NAVAL AVIATION NEWS

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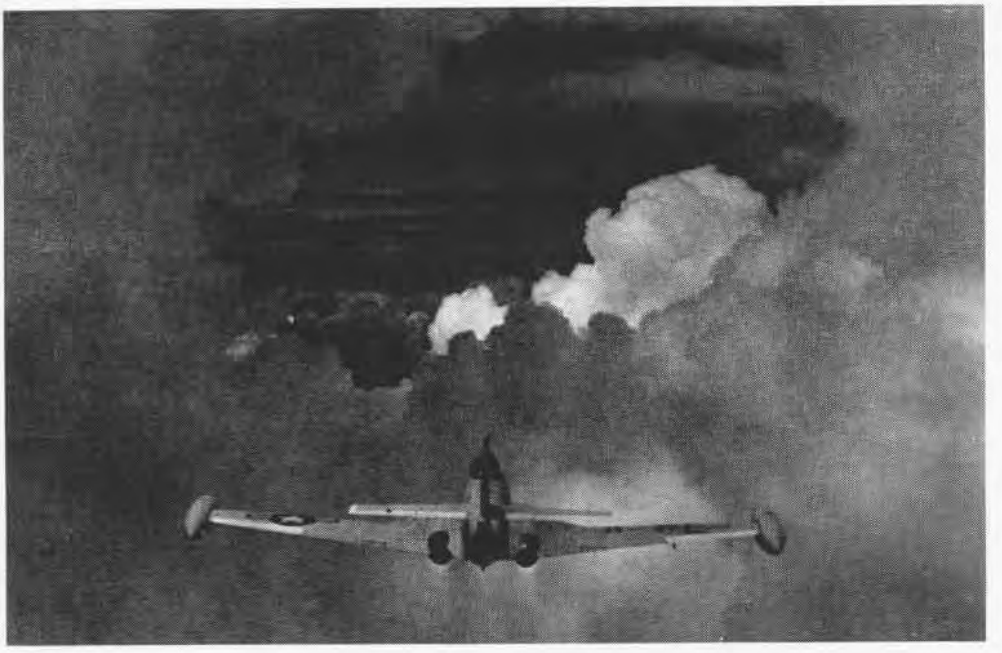


NAVY'S HURRICANE HUNTING TEAM

Batteries for today's deadly serious game of hunting and tracking hurricanes in the Atlantic, Gulf of Mexico and Caribbean include the photo-fighters of VFP-62, and VW-4's radar-packed WV-3's and P2V-5J Neptunes. New member of the team this year is Light Photographic Squadron 62 with Banshees and Cougars.

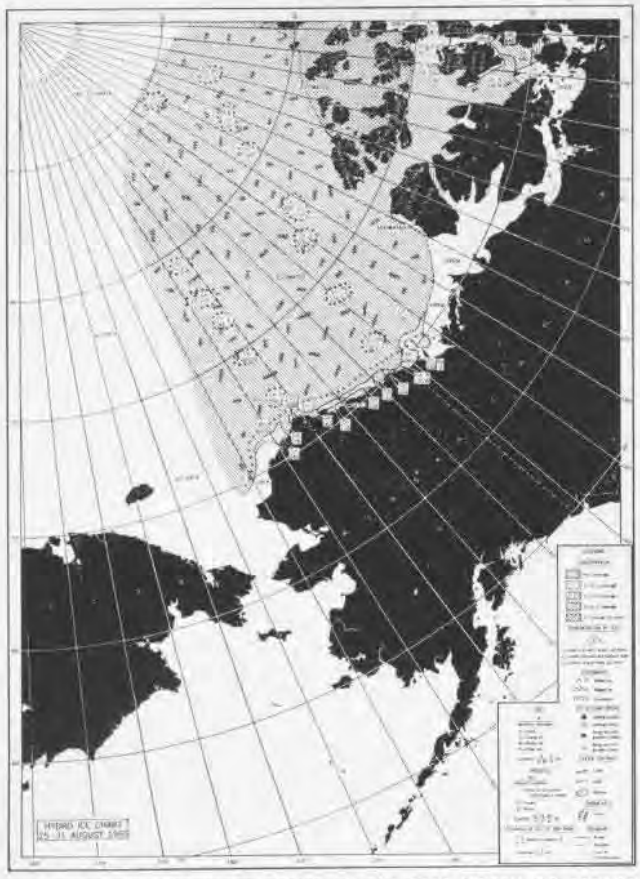
ICE FLOES AHEAD!

SHIPS AND SUPPLIES GET THROUGH TO ARCTIC OUTPOSTS GUIDED BY ICE FORECASTS PUT OUT BY U.S. NAVY HYDROGRAPHIC OFFICE

THE ESKIMOS and Canadian Mounties have new neighbors. "It isn't exactly like Times Square," says senior Ice Forecaster Walter I. Wittman of the U. S. Navy Hydrographic Office, "but there's something doing in Arctic circles."

There was a time—and it wasn't long ago—when the great seas of the Arctic area were simply there. Occasionally some intrepid explorer made his way across the tundra after a perilous sea voyage dodging ice formations. Headlines blared the announcement of Adm. Robert E. Peary's reaching the North Pole in 1906. Roald Amundsen's name was another great Arctic headliner 30 years ago.

Now, though still untouched by neon lights, the North American Arctic is witnessing new activity. Several major programs contribute to this drastic change of pace. Arctic weather stations were set up between 1946 and 1949. The big USAF base at Thule, Greenland, was built in 1951. Arctic radar stations as part of the Distant Early Warning Line, were established in 1955.



HATCHED LINES SHOW ICE COVER IN THE SEAS NORTH OF ALASKA

AT THESE facilities in the Arctic, there are thousands of workers and technicians. If their service is to be effective, they must be able to operate on a year-around basis. Adequate replenishment must be provided.

Logistic support is a tremendous problem, and information which aids ships to get to the north must be made available on an urgent-rush basis. There is an all too short shipping season each year. Sea lanes in the Arctic open up briefly and then close. To expedite ships' passage into and out of these advanced stations and bases, the U. S. Navy Hydrographic Office has provided sea-ice forecasts and made special surveys of the area. In 1955, more than 100 vessels were used to ship 3,500,000 barrels of fuel oil and 500,000 tons of other cargo to Arctic bases.

Ice has suddenly become an intensely interesting subject. Oceanographers now need to know the full details of its location in Arctic waters in the summer season if the U. S. Hydrographic Office is to give detailed information to ships that must get through to Greenland, Baffin Island and the north Alaskan perimeter.

While the exact texture and thickness of the ice is more easily determined by observers on surface vessels, they can have little idea of the extent of an ice field. A helicopter can extend the area of observation, but actually this type of patrol likewise has its limitations.

WHAT IS NEEDED is long range aerial reconnaissance, and that is what Navy patrol aircraft have provided for the last four seasons. Since 1953, first Navy *Privateers*, then *Neptunes*, have belonged to the team engaged in the problem of finding out the clearest routes to the north between April and November. The aerial collection of ice data over the broad seas of the North American Arctic combined with local information of surface ships gives a sounder basis for ice forecasting than had ever been possible before.

The plan is transcontinental in scope. In the East, Navy patrol squadrons are based at Argentia, Newfoundland, and work northward with deployment of units as the season advances. In mid-continent north, the Royal Canadian Air Force makes reconnaissance flights with U. S. observers aboard. The Canadians are based at Resolute Bay in the Northwest Territory, Canada. The Navy squadron in Alaska is based at the naval station at Kodiak, but the patrols are flown out of Fairbanks.

In 1953, the first squadrons to undertake ice reconnaissance were VP-11, VP-23 and VJ-62 at Argentia; at Kodiak, VP-42 and VJ-61 were on duty. The roll call for 1954 included VP-24, VP-18 and VP-5 in the east, and VP-28 and VP-22 in Alaska. In mid-season the Canadians had to leave for a NATO exercise, so in their area, two R5D's from VR-22 took over and flew 12 flights from Resolute.

USCG CUTTER IN 1952 EXPEDITION HAS ICEBERG FOR BACKDROP

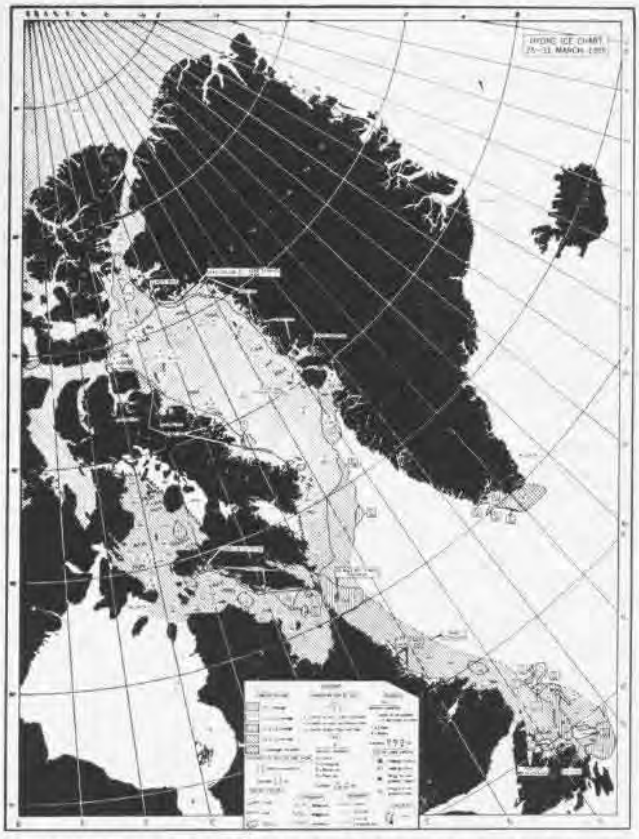
AN LST TRAPPED IN ARCTIC ICE GETS HELP FROM ANOTHER SHIP

Last year VP-8 and VP-3 served in the east; VP-2 and VP-9 in the west. This year VP-10 started in the east and was relieved in midseason by VP-26; VP-57 opened in the west and was followed by VP-28.

On the basis of the data gained by aerial reconnaissance and surface reports, the Oceanographic Forecasting Central at the U. S. Navy Hydrographic Office in Washington, D. C., makes a long-range forecast of ice conditions in the North American Arctic for the entire season. This gives Military Sea Transportation Service the broad outlook for long-range planning purposes.

The next type of ice forecast which extends over a 30-day period, is disseminated by the Hydrographic Office every 15 days. In addition, five-day forecasts are issued twice weekly, on Mondays and Fridays. In turn, daily 48-hour operational ice forecasts are issued by U. S. Hydrographic Office forecasters stationed at strategic locations throughout the Arctic area.

Long-range forecasts extending over a season of five or six months are not nearly so much a guessing game as they might at first appear. Nature is often whimsical, but there does, over a period of years, emerge a pattern. The Hydrographic Office has gathered quantities of ice information, and it has sent trained observers, airborne and shipborne, to get the data that will enable oceanographers to make reliable ice forecasts. This, in turn, enables MSTS planners to determine when ships can reach a given Arctic site and what ice conditions they will encounter.



ICE FORECASTS OF GREENLAND AREA AID MSTS SHIPPING PLANS

THE AIM of the Hydrographic Office is to help surface ships use the short open season and avoid costly delays in reaching their destinations. Toward the end of the season, the ice deadline is predicted and ships make the most of the prediction and get out before the freeze-up.

It is an interesting fact that six percent of the earth's surface is covered by ice in the course of a year. Glacial (land) ice makes up half of this and the remainder is sea ice. Icebergs are break-offs from glaciers and are considered land ice. Extensive studies have been made of land ice, but interest in sea ice is a relatively new development and studies made of it date principally from 1947.

Sea ice can be classified in various ways, but roughly speaking, there are two kinds: *polar ice* that survives the short thawing season and *winter ice* which forms and is completely disintegrated in a single season. Sea ice attains a maximum thickness of about three to four feet along the Labrador Coast, six to seven feet at Thule and eight feet or more at the U. S.-Canadian weather stations north of 74° latitude.

Still another type of ice is "storis." It is peculiar to the southern tip of Greenland. This ice has travelled from the Greenland Sea Area to the southern tip of Greenland. In winter there is something fairly stationary about this ice, but with spring, it's on the move and then it must be tracked.

A CURTISS SOC WAS USED IN ARCTIC STUDIES MADE IN 1946

SEA ICE CAN BE FOUND IN THULE HARBOR, GREENLAND, IN JULY

In 1950, aerial reconnaissance was used on Operation *Nanook*. The Canadian government offered two *Lancaster* aircraft and flight crews if the United States would supply a competent aerial ice observer. The Hydrographic Office assigned Mr. Murray Schefer; and the Canadians provided an expert from the Department of Transport. This experiment in ice reconnaissance worked out well.

