

NAVAL AVIATION

NEWS

97



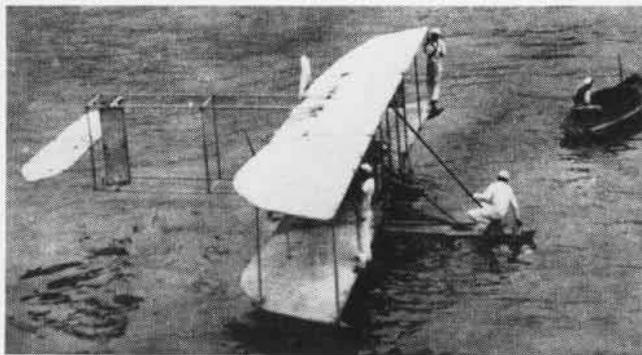
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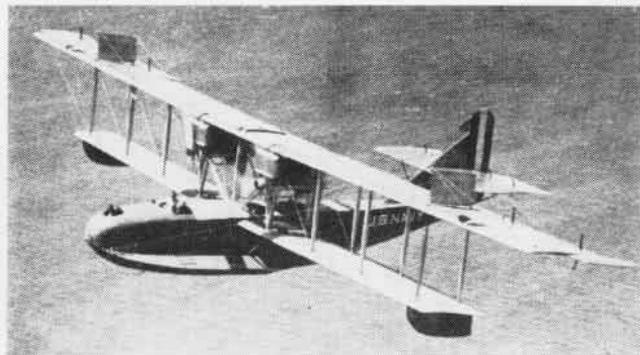
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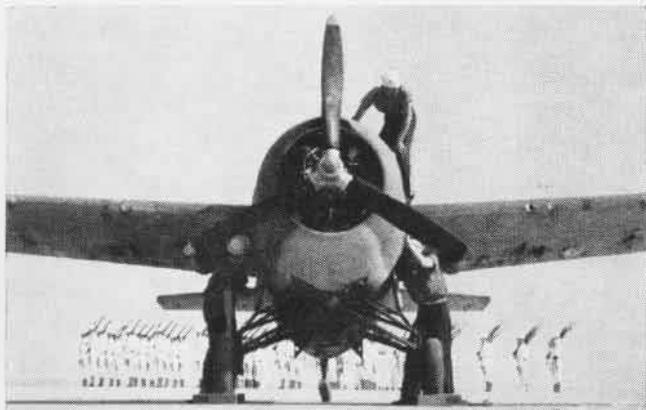
NAVAL AVIATION IS 45 YEARS YOUNG



NAVY PLANE #3 WAS WRIGHT LANDPLANE EQUIPPED WITH FLOAT



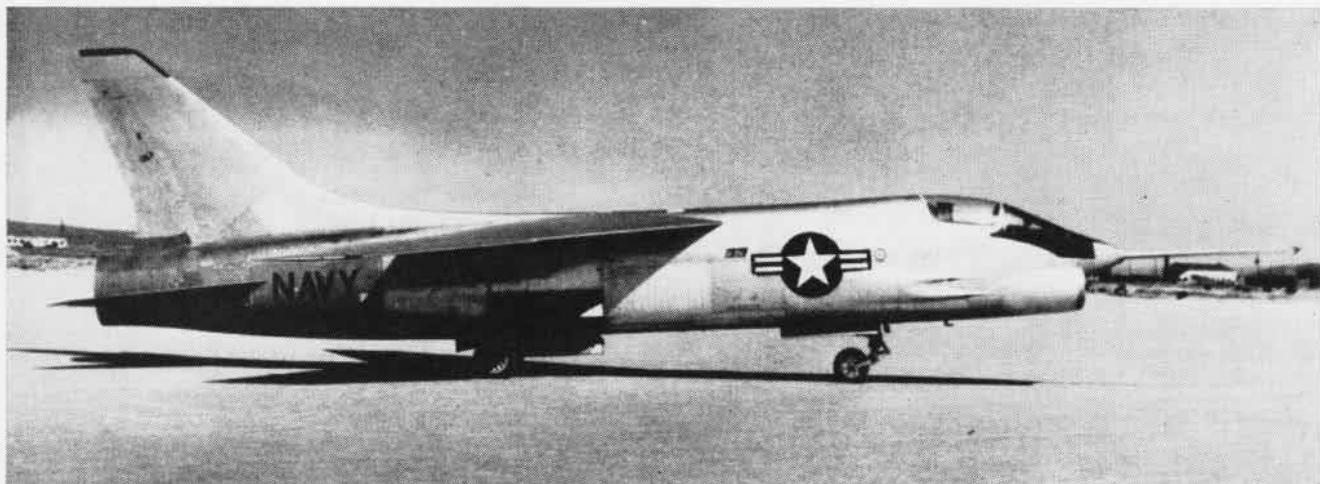
CARRIER PIGEON BEING RELEASED FROM WW I H-16 SEAPLANE



GRUMMAN FIGHTERS SUCH AS F4F DID YEOMAN WORK DURING WW II



NAVY CARRIER PLANES HEADED FOR HOME AFTER KOREA STRIKE



FROM DRAWING BOARDS AT CHANCE VOUGHT CAME PLANS FOR THIS F8U. IT IS NOW UNDERGOING TESTS AT NAS PATUXENT RIVER

On May 8, 1911, the Navy's first airplane was ordered from Glenn Curtiss at a cost of \$5,500. It was the Triad, an eight cylinder amphibious biplane, and a far cry from the speedy fighters and giant patrol planes of 1956. And today, training of pilots and crewmen is just as different from the instruction of Naval aviation pioneers of that era. But what of the

next 45 years? Will the pilots of that time look back at today's aircraft and pilots and wonder how the pilots of 1956 had the courage to get off the ground or water in the "crates" of that year? Today, Naval Aviation is still growing and expanding. It is a well-rounded, hard-hitting team of specialists, capable of attack from the ocean depths to the stratosphere.



'THE MARINES HAVE LANDED'

THE ATTACK is on! Miles and miles beyond the horizon, the fast carrier task force is making its way at good speed toward the enemy stronghold. The amphibious assault of the future is taking place—and *you are there!*

The close formation strength of the carrier task force which characterized the great armadas of World War II is a thing of the past. The attacking force is spread over great areas, yet its power to attack is not lost. Bound together by intricate communications system and aerial transport, the great ships of the line are built to withstand to the greatest degree possible the hazards of atomic warfare.

Wave after wave of surface strength is being brought up under aerial cover, now that the full attack has begun. This had started while deep reconnaissance of enemy country was under way. Each carrier is transporting a battalion of Marines and has aboard enough helicopters to transfer them from the ship to the landing area. There are also enough ammunition and initial supplies to allow the Helicopter Assault Force to gain and hold the original military objective.

All the measures that an alert and skilled intelligence dictate have been taken in the deep, on the surface and in the air. This is three-dimensional warfare geared to the atomic age. But before we follow the drama of conflict, let's step back and see how these highly complicated measures of offensive war were designed.

One of the last times the great carrier task force was used in close formation was in the spring of 1945 at the battle of Okinawa. Carriers, transports, and craft of all kinds were there. From the center of the fleet, ships could be seen from horizon to horizon.

Just four months later, the world entered a new era of warfare. The first A-bomb fell on Hiroshima. Never again could such a close concentration of ships be assembled. It would be inviting disaster.

Some saw in atomic age the end of amphibious warfare. Some ominously predicted that the terrible destructive force of atomic fission would convert war into a deadly game to be played by little men in electronic control rooms surrounded by intricate banks of push buttons.

BUT IN THE past eleven years, while much has occurred that makes a huge concentration of force a hazard, much has been developed by those who are planning our future military capabilities. A "New Concept" of amphibious warfare, one phase of those capabilities generated by the Marine Corps' Advanced Research Group, is being converted into reality by the Marine Corps Development Center. This Center has the responsibility of developing new designs of amphibious warfare.

The story of the Marine Corps Development Center is so closely interwoven with the development of modern beachhead operations as to be inseparable. A major function of the Center is to develop to an even greater degree than ever before, the integration of air power and amphibious doctrine geared to the new era.

Right after WW I, the Marine Corps Schools at Quantico, Va., undertook the development of amphibious doctrine and assumed leadership in devising tactics, techniques and equipment suitable for the use of landing forces.

It was during this period that the first organized efforts were made to deliver close air support. An early exponent of the use of aircraft in this was Col. Roy Geiger, USMC, a Naval Aviator who, years later as a lieutenant general, commanded the U. S. Tenth Army on Okinawa.

The present problems of using air support in amphibious operations is, of course, a complicated one. New weapons make new measures and new plans of attack essential. It is, therefore, significant that the Marine Corps has played a pioneer role not only in the use of aircraft but also in the coordination of air power and surface forces.

In 1933, the Marine Corps Equipment Board was established at the Washington headquarters to determine the adequacy of equipment. However, the Board did no testing, so projects were assigned to various agencies in the Marine Corps, primarily the newly founded Fleet Marine Force, limited, at that time, to the 1st Marine Brigade at Quantico, Virginia.

In 1937, the Board moved to Quantico. Three main agencies concerned with amphibious warfare shared this location: The Marine Corps Schools, 1st Marine Brigade, and the Marine Corps Equipment Board.

When World War II opened, basic doctrine had been established. Under the impetus of war in the Pacific and the guidance of Gen. "Howlin' Mad" Smith, there emerged a hard-hitting, marvelously coordinated landing force.

And then Hiroshima! An explosion equivalent to the detonation of 20,000 tons of TNT! The force of this blast shook military practice to its foundations. When the pieces fell into place again, each of the services had been assigned an area of responsibility. By tradition and mission, it was natural for the Marine Corps to be made the responsible agency for the development of an amphibious landing force doctrine and capability.

In WW II doctrine, large concentrations of force had to exist at two points during amphibious assault: in the transport area, where the troop and supply carrying vessels were anchored to land the force, and on the beach itself.

Now these concentrations had to be avoided in order to prevent the build-up of worth while targets. If the punch of the assault was to be retained, this would involve short range air transport of troops and equipment to inland points



IN EXERCISE, MARINES TRAIN FOR MODERN AMPHIBIOUS ASSAULT

dominating the beach and ready for full scale assault.

It was at once clear that the intricate coordination required could only be accomplished by thorough agreement of the experts in all the specialties to be employed. Aircraft, field artillery, infantry, all would be involved—so in June 1950, the Commandant of the Marine Corps, appointed a board of General Officers to consider the various and difficult problems of military coordination.

THE BOARD decided that in addition to the Marine Corps Schools and the Marine Corps Equipment Board, there should be a third agency to be known as the Marine Corps Development Board for Tactics and Techniques. This board was to parallel the Equipment Board, and eventually these two were coordinated as the Marine Corps Development Center.

Each board has an air section. The air section of the Tactics and Techniques Board is headed by Col. Norman J. Anderson; that of the Equipment Board is headed by Col. Keith B. McCutcheon. It is the business of these air sections to develop, test, and evaluate equipment, tactics, and techniques for employment by Marine Corps forces with emphasis upon amphibious operations and the defense of advanced Naval bases.

Since modern warfare requires so high a degree of cooperation and advance planning, it is essential to have liaison with all parts of the Marine Corps and with each of the other services. This is done by having Marine officers located at various national defense facilities.

There are Resident Marine Corps Development Liaison Officers at Atlantic and Pacific headquarters of Fleet Marine Forces; on the staff of the Commander, Amphibious Force, Atlantic; at the headquarters of the Tactical Air Command, USAF; at the Army's Quartermaster Research

and Development Center, Natick, Mass.; the Signal Corps Engineering Laboratories, Ft. Monmouth, N. J.; Cornell Aeronautical Laboratories; White Sands Proving Ground; Headquarters of the Continental Army Command and five of the six Development and Test boards; and the Air Proving Ground Command, Eglin AF Base, Florida. Effective liaison is also maintained at other installations by contact with Marine Corps personnel who may be stationed at these points.

Helicopters used for most of the experimental work are those assigned to HMX-1 at MCAS QUANTICO. The goal of all the work and all the planning is to make amphibious warfare the vital force that it has always been. Now let us return to the attack of the future.

Before the fast carrier task force even starts to move up, deep reconnaissance missions have destroyed enemy opposition which might otherwise be capable of striking back. Aerial reconnaissance has made it possible to select and attack a great number of targets with conventional weapons. Only then does the helicopter assault force enter

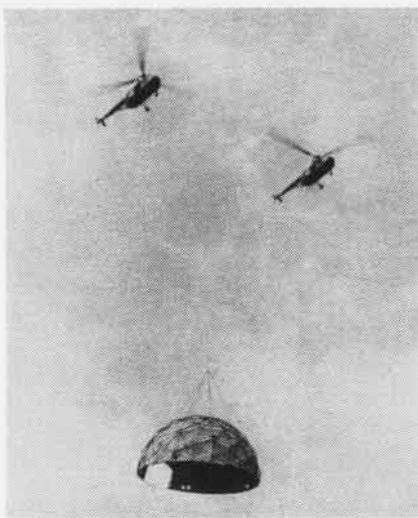
any enemy attempt to intrude and interrupt attack operations. Below the surface of the sea, the same tense determination prevails. Atomic-powered killer submarines patrol assigned areas seeking out undersea opposition.

Special preparations are under way aboard another, larger submarine, too. This vessel, well separated from the rest of the Amphibious Task Force, has a planned mission of violent destruction. The captain of this vessel is responsible for placing an atomic blast in the exact spot selected by the force commander.

Guerilla attacks ashore will coincide with the landings in order to prevent enemy reserves from reaching the objective area and defenders from fleeing.

Electronic countermeasures have been taken to eliminate enemy communications interference.

Aboard the troop carriers, officers and NCO heliteam leaders put on intercom sets and tell plane commanders their teams are ready. All reports have been filtered, and since no serious unexpected opposition is indicated, the command is given to carry out the assault landing at once.



MULTIPLE ROCKET LAUNCHER IS BROUGHT IN DUAL HELICOPTER LIFT OF GEODESIC DOME STRENGTH OF FURIES FOR THE JET AGE

the target area to fulfill its mission of delivering men.

All the way to the target, assault carriers are escorted by other carriers equipped to destroy enemy air opposition and submarines. In the immediate vicinity of the objective area, the carriers rendezvous and establish opening contact with "friendlies" already in the neighborhood.

At a pre-arranged time, contact is made with those ashore. Rapidly, smoothly, efficiently in a manner that has been perfected by practice and rehearsal, the troops board the helicopters. Plane captains check to see that all troops and equipment are properly aboard.

While this pre-debarkation troop activity takes place, carriers outside the Amphibious Task Force continue special activity. Search radars ceaselessly scan the sky for approaching enemy air opposition. Airborne electronic equipment complements surface equipment. Suspense mounts in Combat Information Centers as countless eyes search for "blips" on radar scopes. Messages are delivered between ships in the widely separated force by helicopter.

Air crews and missile launching crews are alert to repel

The helicopters take off and, on signal, head for shore, bound for hinterland points via routes of least resistance. Pilots pick out reference marks ashore and head for them.

Then the holocaust—a blinding flash, burning heat, and a blast wave. In spite of the distance, the blast rocks the helicopters and makes a close formation impossible.

The flight leader in the first helicopter listens intently for a radio signal. The rumble of the bomb subsides, and the ominous mushroom-shaped cloud towers high, blotting out the sun. The radio signal is not received; the helicopter assault force is in grave danger.

"Hotel Alfa Foxtrot, this is Birddog, over."

"Hotel Birddog, this is Hotel Alfa Foxtrot. I read you loud and clear, over."

"Hotel Alfa Foxtrot, this is Birddog. X-ray area secure, am prepared to execute plan Alfa."

"Birddog, this is Hotel Alfa Foxtrot, roger your last, will execute plan Alfa, out."

Receipt of the message, and the immediate acknowledgment acts as a catalyst, starting the chain reaction of



MARINE LANDING FORCE COMES IN SWIFTLY AND MAKES ITS WAY ACCORDING TO PLAN FOR CAPTURING AND HOLDING TARGET AREA

commands and actions that result in the first atomic age amphibious landing. This is the final and dramatic test of the evolution of thought to reality that began at Marine Corps Schools.

The initial check points flash past as co-pilots check the course inland, referring to small scale aerial photographs, on which the route has been marked.

A heliteam leader, alert for dangerous radiation levels, checks a radiac instrument fastened to his jacket.

A small body of enemy infantry is seen in a valley. They stare speechless as the "choppers" speed toward their destination. The plane commander contacts the Direct Air Support Center and relays the location of the sighting.

The objective! The panel markers are sighted, and the excited signals of the guerrillas direct the landing of the leading aircraft.

Troops tumble out hurriedly and are directed to pre-selected positions that must be occupied to insure added security of the landing zone.

Communications are made by walkie-talkies.

"First squad—take the point—V formation—move out to the point of the ridge."

"Hello, Golf six, this is Golf three. I am in position on phase line one. Am covering slope from point sugar to point tare. Over."

"Hello, Golf three, this is Golf six. Extend your flank to point uncle."

"Hello Golf six, this is Golf three. Roger your last.

Wilco—out." And so walkie-talkies coordinate action.

The Supporting Arms Center and the Operations Section go into action as forward air controllers and company commanders check in by radio, and their positions are plotted on the situation map.

Wave after wave of helicopters skim in over the trees and land in the expanding landing zone. Columns of dust-covered troops extend and reinforce the perimeter.

A flight of helicopters comes in, carrying vehicles and artillery. Each has either a vehicle or an artillery piece suspended beneath it in slings. A multiple-barrelled full-tracked tank killer is landed and driven away to cover a roadway leading into the landing area. The distant roar of exploding demolition mingles with the noise of engines and the slap-slap of rotary wings, as dump sites, more landing areas, and underground communications and operations centers are constructed.

The first echelon of the Command Group lands. The commander of the battalion that made the landing briefs them, aided by his operations officer who points out salient features of the terrain. Progress of a patrol up a steep slope toward a band of friendly guerrillas on a mountain top is studied through binoculars.

A mile to the west, the sound of small arms fire is heard. The following arcs of tracers pinpoint the locations of our patrol and of the enemy outpost.

"Hello Golf six, this is Golf two. I have made contact at first thrust coordinates 556272. There appear to be



MARINES RACE ACROSS CARRIER DECK TO BOARD THE HELICOPTER



ROTARY TRANSPORT SPEEDS UP MARINE AMPHIBIOUS ASSAULT

about a squad of them armed with an automatic weapon. Give me a round of sixty HE at 540271. I will adjust."

The whump-whump of mortar fire adds to the din.

Logistic specialists, trained to handle supplies that have been transported by helicopters, land and prepare to receive the volume of supplies needed to support operations prior to the "link-up," the contact with forces landed by conventional surface means.

Huge plastic bags are laid out in trenches. Helicopters—outfitted as tankers—deliver fuel and water for the force.

Far to the northwest, almost at the limit of visibility, a towering pillar of smoke marks the location of a major enemy stronghold. A pillar *in memoriam!*

Engineers and their equipment are landed. Sectionalized heavy equipment is put together, and driven toward locations where work is underway. A fleet of fixed wing cargo planes approach. Colored parachutes blossom as sections of a vitally needed bridge arrive, ready for installation.

Electronic masts are erected to provide both communications and control stations for guided missiles. More surface vehicles, and missile launchers are landed. Batteries of missile launchers are placed in position.

The blasting of conventional supporting weapons from ship-to-shore becomes audible. Landing operations have begun over the beach.

One of the strange, swift aircraft that came in earlier roars to life, ascends straight up, and arcs to level flight. It heads toward the beach and the job of controlling fires. A second aircraft takes off vertically. The Tactical Air Coordinator Airborne is being relieved on station.

Furious firing and activity to the east marks the beginning of the squeeze play action. "Hello Apple, this is Delta 2-4. I have a fire mission for you, over."

Enemy forces, dislodged from the beach area by our conventional landing, collide with our helitroops.

Helicopter movement is suspended as the Air Observer



MARINE CARRIES 3.5 ROCKET LAUNCHER

HRS-3 DELIVERS A 'MIGHTY MITE' JEEP

SIGNAL GIVEN FOR FINAL ASSAULT PHASE

The Helicopter Assault Force Commander arrives, and in turn, is briefed by his Executive Officer, who, on arrival of the first echelon, had assumed command from the Battalion Commander.

