevent its becoming even scarcer, BUAER urges everyone to help save old silica gel.

There are certain "do's" and "don'ts" that should be observed. Don't throw bags of silica gel away. Don't contaminate the silica gel with oil and gasoline by throwing the bags on dirty decks or benches.

Do save bags of silica gel. Turn them in to your supply officer.



M-SHIP RESTS ON ONE WHEEL AFTER LANDING

One-Wheel Landing by Blimp

ZP-11, KEY WEST—One-wheel landings by planes are fairly common occurrences, but this experimental airship squadron has a one-wheel landing by an M-ship on its record books.

When the blimp left Boca Chica field the starboard wheel would retract only about halfway. Flight examination revealed the torque tube stub section broken in two points. This held the gear fast in the half-retracted position and it could not be either raised or lowered.

Lt. Isakson, the pilot, brought the plane back to the field on the port landing wheel, touching down right in the hands of the advance party after a long slow approach. Immediately before hitting the runway, the starboard engine was cut to reduce damage should the blimp list heavily to starboard.

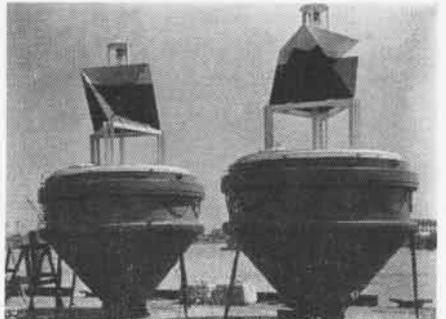
Alert ground handling technique by Lt. Weisemann, coupled with an efficient ground handling crew kept the airship in a safe position during the landing, masting and securing operations. No damage was sustained. The blimp was ready to fly five hours later.

Fastener for Raft Lanyard

J. G. Russell, PR3, of NAS CORPUS CHRISTI, has designed a snap fastener to prevent accidental pulling of inflation lanyard in Mk. 2, 4, and 7 multiplace life rafts M3S. His design has been approved under the Navy Beneficial Suggestion Program.

The snap fastener secures the lanyard in a way that will allow a ready pull when needed, but at the same time lessens accidental pulling of the lanyard. This is an efficient precaution since if the lanyard is accidentally pulled, the life raft must be repacked. Approximately 64 life raft repacking operations (about 64 man-hours) have been required this year by Russell's unit as a result of pulled lanyards.

Normal handling of the raft involves inadvertent pulling of the lanyard. Russell's device solves the problem without decreasing the efficiency of the lanyard on the life raft.



RADAR REFLECTOR BUOYS POLISH ASW PRACTICE

Targets Aid ASW Practice

NAS NORFOLK—When the Fleet Air Detachment operations department requested two radar targets for offshore use by ASW squadrons, two NAB staff civilian engineers, T. J. Crooks and Harold W. Johnson, went about the job scientifically.

From FAIRBETULANT they obtained dimensions and angles for a radar reflecting target that would best trigger off aircraft radar used by the fleet. The reflectors were made from 1/4" sheet steel to form three planes, each 5' 8" square and standing perpendicular to each other and intersecting along their diagonals.

For flotation, the reflectors were mounted on standard Mk 2 peg-top mooring buoys. Batteries for operating lights are inserted in wells through the buoy's top cover. The anchor chain is secured to a swivel on the bottom. Six hundred pounds of cement ballast were poured into the lower flotation chambers to give the targets proper stability.

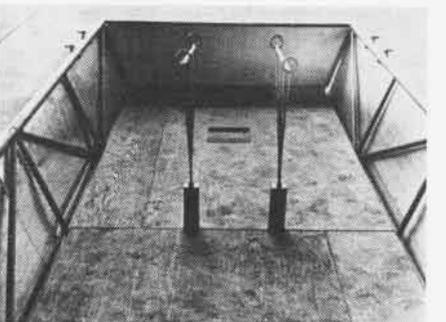
The targets, marked by flashing lights, are anchored 25 miles off the coast. Squadrons report them excellent for low level simulated ASW operations.