So in 1951, in support of the Thule Air Base project, Hydrographic Office observers flew regularly scheduled MATS planes. But transport aircraft were not the answer. The planes flew at 9,000 feet, and this birdseye view of ice was too distant to make accurate ice reports possible. Furthermore, frequent overcasts made ice observation spotty.

Since there were no adequate ice forecasts in 1951, shipping was tied up. This meant that engineer troops and highly paid contractor personnel were loaded early and kept at sea at great expense before the ships could get through Baffin Bay on their way to Thule.

What was needed was aircraft assigned especially to aerial reconnaissance. Such aircraft could operate at low levels and locate suitable passages in the ice through which convoys could be safely escorted. Later in the 1951 season, the aerial reconnaissance by the same Hydrographic Office observers aboard Canadian aircraft assigned on full-time basis over the Canadian Archipelago, provided excellent advisory service.

The Military Sea Transportation Service estimated its loss by ice delay in the 1951 season to run into the millions of dollars. It therefore requested the Hydrographer of the Navy to expand the 1952 ice-observation service over the Labrador Sea-Davis Strait-Baffin Bay area and, if possible, to issue long- and short-range ice forecasts for the region.

The first long-range forecast of expected ice conditions in the Labrador area was prepared in March 1952 for the coming shipping season. It was based in part on historical

FIRST NAVY ICE OBSERVERS WERE TRAINED IN FEBRUARY 1954

ice data, climatology, and preliminary ice surveys in this area. In May 1952, P4Y-2 aircraft of VP-23 were assigned to aerial coverage of the Labrador Sea-Davis Strait-Baffin Bay area. At the same time, Canada's 404 Maritime Squadron conducted its summer reconnaissance of the Canadian Arctic.

Between May and October, 875 hours were flown, in contrast to the 468 hours flown in 1951, two-thirds of which had been from aircraft on routine transport missions. Improved aerial coverage and an increase in daily ice messages from naval surface vessels made it possible to construct a master plot of ice conditions throughout these waters for the first time. Using this plot and weather forecasts issued by the Fleet Weather Central, Washington, D. C., oceanographers of the Hydrographic Office put out their first tentative short-range forecasts of ice concentration, open lanes, and location of ice boundaries.

By the end of the 1952 shipping season, ice observation and reporting techniques were standardized and a Navy training film (7419B) entitled "Identification of Sea Ice" was made. A detailed ice code for shipboard observers was developed; logging instructions for aerial observers were issued; and summary ice messages achieved a fixed style. In later years, radio facsimile transmission of regional charts of observed or forecasted ice conditions, was also used.

This made it possible in 1953 to open up the shipping season with aerial coverage available for the entire North-American Arctic sea ice region. Each season aerial coverage has expedited the clearance of MSTS ships supporting northern outposts.

Aerographer's Mates are the trained observers aboard the aircraft out of Argentia, Kodiak and points north. There are several classes conducted each year at NAS Lakehurst to equip enlisted men for this special work. This year 18 Aerographer's Mates were stationed at Argentia, six at Kodiak. Each man remains at these stations for 18 months.

Aerial ice reconnaissance missions have a threefold purpose: They gather important data and advance our knowledge of North Polar areas; they provide a basis for ice forecasting and they give to surface shipping a knowledge of future and immediate conditions which is worth millions of dollars. Seaplanes know how long they can operate—and where. Landplanes are informed how soon they can land after freeze-up. The advantages to surface and air traffic are varied and incalculable.

Probably there are few peacetime missions more valuable —or more boring. The flights are long, tedious, and, under certain conditions, hazardous. Arctic weather is famed for its uncertainty. Winter may be worse with winds and snow, but in the brief summer, there is rain, sleet, fog and overcast. If everything in aerial reconnaissance could be standardized, the weather would still be unscheduled.

The ice observer, strategically placed in the Plexiglas nose of a P2V, logs the estimated size of the ice fields, spots the free areas and notes their location. The aircraft flies

NAVY FORECASTER (RIGHT) AND CREW OF P2V BEFORE A FLIGHT

ICE BLOCKS (STORIS) BROKEN FROM SOLID PACK OFF EASTERN COAST OF GREENLAND CAN PROVE EXTREMELY HAZARDOUS FOR SHIPS

between 800 and 2000 feet. A patrol lasts from eight to 12 hours.

Of course, fog and overcast regularly complicate the work of the ice look-out. For this reason, radar is successfully used for certain observations. It can locate ice boundaries, particularly the seaward edge. On the other hand, radar is of no use in determining topographical features, age and snow cover.

The observer uses a carefully devised set of symbols, a varied set of colored pencils and enters remarks on charts prepared for him. Various kinds of shading spell out the sea ice formation in the areas he has covered.

The ice observer sends out at once radio messages on the ice situation to ships and the ice forecaster. The track chart the observer has made is mailed to the Hydrographic Office after the flight.

One of the pioneers in ice forecasting was Mr. Henry Kaminski of the Hydrographic Office. From 1951 until his death in 1954, he was a key figure in developing and expanding the Navy's ice reconnaissance and forecasting program. Kaminski instructed and briefed squadrons undertaking these missions.

On 16 April 1954, the big patrol aircraft which carried Kaminski crashed at Paget Point on Ellesmere Island. All aboard were lost. But the solid ground work of specialized knowledge he had helped to gather remained.

On April 17 of this year, VAdm. Francis T. Denebrink, then Commander of MSTS, and his staff were given a comprehensive ice briefing. The briefer was Mr. W. I. Wittman, senior ice forecaster for the Hydrographic Office, who had spent the period from 24 March to 3 April flying over the Newfoundland-Greenland area in a P2V. He had been accompanied by Gordon P. MacDowell, ice forecaster and four Navy enlisted ice observers.

The staff at the Experimental Oceanographic Forecasting Central had studied the data and evaluated it. Mr. Wittman using charts that outlined the conditions was able to describe to VAdm. Denebrink certain matters affecting shipping:

1. Ice boundaries in the eastern sector of the North American Arctic were outlined and compared with those of previous years.
2. Snow cover of the preceding winter was described as heavy.
3. Air temperatures were listed.
4. Ice drift and time were computed to estimate open zones.
5. Forty-day and 70-day forecasts were given.

Finally, the briefing closed with 100-day and 130-day outlooks for mid-July and mid-August and a run-down, port by port, of the expected opening days for ships, first with ice breaker escort and then without. It was a far cry from 1951 when there were no ice forecasts and ships and men waited for an open way to Thule.

Logistic support of Arctic outposts has again this year proved the value of aerial reconnaissance. Observers in patrol planes are making it possible to expedite surface shipments over new sea lanes at the top of the world.

GRAMPAW PETTIBONE

Dear Gramp:

I recently pulled a big goof and because I wonder if it could happen to anyone else, I'm sending it to you for whatever disposition you think is pertinent.

I departed Sioux Falls for Great Falls flying an F9F-6 on an IFR clearance. No particular sweat involved. Cumulus buildups in Great Falls with broken decks and overcasts from the ground up. At Miles City I requested and got 1000' on top to replace the 35,000 I had been at, putting me at 43,500.

Five minutes prior to my ETA at Lewiston I received the following clearance: "After passing Lewiston, descend to 18,000. Report passing through 35,000 on this frequency, report passing through 30,000 on 257.8 to ATC and report passing through 25,000 to Great Falls tower. Cruise and maintain 18,000 until passing Great Falls radio. Cleared for a standard jet penetration approach after passing Great Falls."

Again, no perspiration involved. HOWEVER, during all of this I passed Lewiston. I was busy riding gauges, copying a clearance, reading it back, etc., etc. I checked my kneepad and the map on my lap and both agreed that *317* was the frequency of Great Falls. I had the RAFACS lying open on the port console and it *seemed* to agree that 317 was it. I TUNED to 317, heard the station, DIDN'T CHECK FOR AN IDENTIFICATION (busy, you see), turned the volume down and went on transacting business with ATC. Darned near was the last business I ever transacted, too.

It seems that the frequencies of Great Falls and Helena had been swapped. Great Falls is now *371*, rather than *317*. It took only about 10-12 degrees of course change to head for Helena from Lewiston in lieu of Great Falls, and when I checked the RAFACS the transposition of two numbers (*371*, rather than *317*) simply didn't penetrate. Anyway, I DID A PENETRATION LETDOWN ON HELENA COMPLETELY

UNDER THE IMPRESSION I WAS GOING TO BREAK OUT AT GREAT FALLS. If you look at the terrain maps of the two fields, you too may wake up screaming as I am still doing. I refueled and proceeded on to my home base without ever seeing Great Falls.

Basically, the fault here is so simple, it's insulting to the average aviator to state it—*check the range station identification*. Alibis regarding mistakes in charts (mine was over a year old) and the change in frequencies (made almost two years ago, I think) don't do a bit of good where a dead pilot and a scattered airplane are concerned. There's another thing involved here: Don't get—or allow yourself to think you are—too busy to apply simple good pilotage procedures to any and all flights.

I still think it was poor judgment to swap these two frequencies within 70 miles of each other. Had the RAFACS shown Great Falls to be something like 257 or 369, the difference would have been obvious. But 317 versus 371. . . .

Go ahead and baste me. The things I've said to myself concerning this matter have me completely done on one side. I'll turn over and you can have at the other side, so I can get well done all over, but I'll make you a small bet I'll never ever again get so "busy" I don't check identification and recheck frequencies.

When I broke out at Helena (I didn't know what it was at the time), I had 1400 pounds of fuel left and a short but usable field under me, so I made a carrier approach and had no trouble getting in. But 5000 feet isn't the most comfortable length when the field elevation is 3800. Getting off was simple enough since I left at 0430 the next morning when it was still cool. But before that field came in sight and while I had a mental picture of bellying that thing in someplace, I distinctly remember thinking: "Won't Gramps have a ball with this one?"

CDR, USNR-R

Grampaw Pettibone Says:

Thanks for the invitation to the ball, but I believe I'll just sit out this one. My knees feel a little weak.

The above account came from an experienced pilot, one who served as both XO and CO of jet squadrons during the Korean conflict. And the way he tells it, it *could* happen to someone else—but the next goofer might not get away with it.

My own system for insuring that I have the correct frequency of a navigational aid is *never* to use the information published on the aeronautical charts except as a *very last* resort. No need to use old information when the correct and current dope is available in the *latest* RAFACS and other appropriate publications. If this pilot had used the *Radio Facility Charts* for filling in the pertinent poop on his kneepad prior to the flight, he would probably have used the correct frequency of 371 for Great Falls. True, he might never have discovered that the

317 on the aeronautical chart was no longer correct—but in this case, what he didn't know wouldn't hurt him.

Tagged Out at Home

The pilot of an F9F-5 filing for the final leg of an extended cross country flight learned that current weather at his destination was 100 feet obscured, visibility three-fourths mile with fog. Since a near zero-zero condition was forecast for the pilot's estimated time of arrival, he changed his destination to Langley AFB, but told the forecaster that he would check the weather in flight and would change back to his original destination (home base) if conditions improved.

At 0300 (EST), when 24 minutes out, he requested home base weather and was given a 300-foot ceiling and one and a half miles visibility with light rain and fog, whereupon he changed his destination to his home base. Eight minutes prior to his arrival, he contacted approach control and learned that his change of destination had not yet been received and that GCA was on 30-minute standby. Continuing on to the homer, he arrived on schedule at 39,000 feet with a reported 50 minutes of fuel remaining.

The pilot stated he could not wait for GCA and was cleared for a penetration and approach at his own discretion. During the penetration turn, the local weather was given to him as 200 obscured, one and one fourth with rain and fog. When asked whether he would have enough fuel to go to his alternate if he missed the field on his low approach, the pilot reported that it would be touch and go.

He was given the weather at two alternate fields (one with a 10,000-foot ceiling and four miles in haze) and, in order to expedite an on-course clearance, was asked to which he would like to go in case he missed the approach. "I'll let you know in a minute," was his last transmission. In level flight, the aircraft started clipping off treetops and then came to rest inverted some six miles from the home field. Death was instantaneous.

The pilot had the reputation of being an excellent jet instrument pilot. He had more than 2,000 flight hours and had flown 120 hours in the last six months including 19 hours of actual instruments.

He had taken off from NAS DENVER at 1755 (MST) after having slept for one and a half hours during the afternoon. His point of first intended landing was Lambert Field, but owing to a holding delay at St. Louis, he changed his destination to NAS OLATHE where he let down and then flew VFR to land at Grandview (Mo.) AFB at 2117 (CST). He departed Grandview for the east coast at 0010C and crashed

near his home base at 0342 (EST). Since leaving Denver, he had been airborne almost five hours of which at least four hours were flown in darkness and on instruments.