Hemispherical domes, like halves of hornets' nests, suspended from helicopters, are brought in, and lowered to pre-selected locations. These are above-ground command and operations centers for the force. A master sergeant communications chief directs a crew of wiremen that hurriedly string wire to the domes.

Over near the edge of the perimeter, a voice from beside a parked radio jeep calls: "Hello Apple, this is Delta 2-4. I am setting up shop at first thrust line coordinates 57391. No fire missions requested yet."

Strange, high-speed aircraft come into view. They slow to a stop, hover, and begin backing toward the ground.

Small robot aircraft, unobserved previously, arrive from the west. Litter-pods are suspended on either side of the airframe. They skim low over the trees, and gently land near the geodesic dome marked with a red cross. Wounded from the fire-fight in the west are brought in.

More engineer specialists arrive and stake out an area that will become an airfield in a matter of hours.

who relieved the Tactical Air Coordinator Airborne on station directs the operations of fighter aircraft that look like sergeant's chevrons, as they blast past.

Aerial photo coverage of the action is requested. A photo plane on station is directed along a course parallel with the long axis of the conflict. The aircraft turns, comes in low over the command post.

A capsule containing finished photographic prints streaks to earth, streaming a ribbon parachute.

The swish of rockets, the furious multiple blasts from the anti-tank weapons bring columns of black, greasy smoke from the battle in the east.

The force and drive of the target invasion has succeeded. The Marines are in control, and the process of erecting necessary field facilities has already begun. The first troops of the airborne invasion have secured their position. Despite din and death, we are *there!*

Everything has changed since the last war, everything but the smoke, the dust and the heat. In the future, the tired red eyes of the infantryman will see war on a colossal scale conducted with an awesome fury and terrific speed beyond the comprehension of tired muscles, aching feet, and the shallow blindness of single experience. ★ ★



GRAMPAW PETTIBONE

Ferry Tale

An HUP-2 being ferried from Jax to Lakehurst was on its Cherry Point-to-Weeksville leg at an altitude of 450 feet and an IAS of 70 knots. The pilot was reading his chart as a check on position when he heard a very loud bang (audible for two miles) followed by silence. The startled pilot, realizing that the engine had quit, threw the chart in the direction of the co-pilot seat and hit the collective down. RPM read between 1950 and 2000, both needles married.

The helicopter was over a heavily wooded area and the pilot looked back to determine whether he could make it back to a river he had passed a short time before, but he immediately realized this would be impossible. Gliding straight ahead, the pilot concentrated on leveling off about three feet above the trees. To quote:

"As I approached, I did a *side flare* and came to a dead-stop position. As the plane started to fall, I came up on the collective and it stopped the plane dead, with the fuselage in the tree tops but the rotors above. Then as we started to settle I heard the blade being chopped off and knew it was just a matter of free falling the last 60 or so feet to impact.

"On the way down our right wheel wrapped itself around the biggest tree, and it turned us from an upright position to flat on the pilot's side. This is the way it hit the ground. The plane was falling mighty fast and the impact was real hard. My window was open and my hard hat went into the muck.

"I immediately checked to see if I had been injured and was surprised to find I was not, particularly since a jagged spearhead of splintered tree stump jutted straight up 14 inches into the cockpit in the center of the pilot's open window, a scant three inches behind the base of my neck. I reached over and turned off the magnetos, at the same time asking my crewmember how he was. He said he



was OK. The co-pilot's side was straight up, and my crewmember went out first.

"After leaving the crashed aircraft, we decided to take a course back to the river's edge. The swamp was deep; we went up to our knees many times. The trees and brush were very thick and there were large thorny vines. After grabbing these vines several times to steady my progress, I decided I would rather fall. I finally made sure my stepping was near the stumps, where the ground was much firmer.

"In approximately 15 minutes we reached the river's edge but could not see any signs of help. We decided to go north along the edge about 50 yards to a stump. Upon reaching this area I waded out to the stump and sat down. (This stump was later reported to be in the middle of false river bottom of quicksand.) My crewmember

climbed a small tree on the bank, and I said I would set off some red smoke. I did so but the smoke flare gave two little puffs (about like two good puffs on a cigarette) and quit.

"Then my crewmember set off one of his but the smoke blew back into the trees and stayed low so we did not expect anyone to see it. From our position we could see a causeway bridge with occasional cars going over it. We tried to time setting off our smoke (both day—red—and night—white) to attract one of the drivers' attention. Apparently all North Carolina drivers look straight ahead for after half an hour we still could not attract anyone's attention.

"I then suggested to my crewmember that our best bet was to go back to the plane and get the PK-2 raft. We decided that he would go back, and I would stay put in hope of attracting someone. On the way back to the plane (it was difficult to know the way back because of terrain) to insure not getting lost and separated, we called to each other each 30 seconds. As my crewmember went south along the river he called that he had found an abandoned delapidated rowboat with a piece of 1 x 3 old board about eight feet long. The boat was lying upside down. He turned it over and with about six inches of water in the bottom started to row to pick me up. When he reached me, we both stood on a partly submerged thin tree and tried to turn it over to get all the water



They must be city boys!

out. We could not do a complete job, nevertheless we started out to the center of the river with my crewmember rowing.

"Our progress was slow and I noticed the boat was taking on more water—cold water. I took off both my shoes and with a shoe in each hand started to bail out the water. I thought I was holding my own, but after 15 or 20 minutes I started to slow down and I could see the boat was about half submerged. I set off another red smoke (the last) and the smoke went straight down the river to the boat docks. When it cleared, I saw that a rowboat was headed out for us. We met in about 10 minutes and they took us aboard."



Grampaw Pettibone Says:

These boys did right well on the basic course—they got down in one piece—but they could have flunked out in the finals, the survival task of getting home from the boondocks. The pilot's hardhat and his snugged and locked shoulder harness and belt assembly prevented his being flattened into the landscape. Similarly, the crewman's equipment held him suspended and prevented his 200 pounds from sandwiching the pilot to the ground beneath.

Having crashed into a swamp, they were fortunate to have picked an area near civilization. Even so, if they had begun an erroneous break-out heading almost anywhere within the remaining 270° sector their 15 minutes of weaving, wading and detouring where visibility was limited to ten yards could have terminated in disorientation and a route to nowhere. Neither had a compass or watch.

There remained the dangers of quicksand, water moccasins and cold water (40°F.) and an abandoned leaky boat considerably less waterworthy than the raft residing in the helicopter.

The NAF Weeksville Flight Surgeon recommends the following wear for circumstances such as these: Flight suit, life jacket, compass, watch, knife (machete, if possible), boondocker shoes, gloves, tin whistle and a big red bandanna. Wal, mebbe the Doc's got something there. Of course those red bandannas can be handy things to have, but you just don't hardly see them around much anymore. I've sort of figured that a piece of my red flannels or my bright plaid summer shorts could serve the purpose in a pinch.

As a comforting note, the local residents didn't all have their heads down. The ASR net alert evolution had been smartly executed and the State Highway Patrol even had the grid coordinates

within a mile of the site reported to ASR starting some 90 seconds following the crash.

This story had a happy ending, but it ain't necessarily so. The wooded swamp areas can swallow airplanes, hunters and capsized fishermen—it's not uncommon for searchers to stumble across a crash site several years old for the first time in the course of a vain search for the most recent disaster victims. These areas cannot always be avoided, but the intelligent pilot will prepare himself to pass the test in case he's called for the final exam.



Hold him off well in advance!

Not Allowed

An AD-5W was cleared into the traffic pattern to commence night field carrier landing practice, but collided with the ground prior to making the first approach. The airplane was demolished and the pilot killed instantly. There was no indication of mechanical difficulty of any kind. While the cause of the accident could not be positively determined, two distinct possibilities existed.

The most likely cause of the accident was that the pilot failed to allow for the 500 feet of altitude difference between the coastal field from which he took off and the nearby field at which he was scheduled for his FCLP; that is, he was attempting to fly the pattern at 300 feet above sea level instead of 300 feet above the terrain.

While it's strictly conjecture, a second possibility is that the pilot veered from his path of intended travel and intended attitude when he took his eyes off the flight instruments or visual ground references to reset the exterior light switch from the "blink" to the "steady" position preparatory to his first landing pass. In the AD-5W the

external light positioning switch is on the right side of the cockpit, requiring the pilot, in the absence of an assistant pilot, to lean far to the right, reaching over the assistant's seat and down to manipulate the switch.



Grampaw Pettibone Says:

From all appearances, the fatal accident was avoidable. Most everybody pulls an occasional blooper, but the fact remains that you can't always get away with it, especially in an airplane.

Since his normal operations had been from a field with an elevation very near sea level, it's quite conceivable that this relatively inexperienced pilot forgot to make an allowance for the higher elevation of the nearby field. A temporary slip of the mind, but with permanent results.

As for the second possibility, if you have to exhibit your boarding house reach to actuate a switch in the cockpit, recognize the potential dangers involved. Just as the boarder has to display a nicety of judgment and timing in reaching for that second pork chop, lest he get a fork stuck in the back of his hand, so must the pilot be aware of the possible consequences of his own far-reaching actions.

The switch from "blink" to "steady" could have been accomplished at an earlier, less critical time. Granted, in this case the safest earlier time would have been prior to take-off, since it takes a very long arm to reach the switch from the left seat during flight. This situation occurs in both the AD-5N and -5W when no additional crewmembers are carried. I'm advised that AD Aircraft Service Change 642 will relocate the exterior light controls to the center console.

MEMO FROM GRAMP:

He who lacks in anticipation
Has lost control of the situation.



THIS SCENE is probably still vivid in the minds of the Japanese defenders of Mt. Suribachi in the closing days of the Iwo Jima campaign. The mock attack this year was a "tremendous success."

MARINES 'RETAKE' IWO JIMA

THE THIRD Marine Division has "taken" Iwo Jima and its nearly impregnable Mt. Suribachi for the third time in 11 years. Not long ago, while a large number of troop transports, escorts and aircraft carriers stood off-shore, the Marines stormed the beach in a manner reminiscent of that almost impossible task in 1945.



CREW READIES A-bomb simulator to be dropped over operating area to add realistic touch.

In that assault, they met the best that the Japanese Empire had and won decisively. In this third one, they are practicing as they did on the second. Throughout the operation, both offensive and defensive aspects of atomic warfare were emphasized as never before in a military operation of this size.

Forty thousand Marines were given some idea of what it might be like to

face a potential enemy which could destroy with atomic weapons. Ships at sea and men ashore were included in the relatively new concept of deployment to prevent such an explosion from destroying too much at one time.

"Atomic bomb simulators" exploded over the task force and on Iwo Jima, producing the miniature mushroom-shaped cloud that has become the symbol of the atomic age. Every ship in the formation held drills in decontamination against radioactive fall-out from the mock A-bomb burst.

Carrier pilots practiced maneuvers necessary to escape the atomic burst after they had dropped dummy bombs the same size and weight as real A-bombs.

MGen. T. A. Wornham, CG, Third



TWO MARINES defending the island capture and search an "aggressor" on Iwo Jima beach.

Marine Division, stressed the Navy's role in the operation: "One of the unique tools we have that few other nations possess is the ability to wage effective amphibious warfare. This requires continued control of the seas, and as we keep that control, we keep the means and ability to win."

Uruguay Gets a Navy PBM Crew Trained at NAS Pensacola

Uruguay's senior Naval Aviator, Cdr. Carlos Mari, and his crew made their first flight in their own PBM-5S-2 *Mariner* at NAS PENSACOLA on 8 March. The *Mariner* was turned over to the Uruguayan government under



MARI ACCEPTS PBM FROM NAS O&R'S HUNT

the auspices of Mutual Defense Assistance Program by Cdr. L. J. Hunt, Jr., Assistant O&R officer.

The aircraft was the first PBM to be processed by the stations O&R Department. As soon as the "bugs" were ironed out, the crew flew the plane to ATU-501 at NAS CORPUS CHRISTI for an additional six-weeks training before takeoff for Montevideo, Uruguay.

The PBM-5S-2 has anti-submarine configurations for use in patrol duty.

CVA's Vie in Blood Giving Shangri-La Wins with 1,021 Pints

The USS *Shangri-La* and the USS *Bennington* held an unofficial contest to see which carrier would donate the most blood to the Philippine Red Cross community blood bank. The *Shangri-La* won hands down when crew members donated 1,021 pints of whole blood. The *Bennington* had donated 856 pints earlier.

The blood will be used to meet almost any emergency in the Philippines and Far East. During the Korean War, the Philippine Red Cross shipped thousands of pints of whole blood to United Nations forces fighting there.

Navy Mission is Defined Keynotes Theme of 'The New Navy'

A restatement of Navy principles, defining the mission of the modern U.S. Navy has been drawn up by BUPERS under the direction of VAdm. J. L. Holloway, Chief of the Bureau of Personnel. The back cover of this issue of NANews carries it.

The idea of succinctly stating the Navy's mission originated with Adm. Arleigh Burke, CNO. He directed that this statement of the Navy's purpose, present and future, be written in such a way that it can be easily memorized.

Adm. Burke emphasized that three points be stressed: The Navy is a ready force, constantly on the alert; Navy men have every reason to be proud of their service; our dynamic Navy has a bright future.

The Navy plans to distribute copies to all Naval installations. BUPERS considers it so important that personnel familiarize themselves with this statement that it probably will become promotion exam material in the future.



SIZE OF COOKING vats fascinates one of 80 wives who went aboard the *Saipan* to see how an attack carrier operates. Guided tours and lectures gave them first hand knowledge of the complexities of the ship.

NavCad Ex-Bronco-Buster Now Rides Herd at NAS Pensacola

"Let 'er rip; ride 'em, cowboy." These are familiar sounds to NavCad H. J. Rosser of Cleburne, Texas, who is now at Pensacola in Pre-Flight.

A former student at the University of Texas, Rosser spent his summers bronco busting, calf roping, bulldogging, and served as Brahma Bull jockey in rodeos. He also played football.

Perhaps young NavCad Rosser's avid interest in aviation dates back to the numerous flights he took from the back of some giant Brahma Bull.



SECRETARIES SHOWN NEAR F3D SKYKNIGHT

Secretaries on Forrestal Visits During Shakedown off Cuba

The Deputy Secretary of Defense, the Honorable R. B. Robertson, and the Assistant Secretary of the Navy for Air, the Honorable J. H. Smith, Jr., were guests of Capt. R. L. Johnson, CO of the USS *Forrestal*, during the carrier's shakedown cruise off Cuba.

Early one morning they donned flight gear, climbed aboard two F3D *Skyknights* and were catapulted off the steam cats on the *Forrestal's* bow. Secretary Robertson was "catted" first, and Secretary Smith followed seconds later. After a 30-minute flight, the speedy jets made arrested landings aboard the *Forrestal's* angled deck.

Both officials lined up with the crew to eat in the crew's mess as did their military aides. Each sat down to a roast chicken dinner with enlisted men from their home town. A tour of the

ship and observance of air operations followed. That evening they returned to the crew's mess hall to congratulate four *Forrestal* sailors who were observing their birthday at a special table.

They disembarked the following morning to go aboard the guided missile cruiser USS *Boston* to observe the firing of Navy's guided missiles.



MOORE AND HIS BRIDE LEAVE YORKTOWN

'I Do's' Aboard Carrier Wedding Performed On Yorktown

The USS *Yorktown* has another first. Last March, for the first time aboard the veteran carrier, a wedding ceremony was conducted by the ship's Protestant Chaplain, Ltjg. K. O. Scott.

Richard Moore, AN, and Jean Starfeldt, WAF of Hamilton AFB, were joined in marriage in the crew's lounge before a small and informal group.

Moore had never heard of such a thing being done aboard ship but requested that the ceremony be conducted there. After ship's officers determined that regulations did not prohibit this practice, the chaplain was permitted to perform the ceremony.



WIVES OF officers and members of VMA-223 and their husbands pose before squadron *Furies* on the flight deck of the USS *Wasp*. During the one day cruise off San Diego, Capt. R. W. Denbo, *Wasp* CO, played host to them and ship's company husbands before deploying to the Far East.

Planning Conference Held Chincoteague Host to DD Officers

VX-2 played host to officers of the USS *Richard E. Kraus* DD-849 at NAS CHINCOTEAGUE in order to discuss future operations in connection with projects to be undertaken for the Operational Development Force.

The visiting officers were given a tour of the station and a chance to observe drone operations by VX-2. They watched the actual launch and recov-



OFFICERS DISCUSS DRONE OPERATIONS

ery of a drone. This was a spectacular performance when Ltjg. E. D. Shropshire successfully landed a red F6F-5K Nolo during a 20-knot, 90° crosswind.

Shown in the photograph is Capt. J. L. Nielsen, VX-2 skipper, who is using a model to explain drone techniques to Cdr. J. R. Zullinger, CO of DD-849. At right, Cdr. R. G. Dose, VX-3 skipper, and Cdr. C. V. Vossler, prospective CO of VX-2 look on.

VF-14 Gets New Demon Jet First Assigned to Any Fleet Unit

VF-14, based at NAS CECIL FIELD, received its first group of the F3H-2N *Demon* turbojet fighters, the Navy's latest fleet-assigned aerial weapon. Their arrival marks the first allocation of any number to Atlantic or Pacific fleet units.

The all-weather fighter recently passed rigorous carrier trials with flying colors aboard the *Ticonderoga*. Combining maneuverability with interceptor speed, the *Demon* proved itself a high-performance night fighter.

The shapely swept-back thin wings have a 45° sweepback and can be folded for carrier stowage.

With a range of more than 1000 nautical miles, the ship is equipped with a pressurized cockpit, automatic pilot, ejection seat, and has rapid-firing 20mm. cannon as well as rockets.



GEN. RANDOLPH McC. Pate, GMC, lowers himself into the cockpit of an F3D at MCAS Cherry Pt. for his first jet ride. Maj. R. G. Klein (adjusting Mae West) was pilot. Other man (rear) is SSgt. Collins, plane captain.

XRON-1 Tested for BuAer Midget 'Copter Weighs 500 Pounds

The Gyrodyne Co. of America, Inc. test flew its tiny XRON-1 *Rotorcycle* for BUAER Representatives in February.

The XRON-1, an ultra-small helicopter that weighs a mere 500 pounds with pilot aboard, performs all basic helicopter maneuvers and cruises with great ease. Control qualities at all speeds were reported to be excellent, and its smoothness in terms of vibration was beyond expectations.

Intended for use as an observation craft, the *Rotorcycle* can also be used for liaison and small unit tactical maneuvers. Other company claims for the 'copter are low training time, simplicity of maintenance and low cost.



GYRODYNE'S RYAN AT CONTROLS OF XRON-1

Japanese to Train in U.S. 14 Take NavCad Tests at Atsugi

Fourteen chief petty officers of the Japanese Maritime Self Defense Force have been given pre-flight physicals and aptitude tests to qualify them for NavCad training in the U.S.

Scheduled for departure in July, those selected will report to the U.S. Naval Air Training Command at NAS PENSACOLA for the 18 months of aviation training before gaining their



PHYSICAL EXAMS WERE PART OF THE TEST

wings as fledgling pilots in the MSDF.

LCdr. M. Yoshimatsu, O-in-C of the group, said that emphasis will be on anti-submarine warfare aircraft such as the P2V-7 *Neptunes*, which the MSDF recently acquired under the MDAP.

Cecil Crew Saves Pilot When a VF-62 FJ-3 Fury Crashes

Three fast-thinking men from NAS CECIL FIELD's crash and rescue section have been credited with saving the life of a VF-62 pilot. The pilot crash landed his FJ-3 *Fury* on the north end of the field and rescue teams went into action as flames threatened to engulf him.

First on the scene was A. W. Brice, AD1, a helicopter pilot, who landed his craft and tried to remove the sprung canopy. It wouldn't budge. Seconds later, the crash section chief, D. R. Kehoe, DCC, arrived, but despite the efforts of both men, the canopy still wouldn't open.

A crash-fire truck pulled up near the burning plane and crew leader, G. L. Bishop, AB3, acted quickly. He grabbed a fire axe and chopped away at the canopy while Kehoe gave the injured pilot instructions.