Loose Equipment Container

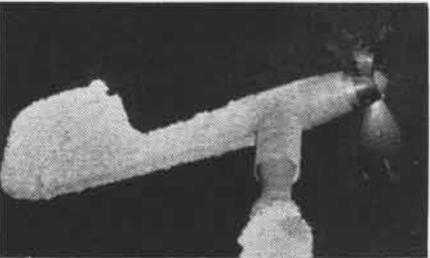
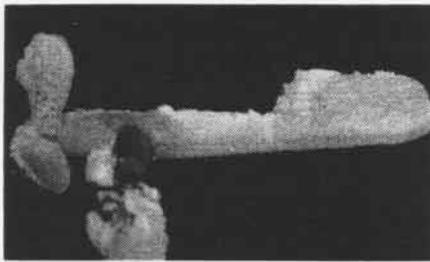
VP-3 at NAS JACKSONVILLE has devised a way to transfer Standard Inventory Log equipment, personal gear, spare parts, etc. Routine transfer or exercises requiring deployment of aircraft have always raised the question, "Where are we going to put all this stuff?" The bomb bay loose equipment container seems to be a good answer.

The container can be easily built by any activity having metalwork facilities. The framework is a welded steel tube structure with a plywood floor. The sides are of sheet aluminum, and the container is held in place by the bomb shackles.

The size of the unit must be such that bomb bay doors may be closed with the container installed.



BOMB BAY CONTAINER MADE HOLDS LOOSE GEAR



AEROVANE without a heating element is shown above, heavily encrusted. An aero-vane with heating element is shown below.

Aerology Gear Arctic Tests

Point Barrow, Alaska, is an ideal location for testing instruments under arctic conditions. Located at latitude 71°23' longitude 156°17'W where the pack ice of the Arctic Ocean crowds the shore, Point Barrow has snow so fine that it is difficult to tell whether it is blowing or falling. Last February the thermometer dropped to -53° F.

The permafrost (permanently frozen soil) extends hundreds of feet into the ground, thawing only a short distance down during the summer months.

At this typically arctic location, BUAER has established the U. S. Naval Arctic Test Station. Here during the winter of 1950-51, aerological instruments were installed and operated.

It was found that wind instruments utilizing cups to catch the wind were unsatisfactory. The snow filled the cups in a matter of hours. Ordinary lubricating oil for instruments hardened and had to be replaced with special low temperature oil. The clocks which operated recording instruments stopped at -48° F.

Some of the instrument problems are solved. The problem of surface wind measurement required a modification of the Aero-vane wind measuring instrument. The propeller blades were de-iced by wrapping electrical heating elements around the blades.

Resistance thermometers with remote indicators and recorders will make temperature measuring more convenient and eliminate the interference which delicate instruments reflect when an observer is near.

Keeping the mechanical instruments working is a daily routine—cleaning the snow and ice crystals out of working parts and replacing the low temperature oil which has been soaked up by the ice crystals.

Tests will continue this coming winter.

CORRECTION

In the July issue of the NEWS, an article on Bureau of Yards and Docks' building program said the Navy was paving "all new jet runways and warm-up aprons". The article should have stated the paving was only the 500 or 1,000 feet of runway at the ends.

Korea Jets Keep on Flying

VMF-311, KOREA—This F9F jet squadron, led by LCol. John F. Kinney, claims the "top-em-all" record for a month's flying for the only Leatherneck jet squadron in Korea.

Pilots, technicians and mechanics, teaming together, amassed 2,241 hours flying in the 30-day period, threw out 400,000 rounds of 20 mm ammunition, fired 1,700 rockets and dropped more than 4,000 bombs.

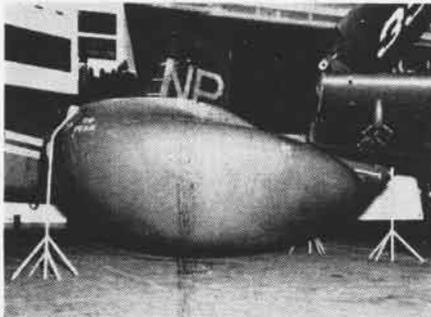
The squadron's best day was 13 June when in 48 combat missions, the jets logged 92.1 hours—even with two everready jets standing on the strip to intercept any enemy raids. One plane went through four checks and flew 129 hours without being grounded by the pilot's "thumbs down". One jet got off its 208th combat mission before 30 June while eight more neared 200 missions. One



MECHS SWARM ON JET AS ORDINANCEMEN REARM

engine had flown 492 hours since it arrived from the factory.

Line check crews and maintenance squads made that kind of records possible.