The accident board felt that the pilot descended knowingly to an extremely low level to gain visual contact and while flying—either visually or on instruments—in darkness, rain, and fog inadvertently collided with the treetops.

Following the crash it was discovered that the radio altimeter was set on the low scale but *the radio altimeter was not turned on.* Examination of the pilot's flight planning log showed that he didn't complete his planning to Langley, the destination listed on his flight plan.

Grampaw Pettibone Says:

The evidence indicates that this lad never intended to go to the base for which he filed. There's no doubt about his being a capable gent with plenty of confidence built on experience. After all, it's not every Tom, Dick and Harry who chooses to spend most of the night flying instruments from Denver to the east coast.

Maybe that was his trouble—overconfidence that blinded him to the limitations of man and flying machine.

In spite of familiarity with the area and confidence in your own ability, trying to get home using just your 20-20 eyeballs when the field's below GCA minimums just ain't smart. This is a case where foresight's better than eyesight—or hindsight from six feet under the sod. It makes me mad!

Old Stick-in-the-Mud

Three HOK-1 aircraft had completed the first two legs of their ferry trip when the lead pilot made a precautionary landing to determine the cause of a strange smell (suspected smoke). The remainder of the flight landed beside him to give assistance if needed. After the leader decided to continue the flight, he was advised by the plane captain that the helicopter had settled into the soft ground. Both wheels on the right side had sunk approximately five to six inches below the surface, but the pilot decided that it would be a simple matter to pick the aircraft up and proceed.

When take-off was attempted, the helicopter started to tilt to the left, so collective pitch was reduced. The pilot then made a second take-off attempt, using more collective pitch and right cyclic to overcome the tilting tendency. The helicopter tipped further to the left and the left rotor touched the ground. The HOK set up a severe vibration, and the pilot shut down to survey the damage.

Grampaw Pettibone Says:

Looks to me like this gent had plenty of warning of events to come but didn't believe in signs and was too eager to get on with the flight. For the price of the few minutes required to wheel himself onto firmer ground—and he had the crews of three helicopters to help him—he could have saved his aircraft.

The pilot thought the accident could have been prevented if he had locked the nose wheels prior to landing, believing that if they had been straight instead of swiveled the aircraft would have lifted off easily. Mebbe yes, mebbe no. The accident board did recommend locked nosegear for rough terrain landings, but felt that the pilot erred in not making certain the aircraft was free of the soft ground before making the first take-off attempt and that before making the second try he durned well should have been positive that he was really unstuck.

TO 40,000 FEET IN OPEN GONDOLA

On August 10, two Navy scientists travelled by balloon to a height of 40,000 feet in an open fiberglass gondola little larger than an oversized bathtub.

The flight was launched from the University of Minnesota airport, north of Minneapolis, at 0818 CST. The balloon came to earth a little over four hours later at 1230, eight miles south of Stevens Point, Wisconsin.

LCdr. M. Lee Lewis of BuAer and Malcolm D. Ross, civilian aerologist with the Office of Naval Research, made the flight as an initial step in Project *Stratolab*.

Objective of the *Stratolab* program is to provide a laboratory in the stratosphere for observers to conduct research. This first flight is the culmination of ten years of *Skyhook* research by ONR. The laboratory will be used for sustained periods at varying altitudes and future flights are planned at much higher altitudes.

The cold-weather outfits of the two balloonists protected them against temperatures as low as —75° Fahrenheit.

Lewis and Ross remained at the 40,000 foot level four hours. They photographed contrails, or vapor trails at close range with time-lapse cameras for scientists of Cornell Aeronautical Laboratory who are conducting contrail studies for the Office of Naval Research. NAS Minneapolis provided the jet aircraft that made the contrails.

Secondary objective was to make preliminary tests with a special gamma ray detector. It will be used later at high altitudes to obtain fundamental gamma primary cosmic radiation data for University of Minnesota scientists working under contract with ONR.

AEROLOGISTS TRY THE GONDOLA FOR SIZE

The Navy Medical Research Institute tracked the flight with an airplane equipped to be a flying aeromedical laboratory. Capt. N. L. Barr (MC) and a team of Navy scientists evaluated data gathered in flight. A radio broadcasting version of an electro-cardiograph recorded the pilots' heart reactions and respiratory conditions.

Successful flight of the balloon inaugurated Project *Stratolab* and proved the feasibility of using this type of test vehicle for high altitude research.

FJ-2 Fury Crash Averted

VMF Pilot Proves Steady Nerve

First Lt. Stoney Mayock, USMC, showed his clear thinking at Atsugi in July. A member of VMF-235, the *Death Angels* squadron, he piloted his crippled *Fury* to a safe landing.

On a local instrument hop, 30 miles from the field, the movement of the FJ-2's stick became restricted, and the aircraft tended to roll to the right.

"My first impulse was to eject," said Mayock, "but I realized that by using my rudder pedals and cross-controlling I could maintain directional control of the aircraft."

After notifying Atsugi of the situation, Lt. Mayock, aided by his wingman, began to test how the airplane would behave at slow speeds. When he had checked his plane's characteristics and burned up his excess fuel, he decided to try a landing.

The plane came in on a nose-high attitude with no damage to the craft and no injury to the pilot.

The Marine's decision to stick by his *Fury* saved taxpayer-dollars and kept another plane in the skies.

New Program for NACA

Military Personnel to Join Staff

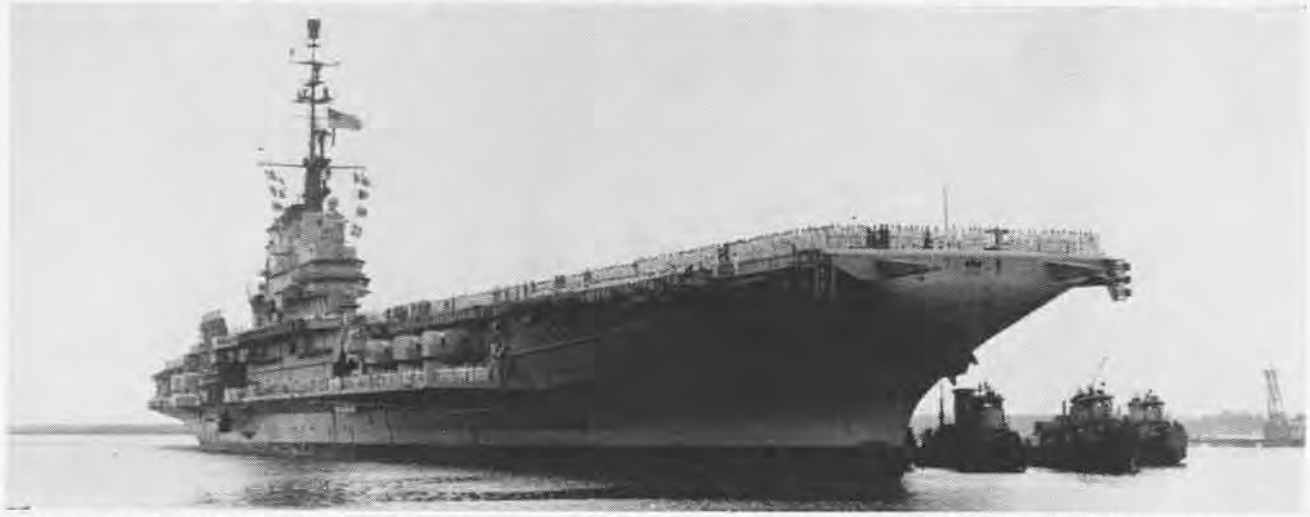
The National Advisory Committee for Aeronautics and the Department of Defense have launched a cooperative measure to supply NACA with much needed scientists. The technical and scientific personnel will be provided from the ranks of active duty military officers.

It is expected that approximately 50 officers of the Navy, Army, and Air Force, with degrees in engineering or the physical sciences, will be assigned to duty with NACA in the next six months.

Under the new plan, the Navy will submit a roster of qualified officers with aeronautical engineering degrees. To qualify, each must have at least two years additional obligated service or must extend their tours of active duty to accept the NACA assignment.

THIS NAVY *WV-2 Super Constellation, made bizarre by a huge disc-shaped structure spreading over it like a parasol, is a new early warning research plane. The craft looks like a plane captured by a flying saucer. It will be used to test advanced ideas in flying radar stations. The circular structure, which measures 30 feet across, is a radome which houses the craft's distance-determining radar antenna.*

FDR REACHES NEW HOME BASE



TUGS MET THE NEWLY MODERNIZED FDR AT THE ENTRANCE TO ST. JOHNS RIVER, AND EASED IT DOWN THE CHANNEL TO ITS BERTH

SCENES SUCH AS THIS WERE COMMONPLACE

THE MIGHTY USS *Franklin D. Roosevelt* eased up to the dock at its new home base at Mayport with a welcoming fanfare from waiting families, seconded by shrill whistle blasts from eight Navy tugs. Approximately 500 families were reunited after a separation of two months. The ship had left Bremerton in June for Cape Horn.

Upon crossing the equator in the Pacific, 2700 'pollywogs' (those who had never crossed the equator before) were initiated by the 350 "shellbacks", or experienced crossers. In rounding the Cape, the carrier encountered ice floes and 27° temperatures in the Antarctic waters. Stops were made at Balboa, Valpariso, and Rio de Janeiro.

IT WAS A GREAT DAY FOR THE CHILDREN

DEPENDENTS FLOCKED ABOARD TO WELCOME TRAVELLERS HOME

PAPA LOOKS GOOD TO THIS BROOD. MAMA SEEMS HAPPY TOO

PACIFIC 'QUEENS' HAVE RETIRED

"THE OLD ORDER changeth, yielding place to new." Probably nowhere does the new replace the old, and does the valued achievement of yesterday yield to the march of today's progress more than it does in aviation.

After more than ten years of faithful, outstanding service in supplying units of the Pacific Fleet, the "Grand Old Ladie of the Pacific," the famed Martin *Mars* have made their last passenger run over the Pacific on that so-familiar Hawaii to California run. Being retired under an "orderly and routine phase out", the *Marianas Mars* made the last flight late in August, carrying passengers from Honolulu to the United States.

Since the first of these huge, but graceful seaplanes entered into service in 1946, the five *Mars*, with home base at the Naval Air Station, Alameda, and flown by men of Air Transport Squadron Two, have become a legend in the aviation world.

During their first nine years of service the *Mars*, named for island groups, *Philippine, Hawaii, Caroline* and *Marianas* (and the *Marshall* until early 1950) averaged one flight from the Mainland to the Central Pacific each weekday evening. In that time they achieved outstanding records of performance. These records have been added to in an appreciable degree, during the past year or so of "phase out" period.

As a matter of interest to all those who have known these "Queens of the Pacific," either by reputation, or by having been furnished transportation by them, having worked on them, or having flown them, a list of their achievements is given: Since the first scheduled transoceanic flight in 1946, the five JRM's have transported across the Pacific more than 20,000 tons of high priority air cargo vitally needed in the fleet.

Of the hundreds of thousands of passengers carried by the big Martin *Mars*, not a single one has ever been injured, or has been in any kind of *Mars* accident.

Eight years ago, in August 1948, the *Caroline Mars* set a seaplane nonstop distance mark by flying 4,748 miles from Honolulu to Chicago in 24 hours and 12 minutes, a record that still stands untouched.

THE CHIEF STANDING ON WING TIP OF THE MARS IS DWARFED BY ITS 200 FOOT SPAN

One week later, in September of that same record-making year of 1948 for the JRM's, the *Caroline Mars* set another record—this one in cargo ferrying. In a single flight, between Patuxent River, Md., and Cleveland, Ohio, she carried 68,282 pounds of cargo. This is the heaviest payload ever lifted by any aircraft.

The *Marshall Mars* made her outstanding contribution to the Queens' record of achievement—and indeed, to Naval Aviation's record — the next year. In May 1949 she transported, in a single flight, 301 passengers from the Naval Air Station Alameda to San Diego, in addition to her regular crew of seven. This is the greatest number of passengers ever carried into the air by any type of airplane or airship, well in excess of the rigid dirigible *Akron's* record load of 207 passengers.