The axe did the trick, and the superficially injured pilot was lifted from the cockpit. The fire was soon extinguished by crash and fire equipment.

Service Facility Moved Technical Records Now at NASD

The Technical Records Department of the U. S. Naval Air Development Center has moved its offices to the Naval Aviation Supply Depot, 700 Robbins Ave., Philadelphia. This transfer was initiated by BUAER to unite Technical Records with the publications branch of the Depot.

The Technical Records Department, a BUAER service facility, is responsible for providing specialized collection and reproduction control of BUAER and aircraft industries' drawings and specifications as may be required by governmental establishment and commercial organizations.

In existence for more than 11 years, the 55 employees of the unit, under the direction of Miss Marie G. Burke, have helped assemble more than two million drawings. Some date back as far as 1918 and concern the Navy's very first aircraft specifications.

Mothballing of a CVE USS Pt. Cruz Marks 'End of Era'

When the USS *Point Cruz* steamed into San Diego Bay, the escort carrier's swan song began. The ship, last of her type to be operated in the Pacific, is scheduled for decommissioning and assignment to the inactive reserve fleet.

The *Point Cruz* symbolizes a proud tradition gained during WW II. Notable among these ships were the USS *St. Lo*, *Gambiers Bay*, *Rendova* and *Kula Gulf*.

The escort carriers returned to serv-



THE NAVY'S first operational transonic trainer, the F9F-8T Cougar made its successful maiden flight. Armed with two 20mm. cannons, and capable of carrying a variety of missiles, it will also be used as an operational fighter. Modifications include a new forward cockpit, the removal of two 20mm. cannons and ammunition boxes, and a 23-inch longer nose section.

ice during the Korean War as bases for hunter-killer organizations, but later the big *Essex*-class carriers were converted to CVS's to fill this need.

VS-25 logged a notable, 1,134 accident-free landings in their S2F-1's in the last 11 months of operations.

The ship, commanded by Capt. A. R. Matter, served as flagship for RAdm. W. M. Nation, ComCarDiv-15. She is scheduled for decommission at the Puget Sound Naval Shipyard.

55's Outstanding NavCad Marine Lieut. Wins DAR Award

Marine 2nd Lt. W. A. Holmes, Jr., has been selected as the outstanding NavCad of 1955. Now serving with VMA-225 at Edenton, N.C., the lieutenant was named for his outstanding performance in ground school training and actual flying while a cadet at NAS PENSACOLA.

Holmes travelled to Washington, D.C. to receive an engraved wrist

watch from the National Society of the DAR.

This is not Holmes' first honor. For he was regimental commander of the student class at Pensacola, held the highest honors possible and was chosen as the top student in pre-flight at Pensacola.

Entering the Navy first as an enlisted man, Holmes applied for and was accepted for flight training in 1954. He received his wings in July 1954 and was commissioned in the Marine Corps.

Rolls-Royce Looks Ahead Plans Aircraft Atomic Power Units

Rolls-Royce, well known both in the automotive and airplane industries, has been working for the past 18 months to develop atomic power units for aircraft.

Two main problems involved in the project are those of heat and radiation. The efflux temperature of an atomic aero-engine may reach as high as 4000°F, about three times that of the conventional turbojet. The engineers are now developing metals with high boiling temperatures as well as cooling systems effective in combatting the great heat of the reactors.

Another problem is the protection of crew members and passengers from radioactivity emitted by the reactor. If a solid sheet of lead were used, it would have to be two feet thick.

Yet there is one prospect which has the aero-engineers smiling: a long-range conventional aircraft designed to carry 100,000 lb. of fuel (enough for 5,500 miles) could travel the same distance with .05 lb. of uranium 235, the fuel which will be used for an atomic engine of the future.



THE XC-7 STEAM catapult at Naval Air Test Center, Patuxent River, gets a work-out as the Navy's F11F-1 is launched for tests. The Tigerjet in all its production models is powered with a J-65 Sapphire turbojet with afterburner. It will be the latest Grumman plane to join the Fleet.



THE ACCUSED HEARS THE 'SENTENCE' OF THE BESWABBED COURT



'THUMBS DOWN' DECISION IS GIVEN CASE BY THE OFFICERS

DEATH ANGEL SAFETY COURT AT ATSUGI

YOU COURT danger at your peril and land in "court" if you're a Marine pilot of VMF-235, Marine Air Group 11 at Atsugi, Japan. The court is designed to keep pilots on their toes and stress safety in such a way that pilots won't find it easy to overlook the "do's" and "don'ts."

Safety rules cannot be over-emphasized. Carelessness has proved costly, and VMF-235 is doing something about it. Capt. Jack Reen, squadron safety officer says, "Each pilot constantly observes the others for any infractions of the flight safety code." Each week there is an accounting.

Every Friday Reen takes the part of

the "persecutor" and the guilty culprits appear before the members of the Safety Court. Its members, outfitted in red scarves and wigs after the manner of the English jurists, lend legal atmosphere to the courtroom.

The charges may appear minor, but they could be serious under certain conditions. One week an unsuspecting pilot was observed rushing toward his plane for an early morning hop wearing low cut oxfords. This could lead to a pair of frozen feet if his plane's heating unit failed. The embarrassed officer admitted his guilt to the Court and paid his fine.

Flying without a G-suit, smoking

on the ramp, and failing to conduct proper pre-flight cockpit checks are frequent violations. Not only does the court deal with safety violators, but it also serves to remind pilots of all squadron regulations.

The fines, decided by the bewigged jurists, range from one to two dollars, and are paid to the Court Clerk. When the fund reaches sufficient proportions, it is used for a Squadron Happy Hour.

Lt. Col. R. W. Teller, skipper of VMF-235 has this to say about the Kangaroo Court: "The officers have a lot of fun ribbing each other, but . . . it has its serious side and all goes to make for safety-conscious pilots."



IMPROPER FOOTWEAR ON A MORNING HOP



CAPT. REEN SHOWS EVIDENCE TO ACCUSED



CULPRIT PAYS FINE TO LT. MICHAEL MURA

PRINCETON VISITS BEAUTIFUL BANGKOK

WHEN THE USS *Princeton* anchored off Bangkok, Thailand, it marked the second time since the end of WW II that a U.S. aircraft carrier had visited this port. Bangkok's one million citizens gave the *Princeton's* men a warm welcome.

Famed as the "Venice of the East," Bangkok is built on canals and situated about 30 kilometers from the sea on the Chowphya River. A center of Buddhist faith, the city's glittering



THAI BOATS BRING PRINCETON MEN TO CITY

temples and golden statues are a tourist's delight. In the temple enclosures and city streets, saffron-robed Buddhist monks beg their two meals a day. It was a wonderful city to visit.

The *Princeton* visited Bangkok as part of Operation *Firm Link*. This operation, designed to prove the mobility of SEATO's forces brought together elements of British, Australian, New Zealand and U. S. armed forces in addition to Thai forces.



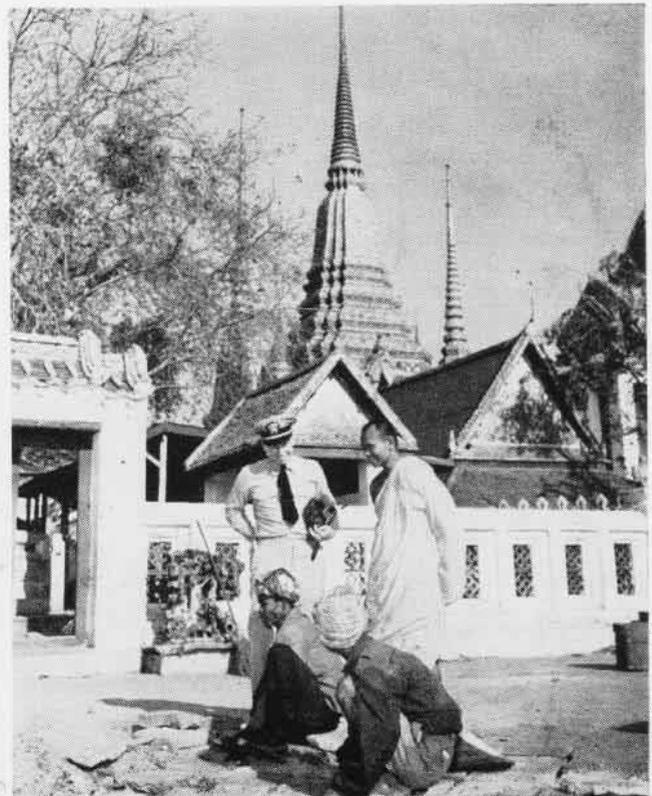
FIRST TOURIST STOP IS THE FAMED LUMBINI PARK



BOYS AND SAILORS STUDY THE TOURIST DOPE SHEET



THE MARBLE PALACE, FAMOUS TEMPLE, WAS ONE OF TOUR SITES



CHAPLAIN CHATS WITH PRIEST AT 'RECLINING BUDDHA' TEMPLE

DOUGLAS-BUILT FOR NAVY



EARLY DOUGLAS OPEN-AIR DT FLOAT PLANE IS FULLY ARMED! NOTE THE BOMB LOAD

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WHO MAKES NAVY PLANES?

This is the first of a series of articles about the aircraft companies that build planes for the Navy.

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delivered to the Navy later this year.

The 20 April 1923 Bureau of Aeronautics *News Letter* (now NANews) recounted the first world performance record of a Douglas-built plane. On 17 April, Lt. Rutledge Irvine and an observer at McCook Field, Dayton, Ohio, ascended to 11,609 feet with a load of 2,204.622 lbs., in a Douglas torpedo plane. Irvine was in the air for two and one half hours. Although the altitude weight-carrying record lacked somewhat the spectacular features of other records in aviation, it was of great importance and of marked interest in connection with the development of the torpedo planes for service requirements.

In the same month appeared this item in the *News Letter*: "Orders were issued by the Bureau of Aeronautics authorizing the turning in of all P.T. torpedo planes. The P.T. will be replaced within the coming month by the new DT torpedo plane which has shown such remarkable performance qualities in recent tests."

The role of carrier-based torpedo planes and dive bombers in WW II was clearly forecast on the morning of 7 December 1941. A few critical moments as the Japanese carrier planes rained death and destruction down upon Pearl Harbor removed any doubt

Nearly 34 years ago, in 1922, Donald W. Douglas made his first airplane sale to the U.S. Navy, a torpedo carrying bi-plane, the DT.

This began the association between Douglas and the Navy which has lasted through more than three decades, and has resulted in the production of record numbers of high performance military aircraft.

In the next 12 years, Douglas sold the Navy 41 of the DT's and the subsequent improved DT-2's and T2D's, convertible land or seaplanes, some of the earliest combination land and float planes. The T2D folding-wing bi-plane was designed for triple duties of bombing, torpedo-dropping and scouting.

One of the major producers of aircraft for the U.S. Navy, Douglas claims to be the Navy's largest prime

contractor for combat aircraft. Of all the planes delivered to the Navy during fiscal 1955, and the first quarter of the current fiscal year, about one-fourth came from Douglas.

Largest of the company's divisions is at El Segundo, Calif. Rolling off the assembly lines there now are the A4D *Skyhawk*, the record-breaking mighty midget atomic attack bomber; the F4D *Skyray*, bat-winged jet interceptor and official holder of two world speed records; the A3D *Skywarrior*, twin-jet swept wing bomber, and the Navy's most powerful carrier airplane, built to fly far, high, and fast; and the AD-5 and AD-6 *Skyraiders*, single piston-engine airplanes which upheld their reputation for reliability and service in Korea. Still another version of the *Skyraider*, the AD-7, is scheduled to be



LEADING 'TARGET' IN A STEEP TURN



SBD DIVE BRAKES FORM BLACK LACE AGAINST CLOUDS



'TAIL-CHASE' WAS GOOD TRAINING

about the effectiveness of that plane.

Rousing from the shock of this savage attack, the Navy began the lengthy but effective campaign of using its carrier-based planes to deliver shattering blows to the Japanese fleet, and to its many island strongholds, one by one. This concept was followed without let-up through the weary years of war that followed.

UNTIL such time as the newer planes, still under production, were ready for operation, the Navy had to depend, for its bombing missions, upon three proven planes—one torpedo bomber, the TBD *Devastator*, and two dive bombers, the SBD *Dauntless* and the SB2U *Vindicator*.

With its assembly lines already established and its sources of supply located, Douglas Aircraft was building its trustworthy airplanes, and increasing its output. At the close of 1941, Douglas was delivering about 20 *Dauntlesses* a month to the Navy. These small, but powerful, planes proved to be among the most useful.

Aboard carriers in large numbers when the war began, the SBD immediately proved a deciding factor in many of the early Naval engagements. During 1942 and 1943, practically all Navy and Marine bomber pilots flew the SBD's. At the Battle of Coral Sea in May 1942, the *Dauntless* led the attacks. A month later, at the Battle of Midway, the SBD's turned back the Japanese invasion force by sinking



IN SUPPORT OF THE FLEET, SKYMASTERS TRANSPORT NEEDED MEN AND MATERIALS

four of their fleet aircraft carriers.

As late as 1944 the Commander-in-Chief, U.S. Fleet, in a telegram to the president of Douglas Aircraft stated: "To date, the SBD has sunk more enemy tonnage than all other arms combined."

Switched from naval to land combat, these reliable dive bombers were effective in the island-hopping sweep of Allied forces. Beginning with their role in the bitter struggle at Guadalcanal, the *Dauntlesses* played important parts in the Solomons, Gilberts and New Guinea campaigns, and on to the Philippines. Making a specialty of pill-box removal, the SBD's also cut supply lines, destroyed bridges and were used in troop attack. At the war's end, Marine dive-bomber squadrons in

the Philippines were still using *Dauntlesses* for close air-ground support.

Such was the combat record of the airplane that in 1941 was considered an interim model to be kept in production only until the newer planes became available. More than 5500 SBD's were delivered by Douglas before it was succeeded by the newer, even more formidable AD-Skyraider series.

Just as the SBD was called the "Workhorse of the Second World War," so the AD held that title during the Korean conflict. Now, ten years after the first *Skyraider* rolled off the assembly line at El Segundo, it is still in full production. The design is so versatile that the models of the AD-1 through the AD-6 are used for night attack, counter-measures, airborne early warning, for photography, target towing, ambulance, for passenger and cargo carrying. The AD-7, now going into production, will resemble externally the AD-6, but will have "beefed-up" wings and a more powerful engine.

THE F3D *Skynight*, two seated heavy, all-weather fighter, used as a night fighter over Korea, is no longer in production. The 200 F3D's still in use, are assigned largely to Marine squadrons and to FAWTULANT and FAWTUPAC.

The fact that the Navy at one time used Douglas-built patrol bombers may be of most interest to the men who flew them—men attached to Patrol Squadron Three, Four, Eight, and possibly Six, between 1931 and 1937. During those years, these squadrons, in PD-1's and PD-2's, fanned out from the mainland, from Coco Solo in the Canal Zone, and from the Fleet Air



THIS RELIABLE R4D WILL ADD TO THE ALREADY OUTSTANDING RECORD OF SKYTRAINS



AD-6 SKYRAIDER IS LATEST VERSION OF NAVY'S PROP BOMBERS THE AD-4N CARRIED A TERRIFIC LOAD OF BOMBS AND ROCKETS

Base, Pearl Harbor, patrolling the skies and the sea lanes.

Developed from a BUAER design, the PD-1 was a twin-engine coastal-patrol flying boat, while the considerably improved PD-2 was a patrol torpedo and bombing convertible twin-float seaplane or landplane.

Any Douglas story is incomplete until the transport series is included. It begins, for the Navy, with the amphibian, RD-1, a six or eight-seated monoplane powered by two 300 hp Wright Whirlwind air-cooled radial engines. Mounted in nacelles which were carried well above, and in front of the wing, they drove tractor airscrews. Purchased in 1931, the plane was subsequently turned over to the Coast Guard.

An interesting story is told about one of the three RD-2's that the Navy acquired in 1933. This amphibian, fitted out for VIP use, was the plane President Roosevelt flew in, and was, according to the account, the first aircraft to be designated as the "Presidential Plane."

In December 1934, the Navy accepted delivery of its first Douglas

land transport. This twin engine plane and the 12 others of the series that followed, forerunners of the famous R4D, were channelled to the Marine Corps for service in the paratroop training program that was well underway prior to the attack on Pearl Harbor.

If there is one thing Navy transport pilots are unanimous in, it is in praise of the venerable R4D. Usual description is—"Finest airplane ever built. Practically indestructible—they won't wear out. They'll fly through anything." In use since 1942, these R4D's through R4D-7's, and the modified R4D-8 Skytrains are still one of the most widely used aircraft, with slightly under 300 still in active service.

Four engine Skymasters, R5D's, and the R6D Liftmasters, have contributed their share of the hundreds of thousands of safe passenger and cargo miles flown by transport planes as they have fanned out over the entire globe, furnishing logistic support for the U.S. Fleet.

Douglas Aircraft Company's El Segundo Division is divided into two major locations—the main plant in the city of El Segundo, approximately ten

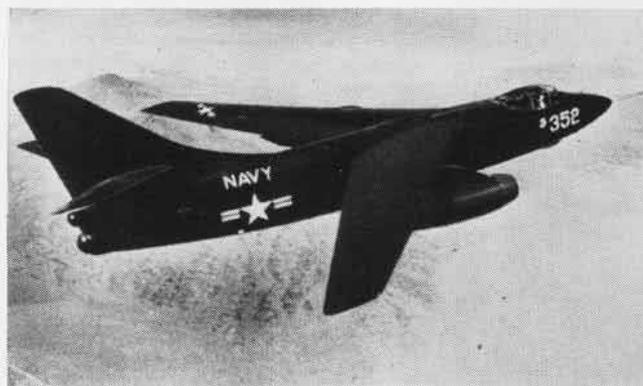
miles southwest of Los Angeles, and the Torrance facility, about eight miles southeast of the El Segundo plant.

The main plant, started in a converted bus factory with 20,000 square feet in 1932, has increased at a phenomenal rate to keep up with the heavy stream of Navy airplanes flowing from its production lines. By WW II, in 1944, the plant had grown to nearly two million square feet. Today it occupies 171 acres and 2,752,796 square feet of covered floor space.

The Torrance facility, rehabilitated in the past three and a half years by the Navy and Douglas from a WW II aluminum foundry to become one of the nation's most modern aircraft factories, occupies 214 acres, and included 1,548,000 square feet of covered area.

Douglas El Segundo enjoys a close liaison with the U.S. Navy. In fact, the Bureau of Aeronautics office located at the El Segundo plant, with its almost 200 naval and civilian personnel, is one of the largest BAR offices in the nation. Capt. F. D. Pfothenauer is the BAR, and his assistant is Cdr. R. J. Thompson.

El Segundo's 15 test pilots, headed



AD-3D SKYWARRIOR IS POWERED BY TWO P&W J-57 JET ENGINES SKYWARRIOR PRODUCTION LINE SHOWS FUSELAGE CONSTRUCTION



AN ASSEMBLY LINE OF THE DELTA WINGS OF THE A4D SKYHAWKS



THE SKYHAWK, MIDGET BOMBER CAPABLE OF ATOMIC DELIVERY

by La Verne Browne, fly each production airplane before it goes up for Navy acceptance. The Navy aviators assigned to BAR EL SEGUNDO are acceptance pilots and fly each aircraft before it is turned over to the ferry pilots.

From the modest beginning of five employees in 1932, the Douglas El Segundo Division now has more than 22,000 people on the payroll. To produce the many airplanes for the U.S. Navy, it employs more personnel than it did during the height of WW II, when the peak of 21,240 employees was reached. Even during the nationwide postwar reduction in the aircraft industry, the El Segundo Division still retained many thousands of employees. The advent of the AD Skyraider as a postwar aircraft model cushioned the drop of work in the plant.

In the hierarchy of command at the El Segundo Division, T. E. Springer is vice president-general manager; E. H. Heinemann is chief engineer; J. W. Ross, assistant to the general manager, and manager of military relations, and R. A. Myers is works manager.