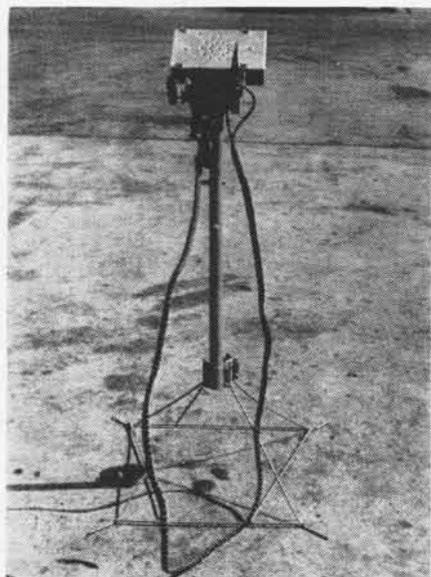
THREE TRIPOD STANDS HOLD UP BULKY RADOME

Tripods Hold Ad-4W Radome

VC-11, PACIFIC—Faced with the problem of handling bulky radomes removed from ASW planes, this squadron has developed three tripods seem to answer the need.

The AN/APS-20 radome, because of its large, one-piece construction, is susceptible to damage when detached from the aircraft, particularly on carriers. Since this requirement was not taken care of by ground handling equipment furnished with the AD-4W, Lt. H. B. Boatman designed three tripod support stands, usable on carrier or ashore.

They are light and small and can be carried by one person between aircraft on a crowded flight or hangar deck, up ladders and through passageways between the decks. The radome readily can be tied down at the tripod suspension points and secured to the flight or hangar deck of carriers, or in high winds ashore. The stands vary from 36" to 51" in height and of chromalloy tubing.



CONTROL UNIT ON STOUT WIRE LEGS AIDS LSO

Reel For LSO Radio Cart

NAS CORRY FIELD—A modification to the ordinary radio remote control cart used by landing signal officers here has been devised by Emmett L. Kozel, AN.

The idea now permits the LSO to move a portable stand about 125 feet away from the cart in any direction, thus allowing the cart to be well out of the way of approaching planes.

The stand consists of a speaker, microphone, trigger release for Very pistols, and a switch to operate a light mounted on the cart. The unit is compact and permits complete operation of the control cart with one hand. It has proved invaluable for night field carrier landing practices.

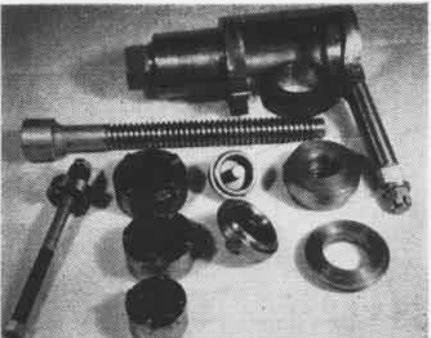
The cable is attached to a reel mounted on the cart and is manually operated. Additional distance away from the cart may be had with a larger reel and a longer cable.

New SNB/JRB Bushing Puller

The Marine Air Detachment at NAS ANACOSTIA announces the design and construction of a load mount bushing puller by TSgt. John Hrin, a member of the detachment.

It is original in design, and although it is not the only puller in service, it has proved to be more than exceptional in performance, since it requires approximately four hours for the removal and installation of three new bushings and may be done by one man.

Previously, removing and installing bushings had required a chance of the entire mount and was done by an overhaul center.



PARTS USED IN HRIN'S DESIGN ARE SHOWN HERE

CARRIER NOTES

BUREAU OF AERONAUTICS—SHIPS INSTALLATIONS DIVISION



HERE IS EXAMPLE OF WHAT CAN HAPPEN TO AIRPLANE WHEN BARRIER IS LOWERED TOO SOON

Caught with Barriers Down

Too many flight deck crashes result from improper use of the airplane barriers. The trouble is caused usually by eagerness on the part of the barrier operators to speed up operations and to avoid partial engagement of barriers by the airplane after the arresting hook has caught a late wire.

The chances taken to minimize airplane damage and avoid rerigging barriers are not worth while when the severe consequences of an arresting hook breaking or becoming disengaged are considered.

Two barriers must remain up during landings until airplane is stopped.