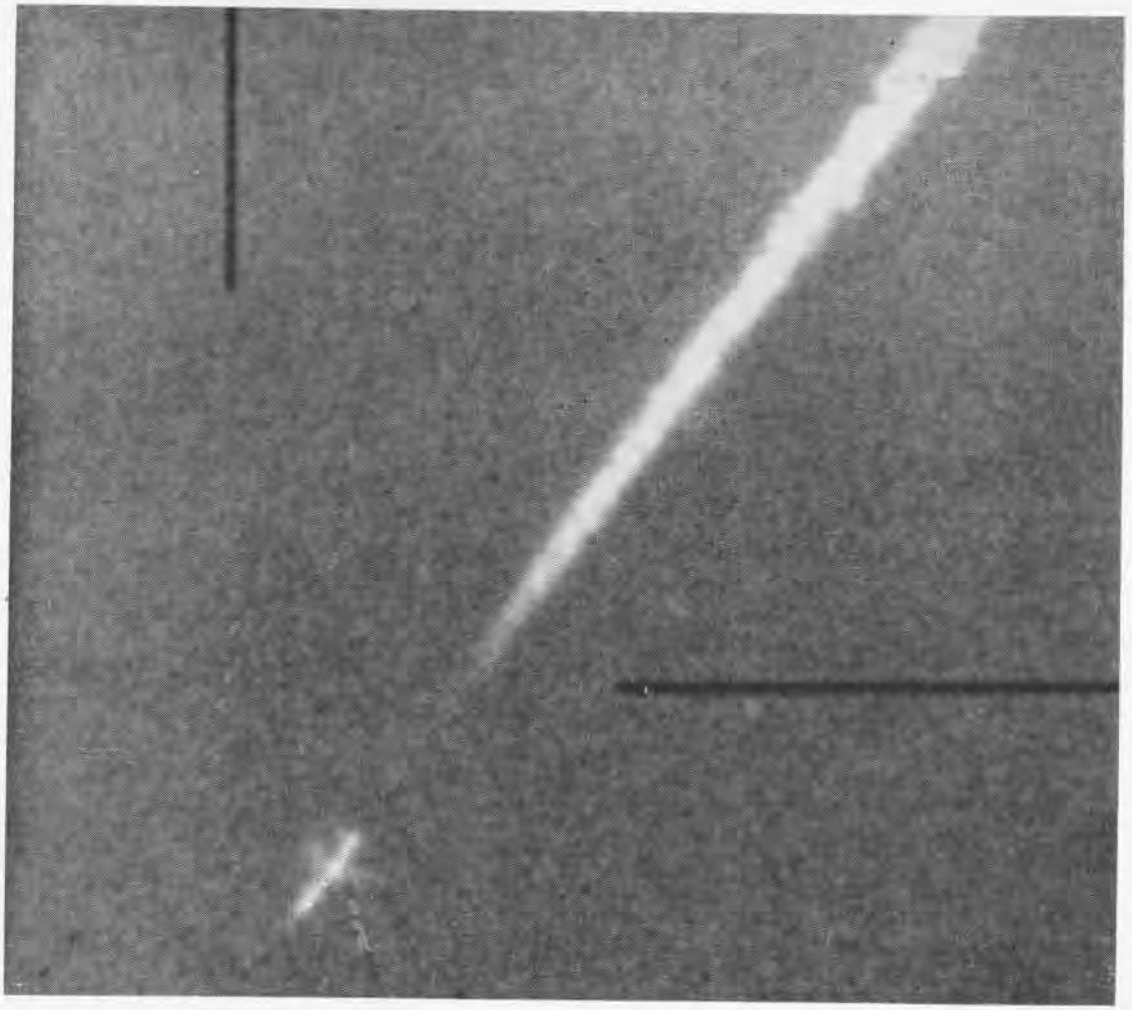
One was lost in 1950 when the *Marshall Mars*, on a routine test flight, and not carrying passengers, burned as a result of a gasoline leak and the subsequent fire, and sank off Keehi Lagoon, Honolulu. Even in that unhappy loss, the safety record was maintained intact, for everybody aboard escaped without injury.

All in all, in their ten years of service to the Pacific Fleet, these venerable ladies have carried over 200,000 passengers, service personnel and their dependents, distances equivalent to 23 round trips to the moon!

Much of this outstanding performance has been accomplished through the efforts of skillful VR-2 personnel. Old-timers many of them are, and take as a matter of course the logging of an excess of 5,000 JRM hours.

AND NOW the Queens are being retired and are to be replaced by new turboprop seaplanes. These Convair R3Y *Tradewinds*, powered by four T-40-A-10 turboprop engines, each rated at 5,500 hp., emphasize an ability of rapid resupply of the Navy's mobile units. As an earnest of their capability in that new mobile supply field, a *Tradewind*, early in her testing period, set an impressive unofficial speed record for transport type aircraft. In 1955 this big seaplane flew 2,400 miles across the continent in six hours, making the run from San Diego to Patuxent River at an average speed of 403 mph at 27,000 feet.

By the end of this year, VR-2, commanded by Cdr. Ned L. Broyles, is expected to be operating seven of the speedy R3Y's. Thus, one phase of Naval Aviation history is being brought to a close by this, the military's only seaplane transport squadron. But this same squadron is entering upon a new era of service, and will continue to discharge the missions assigned it in support of the Fleet.



F8U WINS THOMPSON TROPHY

THIS IS AN ASKANIA CAMERA THAT FILMED THE SPEEDING CRUSADER, ABOVE, AS IT FLASHED OVER THE 15.1 KILOMETER RUN

NOW HEAR THIS—"THE NAVY'S F8U-1 CRUSADER HAS SET A NEW NATIONAL SPEED RECORD TO WIN THE THOMPSON TROPHY FOR 1956."

Piloted by Cdr. R. W. 'Duke' Windsor, the faster-than-sound carrier-based fighter attained the speed of 1015.428 mph as it easily overtook last year's record of 822 mph, and swept the Thompson mark on beyond the 1000-mile figure for the first time in the twenty-six years of the race's history. Announcement of this new record was made at the National Air Show in Oklahoma City.

So far as is known, this standard-production model *Crusader*, equipped with a full armament complement of 20 mm cannon, and carrying ballast equal to a full load of ammunition, is the first operationally equipped jet aircraft to exceed the 1000 mph mark.

Twice before, Chance Vought-designed Navy planes, adaptation of WWII *Corsairs*, have won the event. Cdr. Cook Cleland, flying a modified F2G as a civilian, won both the 1947 and 1949 races. In '49 he set an all-time piston engine speed record of 397.07 mph.

THE RECORD flight was at an altitude of 40,000 feet over a 15.1 kilometer course on the Mojave desert at China Lake. Cdr. Windsor, test pilot from NATC, PATUXENT RIVER, making two passes over the course, was clocked at 1018.553 mph on his northern run, and at 1012.303 mph on his return to the south. He flew 400 miles in making the two runs over the 9.3 mile course, the extra 381.4 miles being used in gaining altitude, and in making the supersonic turns at both ends of the runs.

This year, a new system of timing the flight was used. At each end of the 15 kilometer course, there were located two Bowen cameras with 10" telephoto lenses shooting straight up. As the *Crusader* flew over the cameras, they recorded not only its passage, but also the time of the passage. Analysis of the film by the National Aeronautical Association, under whose sanction the Thompson Trophy run was made, gave the exact speed of the plane between the north and south camera station-course terminals.

Additionally, eight Askania theodolite cameras were lined on both sides of the course to record on movie film the plane's passage. Triangulation of data recorded on each movie frame afforded double check on the speed.

For still further data, there were installed inside the *Crusader's* fuselage two barographs, to record the plane's altitude in flight, and two cameras to photograph the duplicate sets of flight instruments that were located in a compartment directly behind the pilot.

On the day of the flight, crews began their labors at 0300, getting the plane ready for the early morning takeoff. As a means of packing as much fuel as possible into the F8U's tanks, the JP-5 was run through a bath of dry ice in a coil resembling the old-fashioned bootlegger's still. At the 40 degree temperature reached by this frigid bath, 300 extra pounds of precious fuel were crowded into the tanks.

The hanger pre-flight checks over, the *Crusader* was towed down the long runway, instead of taxiing down under its own power. This was done to conserve every pound of fuel possible. With the J-57-P4 engines and all instruments checking out satisfactorily, Cdr. Windsor headed down the runway at 0650 and roared into the air, coursing due south.

Making his takeoff and climb under military power, Duke cut in his afterburner at 32,000 feet, and immediately entered supersonic flight. Ninety miles south of Mojave he went into a turn and headed back north for the first run. Accelerating as he roared northward, he flashed across the cameras exactly on course—at 1018.553 miles an hour! Still flying at supersonic speed, he made a sweeping 85-mile turn, pulling one and a half G's, and headed back south for the second run over the course. On this run he was recorded as making 1012.303 miles an hour, thus giving an average speed for the two runs of 1015.428 miles an hour.

Three observer jets, two TV-2 *Shooting Stars*, and an F3D *Skynight*, were in the air at the two ends of the course, carrying NAA officials to check on the flight. So fast did Windsor and his *Crusader* fly, however, that only one plane was able to get even a glimpse of the F8U as it flashed through the runs. During the entire 400 mile flight Windsor made in covering those two 9.3 mile over-the-course runs, he was flying supersonic all but 80 miles.

Since there was a 48-knot crosswind almost 90 degrees to the flight line, the 'Duke's' two runs were almost identical in speed. He had to correct his heading only slightly to offset the drift of the crosswind.

Through the eight practice runs Cdr. Windsor had previously made over the course, he was now able to put the F8U almost exactly above the two Bowen cameras at the north and south ends of the course, for the official record of his speeds.

National Aeronautics Association rules for the Thompson Trophy race allow a pilot only 100 meters deviation in altitude (328 feet) in his run for a speed record. On the turns he is limited to a variation of only about 1500 feet, to prevent him from diving on the course, and thereby picking up speed. The two barographs carried in the *Crusader* proved that the 'Duke' had held well within the allowable on that point.

After the Patuxent River pilot had flashed past the south observer post on the second run, he cut off his afterburner, decelerating for a landing at the Mojave airstrip. His wheels touched down on the runway at 0722, exactly 32 minutes from the time he had taken off. The time had been short, but much had been accomplished. During that thrill-packed half hour or so, he had broken one record, had set another one, and had perhaps given a hint of the greater performance that may be expected from this supersonic steed of the air before it reaches the Fleet. And he still had 1500 pounds of fuel left in his tanks, an ample amount to have permitted a much longer approach run.

SCREAMING MANY DECIBELS AND SPEWING SUPERHEATED EXHAUST, DUKE WINDSOR'S F8U-1 CRUSADER MOVES FORWARD TO TAKE OFF

CRUSADER'S FUEL WAS COOLED BEFORE IT WAS PUT IN TANKS

TWO BOWEN CAMERAS WERE AT SOUTHERN END OF THE COURSE

NAA OFFICIAL C. P. BARNETT CHECKS RECORDING STOPWATCHES

CDR. WINDSOR RECEIVES CONGRATULATIONS AFTER RECORD RUN

As he brought the grey-and-white Chance Vought *Crusader* to a stop in front of the hanger at Mojave and opened his canopy, Windsor held up his two thumbs to his ground crew as a signal of victory. He did not know yet what his official speed had been, but he did know that he had passed the magic 1000-mile mark with speed to spare. He also knew from his contacts with the radar tracking on the ground that he had crossed the two observer posts and the Bowen cameras in exact alignment.

Cdr. Windsor is quoted as saying to the crowd of well-wishers who swarmed up to greet him as he climbed out of the cockpit, "No sweat at all. It's a breeze!"

This is the first time a Navy plane has won the coveted Thompson Trophy. But is is not the first time a Navy plane has entered that race.

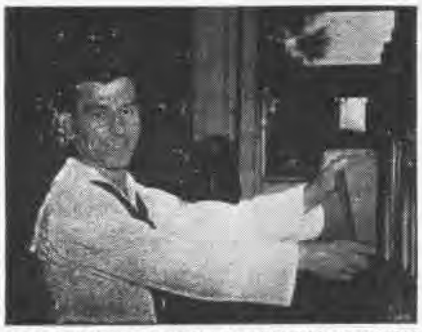
On the tenth and last day of the 1930 National Air Races, held at Chicago, seven planes lined up for the fastest event of the race meet. This was to be the first free-for-all contest for the now world-famous Thompson Trophy. The only military entry, a Navy modified Curtis *Hawk* XF6C-6, was flown by Marine Captain Arthur Page. The *Hawk*, almost a new design, was a 'parasol' monoplane fitted with a 700 hp *Conqueror* engine cooled by wing radiators. The landing gear was a single-strut type with long graceful wheel pants. Capt. Page's racer was the largest entry, also the most powerful, and was expected to win this race.

The *Hawk* was the first racer off the ground, and its superior speed was apparent from the very first: Capt. Page had almost completed the first lap before the last ship of the seven took off!