Continuing the standards of per-

formance set by earlier models, several of the airplanes produced for the Navy by Douglas' El Segundo plant have chalked up world records. On 20 August, 1947, Cdr. Turner F. Caldwell flew the Douglas *Skystreak*, D-558-1, at a world's record speed of 640.663 mph at Muroc, Calif. This was the first world speed record set by the Navy since 1923 when Al Williams hit 266.59 in a Curtiss racer. Caldwell's fastest run of four over the three kilometer distance was 653.4 mph.

BUT THIS speed record was good for only five days. On 25 August it was broken when Maj. Marion E. Carl, USMC, also flying a *Skystreak* set a new record—650.796 mph for the three kilometer course.

On 21 May, 1953, LCol. Marion Carl set an unofficial record when he blasted a *Skyrocket*, D-558-2, to an altitude of 83,235 feet, erasing the *Skyrocket's* own previous record of 79,494 reached in 1951. This 1953 record altitude was higher than any manned aircraft had ever been before.

The rakish F4D *Skyray* jet interceptor gained international reputation on 3

October 1953 when it screamed to a new official three-kilometer straight-away speed record of 753.4 mph. The late LCdr. James B. Verdin made that average in four passes over the Salton Sea measured course.

Thirteen days later, on 16 October, Robert O. Rahn, Douglas test pilot, raced the same delta wing fighter around a closed 100 kilometer course at a new speed of 728.11 mph. Bob Rahn added still another laurel to the F4D's growing wreath when on 23 February 1955 he flashed from a standing start to an altitude of 10,000 feet in 56 seconds, setting an unofficial climb record.

In October 1955 the small but mighty attack plane, an A4D *Skyhawk*, piloted by Lt. Gordon Gray, set a new world speed record for the 500-kilometer closed circuit course at Muroc, averaging 695.163 mph around the 62 mile circular track.

In reviewing its achievement during the past 34 years of manufacturing aircraft for the Navy, Douglas Aircraft Company counts as most important its contribution to the strength of our nation, and to the defense of freedom.



FINAL POSITION IN F4D SKYRAY FIGHTER INSTALLATION LINE



F4D SKYRAY IS POWERED BY A P&W J-57 WITH AFTERBURNER

THEY CAME CLOSE TO BEING ANGELS

THE FEATURE account of the Blue Angels (NANEWS, August 1955) recalled another stunt team of many years ago, to which I belonged.

In 1938, the City of New Orleans had a big Navy Day celebration and requested a flight team demonstration, from Capt. Aubrey W. Fitch, the Commandant of Naval Aviation Training. LCdr. "Cat" Brown, CO of Squadron Five, was directed to provide such a team from among the fighter flight instructors. All volunteered but by some process of elimination, Ray Needham, the late Rusty Irons and I won out. The flight leader job being the easiest, I got elected by a vote of two to one.

Our routine was designed to give the crowd a lot of noise and low level maneuvers which could be easily seen and heard from the bleachers. It was pretty much the standard routine: section take-off; low passes across the field with wing-overs at each end and finally a few slow rolls then a loop with a fleur-de-lis; final join up and land.

The one thing we did which was different was a snap roll from the lead to number three position while in echelon. I don't know who originally discovered that this maneuver was possible, but it must have been the same guy that swallowed the first oyster.

With the wing men flying close in and only slightly stepped down at slow speed, the leader would pull back and kick her into the echelon. The first time I tried it, I wasn't quite convinced that it would work so I eased into it. As a result I ended up way astern. After a few tries and experiments it became easy and a good full snap would set you down right in the number three spot. We were flying that finest of all flying-for-fun aircraft, the F4B, and this evolution is not recommended for present day models.

On the day of the show in New Orleans, the mayor and the beautiful radio star, Jessica Dragonette, met us at the Shushan Airport (the New Orleans Municipal Airport) and a motorcycle escort took us to the mayor's office for champagne cocktails. A big luncheon at the Roosevelt Hotel followed

By Capt. N. A. Campbell, USN



with Adm. Fitch as the principal speaker. Needham, Irons and I were rushed back to the Shushan Airport to put on our show.

At the precise pre-designated time, we zoomed Tulane University Stadium for the benefit of a Navy Day gathering there and then returned to the airport to do the stunting. There was a good crowd and we were anxious to impress them. Everything worked fine until we went into our final act.

In this the wing men broke in opposite directions at the start of a second loop. Then on the top, I did a snap roll and pulled out low in front of the crowd. The wing men came down from opposite sides and just at the bottom Needham would cross just



'IT WAS VERY EFFECTIVE, PROPERLY DONE.'

above me and Irons just above him. When timed right, it gave the illusion of all three planes diving into the same spot at the same time. It was pretty effective when done properly.

On this particular day either the effects of the champagne, the big lunch, or just showing off for Jessica caused me to be a little less observant of my altitude than I should have been. After the snap roll on top, the nose dropped I headed for the center of the airfield. Any fool could plainly see that I hadn't started that maneuver with enough altitude.

It was either crowd Needham and Irons or dig a hole in the airfield, so with both hands on the stick, I pulled back with full pressure and cleared the field by several feet. How the wing men got over me and how close they came, I'll never know, but the spectators were impressed.

Patent Given on Battery Gives Greater Economy, Longer Life

A Navy lieutenant at the U. S. Naval Ordnance Facility, Yokosuka, Japan has patented a method of assembling a rechargeable dry cell battery. He's Lt. W. P. Shuman, a former enlisted man and Naval Academy graduate.

His knowledge of science was obtained through a postgraduate course at Monterey, Calif., and a masters degree in chemistry at Lehigh University. He built the pilot model in only ten days. Featuring a compressed disc assembly, the dry cell is constructed of nickel cadmium or silver zinc and uses a Shuman patented polyvinyl chloride separator.

The compressed disc idea makes it possible to construct a dry cell as small as desired; i.e. he built one for a hearing aid that was $\frac{3}{4}$ of an inch long and $\frac{3}{8}$ of an inch in diameter. Shuman believes that his battery offers advantages of greater economy, longer life, and greater flexibility than does a similar competitive model.

Shuman is an active member of the American Chemical Society, American Institute of Electrical Engineers, the American Rocket Society, the Electro-Chemical Society and Sigma Xi, an honorary scientific research society.

LET'S LOOK AT THE RECORD

The 'Happy Valley's' Score CVA Logs its 63,000th Landing

Ltjg. E. M. Cranton of VS-36 logged the 63,000th arrested landing aboard the USS *Valley Forge* in January. It was during night carrier qualifications of VS-36 and VS-26 that Cranton brought his S2F-1 aboard for the milestone.

RAdm. Allen Smith, Jr., ComCar-Div-16, presided at the traditional cake cutting in the wardroom of the big carrier. Others present were the ship's CO, Capt. L. W. Williams, VS-26's CO, Cdr. D. D. Chapman, and VS-36's CO, Cdr. E. R. Fickenscher.

VS-26 and VS-36 pilots also logged over 1000 day accident-free landings as well as 200 night landings.



CDR. PAUL F. Stevens, R. G. McKee, AQC and A. W. Levey, ALC, all of VAH-1, were the first three men to complete the new Fleet Integration Program on the A3D at Pax River.

British Hold Speed Title Fairey Delta 2 Sets World Record

Great Britain has regained the world's speed record. Ex-Fleet Air Arm pilot Peter Twiss, DSC, flew the Fairey *Delta 2*, a research aircraft, to a scorching 1132 mph, which is being recognized by FAI as a new record. It is also the first world's speed record to be recorded in the 1,000 mph-class.

The *Delta 2*, which first flew in October 1954, is equipped with a Rolls-Royce Avon turbojet engine with afterburner. Two runs at 1117 mph and 1147 mph at an altitude of 17¼ miles were recorded.

Photographic equipment designed and built by the Royal Aircraft Estab-

lishment, Farnborough, was used to measure these speeds to within one thousandth of one mph.

The plane, first shown to the public at the 1955 airshow at Farnborough, is unique in that its nose can be hydraulically lowered for better pilot vision on take-off and landing. Commonly called the "Droop Snoot," the Fairey *Delta 2* was equipped with a refrigeration system to keep the cockpit cool during these searing runs.

Pilot Twiss commented: "There was no difficulty so far as the plane was concerned. I have been flying it at these speeds for some time now. As I reached the high speeds, I could feel the beginning of the heat barrier. The cockpit began to get warmer from the friction of the air over the plane. An instrument measured a rise of about 120°C just off the skin of the plane."

Station Record is Broken Whiting's BTU-1 Flies High Time

Pilots of Basic Training Unit One at NAAS WHITING FIELD have broken all previous station records by flying a total of 2005.7 syllabus hours on March 1. It is at this field that most of the Navy's student pilots make their first solo flight.

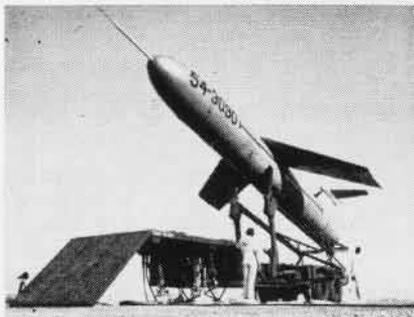
Students flew 1451 flights and made 6,694 practice landings to establish this new record. Thirty-five students flew their first solo flight, and 21 completed the primary phase of flight training.

Whiting's previous high was established in February, when 1961.2 hours were logged by student pilots.

CVA in Yokosuka Drydock Bennington Drydocks Stern-first

As the USS *Bennington* prepared to move into Drydock #5 at the Shipyard Repair Facility, Yokosuka, Japan, it was discovered that the drydock wasn't built with an angled decked carrier in mind. Instead of moving the big carrier in bow first, she had to be positioned stern first so that the drydock cranes could be used.

This established a "first" for the *Bennington* and also for SRF. Not



A TEST VEHICLE of a new version of Martin's Matador is ready for test firing at Air Research Development Center, Holloman AFB, New Mexico. For tactical missions, TM-61B will have a new electronic guidance system.

only was it the first time that an angled decked carrier had entered that drydock, but it was also the first time SRF had to have any carrier move in stern first for routine checks and repair.

The *Bennington* is the second carrier with an angled deck to enter the huge harbor at Yokosuka, Japan.

USS Tripoli Claims Record Refueled at Sea, No Speed Change

When the *Tripoli* was refueled by the oiler *Salamonie*, a record may have been set. The personnel of both ships are eager to know if anyone has bettered it.

After the aircraft transport carrier maneuvered into position beside the oiler, 101 turns were rung up on both engines. No more speed changes were made for the next four hours while the *Tripoli* maintained station beside the oiler until the operation was completed.

In claiming the record, the *Tripoli* gives credit to her helmsman and engineering department, and thanks to the *Salamonie* for its cooperation.

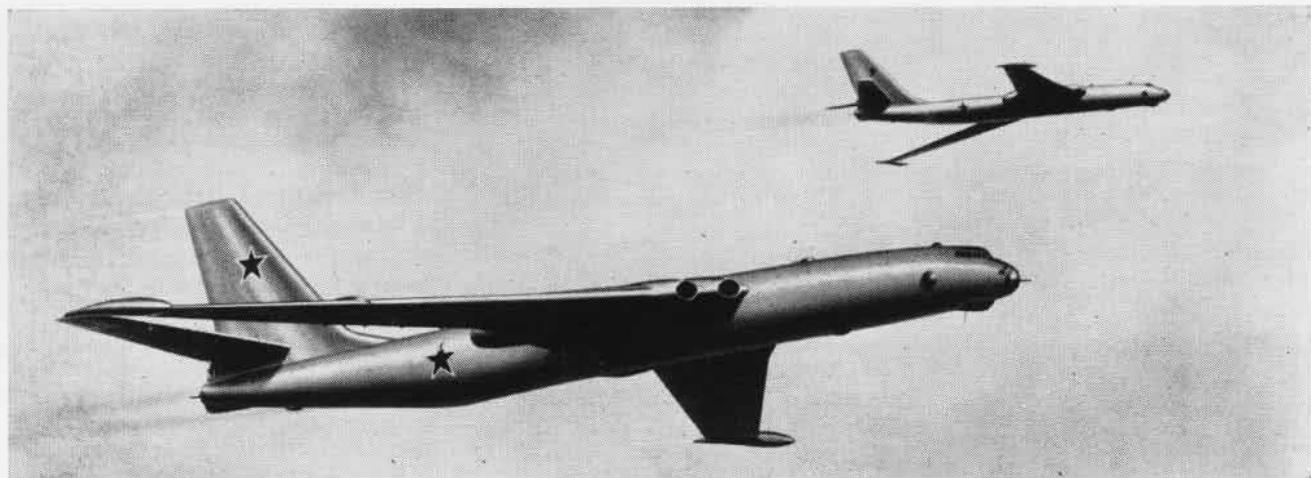


MILE-A-MINUTE average was logged by members of HU-731, NAS Grosse Ile, on a ferry hop to New Orleans. (L. to R.) Lt. P. Gannon, Lt. W. Steffanac, Alvan McClure, AD2.

RUSSIAN AIRCRAFT TODAY UNDER THE RED STAR



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THE BISON BOMBER IS POWERED BY FOUR TURBOJET ENGINES, HAS AN APPROXIMATE SPEED OF 550 MPH; LENGTH 158', SPAN 175'

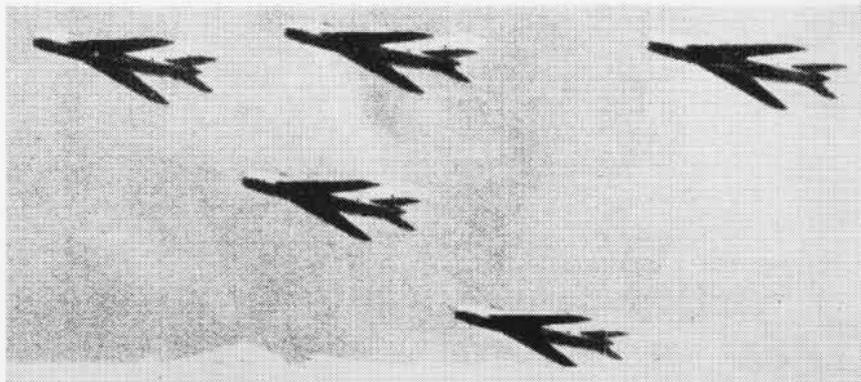
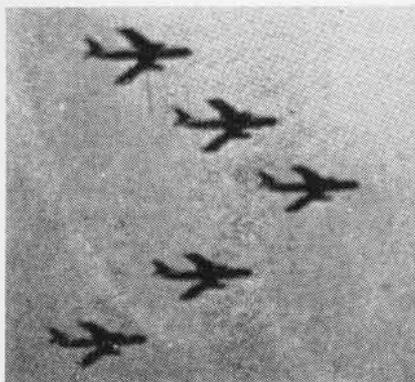
THE MILITARY air strength of the Soviet Union is divided into four major sections, each with its own particular task. They are the Air Force of the Soviet Army (which is a tactical air force); the Long Range Air Force; the Fighter Air Force of the Home Air Defense Force, and the Naval Air Force. In addition, and of interest from the recognition point of view, there is the Soviet civil airline, *Aeroflot*. Soviet-designed aircraft are also in service with the air forces of the Chinese People's Republic, Korea and the East European satellites, and in some instances are built in those countries under licenses.

The total strength of the Soviet Air Forces is about 20,000 aircraft, and a substantial number of these serve in the tactical division, the Air Force of the Soviet Army. This force is sub-divided into several small air armies under the local control of the military commander, and is equipped almost entirely with jet aircraft. A few IL-10 *Beasts* (descendants of the IL-2 *Stormovik* of World War II fame) are still in service, but for the most part, the force is made up of obsolescent MIG-15 *Fagots*, MIG-17 *Frescos* and IL-28 *Beagles*. The functions of this branch of the air force

include those of fighter defenses, close support, interdiction and reconnaissance.

The Long Range Air Force operated during the last war, using various aircraft including the PE-8, then rated as a heavy bomber, but it was never employed on strategic bombing in the manner of the Anglo-American bomber forces. After the war, the Soviet aircraft industry, with the aid of a few force-landed B-29's (then the most advanced heavy bomber in service), produced the TU-4, which made its first appearance at the May Day fly-past in 1947. Although large numbers of the TU-4 *Bull* were produced, they are now obsolescent, and in 1954 the Western world had its first glimpse of two successors, a twin-jet medium bomber and a four-jet heavy one. At the Tushino Air Day on July 3rd last year, fifty of the twin-jet bombers, known to the West by the code name *Badger*, made their appearance in company with several of the four-jet *Bisons* and seven examples of a four-turboprop bomber known as the *Bear*.

The Fighter Air Force of the Home Air Defense Force is, as its name implies, charged with the air defense of the



FLASHLIGHT FIGHTER HAS TWO TURBOJETS

FARMER FIGHTER, POWERED BY TWO TURBOJETS, REPORTED TO EXCEED SPEED OF SOUND

USSR proper. It is equipped with modern jet fighters: MIG-15 *Fagots*, which are rapidly being replaced by the improved MIG-17 *Frescos*, and in all probability it will soon have numbers of the new, single-seat supersonic *Farmer* fighter and the twin-jet all-weather fighter *Flashlight*, which were seen at Tushino last July 3rd.

The Soviets have placed increased emphasis on strengthening and modernizing Naval Aviation. A modern training program, coupled with the conversion to jet type aircraft, has enhanced its potential as a Naval force of sufficient size and strength to fulfill many of the missions normally associated with a modern Naval air arm. Soviet Naval Aviation is, however, unique among comparable Naval air arms in that the Soviet Navy has no known aircraft carriers and, therefore, is at present restricted to operations in its contiguous waters by the range limitations of its aircraft.

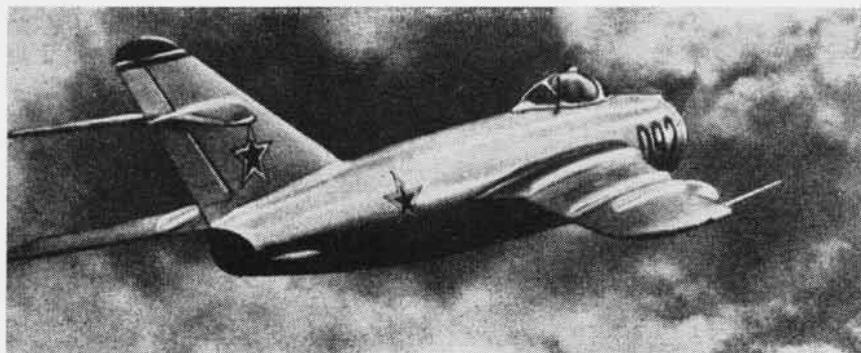
The rise of Naval Aviation over its World War II role of supporting operationally the Army ground forces was apparent in the February 1950 reorganization. That increased emphasis had been placed on the strengthening and modernization of Soviet Naval Aviation was revealed at the July 1951 Air Day Show when the Soviets openly displayed some of the Navy's new jet equipment.

Naval Aviation is an integral element of the Soviet Navy and is, therefore, administered separately from the aviation components of the Soviet Army. Principal subdivisions in the organization of Naval Aviation are: (1) fleet air forces, (2) air divisions, and (3) air regiments. Fleet air forces are attached to each of the six major surface fleets and are operationally and administratively subordinated to the respective fleet commander, for co-ordinated operations.

Since the Soviet Navy boasts no aircraft carriers, its fleet air forces consist primarily of land-based aircraft supplemented by a small number of flying boats and amphibians. With the exception of the latter, aircraft used by Soviet Naval Aviation are the same as those used by other Soviet air forces. (Naval Aviation units have been re-equipped with *Fagot* and *Fresco* jet fighters and jet *Beagle* and *Bosun* jet light bombers. The Navy's flying boats include the *Madge*, similar to the US PBM, and the *Mop* (GST) a license-built PBV).

Naval aviators, like all specialized officers of the Soviet Navy, have army-type rank titles. However, naval air personnel wear naval uniforms with appropriate insignia and markings.