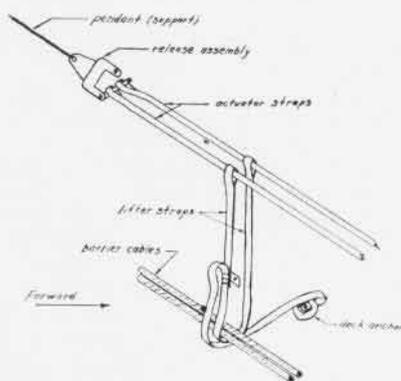
This is particularly true in the case of barrier adapters for nose-wheel-type aircraft, but applies also to the conventional cable barriers for tail wheel type aircraft. *Grampaw Pettibone* was stirred deeply in the April 1949 issue of the NEWS because a pilot's life was lost when all four barriers on a CVE were dropped during the landing of a tail-wheel-type airplane.

An F9F airplane was recently damaged excessively because of reduced barrier protection. All barriers except No. 5 had been lowered after the hook had engaged two late wires. When the hook broke, the airplane engaged the barrier off center to starboard and crashed into the crane parked beside the island.

The air officers on aircraft carriers should emphasize safety in the operation of barriers and "never get caught with their barriers down".

Improved Barrier Adapter

The improvement program for barrier adapter webbings has resulted in the development of a new design by the Naval Aircraft Factory. This design, known as a "folded adapter", will be particularly advantageous when mixed types of aircraft operate from a carrier, rerigging time following a barrier crash will be greatly reduced, and the time required for change from conventional barrier to barrier adapter arrangement will be shortened. The adapter is arranged to throw the barrier cable from the deck upon actuation by the airplane, but incorporates an improvement wherein the barrier cables lie cradled in the lifter straps and may be raised into place for conven-



BARRIER ADAPTER WORKS WITH PROPS AND JETS

tional aircraft engagements by merely tensioning the support pendants.

The only connections that need be made or broken for installation or removal of this adapter are the end connections for the actuator strap and the deck anchor connection for each lifter strap. All snap fasteners may be fastened prior to installation and remain fastened during subsequent removal and re-installation.

Installation, operation instructions, and allowance quantities will be furnished prior to distribution of the new barrier adapter to the fleet.

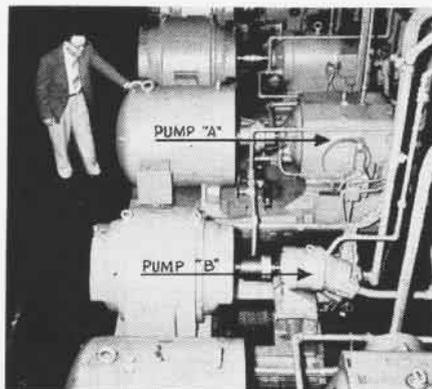
Hydraulic Pumps of Future

The accompanying picture shows the installation of two types of catapult hydraulic pumps undergoing tests. Pump "A" is the present service type which has an over-all efficiency output of 77.7 per cent. Pump "B" is a new design having an over-all efficiency output of 96.2 per cent. A new retraction pump, which is not shown but is similar in size and weight to Pump "B" has an output efficiency of 97.6 per cent as compared to the present type retraction pump with an 86.0 per cent efficiency.

The following data give a comparison of the pumps shown:

Type Pump	Net Wt. (Lbs.)	G.P.M.	P.S.I.
"A"	2630	65	3500
"B"	375	70	3500

The present cumbersome type of pump requires numerous man-hours to remove portions of decks and bulkheads for access prior



NEW HYDRAULIC PUMP, FIG. B, 96% EFFICIENT

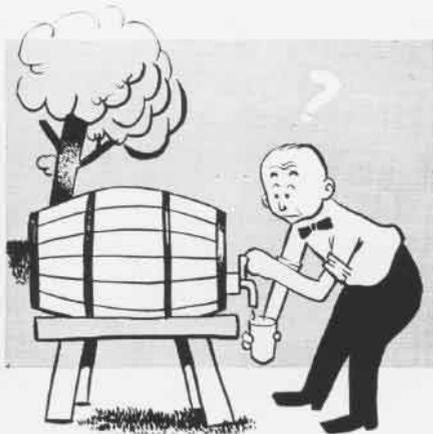
to overhaul or replacement. With the reduction of 2255 pounds of weight and reduced overall dimensions, removal of the new pump may be accomplished conveniently without disturbing deck or bulkheads.