By the time the race had gone three laps, Page had lapped the field, and the match was now for the second place. And then the *Hawk*, trailing a wisp of smoke, flew high and wide around the home pylon on the 17th lap, and never recovered from the turn. It flew into the ground at a steep angle, nose down, and sent a cloud of dust 50 feet high. There was no fire, for Capt. Page, even though overcome by deadly carbon monoxide, had turned off the ignition before crashing.

The winning speed was Speed Holman's 201.9 mph. Capt. Page's speed had averaged 219 before his crash.

It is a far cry from the speed of 201.9 mph in 1930 to this year's record of 1015.428. But this is progress. The fact that it is a Navy plane that attained that record is one more indication that this is a forward looking Navy facing a future of increased importance in the air.



WOLFGANG AT WORK IN SAUFLEY LOG ROOM

Young German in Navy
Proves a Good Sailor at Saufley

Wolfgang Mehrmann, AA, from Luebeck, Germany, is now a U. S. Navy sailor, assigned to the log room at NAAS SAUFLEY FIELD. His history is an interesting one.

When the Communists blockaded Berlin in 1945, Wolfgang fled over the Russian barrier to West Germany. To further his education, he attended schools with money earned doing construction work. After school, he joined a German police force, a border patrol set up to keep the Communists out of West Germany.

Wolfgang arrived in America in November 1955 to live with relatives in Hancock, Maryland.

Drafted into the Navy in March 1956, he was sent to Saufley Field. He has proved himself a good sailor.

Enlisted Conferences Held
Career Service Problems Debated

A special Navy Enlisted Career Conference was held at NTC BAINBRIDGE in August. "Why do our enlisted specialists leave the service, and what can we do to keep them in?" was the major point of discussion.

The Navy brought 109 enlisted panelists from the East Coast, Atlantic, Caribbean and Mediterranean areas to participate in the conference. At the meeting, set up by Capt. W. M. Collins, 60 specialists were represented. A similar conference was held in San Diego.

Conference discussions, led by the enlisted men themselves, covered such problems as military pay and the problems of Navy life, the prestige and status of the enlisted man.

Findings of the conference, together with similar reports from all the services, will be evaluated and acted upon by a Dept. of Defense Committee.

And He Said 'Excelsior!'

THERE IS *a fast way to rise at certain training centers. At Quonset, you can make your way up via the ejection seat trainer. It's a sure-fire exhibit and always popular.*

WHITE HUM-STRUMS A TUNE FOR HIS MATES

Strummin' While You Work
Navy Blue Guitar aboard Jupiter

Danny White, PN1, has a special talent which endears him to his shipmates. The 29-year old sailor strums a mean guitar. He is responsible for a new custom aboard the USS *Jupiter*, the Navy's only aviation supply ship. It meets the full approval of the skipper, Capt. John S. Barleon.

"As the *Jupiter* highlines supplies to an aircraft carrier at sea," explains White, "the flattop's band usually plays during the operation. Not long ago, the Captain had me sing a song in return over the P.A.—and now it's become a regular tradition to have sort of a singing battle to beat the band back and forth between ships."

Since the *Jupiter's* home port is Yokosuka, White has an opportunity to explore music in Japan. He is surprised to find that the Japanese like American hillbilly music. White hopes to carry some Japanese tunes in his song bag when he returns Stateside.

BuAer Engineer Cited
Wins High Civilian Service Award

RAdm. J. S. Russell, Chief of BUAER, granted to Mr. Carl F. Dreesen the Bureau's highest civilian honorary award. The Meritorious Civilian Service Award and a supplemental $300 superior accomplishment award went to the BUAER general engineer in recognition of his important contributions to the improvement of aircraft fire fighting and rescue operations within the Department of the Navy.

In addition to his regular duties, Dreesen prepared the "U.S. Navy Aircraft Fire Fighting and Rescue Manual." This manual provides guidance to field personnel in crash fire fighting techniques.

Mr. Dreesen has been employed in the Bureau since February 1954.

FLYING HIGH AT ALTITUDE ZERO

J. D. ODOM, OF CAA, INSTRUCTS CONTROL TOWER OPERATORS

TRADEVMAN SHOWS ENSIGN A. T. ROBERTS 'HOP' FLIGHT PATH

"ROGER 1-1, understand over Saki 20,000 at 30. Cleared for penetration; call passing 14,000 feet; over."

"Roger Atsugi approach control, understand cleared for penetration, will call passing 14,000 feet."

Minutes later, after making a perfect landing under adverse weather conditions, the perspiring pilot steps from his plane. He steps not onto an airstrip, however, but into a room in the Aviation Training Building at NAS ATSUGI. His aircraft is a jet instrument trainer.

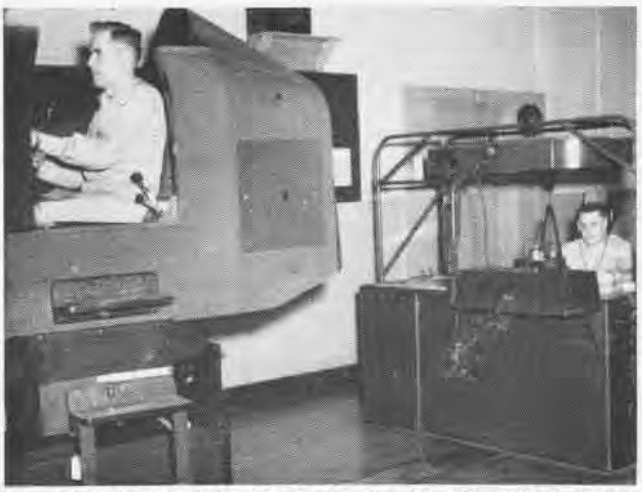
The pilot encounters many problems during his realistic "flight." By twisting dials and pushing buttons, the enlisted instructor who operates the trainer can simulate the effects of rough air, lightning and even ice.

Fledgling pilots use four Link trainers to practice flying prop aircraft on instruments. These simulate banks, climbs and dives, adding the necessary touch of realism.

One room of the training building houses an impressive looking machine with scopes and gleaming lights. This equipment, called a sonobuoy trainer, gives radarmen practice in tracking submarines. An enlisted man operates the "submarine" and tries to outmaneuver the tracking aircraft. The radarman drops several sonobuoy listening devices in a circular pattern over a wide area of "ocean." They transmit the tell-tale noise from the submarine's screws to the radarman in the aircraft who fixes the sub's position accurately, so that an attack could be made.

Aviators can even practice bombing targets without leaving the training building. A large machine, called an ultrasonic navigation and bombing trainer, uses special radar detection maps of specific targets and gives bombardiers an opportunity to improve their marksmanship.

The building's three classrooms and auditorium are constantly in use. Lt. R. S. Armstrong, Officer-in-Charge of Aviation Training, and the 13 enlisted tradevmen who aid him have their hands full. Their vital work is exacting, but they realize that through the training they offer, many lives may be saved right in the classroom.



ENS. ROBERTS PREPARES TO START ON AN INSTRUMENT FLIGHT

R. L. THIBEAULT, TD1, GIVES CLEARANCE FOR JET 'LANDING'

PILOTS OF S2F *anti-submarine planes scramble to man their craft on the flight deck of the USS Princeton. Chief mission of the carrier is the perfection of techniques for locating and sinking enemy submarines. Trackers made 2499 landings during the cruise.*

ON TOUR WITH THE PRINCETON

HELICOPTERS *of HMR-163 were based aboard CVS-37 during the SEATO Operation Firmlink.*

WHEN THE USS *Princeton* steamed into San Diego Bay in August, California shores looked mighty good to its two thousand officers and men. During the eight-month cruise, the anti-submarine aircraft carrier had visited ten different ports in the Far East. The men aboard had seen the world, but here they were in America —back home!

Flagship of RAdm. T. B. Clark, ComCarDiv-17, the *Princeton* spent 68 percent of her overseas tour at sea, sailing over 40,000 miles. During this time, her S2F *Trackers* and helicopters completed 4,456 landings. Returning with the ship was VS-21 and HS-6.

Skippered by Capt. W. E. Gallaher, the mission of CVS-37 is the perfection of submarine hunter-killer techniques. The ship works as a floating airfield for the second member of the team, the air group. The air group locates, tracks and attacks the sub while the third team member, a screen of destroyers, steams to the scene to deliver a whopping "Sunday punch."

The *Princeton's* first stop was Pearl Harbor for an Operational Readiness Inspection. Continuing westward the

TRACKERS OF VS-21 *orbit the Princeton. A member of the team which guards against the undersea menace, the anti-sub squadron tracks and attacks the demons of the deep. Constant practice keeps the outfit on its toes, ready, if necessary, for the real thing.*

DURING THE PRINCETON *cruise, which lasted almost eight months, S2F Trackers flew over the Japanese mainland on training flights.*

AN ANTI-SUBMARINE S2F *with radar detection gear extended, makes a pass over submarine during hunter-killer exercises in the Pacific.*

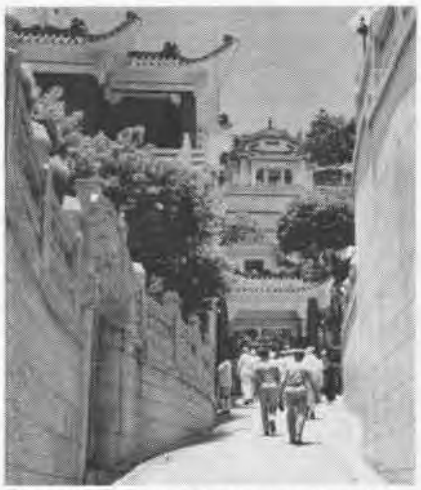
carrier took part in the joint maneuvers of the SEATO nations, called *Operation Firmlink*. The exercise took the ship to Bangkok, Thailand.

After a stop-over at Yokosuka in March, the *Princeton* engaged in intensive hunter-killer exercises in the Pacific. During the following weeks, stops were made at Okinawa, Manila, and Subic Bay. At Subic, the crew participated in *Operation Blood Brotherhood*, a blood donor campaign conducted by the Philippine Red Cross.

During respites of hunter-killer exercises, the carrier visited Kuro, Japan; Keelung, Formosa; Sasebo, Japan; Hong Kong; and Buckner Bay.

Taking advantage of the many ports of call, men of the *Princeton* took full opportunity of the chances to see the sights. However, while aboard ship, everybody worked hard. Intensive exercises in locating and sinking enemy subs has kept this guardian of the seas in top battle-readiness.

MEN OF THE PRINCETON, *while at Bangkok, Thailand, took time out to tour the city. They were especially impressed by the architecture, typified by this Sleeping Buddha Temple.*



ENTRANCE *to Tiger Balm Gardens, Hong Kong, a photographic wonderland of the Far East.*

OVERSIZED *bottle, hose are in fun, but crew made record during the blood donor campaign.*

THIS PRINCETON *sailor is too busy to notice the pretty damsel during Hong Kong visit.*

P2V DIDN'T NEED CRASH CREW SERVICES

Pilot Shows Airmanship
Safely Lands Crippled Neptune

LCdr. Wilson M. Haff, a flight instructor at ATU-614, Hutchinson, Kan., successfully completed an emergency landing at the air station, without injury to his passengers or plane.

The nose-wheel of the *Neptune* patrol bomber fell from the plane following takeoff. The P2V was on a scheduled navigation training flight to Miami. It never left the Hutchinson field area.

Notified immediately by control tower operators of the emergency, Haff circled slowly to consume fuel. This also gave other airborne planes in the vicinity an opportunity to land.

After the radar and cockpit escape hatches were jettisoned, LCdr. Haff eased the plane down without incident.

Pigeon Carquals on Wasp
New Member of 'Fabulous Fifteen'

A carrier pigeon, newest member of CAG-15, made the 28,000th landing aboard the USS *Wasp*. The unscheduled recovery occurred during flight operations off the coast of Taiwan.

The bird made an unorthodox carrier approach and settled on a VF-152 *Banshee*. Not indoctrinated in modern jet propulsion, he got involved with a number of jet blasts. The result was a bundle of ruffled feathers and a great deal of indignation. The bewildered creature finally succeeded in perching on the island structure where he was rescued by the flight deck crew.

The avian belonged to a Taiwanese pigeon breeders association and had probably been an entrant in an island pigeon race. Apparently he drifted into the Formosan Straits owing to malfunctioning navigation aids.

NEWEST MEMBER OF CAG-15 MAKES RECORD

It was felt unfair to the pilots to make a cake for the 28,000th landing out of poppy seed. The honor was given to Ltjg. Gonzales, a VA (AW)-35 pilot, who came in a close second.