The Soviet Civil Air Fleet—*Aeroflot*—operates a large number of the IL-2 *Cab*, which is the *Dakota* made under license, and a great many IL-12 *Coaches*; the latter are now beginning to be replaced with the IL-14 *Crate*, a specimen of which was seen in this country early this year when it brought Mr. Gromyko to London Airport. At Tushino last year, the *Camel*, a new jet transport was shown for the first time, and is somewhat similar in general appearance to the *Badger* medium bomber. This transport, believed to be the TU-104, recently brought the Soviet security head to London. The IL-20 is believed to be a freight-carrying modification of the well-known IL-28 *Beagle*, which has been in use for some time on certain routes for the carriage of mails and press material. The USSR also makes extensive use of aircraft and helicopters in the Arctic area for fishing, agricultural and numerous other purposes to the benefit of the civilian population. (See NANews, March 1956.)



BADGER BOMBER POWERED BY TWO TURBOJETS

FRESCO FIGHTER, MIG-17, REPORTEDLY HAS MAXIMUM SPEED OF APPROXIMATELY 750 MPH

THE AIRCRAFT shown at the 1955 fly-pasts demonstrate clearly that the Soviet aircraft industry is well developed and capable of producing, in quantity, aircraft and engines of a very advanced nature.

It is evident from the few appearances which the *Crate* has made, in Paris and London among other places, that Sergei Ilyushin has made quite an improvement upon his earlier IL-12 *Coach*, still the mainstay of *Aeroflot*. It may be taken that a fairly large number of *Crates* are being built, and that they will ultimately take over from their obsolescent stablemates. From the recognition aspect, the *Crate* differs principally from its predecessor in fin and rudder shape, which is completely new. In contrast to the neat triangular empennage of the *Coach*, the *Crate* has been given a much



SOVIET PILOTS BY TAIL OF MIG-17 FRESCO

aircraft in squadron service. In appearance, the two are difficult to distinguish, for their external differences are very few.

The *Fresco* is slightly larger than the obsolescent *Fagot* (approximate dimensions are: span, 36 ft., length, 34 ft.) and has a narrower wing with greater sweepback—45 degrees on the inner sections, and 40 degrees on the outer, producing a slight leading-edge kink. The wingtips (almost square on the *Fagot*) are rounded, and each wing carries three boundary-layer "fences" on the upper surface.

Fresco was first seen in the Soviet Zone of Germany in 1953, and since then has appeared in fly-pasts over Moscow in 1954 and 1955. It is a single-seat day fighter and has a longer fuselage than the *Fagot*. The armament, which is buried in the fuselage



RUSSIAN-BUILT ILYUSHIN IL-12 OF POLISH AIR LINES STOPS AT BRUSSELS, BELGIUM



TURBOPROP BEAR WITH ITS FRESCO ESCORT

larger, broad and square-looking fin and rudder reminiscent of that fitted to the Grumman S2F *Sentinel*. Other features are square wingtips, and the leading-back of the engine exhaust pipes past the trailing edge in an extension of the nacelle, in a similar manner to the Convair Liners. Foreign press reports suggest that the *Crate* may have a cruising speed of about 250 mph. The dimensions of the *Crate* are approximately 101-ft. span and a length of 70 ft. There is a remarkable similarity of nose contours between the *Coach* and *Crate* and the U.S. DC-3.

It is impossible to describe the MIG-17 *Fresco* single-seat fighter other than by comparison with the earlier MIG-15 *Fagot*, from which it is obviously developed and which it is now steadily replacing as the leading Soviet fighter



HARE 'COPTERS GIVE HOISTING EXHIBIT

under the nose intake, is reported to consist of one 37 mm. and two 20 mm. cannon. Reports suggest that the *Fresco's* top speed is of the order of 750 mph, and a very good service ceiling also seems probable. Reports from American pilots in Korea included reference to single seat jet fighters (probably *Frescos*) at heights of more than 58,000 feet.

In appearance, the twin-jet medium bomber *Badger*, which is thought to be a Tupolev design, looks much like a smaller edition of the heavy bomber *Bison*. It made its first appearance (to foreign observers) at the 1954 May Day fly-past, and was also in evidence at Tushino on July 3rd this year, when 54 of these machines were seen. The *Badger* is obviously in quantity production for the Soviet Air Force.

Roughly a counterpart of the B-47 *Stratojet* and the Vickers *Valiant*, the *Badger* is aerodynamically an even cleaner-looking aircraft than the bigger *Bison*, in spite of a nose radome, two small remote-controlled gun turrets and two large observation blisters athwart the fuselage under the tailplane. The two powerful turbojets are part-buried in the wing-roots, and it is also interesting to note that the main wheels of the tricycle undercarriage are housed in pod fairings which extend below and behind the trailing edge of the wing in the manner of the British *Valiant* B Mk. 2.

The *Badger's* swept-back tail unit is similar in general appearance to that of the *Bison*, though of an overall slimmer pattern; the wing has even more sweepback than the larger machine. Approximate dimensions of the *Badger* are: span, 125 ft.; length, 112 ft. Continental sources credit the *Badger* with a normal range of around 2,800 miles, and a maximum range, with a much reduced bomb load, of some 4,375 miles.

Little is yet known about this twin-jet all-weather fighter which looks so much like the French *Vautour*. Fifty of them were shown for the first time at Tushino this year, and from this appearance it has been possible to observe a swept anhedral wing (like the *Vautour*) with rather small jet nacelles and parallel leading and trailing edges, and a *Meteor* 14-type radar nose. There seems to be a hint of ME-262 ancestry.

The turboprop heavy bomber *Bear*, of which seven were displayed at Tushino on July 3rd, looks, from such pictures as are available, strikingly



MAX, OR YAK-18 TRAINER, HAS RADIAL ENGINE AND MAXIMUM SPEED OF 160 MPH

similar in outline to the American B-52 *Stratofortress*. The impression gained at Tushino, however, was that the *Bear* had probably been designed primarily for a long range and a high ceiling, rather than with any pretensions to speed. The very short nose is an interesting feature of this aeroplane, but, unlike the B-52, it has a circular-section fuselage.

Generally looked upon as the Soviet equivalent of the American B-52 *Stratofortress*, the *Bison* is remarkable for the fact that, although comparable in size to its eight-engined U.S. counterpart, its propulsion is achieved by four turbojets only. When it is remembered that the B-52's present motors rate some 9,000 lbs. thrust apiece, it is evident that the Soviet Air Force has at its disposal an aero-engine of formidable power.

The first prototype *Bison* made its public debut at the May Day Parade of 1954, and at the Tushino "open house" air display on July 3rd last year a for-

mation of 12 was on show. Like the B-52, the *Bison* employs a tandem undercarriage carried in the fuselage immediately fore and aft of the bomb storage compartments, and is also fitted with small outriggered stabilizers mounted in streamlined wingtip pods. It does not, however, follow the American vogue for "poddied" engines, but mounts them part-buried in the wing roots in a similar manner to the British *Valiant* and *Comet*—though in the *Bison's* case the intakes and exhausts are staggered.

According to foreign press reports, the *Bison* is equipped with three gun positions: one on top and one under the fuselage just forward of the wing leading edge, which are remote-controlled, and one in the tail. No authentic performance details are available, though it has been suggested that a top speed of 550 mph and a range of around 4,000 miles are feasible. The approximate span and length of the *Bison* are 175 feet and 157 feet 6 inches.



CRATE, THE IL-14 TRANSPORT, IS POWERED BY TWO RADIAL ENGINES, APPROXIMATE LENGTH 70', SPAN 101', CRUISES 250 MPH.



NADU TESTS GEAR IN SUCH CRAFT AS THIS P2V-5 SUB-HUNTER

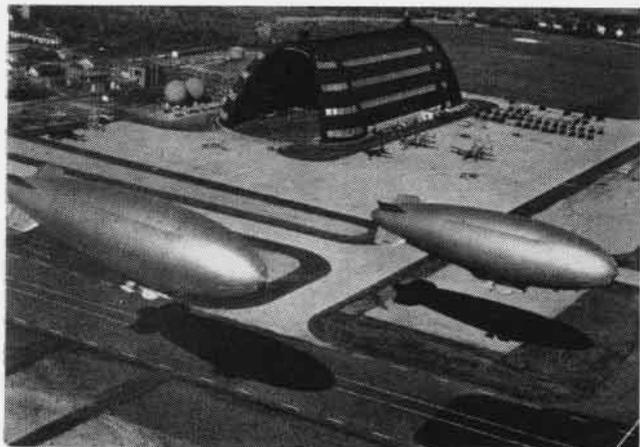


A NAVY-DEVELOPED R7V ON ONE OF ITS MANY TEST FLIGHTS

'PRACTICE MAKES PERFECT' DETECTION



NADU NAVY BLIMPS ARE ACTIVE AT NAS SOUTH WEYMOUTH, MASS.



ENEMY' AIRCRAFT have been spotted! Within minutes, radar directed interceptors are airborne, rushing to meet the "invaders." All this takes place at the Naval Air Development Unit, NAS SOUTH WEYMOUTH, Massachusetts, where exercises of this sort occur daily. This is an essential part of an alert national defense.

Commissioned on September 1, 1953 by the Secretary of the Navy, NADU was established as an extremely important cog in the development and improvement of the Continental Air Defense. Highly trained men of this unit assist the Air Defense Command and the Massachusetts Institute of Technology scientists who are engaged in developing and evaluating electronic detecting devices essential to national aerial defense. This work is called Project *Lincoln* after MIT's Lincoln Lab.

These "pioneers beyond the horizon," as they have been called, are part of the vast shield of airborne electronics essential to national security. Only constant rehearsal guarantees its effectiveness.

Many of the devices and equipment conceived and fabricated by Project *Lincoln* are installed in NADU's aircraft for flight evaluation. From AF Bases near NAS SOUTH WEYMOUTH are flown the aircraft which simulate "enemy" planes seeking to penetrate our electronic defenses from hundreds of miles at sea. From South Weymouth, radar-directed interceptors rise to meet the "invaders." These exercises continually test equipment developed by the Lincoln Lab or other related military and industrial groups, all of whom have a stake in the success of the equipment.

NADU personnel install, operate, and maintain the equipment; but in event of a national emergency, they would be available as part of the tactical team to secure our outermost defenses. The realization of the importance of this mission keeps the unit on its toes.

These exercises not only test the equipment, they give personnel priceless experience. The unit has the advantage of flying the most modern lighter-than-air and heavier-than-air craft. Constant practice increases the skill of already highly trained men.

Membership in this select group is based not only on superior job performance, but also upon one's ability to meet, live and work with others, according to the Commanding Officer, Cdr. R. H. Wood. Qualities essential to cooperation are required of "pioneers beyond the horizon."

THE UNSUNG MEN BEHIND THE RIPCORD

HIT THE silk!" A man remains poised for an instant in an open doorway thousands of feet above the ground. Moments later he is hurtling through space. The only thing between his safety and certain death is the parachute which is strapped securely on his back.

Many words and pictures have been devoted to men "hitting the silk" and lazily floating earthward in their bil-



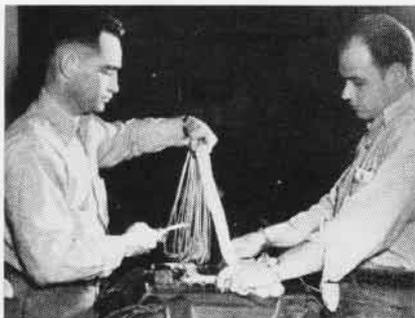
PARACHUTE riggers, *Atsugi*, fold 100 yards of nylon for stowage into the chute pack.

lowing parachutes. Relatively little publicity has been given to the men in the parachute loft, the chute packers, whose skill makes the whole operation possible.

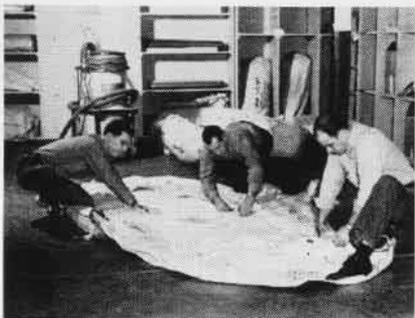
The parachute riggers at NAS AT-SUGI, Japan are a representative outfit. Lowell Farris, PR1, estimates that they inspect 700 chutes per month. Each chute must be unpacked and repacked every 60 days.

Responsibility is a watchword among riggers. They fully realize that the day may come when a life may rest solely in their hands. Their skill and reputation must be such that a pilot will jump unhesitatingly if the occasion arises, fully confident that the silk will open and guarantee his safety when the ripcord is pulled.

The parachute rigger must have confidence in his own ability. The Navy has a very practical way of making certain that he does. Before being graduated from the 16-week Parachute Rigger's School, NAS LAKEHURST, N. J., each student must make a prac-



NOT SPAGHETTI but shroud lines being stowed into the parachute pack by the riggers.



NAS AT-SUGI personnel repack one of the 300 life rafts which are inspected each month.



L. FARRIS, PR1, replenishes life raft inflation bottle with a supply of carbon dioxide.

tice free-fall jump—using a chute which he, himself, has packed.

Although in 1924 parachutes were designated as mandatory gear for all military fliers, many pilots were reluctant to use them. They took their chances riding their disabled planes to the ground. At Lakehurst, it was decided to do something to overcome man's natural reluctance to hurl himself into thin air. It was reasoned that if it became known that the man who packed and repaired parachutes had enough confidence in his own ability and equipment to make a deliberate

jump, the aviator might be more willing to take a chance on his own chute rather than crash with his plane.

The almost daily reports today of bailouts, ejections and entire crews being saved by jumping prove that this line of reasoning paid off.

Riggers must be "jacks of all trades" and master of all of them. They are about as handy with a needle and thread as tailors. They use powerful



FARRIS USES a powerful sewing machine to make needed repairs in torn chute harness.

sewing machines to repair harnesses and conventional machines for sewing the nylon chutes.

Once repairs have been made, the chutes are hung in a specially heated loft for 24 hours. The purpose of this operation is to evaporate any moisture which may have collected in the folds of the chute and to "hang out" any unwanted creases in the nylon. After the chutes are taken from the loft, they are carefully repacked and made ready for delivery.

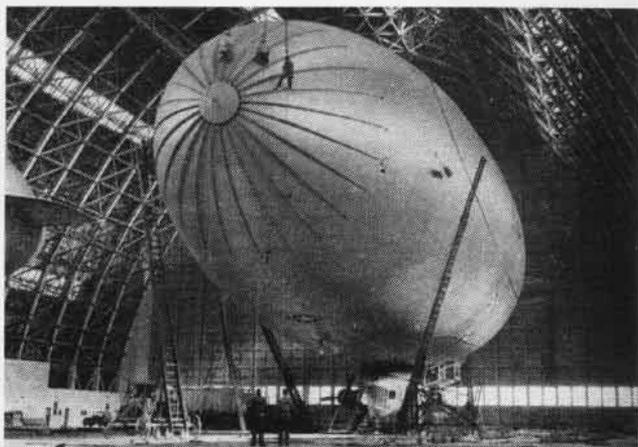
Riggers are also responsible for all survival equipment aboard Naval Aircraft. Each month they unpack and inflate 300 assorted life rafts to check for leakage. All survival gear carried in the rafts is carefully inspected to make certain it is ready for emergency use. The safety of aircraft personnel depends upon these continuous checks.

Equipment is tested and repacked countless times without ever being used. But as far as the rigger is concerned, each testing and repacking is the one that really counts.

Weekend Warrior NEWS



FINAL STEP in preparing the airfoil for flight is the attachment of the gondola. The envelope is held in place by a weighed net.



FILLING almost the entire space allowed for construction, the blimp is about ready for flight test. Envelope was made by Goodyear.

NARTU Erects Airship

Many of the new hands assigned to NARTU SANTA ANA were impressed by their first view of the airship they will fly when the ZSG-2-67 was uncrated from its shipping carton. Everyone was "hard at it" as they worked on the airship under the skilled supervision of the O&R crew from the air station at Lakehurst.

Transforming the envelope from a flat piece of rubber fabric into an airfoil and attaching the gondola was an exciting experience, particularly for those unfamiliar with airship maintenance.

This was the fifth airship to be erected at NARTU SANTA ANA, and construction was completed in jig time.

Grosse Ile's New Equipment

NAS GROSSE ILE received two new pieces of up-to-date fire fighting equipment for the protection of pilots taking off and landing at that field. The heavyweight of the combination is the MB-1 crash-fire truck; its running mate, the MB-2.

The MB-1 is capable of smothering an aircraft fire with 12,000 gallons of foam in two minutes. In performance and mobility, it is equal to the Army's combat vehicles. It moves cross-country through mud and sand with com-

parative ease and ascends grades up to 68 percent.

The MB-2 was designed for use in getting to a fire quickly to blanket the aircraft with foam and rescue the personnel within. It is generally stationed close to the duty-runway, thereby reducing the time enroute to the scene and leaving the bigger MB-1 to stand by for alarms from other areas.

Olathe's Breakfast Sessions

To plan the weekend work schedule on drill days at NAS OLATHE, CO's, XO's and key officers make a point of eating breakfast together at the air station on Saturday mornings. It makes for a good start as the officers discuss the work for the weekenders.

Matters taken up include flight schedules, priority projects, aircraft availability and foul weather schedules. Reports from Olathe indicate the plan works out well.

VA-735 Cruises Caribbean

NAS GROSSE ILE's VA-735 has the distinction of being the first Reserve attack squadron to spend their two-week annual training duty at NAS GUANTANAMO BAY, Cuba. They welcomed relief from Michigan's winter blasts.

Several members of the squadron boarded the super carrier USS *Forrestal*

to observe a demonstration of the Navy's newest addition to the Fleet.

Seattle Honors Employee

Capt. H. R. Horney, CO of NAS SEATTLE, presented a superior accomplishment award to Miss Rosalia B. Wild, an air station civil service employee. A check for \$200 accompanied the award. Miss Wild, who has 13 years federal service, transferred to the air station in March 1955 from 13ND Headquarters.

New Orleans Hosts Hundreds

NAS NEW ORLEANS played host to several hundred people during the Mardi Gras celebration. Drill teams, bands and majorettes from all over the country visited the station.

The nationally known 80-piece NavCad band from Pensacola and the internationally famous Dorothy Hurts Majorettes of Hamilton, Canada, were included in the 500 military and civilian visitors billeted at the station during the Mardi Gras season.

Other visitors included the Longview Senior High School band of Longview, Texas; Clemson College Senior Platoon of the Clemson Agricultural College, Clemson, S. C.; Lakeview High School Band from Ft. Oglethorpe, Georgia; Colbert County High School

band of Leighton, Ala. and the Louisiana Tech Air Force ROTC band and drill team of Ruston, La. The Canadian strutters were judged the best drum majorettes in Mardi Gras parade.

Montana's True Navy Pilots

OUT NAS SPOKANE way, there is a group of 13 Naval Reserve officers that are making travel records. Sometimes referred to as the "Montana Contingent" of VF-901, the men travel an incredible number of miles each month in order to attend weekend drill periods with their squadron at the air station.

Although this group constitutes 60% of the pilot strength of VF-901, they all reside in Montana. Each travels the great distances involved at his own expense and on his own time. During bad weather, which is the rule rather than the exception, it takes some of these members at least 36 hours over slick, treacherous mountain roads to make the round trip by automobile.

On some occasions, the roads have been impassable. When this is true, many of the pilots travel via commercial air and some used their own aircraft to make the trip—all at their own expense.

In the past three years, the aviators have travelled over 11,174 miles per month with a total of 347 hours spent on the road per month. Time and distance records do not include the annual two-week training cruises each



LOCKHEED'S Crandall steadies ladder as LCdr. Frandsen climbs up to look at T2V-1 cockpit.

pilot attends nor the special cruises which are sometimes necessary for efficient flying practice.

The "Montana Contingent," which recently checked out and completed the transition to jet from prop aircraft are (in photo from left to right, front row) Lt. N. E. Lieberg, Lt. N. Sevalstad, Lt. R. A. Taylor, Lt. A. M. Hellsmark, Lt. W. H. Green, Lt. S. E. Stanley; (back row) Cdr. R. J. Anderson, Lt. F. D. Mahrt, Lt. C. E. McPherson, Lt. M. P. Volkman, Lt. A. C. Christensen, LCdr. P. L. Dayl and Lt. C. W. Timmerman—all from West Montana.

Jet Trainer Shown at Los Alamitos

Weekenders at NAS LOS ALAMITOS were given a special demonstration of the Navy's new jet trainer, the T2V-1, a short time ago by Ray Crandall, a Lockheed test pilot and member of VF-771.