At present, this new type pump is installed on the USS *Cabot* for use with the recently installed Type H Mk 4B catapult. Service tests will be conducted aboard to determine dependability and life duration. CV-9 class carriers, which are presently undergoing the 27A conversions, are also being equipped with the new type pump for use with their Type H Mk 8 catapults.

● NAS JACKSONVILLE—Fishermen at this station now can fish and catch shrimp off the ramps and bulkheads by the seaplane hangars. NAS WHIDBEY ISLAND, Wash., permits hunting for game and birds on the station.



AVIATION ORDNANCE



Barrel Failures Announced

All barrels, .50 caliber stellite lined, part number D7161580, stock number J941-B-713 have proved to be unsatisfactory and potentially dangerous.

BUORD is replacing these barrels with barrels of superior design. These barrels may be requisitioned in accordance with the provisions of OP 1820 under the following stock numbers:

Barrel, .50 caliber stellite lined, Part No. D7162259, Stock No. J941-B-713-100, or Barrel, .50 caliber stellite lined, Part No. D7265156, Stock No. J941-B-713-150.

Disposition instructions of replaced barrels will be issued at a later date.

N.B. These barrels are used in fighter aircraft ONLY.

Inadvertent Firing Analyzed

Patrol Squadron Five in a report on an inadvertent firing of a 20 mm bow gun describes the incident and analyzes the possible cause:

After completion of a simulated strafing attack, the pilot of MC-8 turned the master armament switch "off" and began pull out. Approximately 10 seconds later, a round was inadvertently fired from one of the bow 20 mm guns. During the firing run, the co-pilot noted that the light was out on the #3 gun.

Cause of Trouble—An inspection of the bow gun installation of MC-8 was conducted, and no discrepancies were noted except for a slight burred portion of the breech face of the barrel assembly on the #3 gun.

It is believed that a round in the #3 gun did not "go home" in the chamber, but lodged against the breech face of the barrel assembly, being held there by spring tension of the driving spring. It is further believed that vibration of "g" force after the run caused the round to position itself so that it was able to slide into the chamber where it was automatically fired.

The reasons for these assumptions are as follows: (1) The 20 mm M3 has a floating firing pin which automatically fires when

the breech block goes to battery. (2) It is not an uncommon occurrence for round to "hang up" on the breech-face of the barrel assembly. Most of these cases usually result in broken round necessitating clearance by hand or are "charged through" by the pilot as soon as his gun safe switch is placed in the safe position. (3) Cook-offs in bow guns are very unlikely, due to the excellent cooling conditions existing.

Recommendations: When the gun safe switch is placed in the "safe" position, hydraulic pressure forces and holds all breech blocks to the rear (out of battery and safe). Under this condition, gun cannot possibly fire. Commander Fleet Air Wing Eleven has directed that greater emphasis be placed on the gun safe switch than on the master armament switch when bow guns are being fired.

► **BuOrd Comment**—BuOrd concurs with VP-5's recommendation. Several suggestions are set forth for preventing recurrence of the difficulty.

1. Frequent inspection of the gun sear, breechblock lock, and the trigger sear return nut for burrs or other defects that would prevent proper operation of these parts.
2. Close inspection of the breechblock slide springs and the gun driving spring.
3. Maintenance of the feed mechanism as recommended in TM9-229 and OML GV2-51.
4. Thorough and frequent cleaning and lubrication of the bolt assembly, gun receiver and barrel chamber. Refer to Op-1828.
5. Periodic inspection of the aircraft gun electrical circuit to insure all components are in proper working order.

Receivers Minus Shotguns

Receivers for Remington Skeet Type Shotguns are being shipped to overhaul activities for repair, rather than the complete shotgun. BUORD does not stock receivers as a spare part. Therefore, a complete shotgun should be turned in for repair.

Pilferage? The fact that only receivers are being turned in for repair indicates pilferage on the part of some activities of the removable parts of the shotguns. The practice of turning in only the receiver for repair, instead of a complete or nearly complete shotgun, must be discontinued.

Instructions for reporting the Remington Skeet Type Shotguns in need of repair as well as instructions for requisitioning new or replacement Remington Skeet Type Shotguns are contained in Part VII of Ordnance Pamphlet 1820 and should be followed.

Installation: Installation of the barrel to the receiver should be performed only by qualified personnel of a small arms repair shop. Installation by other than qualified personnel may prove hazardous.