Navy Trainer Is Named
Officially Designated the Trojan

The North American Aviation's T-28C trainer has been officially designated the *Trojan*. The name was the result of a contest, in which military personnel at all Navy air training bases took part.

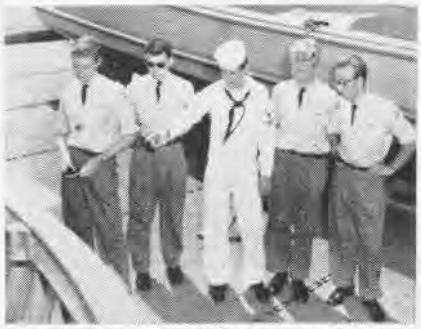
Lt. Thomas G. Harty, an instructor at NAAS BARIN FIELD, was the contest winner. For his reward, Harty will receive a special scale model of the *Trojan* from VAdm. A. K. Doyle, Chief of Naval Air Training.

'Champ' Hosts Air Cadets
Over 20 Countries Represented

Climaxing a three week visit to the U.S., sponsored by the USAF, over 150 international aviation cadets, representing more than 20 countries, visited the USS *Lake Champlain*. The fast attack carrier is currently undergoing routine overhaul and repairs in the New York Naval Shipyard after a seven-month tour of duty with the Sixth Fleet in the Mediterranean.

In 1948, an annual exchange of Civil Air Patrol Cadets and foreign cadets was established. Since that time over 1000 youths have taken part in the program. The foreign cadets, ranging in age from 17 to 25 years, are sponsored by the air forces of their respective countries. The CAP Cadet age range is 14 to 18 years.

During the same three week period,



GUIDES LED CADETS ON TOUR OF THE SHIP

CAP Cadets from the U.S., Alaska, Hawaii, and Puerto Rico were guests in some 22 countries abroad. They were chosen by a stiff competitive examination based on their aviation knowledge, military appearance, and overall good record.

The day following the visit to the *Champ*, the foreign cadets were flown by MATS to Washington en route home.

LIKE A MOTHER *hen, an A3D Skywarrior dwarfs two A4D Skyhawks on a flight over California. The A3D is the Navy's biggest carrier-based airplane; the A4D is the smallest. Attack bombers with atomic payload capabilities, they are in production at Douglas Aircraft.*

Stork Sets Speed Record
Overtakes a MATS Constellation

Enroute from Travis to Hickam AFB, Mrs. Constance H. Worsley, wife of SSgt. Harold R. Worsley, gave birth to a "flying baby girl." The event occurred on a Navy *Super Constellation* assigned to MATS. Mrs. Worsley was planning to meet her husband in Tachikawa, Japan, the following day, but the baby delayed matters a bit.

When asked if there was a doctor aboard, the Air Force came through to team up with the Navy. Capt. Stanford A. Lavine, USAF, and Lt. Betty Flowers, USAF Nurse, were on the flight. The only instruments available were scissors and some bandages.

At the suggestion of the VR-7 Navy crew, Mrs. Worsley named the baby

MOTHER AND 'FLYING BABY' DOING FINE

Connie Patricia Ann in honor of the aircraft. Crew members and passengers collected $53 as a start on Connie's future.

Little Connie is the third baby born over the Pacific Ocean this year.

New 'Copter Improvement
Permits In-Air Blade Tracking

A simple, lightweight device developed by Kaman Aircraft engineers, now permits a helicopter pilot to put his ship's rotors "in track" during flight.

Known as "cockpit blade tracking," the device allows the pilot to correct rotor out-of-track conditions without resorting to on-the-ground checking and adjustment.

When the tips of the rotor blades do not rotate in the same plane, the resulting condition is known as out-of-track. This causes the 'copter to be rough in flight and decreases its operating efficiency. Normally, tracking rotor blades is a time-consuming job, and must be done by a ground mechanic.

THIS PANTHER *was the first aircraft to make a landing on the new NAAS Kingsville, Texas, runway. The 8,000-foot runway is constructed of caliche and asphalt and is 25 inches deep. The strip was completed in June, but the actual opening and first landing was on 18 July. Cdr. C. A. Crow, Jr., Officer-in-Charge of ATU-202, was at the controls of the Grumman F9F-6.*

The cockpit blade tracker can be used at cruising speeds up to 60 knots, during "dry runs" on the ground, or while hovering. In the twin-rotor HOK-1, which has been used in developing the device, there are two trackers, one for each two-bladed rotor.

According to BUAER, the Navy is interested in equipping its HOK-1's with the new blade tracking device.

Service Pins to Workers
Represents Total of 455 Years

Capt. F. D. Pfotenhauer, BAR at Douglas Aircraft, El Segundo Division, presented lapel pins to Western District

PINS AWARDED BY CAPTAIN PFOTENHAUER

BUAER personnel, commemorating a total of 455 years of service.

In presenting the pins, for 15, 10, and five years of service, Capt. Pfotenhauer said: "In my many years of experience with the Navy, I can honestly say this is the best overall organization I have ever encountered. Your aggressiveness and willingness to work is very gratifying."

RAdm. John B. Pearson, Jr., BUAER General Representative for the Western District, sent his personal congratulations to the employees honored.

Change in BuPers Manual
Affects Classification of Pilots

BUPERS Manual, Article C-7301(4) Revised, is currently effective and directs that some changes be made in the service group classification of Naval Aviators. Service Group IA has been discontinued and there remain Service Groups I, II, and III.

1. Service Group I is comprised of pilots under 50 years of age, who meet the physical requirements of Service Group I.

2. Service Group II is comprised of pilots age 35 to 50, or those pilots under age 35, who have accumulated 10 or more years of active flying service since designation, who meet the physical standard for Service Group II, and pilots of Service Group I, who temporarily meet only the physical standards of Service Group II.

3. Service Group III is comprised of pilots over 50 years of age, and those under age 50, who are recovering from illness or injury, or who temporarily do not meet the standards for either Standard Groups I or II.

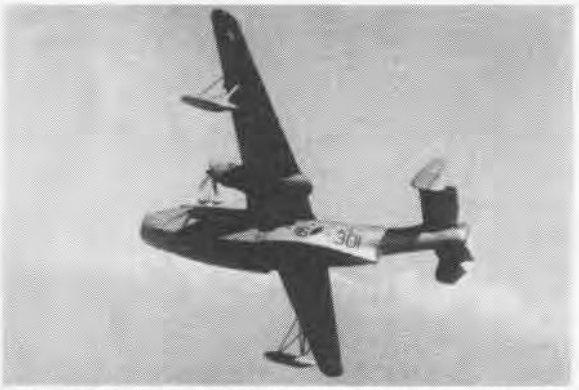
WHEN MISS *North Carolina visited MCAS Cherry Point, she was made an honorary jet pilot. BGen. E. A. Montgomery, CG, presented her with pair of his own wings, shined up!*

P2V-5 NEPTUNES, OBTAINED FROM THE U. S., EXTEND THE PERIMETER OF RECONNAISSANCE FOR THE ROYAL NETHERLANDS NAVY

OF THE ROYAL NETHERLANDS NAVY

Naval Aviation of the Netherlands, beginning back in 1907, concentrated on flying boats and seaplanes between WWI and II. The Dutch Navy's one carrier, *Karel Doorman*, formerly the HMS *Nairana*, is undergoing extensive modernization: angled deck, new elevator, steam catapult, improved arresting gear.

THE DUTCH NAVY'S S55 TYPE HELICOPTER MAKES AIR-SEA RESCUE



NAS BIAK-BASED PBM'S PATROL OVER DUTCH NEW GUINEA

FAITHFUL OLD PBY CATALINAS WILL BE REPLACED BY MARTIN MARINERS FOR PATROLLING MISSIONS OF THE NETHERLANDS NAVY

SEAHAWK JETS, FROM ENGLAND, WILL BE ADDED TO THE DUTCH NAVY'S AIR MIGHT. THEY WILL FLY FROM THE KAREL DOORMAN

OPERATING FROM THE KAREL DOORMAN'S DECK, THESE BRITISH-BUILT FIREFLIES ENGAGE IN AERIAL TOWING AND IN ASW TASKS

CARRIER-BASED RNN FIGHTER SQUADRONS ARE CURRENTLY OPERATING THESE BRITISH-DESIGNED, AND DUTCH-MADE SEA FURIES

HER MAJESTY'S SHIP, THE KAREL DOORMAN, WHEN MODERNIZED, WILL ADD MORE JET FIGHTER STRENGTH TO THE NATO FORCES

AIR DEFENSE OF GROUND MARINES

By Cpl. T. A. Pyle

IN CONTEMPORARY warfare, a unit of ground fighters without protective aircraft is worse off than an orange grove in a snow storm! The Second Marine Aircraft Wing's Air Control Squadron Six is a key element in the air defense of ground Marines.

In a combat situation, the squadron's primary mission is to detect on-coming enemy aircraft and dispatch interceptors to drive off or destroy the hostile planes.

The Counter Air Operations Center (CAOC) of MACS-6 at Cherry Point manipulates the electronic devices used in detecting approaching planes. There, in the darkness of the "hut", are radar scopes, direction finders, radio equipment, telephones and charts for plotting the course of aircraft.

With the hide-and-seek methods of modern combat, the air control squadron must be ready to pack up and move out on a moment's notice in order to keep pace with the ground forces. "Mobility is a necessity in a unit such as ours," says Maj. W. D. Heier, Commanding Officer.

Practically every item of equipment which MACS-6 is using today is so mobile that tomorrow might find it on the beach of some far-off island, if need be.

Upon setting up operations in the field, MACS-6 establishes an air defense net of radar beams which serves to warn the Marines of approaching aircraft. If a plane, detected by these electronic sentinels, responds appropriately to the challenge issued from the watchpost, the craft is permitted to continue on course. Failure to give the correct "countersign" will bring Marine interceptors on the tail of the offending plane.

The communications section operates mobile vans which are used to carry a variety of electronic gear. The section's communication jeeps are equipped to establish forward air direction nets for the interception of enemy aircraft in the combat zone.

Each year the mobility of the Marine air control squadron is demonstrated in the maneuvers at Roosevelt Roads, Puerto Rico. There they meet the strongest peacetime test of their capabilities during the "invasion" phase of the exercise.

MACS-6'S COUNTER AIR OPERATIONS CENTER

While the squadron is at Cherry Point, it augments the continental alert system by reinforcing the radar beams encircling the United States. This radar "blanket" serves to warn the nation of approaching air attack.

IFR-IQ?

What are the time, distance, and altitude tolerances which must be adhered to when flying in accordance with a DVFR flight plan in an ADIZ?

Answer on page 40.

Award to USS Kearsarge
Wins Battle Efficiency Plaque

RAdm. John Perry, ComFAirWhidbey, presented the Pacific Fleet Battle Efficiency Plaque to the officers and men of the *Kearsarge*, in a ceremony held at Puget Sound Naval Shipyard.

Capt. E. O. Wagner, skipper of the carrier, received the plaque, which will be mounted on the quarterdeck.

The "E" goes to the ship attaining the highest grades for exercises throughout the year, together with the results of inspections and the operating commander's evaluation of the ship's performance with the fleet.

In addition to the overall "E", the USS *Kearsarge* was awarded a red "E" for excellence in engineering.

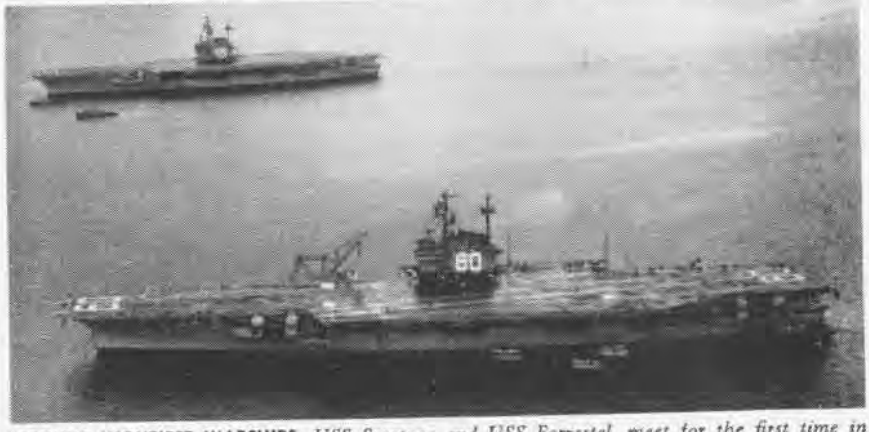
Survival in the Far East
VP-48 in Abandon Ship Drills

Members of VP-48, NAS IWAKUNI, were "down at sea" in August, and everyone agreed it was an excellent idea.