Among the Navy and Reserve observers were Col. Jens C. Aggerbeck, CO of the Los Alamitos Marine Detachment, Cdr. Frank McGaffigan, Los Alamitos Training Officer, LCdr. Mack Wortman, Flight Training Officer, LCdr. A. E. Johnston, CO of VF-776 and LCdr. Tom Frandsen, of FASRon-776.

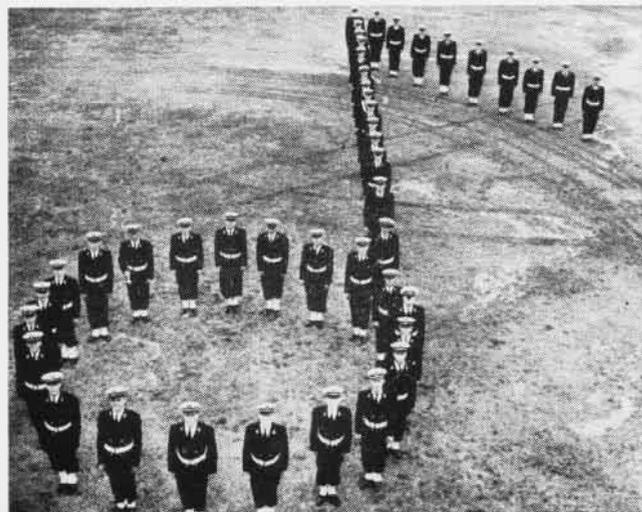
Economy at Willow Grove

Maintenance costs at NAS WILLOW GROVE are being cut through the use of a locally designed aircraft cleaning machine and the use of pre-cut stencils to paint identification on aircraft.

Heretofore, the squeegee and bucket method of cleaning aircraft took two men working a half day. The time was cut from a total of eight hours to 5¼ hours by using a commercially produced cleaning machine. The machine is worth more than \$9000 in terms of manhours saved during fiscal 1956.

By a valve setting, the tank is changed from cleaning to rinsing operations. To convert to painting, only two fittings have to be changed.

To paint numerals and insignia on aircraft, pre-cut stencils are used. Time to mask out a plane has been reduced from eight to four hours, and the pre-cut stencils are re-used three times to add a material saving.



MEMBERS of the 80-piece NavCad band from NAS Pensacola form a huge musical note to depict their vocation during off-duty flight status.



THE MONTANA Contingent of VF-901 pose before an F9F-6 Cougar, the plane they checked out in. They compose 60% of squadron pilots.



LATHAM'S departure for NAS Penscola was delayed by the birth of his first child.

Try, Try Again

Ex-white hat J. G. Lapham, a former disbursing clerk at NAS SPOKANE, has reached the pinnacle of his dreams. For years Joe wanted to fly, but at each turn something happened to deny him the opportunity.

He attended the ROC program in 1953 and finished eight weeks of training at Long Beach. During the summer of 1954, while in training at Newport, Joe suffered a physical disability which necessitated his discharge from the ROC program.

He returned to college and only last year, on 1 June, rejoined the ranks as a stationkeeper at NAS SPOKANE. In July 1955 he applied for flight training in the AOC program and was accepted. He's now doing what he has wanted most to do all of his life—fly.



PERRY WAS promoted to his new rate of AD1 during one of his squadron drill periods.

Weekender Hits a 4.0 Score

Samuel C. Perry, Jr., an aviation machinist mate at NAS MEMPHIS, is the pride of the air station. Perry is the first man ever to make a perfect 4.0 score on an examination for advancement in rate at Memphis, since the NARTU was commissioned.

Perry, who works as a pipefitter in civilian life, belongs to VP-791.

NARTU Norfolk has Dual 4.0 Score

If the 4.0 score of Memphis' Perry seems nearly impossible, consider the achievement of Gene C. Moen, of NARTU NORFOLK. Moen made two consecutive 4.0 scores for advancement in rate to AD-1.

His almost phenomenal feat overwhelmed his squadron mates and especially his CO, Cdr. Gerald A. Weil,



AD1 MOEN received congratulations from his squadron skipper and vast array of shipmates.

who stated that he had never heard of such an achievement in his many years as a Naval Aviator.

Moen took the test in 1955 and made his first perfect score but was not advanced in rate because he lacked sufficient drill credits. After acquiring the necessary drill credits, Moen took another exam and came up with another perfect score.

Good News for Some

Technical Training and Electronics officers within the Naval Air Reserve Training Command had their morale raised recently as a result of a notice issued by RAdm. D. V. Gallery.

The notice, 5321 of 24 February, stated that these two officer billets can now be filled by a lieutenant commander instead of a lieutenant.



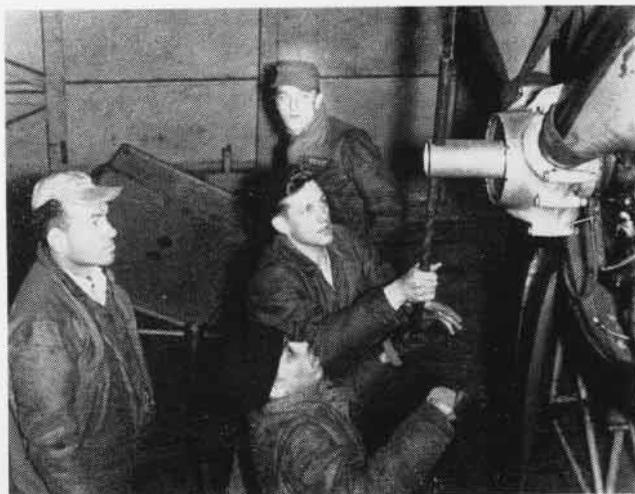
LADIES DAY at NARTU Anacostia found MSgt. Tarnowski explaining vast store of electronic equipment to his skipper's wife and her friends.



CDR. T. E. Bondurant, XO at NAS Columbus, and film star Jackie Cooper look over a model of the Navy's workhorse, the AD Skyraider.



TRAINEES CHECK THE GIMBALS OF THE S2F AFTER FCLP PERIOD



SUPERVISED TRAINING IS THE REAL CORE OF VS-30 PROGRAM

VS-30 GOES IN FOR ALL-OUT TRAINING

WHEN THE NEW airman reports to Air Anti-Submarine Squadron 30, he finds that Boot Camp was only the beginning of his naval training. VS-30 is waging an all-out campaign to train a peacetime squadron to do a wartime job. The goal of this ASW unit is an efficient, well-trained organization.

The majority of the young men reporting on board are in the Navy on minority enlistments, and their average age is eighteen. In about three years, these young airmen will have a decision to make—whether to make the Navy a career or to return to civilian life. Whatever the choice, VS-30 is determined that when this

time comes, they will be more resolute men, better qualified and ready to make the decision.

The "big push" in VS-30's Education Division is to see that all men pass the General Education Development Test. Since September, 18 men have passed it. Twenty are now enrolled in USAFI courses. Aboard the *Antietam*, where the squadron is now located, officer instructors hold classes to help students "bone up" on their English and math.

To help the new men decide where they will work—in electronics, maintenance, ordnance, or structures—the squadron has devised a program which will give each man a chance to make

up his mind. Robert Ogden, ALC, sees to it that each is given a "Cook's tour" of the squadron; he works a few days in each shop to see for himself which tasks best match his talents.

VS-30's aim is to have the best qualified anti-submarine squadron in the Navy. Its training system is based on the principle that if the enlisted man who comes into the squadron is used in the best capacity, he will be a major asset to VS-30 and to the Navy as a whole. If he improves his educational standing by passing the GED test and by advancing in rate, VS-30 will have done the job it aims to do. If the airman returns to civilian life, he will be a valuable reservist.



THE AIM OF VS-30 IS TO HAVE A WELL-QUALIFIED ASW CREW



COMBAT AIR CREW WINGS ARE THE SYMBOL OF ACCOMPLISHMENT



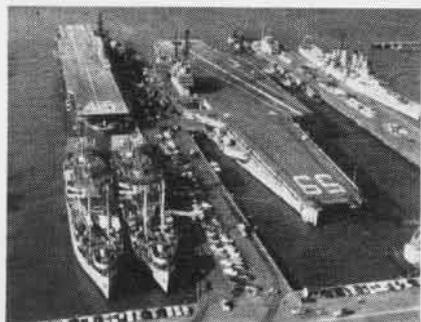
CAPT. J. P. Monroe, CNABT, congratulates AOC E. C. Nixon, brother of the vice president, on his successful completion of Pre-flight at NAS Pensacola. Next step for Nixon is basic.



A WHITE-SUITED LCdr. K. H. Sharpe, senior LSO with VS-25, tests his idea—white suit over black windscreen—to replace the striped LSO suits. BuAer is considering the idea.



CAPT. D. L. Mills (R) NAS Miramar's CO talks over old times with Chief Boatswain P. J. "Pappy" Byrne. The two have amassed 72 years of flying experience in Navy planes.



THE GIANT aircraft carrier, USS Forrestal, occupies as much space as four ships at her Norfolk berth. Other ships are the USS Valley Forge, Taconic, Pocono and cruiser Macon.



NAVY'S LOGISTIC forces still have a sense of humor. As the carrier USS Boxer pulls away after loading supplies, the USS Zeina displays its "closing out sale" banner.



WITH MAST and radar removed, the USS Leyte manages to "squeeze" under Brooklyn Bridge on her trip to the Navy Yard for a routine overhaul. Three tugs assisted in the move.

Scholarship is Established By Naval Academy Women's Club

The Naval Academy Women's Club of Annapolis, Md., has established an annual competitive collegiate scholarship to be awarded to the daughter of a Navy or Marine Corps officer.

The scholarship is to be given to the daughter of an active, retired or deceased officer and amount to \$300. Preference will be given to a daughter of a deceased officer.

Basis for the tuition award will be scholarship, character, and need.

New Facility at Lakehurst NAS CO Announces Building Start

Construction of the new Naval Ship Installations Test Facility at NAS LAKEHURST has begun. Capt. K. M. Krieger, CO of the station, made the announcement as construction of the 16-million dollar project got underway.

This new facility, constructed by BUDOCKS, will conduct test and evaluation programs of aircraft carrier launching and recovery systems and

equipment. Cdr. R. M. Tunnell has been designated as the prospective commanding officer of NSITF, which will take about two years to build.

Military control of the facility will come under the jurisdiction of RAdm. S. B. Spangler, Commander, Naval Air Development and Material Center.

College for Air Safety New Course Taught at Post College

The C. W. Post college of Long Island University is offering its students a unique course in aircraft safety taught by a leading aircraft industry safety expert and a U. S. Navy authority on human engineering.

The instructors are Mr. W. I. Stieglitz, design safety engineer of Republic Aviation, and Dr. C. P. Seitz, head of the Special Devices Center's human engineering department. According to Republic Aviation officials, the 15-week course is given in honor of RAdm. Luis de Florez, a designer of flight training devices and president of the Flight Safety Foundation under the auspices of the Foundation and the

Cornell-Guggenheim Aviation Safety Center.

Stieglitz teaches a course called "Designing Aircraft for Safety." Dr. Seitz's subject is the "Human Factors in Aircraft Equipment Design."

New Ground-Air Teletype First System in Use by BOAC

A new ground-to-air teletype communications system, marking a "first" for British civil aviation, is being used in a BOAC *Stratocruiser* on scheduled service between London and New York.

Object of the system is to receive essential flight information, including meteorological and navigational reports, transmitted by special ground stations in the United Kingdom and Canada, and to present it in typewritten form directly to the aircraft captain when in flight.

Twelve months of planning produced the teleprinter. During that time a special radio receiver was designed, a new light-weight printer made available, and ground transmitters have been assigned and modified.



CPL. WRIGHT BRIEFED BY MAJ. WINTER

Flying Corporal at MCAS Link Instructor Tries Real Thing

For the first time at MCAS CHERRY POINT, an enlisted man, Cpl. James M. Wright, a Link instructor with no previous flying experience, became indoctrinated in the TV-2 jet trainer in actual flight.

Maj. C. G. Winter, commanding officer of CMIT-20, inaugurated the successful experiment to give Link instructors a thorough knowledge of flight procedures. This enables the instructors to utilize their aircraft flight experience in training student pilots in the Link trainer phase of the instrument flying syllabus.

Officer in charge of the Aviation Aids Training Unit, Maj. R. W. Watson, was pleased with the skill exhibited by Wright during his six flights. He remarked that the corporal's flights "will expedite our permanent mission of teaching jet procedures."



E. H. WORD, TMC, demonstrates the results of "Operation Weight and Balance" conducted at NAS Cecil Field by Capt. J. A. Moore, Senior Medical Officer. Word lost 58 pounds before he reported to destroyer Robinson for duty.

A Novel Catapult Signal Now Used Aboard 'Happy Valley'

"Rubber fingers" is a term which always evokes a smile from the anti-submarine pilots of the *Valley Forge*. As a novelty to relax pre-take off tensions, the Catapult Officer, Lt. Nick Castruccio, invented two extra large fingers to greet pilots preparing to catapult from the flight deck.

Previously, the customary signal for a full power tune-up, prior to a launching, was two extended fingers. However, this new twist of placing rubber fingers over his own enables Castruccio to make certain that his pilots receive the tune-up signal and that they leave the ship "in the best of spirits."

One of the *Valley Forge's* amused



'RUBBER FINGERS' SIGNAL TO CATAPULT

pilots recently quipped: "When Nick wiggles those huge fingers at you, brother, you really ARE set to go!"

War Dancer at FAETUPac Aitson is Champion in Own Right

When M. K. Aitson, TDAN, goes "on the warpath" he is a happy man and his friends look forward to his next tribal stomp. Unusual as this situation seems, it isn't at all peculiar, for Aitson is a full-blooded Kiowa Indian and he is also one of the world's champion Indian interpretive dancers.

Aitson, now assigned to FAETUPac at NAS NORTH ISLAND, learned to dance at an early age. His childhood lessons in Oklahoma revolved around Indian customs, traditions and dances.

As a boy he was taught the basic steps of the dance by the elders of the tribe. Through them he learned the



THE TRIBE CALLS AITSON 'BUFFALO RIDER'

fundamentals of Indian dances, but he had to cultivate and perfect his step, rhythm, style, and grace. This gave him the individuality and originality every dancer needs.

Last year at San Juan Capistrano, he was named the War Dance Champion of the West Coast States, a climactic event in a career filled with big moments. Indian dances and dancers had drawn Aitson to folk festivals, Indian pow-wows, reviews, fairs, and other performances over the county.

Modern Robinson Crusoe Special Gunnery Duty in Jungle

Ltjg. Robert J. Kalupa has discovered that Navy duty can mean living in an isolated Philippine jungle where his only "shipmates" are a tribe of pygmy hunters.

Kalupa is air intelligence officer of VF-13 aboard the *Bennington*. While the ship was in Subic Bay, he went to remote Crow Valley gunnery range where his job was to control fire and score target hits made by *Bennington* pilots.

The officer lived in tropical style with daily swims and frequent visits with the pygmy tribe. "They're good farmers and hunters," he says, "but the pygmies have a few customs that wouldn't be popular aboard ship. They smoke cigarets with the lighted end in their mouths and one of their favorite foods is giant bat."

Jungle living is not without its hazards however. Kalupa enjoyed walking barefooted in the jungle until pygmies told him the area has twenty types of poisonous snakes!

THE 'PACEMAKERS' ARE HOME AGAIN

—By Ltjg. E. A. Zeiner



MAJESTIC FUJIYAMA makes the perfect background for these ten Cougars flown by VF-121 pilots. Even during the winter when it is snow-covered, tourists make the climb to view the huge crater.

WHEN THE USS *Hancock* arrived in San Diego in March, it concluded VF-121's fourth Far Eastern deployment. Aboard it carried with special pride the one and only Supersonic Duck.

The first cruise had been made aboard the USS *Bon Homme Richard* in July 1950 with the opening of the Korean hostilities. The entire squadron, then designated as VF-781 and stationed at NAS Los Alamitos, volunteered for active duty. This step won for them the nickname of "Pacemakers." Flying F9F-2 *Panthers*, they lived up to their name by making 1,925 combat sorties in eight months without a single loss of life.

The second Korean tour for the squadron opened in September 1952 aboard the USS *Oriskany*. It was an almost entirely new organization with F9F-5's replacing the old F9F-2's.

On its third trip to the Orient, the squadron was aboard the USS *Boxer*. This time the pilots flew the Navy's swept-wing F9F-6 *Cougar* under the new squadron designation—VF-121. They ended their first peacetime cruise in October 1954 and officially started the present group of *Pacemakers* on

their way to being a top squadron.

The new skipper, Cdr. R. E. "Dusty" Rhodes, former leader of the famed *Blue Angels* flight demonstration team, was one of four pilots who had had any previous operational jet experience. The remaining 25 pilots were either fresh from Corpus Christi or from non-jet activities. The F9F-6 *Cougars* were replaced with the F9F-8's and it took 10 months to train a 150-man fighting team. Again the *Pacemakers* set records.

During one of three visits to NAAS EL CENTRO, 1528 hours of gunnery and tactics were flown in a three-week period. Altogether, by the time of deployment in August 1955, the squadron had flown 8000 hours, including crosscountry flights to Seattle, Miami, New York and Chicago. *Pacemakers* won seven "E's" in gunnery, used 100,000 rounds of ammunition, and became the first squadron to qualify 100% in in-flight refueling.

Aboard the Navy's first carrier with steam catapult, the *Hancock*, VF-121 made a Pacific Fleet gunnery record during an operational readiness inspection in Hawaii. Upon reporting for duty with Task Force-77, VF-121 pi-

lots used the red-nosed *Cougars* in every type of job. They made long-range, high-altitude simulated bombing missions over Japan and South Korea, conducted low altitude reconnaissance sweeps, provided photo escort, carried out high speed fighter strikes into Taiwan during air defense exercises, and flew close support missions on Iwo Jima. They also demonstrated in-flight refueling and foul weather operations with the Secretary of Navy as an observer.

Even when the ship pulled into Japan for a breather and replenishment, the *Pacemakers* never stopped. They moved to NAS ATSUGI to increase their skill in instrument flight and night operation. There was very little play, but they did manage sight-seeing tours near Yokosuka, a visit to Dai Butsu and picturesque Nicco near Fujiyama.

In Southern Japan, Iwakuni was host to the *Hancock* for six days. This gave the *Pacemakers* a chance to visit and see the torii and shrines of Miya Jima, and the remains of atomic devastation at Hiroshima. In Hong Kong, where the tailors outnumbered sailors, the main attraction was buying clothes. Upon a short visit to Manila, its perennial warmth drew sunbathers onto the flight deck. Then the *Hancock* turned back to Yokosuka before the trip home.

Flight operations concluded with the Iwo Jima simulated invasion. Ltjg. Robert Zube made the 10,000th landing on the *Hancock*.

To add a little humor to their operations the day before the ship reached San Diego, the squadron tied a rag model of Donald Duck to the nose of Ltjg. Ralph "Skeeter" Carson's plane. The Duck was then taken through the sound barrier to make it a "Supersonic Duck."

One achievement of which the squadron is particularly proud is the completion of a 60-sortie flight schedule one day with 13 airplanes—12 scheduled and one stand-by. As it turned out, every one of the 12 scheduled aircraft successfully completed five consecutive flights, and the single standby, manned by Ltjg. Robert Van Arsdol, made five consecutive trips

down the elevator. VF-121's maintenance crew stole the day.

In spite of this, Van Arsdol, along with Ltjg. Charles McConnell and CAG-12, Cdr. C. N. "Tex" Conaster, became members of the Century Club by making at least 100 jet landings on the *Hancock*.

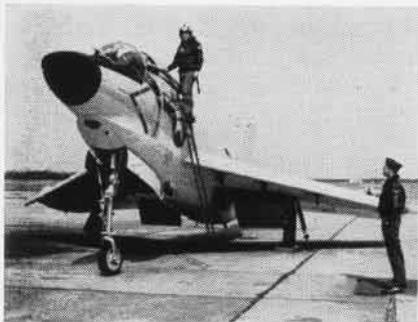
A total of 11,700 hours were flown by pilots of VF-121 and 2,500 carrier landings were made before they disembarked from *Hancock* at San Diego.