Some Bombs Just Don't Fit

BUORD has received a number of reports from overseas activities stating that difficulties have been encountered in installing some bombs on the Mk 55 bomb rack. These difficulties indicate that single suspension lugs on bombs vary in design, depending upon the type of construction employed by bomb case manufacturers.

These types of single suspension lugs on bombs in stock are readily identified as follows:

Suspension Lug GA 2032—Suitable for use on Mk 55 bomb rack. **Identification:** Split seam, stamped lug, alternate design as shown in Army Ordnance DRG. GA 2032, having vertical sides when viewed from the side of the bomb in a plane perpendicular to the longitudinal axis of the bomb.

The single suspension lugs are used on these bombs:

- 100-lb. GP, AN-M30, AN-M30A1
- 220-lb. Frag, AN-M88
- 250-lb. GP AN-M57, AN-M27A1
- 260-lb. Frag, AN-M81

Suspension Lug GA 2109—Questionable fit on Mk 55 bomb rack (fit of these bombs depends upon lug and bomb rack tolerances). **Description:** Forged lug, alternate design as shown in Army Ordnance DRG. GA 2109 with sides, when viewed from the side of the bomb in a plane perpendicular to the longitudinal axis of the bomb, forming an incline of 80-82° with the horizontal.

Suspension lug GA 2109 may be found on the same bombs listed above.

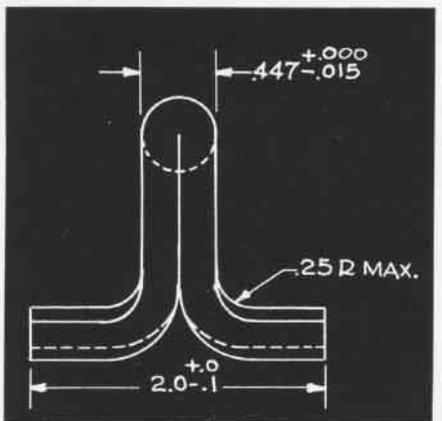
Suspension Lug, 82-3-336C, 82-3-320C and 82-3-436—Not suitable for use on Mk 55 bomb rack. **Description:** Forged lug, as shown in Army Ordnance DRG. 82-3-336C, 82-3-320C and 82-3-436, with sides when viewed from the side of the bomb in a plane perpendicular to the longitudinal axis of the bomb, forming an incline of 70° with the horizontal.

These lugs may be found on the following bombs:

- 82-3-336 on 100-lb. GP, AN-M30, AN-M30A1
- 82-3-320C on 250-lb. GP, AN-M57, AN-M57A1, 260-lb. Frag, AN-M81
- 82-3-436 on 220-lb. Frag, AN-M88

Bombs with single suspension lugs GA 2032 may be identified generally by a painted yellow circle approximately four inches in diameter around the single suspension lug.

BUORD is issuing an OML containing descriptive sketches.



SUSPENSION LUG GA 2032 FOR MK 55 USAGE

LETTERS

SIRS:

The new record for carrier landings claimed by MAG-15 in the March issue may be a record for CVL-class carriers, but certainly not for all carriers. The USS *Mission Bay*, CVE-59, operating from Port Everglades, Fla., in the summer of 1945 made 409 daytime TBM landings in a single day's operation. The qualifying pilots all were student aviators from NAS FORT LAUDERDALE.

The same ship operating from NAS QUONSET POINT in early 1945 made 104 night TBM landings in qualifying a VC squadron. Only incident was a TBM which floated and engaged the top barrier cable with its hook. This caused the plane to land rather heavily over the Captain's cabin, to which he had retired a few moments earlier.

Neither of the above figures is claimed to be a record, but should serve to give present day carriers something to shoot at.

CARL H. HOENBURGER, CDR.
NAVAL HOSPITAL
SAN DIEGO, CALIF.

† After the *News* printed the article about MAG-15's feat of making 327 landings aboard the *Wright* off Pensacola, another reader reported the CVE *Matanikan* landed 602 in one day of May, 1945, for MAG-6.



SIRS:

Having recently read in NAVAL AVIATION NEWS of tests made by Service Test division at NATC PATUXENT on visibility of mirror flashes, I wonder if a suggestion might be in order.