Just off Henderson Beach, the flight crews "abandoned their aircraft," and prepared to survive at sea. Under the supervision of Ltjg. D. P. Smith, survival officer, the men practiced techniques of survival that may someday save their lives.

The "downed" airmen climbed aboard their rafts, cared for the wounded, sent emergency messages, made makeshift fishing tackle, distilled fresh water from sea water, and became better acquainted with survival gear carried on every flight.

Commanded by Cdr. J. F. Davis, VP-48 is due to return Stateside shortly.



WORLD'S MIGHTIEST WARSHIPS, *USS Saratoga and USS Forrestal, meet for the first time in the port of Hampton Roads, Va. The "Sara" anchored in the harbor for supply loading, while enroute to Guantanamo Bay during shakedown operations. The carriers met as the Forrestal left port for a short cruise. CVA-59's shakedown cruises have been completed.*

BELL XV-3 *Convertiplane has made up to 15 degrees forward rotor mast angle conversions in flight during phase I flight tests at Bell's Texas plant. Evaluation flights in helicopter configuration indicate that low power settings will be required in forward flight up to 80 knots. The Convertiplane's vibration level is very low because of flexible rotor mountings.*

THE 'SPROULE' *rescue net, which scoops personnel from the water, was demonstrated by Coast Guard personnel at their station, Elizabeth City, N. C. The net received its name from its inventor, an officer in the Royal Navy. Military air/sea rescue specialists were observers.*

Japanese VIP's on CVA-37
Grumman Tracker is Exhibited

Just prior to her departure from Yokosuka, Japan, in August, the USS *Princeton* invited high-ranking members of the Japanese Defense Agency and the Japanese Maritime Self Defense Force to visit the carrier. Purpose of the visit was to acquaint the Japanese military men with the Grumman S2F *Tracker*.

The U. S. will turn over several of the two-engined S2F's to the Japanese government in the near future.

Hosts for the orientation visit were Rear Admirals Fitzhugh Lee and T. B. Clark. Adm. Lee is ComFAir Japan, with headquarters at Atsugi. Adm. Clark is ComCarDiv 17, with his flag in the *Princeton*.

Aboard the *Princeton* were 60 Japanese aviation personnel who will undergo nine months of training in the operation of the S2F. During their trip to the U. S., the 12 Japanese pilots and 48 maintenance men were briefed in the role of the S2F in anti-submarine warfare.

These men will be trained in the San Diego area as part of the U. S.'s Mutual Defense Assistance Program.

FLIGHT DECK BRIEFING ON PRINCETON

'Copter Simulator Tested
Program to Find Training Worth

First tests of the Bell helicopter flight simulator have been passed with flying colors at Ellyson Field, Pensacola. Planned by RAdm. Luis deFlorez (Ret.) and built by Bell Aircraft, the simulator is used in the HTU-1's flight program. With the aid of Dr. Leslie F. Butler of the Psychological Research Associates, Lt. L. D. Nelson and the men from the U.S. Naval Training Device Center are conducting an important test program to determine the value of the simulator.

Two groups of 20 students are to be the guinea pigs. One group will be exposed to "the Machine" before actual flight instruction; the other will not. A phase-by-phase comparison will be made between the two groups to determine to what degree, if any, the first 20 men benefit from the preflight tutoring.

The test program will consume approximately six months. Proponents of flight simulators believe that the illusion of flight is so real that the transition to actual flight will be smooth.

A tentative panel of six of Ellyson's top instructors has been selected to learn to fly the simulator. After qualifying, Lts. J. C. Winland, E. D. King, T. Tidd, Ltjgs. Tillerson, M. R. Henry and G. L. Nielsen will initiate the first 20 students.

Outcome of the program is being closely watched by training experts.

NADC Designs New Device
Eases Job of Dismounting Tires

A new device for tire dismounting has been put into operation at NADC JOHNSVILLE. Gone are the days when tire changing involved a few broken spring leaves, brute force, a strong back and oral persuasion. No more bruised fingers and damaged wheels. There's a better way to do it!

The Center maintenance force has designed a machine which brings about this new era in tire dismounting. The equipment is made from salvaged aircraft parts and scrap metal. The machine is hydraulically operated and is capable of dismounting all sizes of fighter and bomber aircraft tires.

According to NADC reports, from one to five man hours is shaved off each tire changing. Damage to wheels has been eliminated by the equipment.

RESERVISTS HIT THE HIGH ROAD

HIGHLIGHT of the year for many *Weekend Warriors* was a 14-day deployment overseas this summer. Although most Reserve squadrons spent their active duty period training at air stations throughout the United States, others were sent to Naval air activities abroad. Coupled with the anticipation of actually participating in fleet operations was the thrill of travelling to distant places.

Reservists proved that they know their business. They are ready to deliver whenever the Navy needs them.

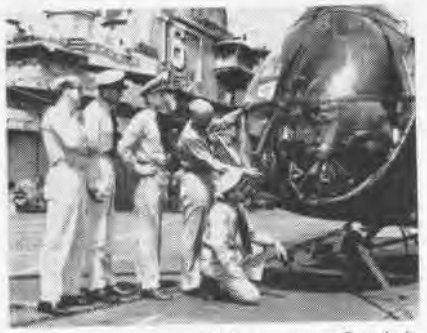
Warriors Aboard the Lex

Officers of the Naval Reserve Aviation Company 14-1, Fort DeRussy, Honolulu, experienced carrier duty first hand aboard the *Lexington*. The 14 Reservists spent one day on the carrier while it was operating out of Pearl Harbor.

The officers made themselves at home and were particularly interested in the flight operations.

Commanded by LCdr. R. F. Bekeart, Company 14-1 members have all had active duty in Naval Aviation. They are from the Honolulu area and represent commercial aviation, government and industrial organizations.

The unit is under the military control of the Commandant, 14th Naval District. It was established in 1948.



PILOTS *of Company 14-1 examine a Lex helicopter during their one-day carrier cruise.*

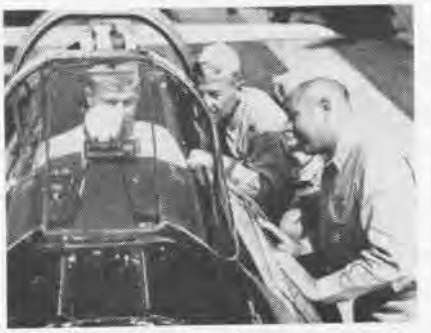
VP-872 Gets 'Cook's' Tour

To the members of VP-872, of NAS OAKLAND, distance means nothing. The squadron, commanded by Cdr. C. S. Whitman, was airlifted to NAS SEATTLE for its two-week active duty training. Transportation was provided by VR squadrons from NAS OAKLAND, NAS DALLAS, and NAS MEMPHIS.

The flight syllabus included trips to Kodiak, Grosse Ile, Ogden, Las Vegas, Minneapolis, and Glenview. The RON flights were the highlight of the cruise for all hands.

Crew II, headed by LCdr. M. R. Thompson, XO of VP-872, made the Alaska run to Kodiak. The difficult trip proved the mettle of pilots and crewmen. And for the boys who had never seen the land of the Eskimos, it was a redletter occasion.

Outstanding maintenance service by FASRon-875, plus pilots and crewmen who were on the ball, pushed aircraft availability over the 90 percent mark.



HONOLULU *Reservists take time out to inspect an AD-6 while aboard the Lexington.*

OFFICERS OF NAVAL *Reserve Aviation Company 14-1 line up on flag bridge to watch flight operations aboard USS Lexington. The Lex operated out of Pearl prior to joining Seventh Fleet.*

The squadron's 988.2 flight hours were accident-free.

The ground syllabus included orientation for AR's, survival methods, advanced classes on electrical and hydraulic systems, emergency procedures for pilots and plane crews.

Niagara Warriors at Lyautey

Reservists of NAS NIAGARA FALLS flew more than 10,000 miles during their first 14-day overseas training cruise. The members of VP-851 made the flight in P4Y's and R5D's. The transports, which airlifted support personnel, were flown by pilots of VR-931, NAS WILLOW GROVE.

Destination was Port Lyautey. From there, the Reservists completed training hops to Barcelona, Nice, Lisbon, Rome, and Gibralter. Pilots averaged 50 hours of flight time.

The entire *Weekend Warrior* contingent, known as Task Group 85, was commanded by Cdr. V. A. Zucarelli. LCdr. C. E. Johnson headed the Niagara patrol squadron. LCdr. D. A. Hess led the Pennsylvania unit.

VP-911 and VR-911 to Africa

Announcement of a flight to Africa for the men and women Reservists at NAS SOUTH WEYMOUTH caused ex-

FLIGHT *and maintenance crews of VP-872, NAS Oakland, work together to keep aircraft in the air during their annual training cruise.*

LT. C. B. *Battersby, of NAS South Weymouth, tries camel riding shortly after landing his plane at NAS Port Lyautey, French Morocco.*

MEMBERS *of VP-872 took time out to net some king crabs during stop-over at NAS Kodiak.*

citement. But the 14-day active duty tour was no joy ride; everyone worked hard during the cruise.

VP-911 and VR-911 departed in eight planes for Port Lyautey, to join Sixth Fleet operations in the Mediterranean.

Just one day after arrival, they flew prescribed hops over the Med and into Europe, and later they performed escort duty for ships off Gibraltar.

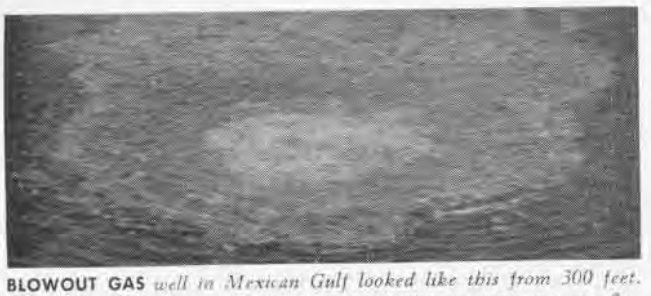
Cdr. Thomas G. Allen, CO of VP-911, headed the task group. Skipper of VR-911 was Cdr. L. E. Mattraw. The senior officer on the cruise was Capt. L. S. Melsom, CO of NAS SOUTH WEYMOUTH.

Reservists on RON flights had a chance to sightsee in Rome, Naples, Malta, Gibraltar, London, Hamburg.

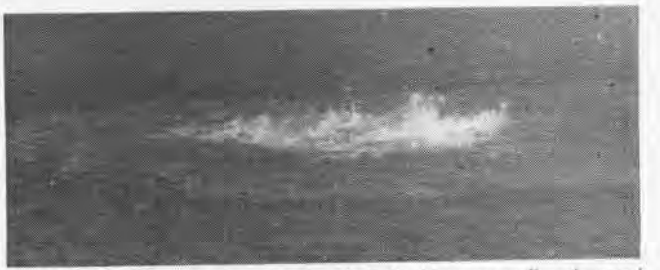
POLITE *ape at Gibraltar begs for food from Weymouth Reservists during visit on "Rock".*

MEN AND WOMEN *Reservists of South Weymouth take their leave of Rome during active duty training cruise in Europe this past summer.*

'BE-FEZZED' *pilots and crewmen of patrol bomber 206, VP-851, in Port Lyautey just before the return flight home to NAS Niagara Falls.*



BLOWOUT GAS *well in Mexican Gulf looked like this from 300 feet. After photo was taken, Navy planes set the escaping gas on fire.*



RESERVISTS *at New Orleans dive-bombed the blow-out well and spread fuel over the area. The fire was started with 20mm cannon shells.*

Navy Fires Gas Well

Reservists at NAS NEW ORLEANS have accomplished an unusual mission. A gas well pipe in the Gulf of Mexico ruptured, and the escaping gas presented a serious threat to surface vessels. The Navy was asked to set the well on fire and destroy the gas.

Under the direction of LCdr. Fred Hooks, Command Liaison Officer, two *Skyraiders* dive-bombed the well with 150-gallon droppable fuel tanks, and sprayed it with 20mm cannon shells. LCdr. Joel Morris, CO of VA-822, and LCdr. Harold Wheelahan piloted the AD's.

LCdr. Hooks called the operation "perfect in every respect." An area about 500 feet in radius puffed into flames. The heat could be felt from an altitude of 300 feet.

Preparations are being made to pump mud into the ruptured pipe. This will choke off the gas below the surface and extinguish the flames.

VF-713 Trains at Moffett

Members of "Fighting 713," NAS DENVER, spent their annual training cruise at Moffett Field this summer.