VX-3 Gets a New F3H-2N Demon Delivered by LCdr. Miller

VX-3, based at NAS ATLANTIC CITY, was one of the first East Coast squadrons to receive an operational version of the F3H-2N *Demon* all-weather fighter.

The jet was delivered by LCdr. Paul Miller, Jr., an old hand at flying the *Demon*. He was the Navy's first test pilot during the carrier evaluation of the all-weather jet aboard the USS *Coral Sea* in October 1953 when it was designated the XF3H-1.

The *Demon* is powered by an Allison J-71 turbojet engine with a thrust rating of 10,000 lbs. Cdr. R. G. Dose commands the experimental squadron.



DOSE, MILLER AND THE DEMON ON ARRIVAL

Randolph 'Suits' the FJ-4 During Tests off Florida Coast

The newly modernized USS *Randolph* tested the new FJ-4 *Fury* in March for carrier suitability.

The new *Fury* differs from its predecessors, the FJ-2 and FJ-3 in its thinner wings and tail, and dorsal fairing aft of the canopy. LCdr. F. T. Stephens of Flight Test, NATC PATUXENT RIVER was test pilot for the evaluation.

The *Randolph* also conducted carrier qualifications and touch-and-go landings for ATG-202 from Cecil Field. She is now on her shakedown cruise in Caribbean waters near Cuba.

CVA-31 Rejoins the Fleet Bonnie Dick Conversion Completed

The attack carrier USS *Bon Homme Richard* is again in the air operations business. In late February the ship marked the beginning of a new era when, loaded with aircraft from VF-112, VS-123, VS-37 and VR-5, she conducted her first flight operations in three years.

The big ship has just completed renovation at the San Francisco Naval Shipyard. This included installation of an angled deck, enclosed hurricane bow, a new powerful steam catapult and extra heavy duty arresting gear.

The ship's executive officer, Cdr. W. N. Leonard, was given the signal honor of making the first launch and landing on the carrier's new deck. He flew an F9F-8 *Cougar*, borrowed from one of the visiting squadrons.

The week of operations off San Francisco saw 145 landings logged to boost her total to 32,534. Capt. L. P. Carver is her Commanding Officer.

USCG Saves Navy Marlin Plane Towed 85 Miles to Safety

The Coast Guard Cutter *Casco* rescued a plane, crew and passengers and, after delivering them safely to Bermuda, sailed to her home port at Boston, Massachusetts.

A P5M-1 *Marlin* from VP-49 was enroute from San Juan, P. R. to Ber-



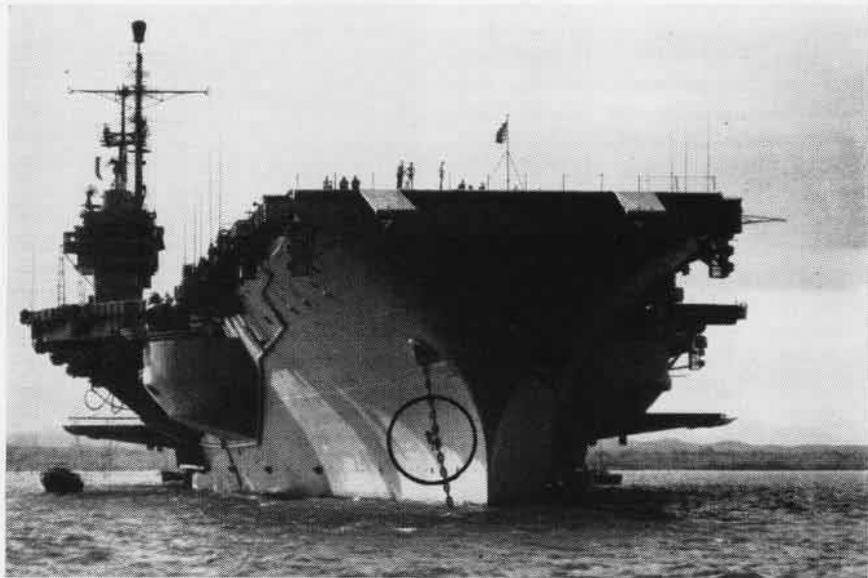
CASCO UNDERWAY WITH MARLIN IN TOW

muda with a load of ground support personnel, when the pilot, Ltjg. James T. Graham, had trouble with his big-twin-engine seaplane.

After jettisoning everything in the plane to keep it airborne, Graham and his crew made a forced open sea landing—described as perfect—as two other squadron planes, a B-29 from the 29th Air Rescue Squadron and two PBM Coast Guard planes, circled overhead.

A Canadian ship, the Canadian *Constructor*, stood by until the *Casco* arrived and took the crew and passengers aboard and the P5M-1 in tow.

The plane was towed about 85 miles to Bermuda without further incident. Ltjg. B. Sutherland was Graham's copilot, and Ens. B. Mullin, third pilot.



WHILE THE GIANT USS *Forrestal* lay at anchor in Guantanamo Bay, Cuba, a seaman was lowered away to paint the anchor chain (see circle). This unusual photograph shows a good comparison between the size of the seaman and a massive 360-lb. link in the ship's anchor chain.

CVA Returns to San Diego Hancock Finishes Far East Cruise

The USS *Hancock* and Air Group 12 have returned to San Diego after a seven-month cruise in the Far East. Commanding the carrier as she returned from her first Pacific tour since 1945 was Capt. J. D. Black.

Cdr. C. N. Conaster, CAG-12, led his squadrons ashore to their home base at NAS MIRAMAR. Squadrons in Air Group 12 are VF-121, VF-124, VA-125 and detachments from VC-3, VC-11, VC-35 and VC-61.

Pilots of CVG-12 completed 4625 landings on the *Hancock's* flight deck during the cruise and spent 8168 hours aloft. She was the first U.S. Navy carrier to be outfitted with a steam catapult and the first to record 5,000 steam cat shots. Pilot of the plane that made this 5,000th launch was Ltjg. Wes Fry of VC-3 Detachment.

After a brief stay at San Diego, the carrier steamed north to San Francisco, to undergo an extensive modernization at the Hunter's Point Naval Shipyard. New features will be an angled deck and hurricane bow.

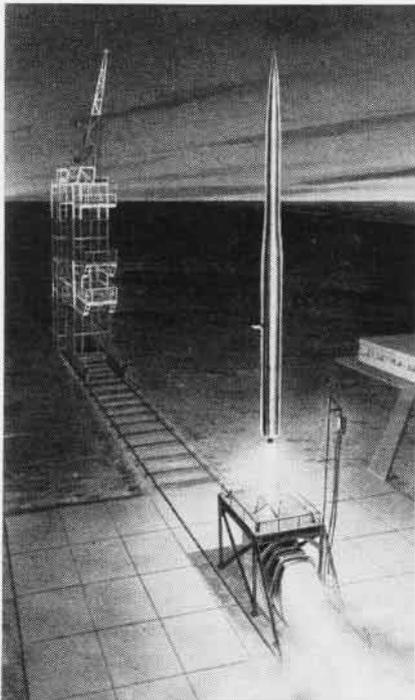
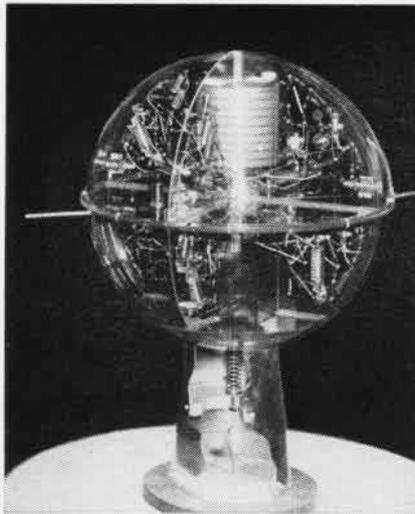
Plane Downed in Pacific Sea Lions are Interested Audience

A twin-engined Martin *Marlin* seaplane, assigned to VP-48 at NAS NORTH ISLAND, Calif., made an emergency open sea landing off Baja, Calif. According to LCdr. A. E. Gargas, CO of the aircraft, the 11-man crew had no difficulty in taxiing the plane 63 miles to the nearest land, the San Benito Islands. The craft was in constant communication with other Navy units.

Upon arrival at the Islands, all thoughts turned to food. The survival rations on board didn't tempt the appetites of the men. A message was sent, and minutes later their dinner came floating down via parachute from one of the circling planes above.

The food packet landed on an island populated with sea lions. As these 500-lb. animals saw the landing party approaching in a rubber life raft, they swam out to investigate. Navigating the raft through these bobbing and darting bodies proved to be more harrowing than the emergency landing.

Once on shore, the airmen retrieved their dinner and then beat a wet and hasty retreat to the plane.



PLANS FOR an earth satellite inspire this design (above) of what it may be like. Below is an artist's design of the Martin Vanguard three-stage rocket which is being planned for placing the satellite in its orbit. It is to be the first liquid fuel rocket to be controlled without use of fins, a very novel proposal.

IFR-IQ?

CAR 60 states that position lights shall be displayed by all aircraft when operating in reduced visibility conditions. True or False?

Answer on Page 40.

New Contract to McDonnell For Advanced All-Weather Fighter

Announcement has been made by the McDonnell Aircraft Corporation of an additional \$22,500,000 Navy contract for the development of the F4H-1, a supersonic advanced all-weather fighter. The original contract for \$38,700,000 was announced last October.

Major subcontracts totalling \$15,164,000 on the F4H program have been awarded to the Bendix Aviation Corporation for landing gear; Northrop Aircraft Inc., for aft fuselages, inner and outer wings and control surfaces; and Stanley Aviation Corporation, Denver, for ejection seats.

The Tulsa Division of Douglas Aircraft Company has been given a \$1,500,000 subcontract for F4H tool design and fabrication. In addition, orders have been placed with General Electric, Collins Radio Company and others for \$3,500,000 in electronic equipment.

Currently in production at McDonnell are two versions of the F3H-2N *Demon*, and three versions of the F-101 *Voodoo* for the Air Force.

Attaches Aboard Saipan As Carrier Qualifies Student Pilots

Commanding officer of the USS *Saipan*, Capt. A. M. Shinn, played host to 52 military attaches from 41 foreign countries as student pilots from NAAS BARIN FIELD made their carrier qualification landings. The carrier on a routine day at sea gave the attaches a close-up view of Naval air operations.

The group had been on a familiarization tour of the South, including the Naval Air Training Command. Senior officer among the visiting group was LGen. Guzman-Cardenas of the Republic of Mexico. The other attaches, many of them general officers, represented friendly nations from every continent in the world.

Highlight of the tour for the visiting VIP's came when Capt. Shinn donned flight gear, joined the student pilots in the flight circle, and made six smooth landings in his SNJ *Texan* trainer shortly before noon.

Navy's flight team, the *Blue Angels*, demonstrated combat Navy tactics in precision formation flight for the attaches at the end of the day's tour.

CVA Sails on Fourth Tour Carrier Held Gala Farewell Party

Attack carrier USS *Oriskany* sailed from NAS ALAMEDA in February with a send-off that would rival the departure of the SS *United States* from New York Harbor.

Colorful pre-departure ceremonies for the big carrier included open house for the dependents of shipboard personnel, a musical salute from 12ND Band and a concert by the ship's band.

Capt. Charles L. Westhofen, *Oriskany* CO, presented a check for \$1000, representing the crews' donation to the Alameda March of Dimes.

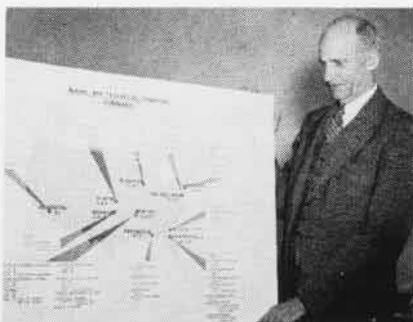
The ship's tons of stores and supplies were augmented by 30 parcels destined for delivery to the "Oriskany Home," a Japanese orphanage adopted by the ship several years ago. The boxes contained clothing and toys donated by a Japanese family in Alameda and the *Oriskany Mariners*, an Alameda Girl Scout Troop sponsored by the ship.

Cdr. Elwin A. Parker, CAG-9, and his organization will fly F9F-8 *Cougars*, F2H-3 *Banshees* and AD *Skyriders* from *Oriskany's* decks during the coming tour in Far East waters.

Training Expert Retires Was Leading Exponent of Testing

Mr. Clarence N. Smith, Educational Consultant to DCNO (Air) and Navy training specialist, retired the end of April after nearly 35 years of Federal service. He plans to live near Melbourne, Fla.

He came to the Navy as a young educator in 1921. Mr. Smith's professional background included degrees from the Universities of California and Columbia and wide experience as teacher, principal and school superintendent. He was an advocate of the use of tests for classification and place-



SMITH SHOWS THE NATTC CHART HE USES

ment of Naval personnel. Testing and in-service training is an integral part of the Navy program today, but in 1921, intelligence and aptitude testing was just beginning.

Mr. Smith was one of the key men in helping to work out and develop the Navy's educational and training system. By 1923, tests were being used at Naval Training Stations, but it was several years before the recruiting division of the Bureau of Navigation (now BUPERS) decided to use tests to screen the most desirable recruits. In the '30's, the testing program made it possible to select successfully the men who made good as CPO's and junior officers in WW II.

From 1935 to 1941, Mr. Smith was in charge of testing and selecting enlisted candidates for the Naval Academy. During WW II, Mr. Smith did for Army Transportation what he had done for the Navy in establishing test and in-service training procedures.

Since late 1945, he has served with Aviation Training, DCNO (Air) as expert consultant and administrator.

Storm Names Selected 1956 Hurricanes Given New Names

At a meeting of the Joint Hurricane Warning Conference in Miami, the monickers to be applied to "wild ladies of the windy season" were chosen.

VW-4, the U.S. Weather Bureau, CAA and USAF were represented at the conference. The conference jointly worked out recommendations that would provide for the acquisition and dissemination of an increased volume of data for use during the forthcoming season. The Navy "Hurricane Hunters" who are directly concerned with providing aircraft reconnaissance of tropical storms, presented the conference with a new Navy capability of medium high altitude re-

connaissance by virtue of the squadron's new aircraft, the WV-3 *Super-Constellations*.

The names selected for the storms were: Anna, Betsy, Carla, Dora, Ethel, Flossy, Greta, Hattie, Inez, Judith, Kitty, Laura, Molly, Nona, Odette, Paula, Quenby (that's a dame?), Rhoda, Sadie, Terese, Ursel, Vesta, Winny, Xina, Yola, and Zenda.

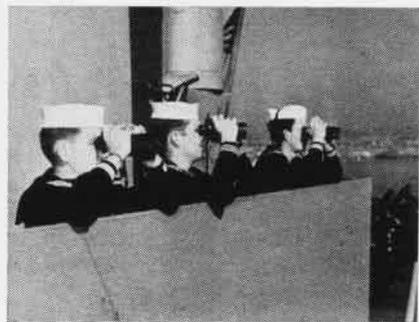
VW-4 will assume full hurricane reconnaissance responsibility in June and have at least one of its aircraft deployed to Puerto Rico at that time to ensure a close watch on tropical storm developments in the Caribbean.

Travel Insurance Offered MATS Safety Record Spurs Move

Naval personnel and their dependents traveling on MATS flights can soon be covered by air travel insurance at regular commercial airline rates. Arrangements for this coverage at MATS terminals were scheduled for completion by April. Later passengers will be able to gain coverage under the new policy at any major civil air terminal.

Administration of the program will be supervised by Mutual of Omaha's subsidiary, Tele-Trip Policy Co., Inc., which already offers Mutual's air travel insurance at more than 87 airports in the U. S. and Canada. The American Express Co., will administer the program at MATS overseas terminals.

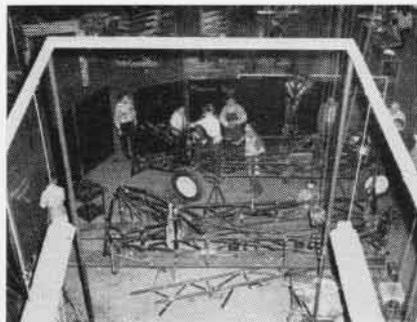
Mr. V. J. Skutt, president of Mutual, lauded the safety record of Navy and Air Force crews in MATS: "This entirely new concept in the field of insurance is made possible through the outstanding MATS safety record and justifies our decision to give regular underwriting consideration to a group which heretofore has been traditionally excluded from commercial protection." MATS emphasizes safety.



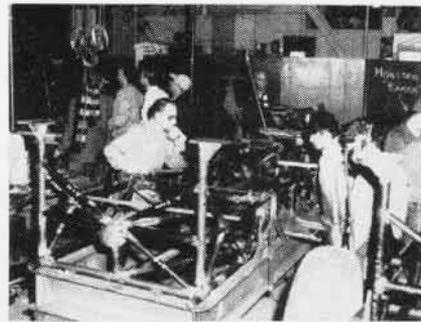
'MONSTERS' HOLD NO TERROR FOR O&R



MEN OF the Metal Division, NAS Alameda O&R, cut and fit tubing for Project Monster.



O&R METAL Division manufactures skeleton for the J-71 jet engine mobile test stands.



WORKERS in Welding and Metal Shop pause to consider engine mount construction problem.

THE MONSTERS are on their way!" But there is no reason to run for the hills. These "Monsters" are harmless—and helpful!

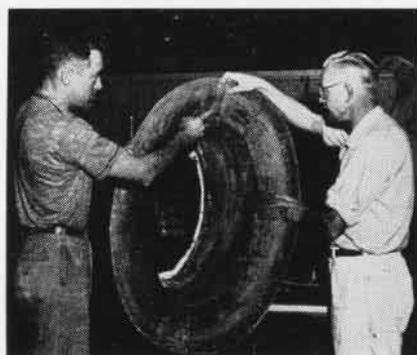
The Overhaul and Repair Department at NAS ALAMEDA completed the first two Mobile Test Stands for J-71 supersonic jet engines used in the F3H *Demon*. They were called "Monsters" because of their appearance and the complexity of their production.

The story of the Monster began on January 3, 1956 when BUAER assigned NAS ALAMEDA the project of manufacturing the two test stands. These were to be ready for shipment by February 29, to be followed by four more in early May. Priority work in progress at the prime contractor's plant made it impossible for the Navy to obtain the equipment from this source before the deadline date. NAS Overhaul and Repair Department filled the gap and all hands turned to and completed the job with flying colors.

Many obstacles had to be overcome. Not only was O&R working against time, but numerous items had to be purchased from outside the local procurement area before manufacture of the main components, the stand and fuel cart, could begin. In addition, operational tests of the stands were necessary before delivery could be made.

The successful race against time was accomplished through the coordination of the groups involved. O&R Production Engineering, Aero Engineering, and Planning Divisions got together and worked out an efficient system for getting the work done.

O&R's Materials Division dealt directly with NAS Supply's Ivan Kerkove, who contacted suppliers through-



ALAMEDA workmanship is rated high. O&R employees inspect newly constructed venturi.



SUSPENSE is in the air as control panels are checked prior to testing the Monster.



OPERATION completed, O&R, employees stand by successful result of their hard work.

out the United States to obtain needed parts. The Manufacturing Branch, Shop 524, did the basic paper work, placing orders with different O&R shop groups. John G. Booth, Stock Control, NAS Supply Department, kept the phone busy between Alameda, St. Louis and Philadelphia obtaining information and parts from BUAER and Air Supply Office representatives. The Naval Air Mobile Training Unit, NAS MOFFETT FIELD, under LCdr. J. J. Marta, was scheduled to provide training facilities and personnel to assist in testing the Monster. Technical information required was handled by LCdr. W. W. Schaeffer, Production Planning Group Officer, O&R, who coordinated instructions from the Bureau of Aeronautics representatives.

WITH THE basic groundwork laid, work on the equipment got underway. First the frames were constructed in the Metal Manufacturing Branch, and then machined fittings necessary to assemble the frames were turned out by the Machine Manufacturing Branch. At the same time, test panels and fuel cart frames were under construction in three shops of the Plant Division. Cables and plastic parts for the project were handled by various other O&R shops.

When these phases were completed, and the engine installed on the test stand, the Repair and Ground Check Division took over. It built the engine up and "ran it up" to check the operation.