Why not have a globe mounted on a rod free to turn and a couple of vanes to catch any breeze? Then if there were mirrors mounted on the globe at various angles, all the pilot in his raft would have to do would be sit there and let the wind transmit his flashes around the horizon.

A second idea would be to mount silver paper on a vertical rod, like those seen at west coast gasoline stations, and let it rotate in the breeze.

Lest there be some question as to what



I mean, perhaps the following crude sketches of what I'd like to have in my life raft are given below.

UNSIGNED

† The above letter was received unsigned from a reader in Henderson, Nevada, and was referred to BuAer airborne equipment division. One difficulty with the globe idea is that it might get crushed when jammed into a para-raft kit.



SIRS:

In the July issue, it was claimed that an R4D from the *Operation Skijump* group established a record for the northernmost landing on the sea ice of a Navy plane, having landed 820 miles south of the north pole.



Between 6 and 10 August 1950, while conducting ice reconnaissance flights for the Coast Guard icebreaker *Eastwind* during the Arctic *Operation Nanook 50*, two Navy float-equipped helicopters from HU-2 Lakehurst, made several landings on the sea ice of the Arctic ocean at latitude 82 degrees 30 minutes north.

On 8 August, a flight was made to 82 degrees 56 minutes north, only 424 miles from the pole.

Pilots of the helicopters were CAP C. B. Taylor and the undersigned. A complete report of the entire operation is contained in the publication *Operation Nanook 50*.

The enclosed photographs show one of the helicopters (UR-22) on a smooth stretch of sea ice at the northernmost point of landing. The other shows members of the detachment, ADC Jones, Lt. (jg) Matthews, ADC (AP) Taylor, Airman Nelson and an unidentified seaman around the cairn they built in northern Ellesmere land.

WILLIAM R. MATTHEWS, LT. (JG)
HTU-1, ELLYSON FIELD

† Looks like the helicopter is the new champion. The R4D people, however, will say it is one thing to land a helicopter on an icefield near the North Pole and another to bring in an R4D and take it off again.

CONTENTS

Annapolis Aviation	1
Detroit Air Races	5
Ship 'Card Stunts'	8
Korean Air War	10
Minneapolis Jet Pilots	14
Why Aircraft Carriers	15
Antisubmarine Planes	22
Swamp Rescue	24
Korea Jet Takeoffs	26
Olathe Bailout Drill	28
Painting Carrier Planes	33
Rocket Camera	35

THE COVER

Refueling an airship from a tanker while underway in the open sea is a new technique developed by ZP-1 and ZP-2. In the cover photo, the ZL-4, piloted by Lt. R. W. Widdecombe, refuels from the USS *Pawcatuck* (AO-108) off Cape Henry, Va. Photographer was B. L. Kensler, AF8, in another ZP-2 blimp.

INSIDE FRONT COVER

The Navy's carrier trio—the AD *Sky-raider*, F4U *Corsair* and F9F *Panther*—pictured here flying over North Korean terrain, are carrying the load for the Navy's strong part in the Korean war. All three planes are from the *Boxer* all-Reserve air group. Note the smoke from bombings in the AD and F4U pictures. Pilot of the *Corsair* was Lt. Robert Pitner and Lt. (jg) Theodore G. Nielson of the F9F.

BACK COVER

AJ-1 *Savages* from VC-6 cluster on the deck of the USS *Midway* during carrier qualification trials. Photo by Bill Susoeff, North American Aviation, formerly PhMlc on USS *Bunker Hill* off Okinawa.

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SQUADRON INSIGNIA

TWO RESERVE fighter squadrons called to active duty for the Korean war are among this month's insignia. VF-726 features a mailed fist climbing from a carrier, typifying naval aviation's punch at the enemy. VF-821, a former New Orleans outfit, has the Mardi Gras mask and purple colors, with crescent-shaped scimitar for the "Crescent City". On the mask, 27 crowns stand for the 27 pilots in the squadron. Peace wreath and gunsight reticle are in each eye. Airship Devron 11 at Key West has a stylized insignia, while Fleet Air Japan features a pair of gold Navy wings and a globe.



VF-821



FLEET AIR JAPAN



ZX-11



VF-726

Restricted

NAVAL AVIATION

NEWS



CONTROL OF THE SEAS

The Navy's fast "floating airfields" are a hard-hitting force to control enemies under the seas, on the seas or over the seas, to protect democracy