The project was a success. The test stand for the J-71 jet engine was ready for delivery on February 28, one day before the deadline date.



F. R. SLAUGHTER, AC2, DIRECTS TRAFFIC USING TV MONITORS IN CONTROL TOWER



TV CAMERA INSTALLATION ATOP BLDG. 27

TV CONTROL OF AIR TRAFFIC AT ALAMEDA

THE FIRST use of television for control of ground operations of air traffic became a reality at NAS ALAMEDA with the completion and successful testing (NANEWS, Dec. '55) of a remotely-controlled closed circuit television system.

Consisting of three cameras located at the eastern end of Runway 25R, the system was manufactured and installed by Kay Laboratories of San Diego, Calif. It is designed to provide "positive control" of aircraft traffic.

The three 16mm. TV cameras relay pictures to three 12-inch video monitors in the airfield control tower more than one-half mile away. Manning the monitors, the control tower operators have several selected and unobstructed

views of runway operations. This makes it much easier to direct airplanes as they taxi, take off and land.

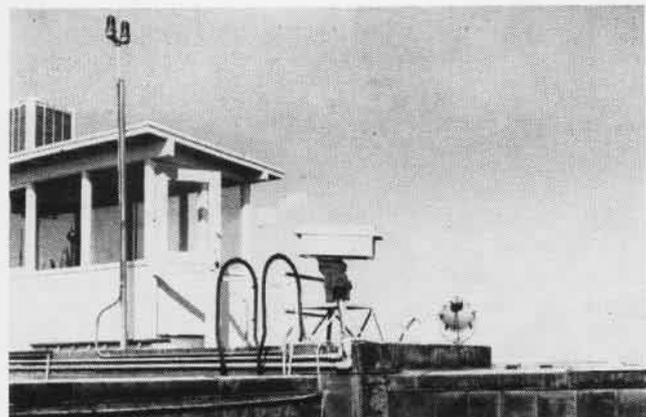
The original proposal for a closed TV circuit was approved by the Navy, and studies were made in collaboration with electronics engineering companies. Early successes with test equipment proved to BUAEER its feasibility and work was begun in July 1955.

Strategic location of the cameras affords control tower operators the best possible view of traffic at the runway end. The eyes of the three cameras overlap and converge on the end of Runway 25R from three points of a triangle; one camera on the seaward side of the strip and two inland.

Two of the cameras have a turret of

three different lenses and the third has two lenses. Each camera contains synchronizing generators and amplifiers to assure full power performance at all times, and each is capable of panning and tilting by remote selection from the control tower. Additional features include automatic lens wipers and weatherproof camera cases.

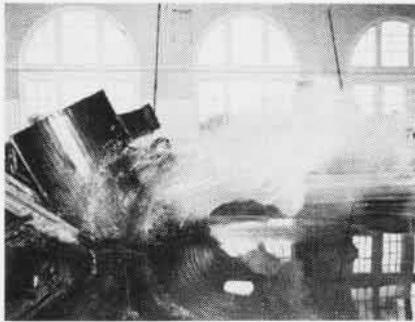
Need for such a system was becoming apparent at NAS ALAMEDA because of the longer runways required for larger and speedier aircraft. The completed TV system appears to offer a simple solution to a complex problem of an expanding air station. This pioneer installation may well receive wider application in other airports throughout the United States.



CAMERA ON HANGAR 20 COVERS NORTHEAST AREA OF THE RUNWAY



A VIEW OF RUNWAY 25R AS SEEN FROM CAMERA ATOP HANGAR 20



THE DUNKER OFFERS REALISTIC TRAINING

D. Dunker Trains NavCads Gear Assists in Survival Training

NavCads undergoing training at NAS PENSACOLA are being given more realistic training in survival techniques in the Navy's *Dilbert Dunker*. The *Dunker* is a device which simulates actual crash conditions at sea.

The student is equipped with the same flight gear that the operational pilot wears. This includes protective hardhat, liner, oxygen mask, and parachute with a PK-2 life raft.

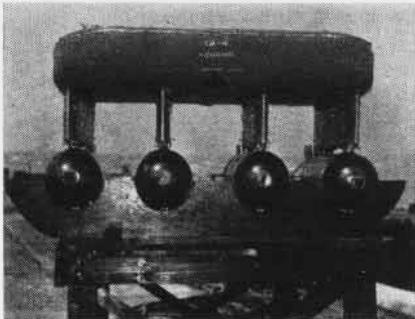
The oxygen mask is connected through a standard regulator to a tank containing compressed air. This allows the student to breathe under water just before he frees himself from the aircraft.

LCdr. A. L. Hall, MSC, of the Naval School of Aviation Medicine, developed the installation and instructional procedures followed in training.

VP-40 Designs Loading Rack For Rearming Operations with P5M

A new loading rack for rearming operations with P5M aircraft has been designed by Vern M. Barrows, AOC, of VP-40, NAS NORTH ISLAND, Calif.

Capable of being adapted for aerial bombs, depth bombs, rockets and torpedoes, the rack increases the safety of personnel and eliminates the damage to ordnance stores caused by lash-



P5M REARMING RACK PROVES EFFICIENT

ing them to the deck of the rearming boat.

Placed over the engine compartment of the rearming boat, it has been used by VP-40 in rearming P5M aircraft with five-inch HVAR rockets.

Mechanic at NAS Spokane Attempts a Valiant River Rescue

A jet mechanic, Clarence C. Richmond, stationed at NAS SPOKANE, Wash., made an heroic but unsuccessful effort to save a drowning boy. As he was driving along the edge of the Spokane River, Richmond spotted 11-year old Dennis English struggling against the icy current.

Although he calls himself only an "average swimmer," Richmond twice swam out into the icy river and each time the swift current carried Dennis out of his grasp. At this point a rescue boat appeared and the youngster was taken aboard. He died on the way to a doctor's office.

A veteran of 13 years, Richmond saw service in the South Pacific during WW II. He has been stationed at Spokane for the last seven years.

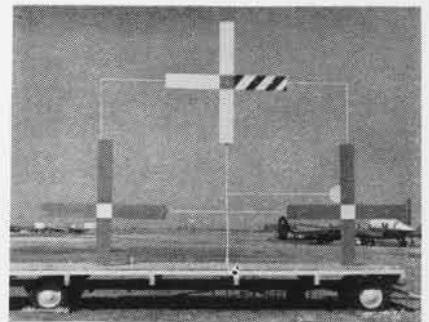
Boresighting Template Unit NAS Chief Builds New Gun Gimmick

The Ordnance gang at NAS MINNEAPOLIS finally licked an age old problem when G. H. Henseler, AOC, came up with the answer. His new device, a mobile boresighting template, was designed, built and tested at the air station. The design has been accepted and approved by BUAER's Incentive Awards Program.

The Ordnance men at the air station had experienced great difficulty in locating and maintaining a satisfactory boresighting template. Three had been built and torn down within the past five years owing to station expansion, permanent obstructions built in line of sight, and unserviceability caused by weather.

Henseler suggested the idea of building a quick assembly mobile template which could be adjusted for boresighting any type aircraft by drilling four small holes in the pipe stands.

It is constructed of used piping and six, 8-inch, 5-foot boards. It can be assembled or torn down for storage in a matter of 15 minutes. Mounted on a four-wheel trailer while in use, it can be located anywhere that space is available. This is a great advantage.



CHIEF'S IDEA PAYS OFF FOR MINNEAPOLIS

By using the trailer, the template can be placed at any distance from the aircraft being tested, thus insuring accuracy of boresighting. When the template is not in use, it can be stored and the trailer made available for other purposes.

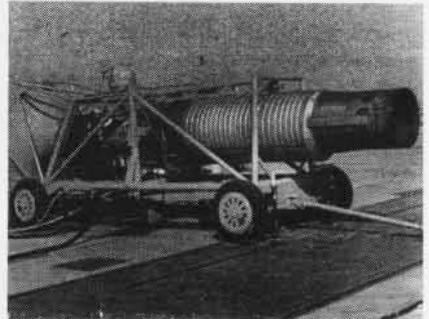
It can easily be torn down and flown to out-lying fields for use. The template was planned, built and put into use within a short period of five days.

Engine Dolly for FASRons Permits Repair at Advanced Bases

Chance Vought engineers have designed a jet engine run-up dolly for Navy fleet air service squadrons which will permit engine repairs at advanced bases where test cells are unavailable.

The four-wheeled dolly will take any J-46WE-8A or B engine as built up for the F7U-3 *Cutlass*. A service dolly which accompanies the engine stand contains all controls for operating the jet engine. It has a 1000-gallon fuel tank, a 10-gallon storage tank for engine oil and another for engine preservative. A five-gallon tank holds engine fuel system preservative oil.

By placing a jet engine in the dolly, ground maintenance crews have ready access to all parts without having to remove the engine from an airplane. Non-instrumented engine thrust measurements can be made using the dolly.

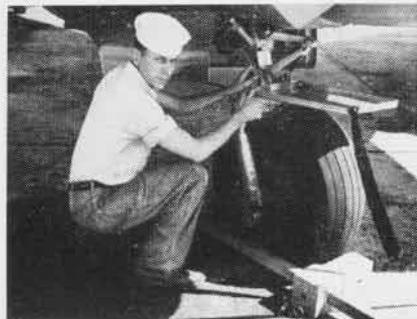


THE DOLLY IS SECURED BY TOWING ARM

SNB-5 Drip Pan Designed Effectively Replaces Canvas Covers

Gone are the days of greasy wheels and oily canvas wheel covers for FASRON-104 at NAF PORT LYAUTEY. Buck Galbreath, AM1, has designed a new drip pan an improvement over the canvas wheel covers now used on SNB type aircraft.

The pan, constructed from scrap aluminum, is a definite improvement over the canvas as it offers better protection for the tires.



GALBREATH DEMONSTRATES NEW DRIP PAN

tection for the tires. It is very easy to clean and stow, and is not difficult or messy to use. The aircraft can also be towed without the necessity of removing and then replacing the pans as is required by the canvas covers.

The drip pans have been used by FASRON-104 personnel for some time and are preferred by all the ground crews which service the SNB-5's.

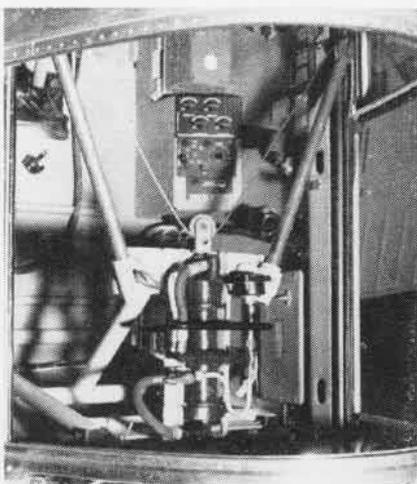
Busy Life of a Retriever HUP-2 Logs 1,000 Hours of Service

A twin-rotor Piasecki HUP-2 Retriever, according to Detachment Two of VU-1 to which it is attached, has become the first helicopter of its type in the Pacific Fleet to reach 1000 hours of flight time during its first service tour.

The 1000th hour was completed in January when Lt. G. E. Thomas, Asst. O-in-C of the detachment, brought the HUP-2 in for its 1398th landing. It was also the 1,178th landing for Thomas.

The helicopter was received new in February 1954. During the first 1000 hours of service, the Retriever has performed a variety of missions, visited a number of Navy units and activities, and landed aboard nine aircraft carriers.

The detachment provides helicopter utility service in support of various Fleet units in the Hawaiian area.



THIS IS the original T-34 canopy tester designed by Lt. C. W. Smith and E. E. Peedin, AM1, of NAAS Whiting Field. It checks if emergency release will work during flight.

Inflation Bag Saves P2V Plane Moved with Little Damage

A P2V-5 was saved from probably strike damage at Adak through the use of inflation bags and jacks. The transient plane had just touched down when the landing gear retracted.

A hoisting crane was available, but the four-point hoisting sling on hand was designed for a P2V-2 and could not be used. It was imperative to clear the runway quickly since it was the GCA landing strip. To drag the plane with tractors would result in probable strike damage.

Inflation bags designed for just such an exigency were at hand, still in their original crates. They had been ordered as a result of publicity given a similar occurrence at NAS ANACOSTIA. Some fast work by the Public Works Machine Shop produced fittings for the air hoses, and two compressors were readied to inflate the bags.

Two tractors, with lines attached to the plane, and a cable from the crane kept the plane steady during inflation. Then two 25-ton Malbar hydraulic jacks could be placed under the wing.

It was necessary to release the air load on each gear strut, and compress them with a jury rigged block and tackle before the landing gear could be lowered, but it was accomplished. ComFAir Whidbey recommended that inflation bags be maintained by all activities which might be required to salvage aircraft. The C/S, ComAir-Pac, concurred in the recommendation.

Mirror System Demonstrated LSO's Train at ALF Crows Landing

Landing Signal Officers on the West Coast have been introduced to the new mirror landing system. LSO's from all units of ComFAirAlameda participated in "Operation Mirror" at ALF CROWS LANDING.

The "flag wavers" carried out flight operations using the new system. ComFAir ALAMEDA was represented by Staff LSO's LCdr. E. B. Boutwell



NEW LANDING SYSTEM IMPRESSED LSO'S

and LCdr. L. R. Mix. LCdr. Bill Spell, ComAirPac's representative, Boutwell and Mix checked out air group and squadron LSO's.

Two West Coast carriers, the USS Lexington and the USS Bon Homme Richard, are being fitted with the mirror landing system. ATG-1, based at Alameda, will become the first West Coast air group to employ the system operationally.

Other LSO's involved in the operation at Crows Landing were Ltjg. C. Sims of VA-65; Lt. J. D. Gay, ATG-1; Lt. J. Schneiders, CVG-2; Ltjg. J. P. Miller, VF-111; Ltjg. R. Person, VF-24; Lt. C. Austin, CVG-19; Lt. D. Crow, CVG-2; Ltjg. L. Dierdorff, VA-216; Lt. J. Wilder, VF-94; and Ltjg. A. L. Jones, also of VF-111.

Jax Wave Records a First Completes Instrument Flying Course

Barbara E. Denton, TD3, of Waterbury, Conn., is believed to have established an unprecedented naval aviation feat when she reportedly became the first Navy Wave to complete a pilot's instrument flying course.

The 21-year old Wave is attached to FAETULant Detachment 2 at NAS JACKSONVILLE. She volunteered for training under the FAWTULant "A" program to gain a realistic insight to a pilot's problems, thus becoming a better instructor than ever before.

LETTERS

SIRS:

Your attention is invited to the first paragraph of "Yellow Bird Sanctuary at Annapolis," which is found on page 17 of the February 1956 edition of your fine publication.

It is apparent that the same sneaky proof reader who works for us must have a cousin or brother at work in the Washington area. Air Force "slipsticks" indicate that 28 and 30 add up to a total of 58, not 48 as indicated in your article. These figures have been checked by our Engineering Branch and have been found to be valid.

Here at Norton AFB we have a fiendish torture for proof readers who err. This usually means 100 lashes with a wet Pitot tube cover. This is followed by writing 100 times on the black board, "I will check my figures and follow orders, sir." This usually results in a new proof reader, but we will have our little personnel problems these days.

Seriously, we think you have a fine publication and we certainly enjoy reading it.

WILLIAM JOHNSTON
Managing Editor
A/C Accident &
Maintenance Review

USAF

¶ We're ordering a digital computer today!

SIRS:

Your fine cooperation and outstanding assistance to NAS CORPUS CHRISTI on its 15th Birthday Anniversary are appreciated. The article you had in NANews was thoroughly enjoyed by all personnel in this area, including



NEW PUNCH for Navy jet photographic reconnaissance squadrons is this F9F-8P Cougar, background for Cdr. M. P. MacNair, CO of VC-62, NAS Jax. Probe is for in-air refueling. Boxing glove is not standard gear.

1956 Wave Reunion

All Waves, ex-Waves and Yeoman (F) are invited to this year's Reunion to be held at the Hotel Chase, St. Louis, Missouri, July 27-29. Theme of the 14th Birthday celebration is "Meet Me in St. Louis." For further information, write Wave Reunion Committee, Room 405, 911 Locust Street, St. Louis, Mo.

both civilian and military, who participated in the founding, development and present operation of this Command

Thanks again for your birthday wishes, the extra effort that you went to in helping us out, and for the additional numbers of the News.

SANFORD L. MEAD
CAPTAIN, USN

Corpus Christi

AIO Trainee Scores High Pieri Has Final Score of 94.19

SSgt. F. L. Pieri of VMFT (All-Weather), Force Aviation, has achieved the most outstanding academic and flying record ever recorded in the Aerial Intercept Operator course at MCAS CHERRY POINT. The sergeant's final score was a whopping 94.19%.

Pieri's training in the AIO course included 37 flying hours in the old twin-engine PV2 *Harpoon*. Eleven graded hops were made in this plane. In the F3D *Skynight*, 30 hours were logged. These included both day and night flights. These hops were mostly for familiarization and were graded by the pilot. The *Skynight* is the plane in which SSgt. Pieri will perform his duties as an aerial intercept operator.

He was given a meritorious mast by Col. L. S. Moore, his CO, and was presented a letter of commendation.

IFR-IQ?

According to OPNAV ATC Procedures Section, the answer is False. Ref: CAR Part 60, Para. 60.23 states: "Between sunset and sunrise, all aircraft in flight or operated on the ground or underway on the water shall display position lights."

CONTENTS

Marine Assault	1
Atsugi Safety Court	12
Princeton at Bangkok	13
Douglas	14
Russian Aircraft	20
NADU	24
Atsugi Parachute Riggers	25
Reserves	26
VS-30 Training	28
VF-121 Returns	32
Mobile Test Stands	36
Alameda TV Air Control	37

● COVER

Maj. Alexander "Rocky" J. Gillis in front of the new Marine Corps FJ-4 Fury jet. Units of MAW-1 in Japan will receive the new fighters this summer. Maj. Gillis, much-decorated pilot of WW II and Korean conflict, has been assigned as O-in-C of the FJ-4 Marine Fleet Indoctrination Program, Service Test, Patuxent River.

● SUBSCRIPTIONS

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★ 1912 MARINE AVIATION 1956 ★



1ST LT. CUNNINGHAM WITH WW I AIRPLANE



BACKBONE OF MARINE AIR SUPPORT AT BLOODY OKINAWA WAS HARD-HITTING CORSAIR



TROOP-CARRYING HELICOPTERS ARE IMPORTANT ELEMENTS IN FUTURE MOBILE WARS

This month marks the 44th Anniversary of 'Flying Leathernecks.' On 22 May 1912, 1st Lt. A. A. Cunningham reported to the Superintendent of the Naval Academy for "duty in connection with aviation." And Marine aviation has grown into a hard-hitting, highly mobile force which has been carrying the fury of a free people against aggressors and oppressors since that time.



MARINE PILOTS IN THE FAR EAST WILL SOON BE FLYING THIS LATEST OF THE FURY FIGHTER SERIES, NORTH AMERICAN'S FJ-4

THE UNITED STATES NAVY

GUARDIAN OF OUR COUNTRY

The United States Navy is responsible for maintaining control of the sea and is a ready force on watch at home and overseas, capable of strong action to preserve the peace or of instant offensive action to win in war.

It is upon the maintenance of this control that our country's glorious future depends; the United States Navy exists to make it so.

WE SERVE WITH HONOR

Tradition, valor, and victory are the Navy's heritage from the past. To these may be added dedication, discipline, and vigilance as the watchwords of the present and the future.

At home or on distant stations we serve with pride, confident in the respect of our country, our shipmates, and our families.

Our responsibilities sober us; our adversities strengthen us.

Service to God and Country is our special privilege. We serve with honor.

THE FUTURE OF THE NAVY

The Navy will always employ new weapons, new techniques, and greater power to protect and defend the United States on the sea, under the sea, and in the air.

Now and in the future, control of the sea gives the United States her greatest advantage for the maintenance of peace and for victory in war.

Mobility, surprise, dispersal, and offensive power are the keynotes of the new Navy. The roots of the Navy lie in a strong belief in the future, in continued dedication to our tasks, and in reflection on our heritage from the past.

Never have our opportunities and our responsibilities been greater.

NAVAL AVIATION

NEWS