FASRON-741 *men listen to Eastern maintenance man while on tour at the Miami Airport.*

The squadron, under the command of LCdr. H. T. Brownscombe, trained in tactics, ground controlled approach, and instrument flying at Moffett.

Pilots and crew of VF-713 come to Denver for reserve meetings from as far away as Albuquerque, N. M., Scottsbluff, Neb., Laramie, Wyo., and Oakley, Kansas. These distant members of the squadron are flown into the "Mile High City" for the meetings or drive in during poor flying weather.

Jax Warriors in Miami

FASRon-741 at NARTU JACKSONVILLE, while on two weeks training duty, flew its maintenance crew to Miami. The crew toured Eastern Airline's maintenance and overhaul plant.

The Eastern shops, the largest in the world, were opened to the officers and men of the squadron by one of their own men, Capt. John Ingle. In civilian life he is the Sales Manager in Northeast Florida for the airline.

The men inspected the interiors of Super "Connies" while the planes were stripped of their finery. The *Warriors* were specially interested in watching engine overhaul and repair.

Marines at NAS Minneapolis

Young men from Minnesota, Illinois and Missouri, spent 30 days in a Marine Air Reserve technical indoctrination training course. The program was held at NAS MINNEAPOLIS.

Training for the recruits was given under the direction of LCol. A. H. Adams, CO of the Marine Detachment.

Following this training period, the Reservists flew to MCAS EL TORO for two-week annual summer maneuvers.

LCDR. H. T. *Brownscombe, CO of VF-713, NAS Denver, gets ready for a flight during annual training cruise at NAS Moffett Field.*

MARINE RECRUITS *jump to at the command of TSgt. E. M. LaVelle, senior drill instructor for indoctrination program at Minneapolis.*

AIRLANT INTERCEPTOR TRAINING

THE FLEET All-Weather Training Unit, Atlantic, based at NAS BOCA CHICA, Key West, Florida, has a double-barrelled task. Its staff, as it devotes full time to giving all-weather intercept instruction, both to individual pilots and to squadrons as a whole, channels its dual efforts right back to a single mission—that of preparing

THESE ARE FAWTULANT 'NIGHT DRIVERS'

men for duty with AirLant All-Weather squadrons.

Newly designated aviators, and second tour pilots, enroute to their all-weather squadrons in the Atlantic Fleet, are ordered to FAWTULant for temporary duty that is comprised of an eight weeks course in training.

The first two weeks of this training are devoted to familiarization with the F3D-2T2 *Skyknight*. These two-seated, heavy, all-weather fighters that got their baptism of fire as night fighters over Korea, are the flying classrooms for the intercept phase of the training. During the remaining six weeks, the pilots are trained in the conduct of low visibility intercepts.

Interceptor trainees work through a syllabus that consists of 47 hours of classroom instruction, 18 hours in the F3D-2T2 Operational Flight Trainer, and 56 hours of flight, of which 44 hours are at night. The OFT, used in both familiarization and intercept phases, gives the students an opportunity to solve some of the problems which will confront them in actual flight.

During the intercept phase of training, the student aviator flies one mission with an instructor, and then two

TRAINEES ARE SET FOR A BUDDY FLIGHT

without. A mutual assistance program comes into being on these two flights, with the student and a buddy alternating as pilot and as radar operator.

In the next stage, the student repeats the training cycle through 23 intercept flights. At this time, the pilot also acquires nearly 20 hours as target. Upon completion of this training, he has flown approximately 178 intercepts.

The pilot departs for his all-weather squadron thoroughly instructed by FAWTULant. He should be able to complete successfully any all-weather mission, whether it be a night intercept of a 'bogie', or an instrument cross country.

The second part of FAWTULant's mission concerns itself with training squadrons as a unit. During the first phase of their training cycle, Atlantic Fleet All-Weather Squadrons deploy to FAWTULant for four weeks intensive intercept flying. Squadron pilots, flying their own planes, work through the approximately 15 flights that comprise the squadron syllabus. Climaxing this is an intercept competitive exercise that is designed to show individual pilot proficiency, and overall squadron readiness.

FAWTULant's GCI Site (Tarpon) controls the intercept flights. At this same time, All-Weather Air Controllers are trained, returning, at the conclusion of their training, to their duty stations as designated All-Weather Air Controllers.

In six month's time, Staff Instructors of FAWTULant All-Weather Intercept averaged 478 intercepts each, and chalked up an average 31.9 hours night flying per month.

During a 12-month period, 91 individual students completed the All-Weather Intercept Course, while five All-Weather Squadrons deployed to FAWTULant for training: VF-31, VF-102, VF-82, VF-171 and VF-14.

Fluoroscope Detects Flaws

NOL Development Undergoing Tests

METAL CASTINGS PLACED IN PLASTIC GLOBE

Chance Vought Aircraft is testing a new high intensity fluoroscope developed by the Navy to permit faster detection of flaws in aircraft metal castings. The device was developed by the Naval Ordnance Laboratory at White Oak, Md., for BUAER.

Chance Vought agreed to evaluate the fluoroscope to determine its accuracy of flaw detection, and its rate of inspection. Two thousand large and small castings of steel and magnesium which have been previously inspected by the conventional x-ray filming method, are being tested and the results compared.

Small castings to be inspected in the new machine are placed in plastic globes, and held in position inside it by a cushion of small rubber balloons such as children play with. The sealed globe is placed between the fluoroscope's x-ray tube and the eight-inch viewing screen. Through the use of controls in a shielded booth, the plastic ball is rotated in such a way that the technician can inspect its metal cargo from all angles.

Within three months, a report of findings will be submitted to BUAER. Based on these results, the future potential of this device will be forecast.

LET'S LOOK AT THE RECORD

VR-7 Super Connie Record
Good Engines, Good Maintenance

Word of a very gratifying example of military aircraft efficiency comes from Transport Squadron Seven, operating with the Pacific Division of MATS Service. When all four engines on one of their Lockheed R7V-1 *Super Constellations* were changed after operating 1250 hours, it was discovered that not a single engine of the four had required a job of major maintenance. The more than 1200 hours of flying those engines had done represent enough time in the air to circle the earth 11 times at the equator!

In August 1955, VR-7, commanded by Capt. Clifford M. Campbell, received, and commissioned this *Super Connie*. Since then, operating out of Hickam Field, Hawaii, she has been carrying passengers and cargo between the mainland and the Far and Middle East.

For nine months, Crew Chief J. E. Poole, ADC, and his men kept the four Wright 3350-34 reverse flow type engines in top condition. During this time the aircraft flew an average of 138 hours a month.

Cougar Scores with VF-32
F9F-8 Dubbed 'Grand Old Cougar'

The skipper of VF-32, Cdr. H. F. Thompson, has dubbed one of squadron's aircraft "Grand Old *Cougar*" for two reasons. The plane racked up nearly 500 hours without breakdown on the original engine and assisted in the winning of six "E's" for the squadron.

The squadron, now serving aboard the USS *Ticonderoga* with CVG-3, commanded by Cdr. R. N. Miller, recorded their fine gunnery score during the unit's last competitive gunnery exercise. Sixteen "E's" were won by the squadron.

The six VF-32 pilots who won "E's" while flying the "Grand Old *Cougar*" were the CO, Cdr. Thompson, LCdr. Gene Gerger, XO, Lts. Roy Johnson (a triple "E" winner), Dick Boyd, Dean Webster and Ltjg. Bill Wiltshire.

FIRST JET *plane to land on the mighty Saratoga was a F9F Cougar flown by Cdr. W. E. Fly, CAG-4, shown being welcomed by Capt. R. J. Stroh, CO of the world's largest warship.*

Records Broken by BTU-4
Unit Logs Impressive Flight Time

Corry Field's Basic Training Unit-4 broke four records and chalked up a record breaking 1150 flight hours in one day. The unit flew over 800 hours to break its own daytime record. Then after nightfall, two new highs were set when 250 night flights were flown.

The unit's flight record of 1150 hours is thought to be unsurpassed by any unit in the Basic Training Command.

During May, BTU-4 flew a total of 16,906 hours, all of which were accident-free. Cdr. Stanley Kalemaris, BTU-4 CO, lauded the efforts of Corry's maintenance department in keeping airplanes in good flying condition.

Ream Field Boasts Record
'Helicopter Capital of the World'

An air station, top quality helicopter squadrons, an excellent program of fleet air unit support, and "whirlybird" experts combine to form NAAS Ream Field—the "Helicopter Capital of the World."

Headed by Cdr. A. A. Giesser, Ream Field can also boast of an enviable record in the tactical training of fleet units, coordination of mercy flights, anti-submarine warfare training, pilotless aircraft and utility squadron operations, and a program of fleet carrier landing practice.

Ream welcomes any and all 'copter installations to challenge its title.

High Marks for VF-43
Top Scores in Aerial Gunnery

Members of VF-43 are proud of their aerial gunnery record. During competitive exercises in May, the squadron decisively proved its worth as a fighter by riddling the sleeve at 25,000 feet to the tune of five "E's", and an overall pilot average of 33.6 hits.

The Jacksonville-based squadron finished third in the fleet air gunnery meet at El Centro this summer. One member of VF-43, Ltjg. Harold Wellman, stole the show by winning not only the individual 25,000 and 15,000-foot championship trophies, but also a trophy as the outstanding gunner of the Navy.

Back in Jacksonville, the squadron took part in another gunnery compex. VF-43 chalked up six more "E's", with a pilot average of 36.7 hits.

THESE FJ-3M FURIES *form part of Cdr. V. F. Kelley's "Kingpins." VF-143, which recently completed a three-week deployment to El Centro for gunnery exercises. Owing to outstanding maintenance, aircraft availability average was 92.5 percent. With the help of the ordnance department, each member of the "Kingpin" team qualified at 15,000 and 25,000 feet.*

SCATTERED EYES OF THE FLEET

RADAR-LOADED WV-2 SUPER CONSTELLATION BELONGS TO AEWRON-1, BARBER'S POINT

FROM AIRBORNE Early Warning Squadron One comes a "Can You Top This?" challenge. It looks as though it's going to be a hard one to beat!

AEWRon-1 claims a record for aircraft dislocation in a 24-hour period. The squadron's aircraft roster is made up of nine WV-2 super "Connies," but on 6 August, it looked like decommissioning day at the AEWRon-1 section of NAS BARBER'S POINT. The nine craft were scattered from Tokyo's Ginza to the plains of Texas.

Six *Constellations* from the squadron stable were airborne on major long distance flights at the same time. The remaining three planes were resting in the Far East, the Hawaiian Islands, and the West Coast. As a matter of fact, AEWRon-1 craft were headed in almost every direction.

One plane was airborne for the heavy maintenance shops of Corpus Christi. Another was enroute to Atsugi and from there to NAS CUBI POINT.

At the same time, another aircraft was leaving the sunny Hawaiian Islands and heading for the northern latitudes and Kodiak, Alaska. Stops were made at Midway and Adak enroute. On the return flight, the WV-2 landed at Whidbey Island and NAS ALAMEDA.

A long-range navigational training hop from Barber's Point to Midway Island accounted for another plane. The flight returned via Johnson Island. Two of the radar-equipped WV-2's were flying from Japan to Cubi Point.

Of the three planes on the ground at the time, one was receiving a paint job at Alameda; one was in Atsugi; and the other was looking extremely lonely on AEWRon-1's flight line at NAS BARBER'S POINT.

Commanded by Capt. E. M. Morgan, AEWRON-1's principal mission is to provide airborne radar for the Fleet.

Record at Hutchinson

Student Makes Near-Perfect Score

Ltjg. John C. Staton, a student officer at NAS HUTCHINSON, commanded by Capt. H. E. Irons, made the highest over-all standard score ever attained at the air station. He completed the ground school phase of training with a mark of 79, one point less than a perfect score.

Not only was Staton's score high in ground school, but flight instructors reported his marks in actual flying phases of training were well above average.

After graduation and designation as a Naval Aviator, Staton received temporary orders to the Naval School of Justice, Newport. His permanent duty station will be Barber's Point.

CAPT. IRONS AWARDS WINGS TO STATON

CAG-12 Scores a High

Reenlistments up at NAS Miramar

Carrier Air Group 12, at NAS MIRAMAR, scored high in the men-batted-in department for the last quarter of fiscal 1956. Of the whitehats due to leave the service during the months April through June, 43.7 percent decided to stay in the Navy.

VF-124 topped all four squadrons with a 100% reenlistment record. VF-121 had a 41.6 percentage; VA-125, 66.7 percent; VA-126, 36.4 percent.

CVG-12 staff retained one of three men due for discharge, so the air group kept 28 men of the 63 aboard in service.

LTJG. ROBERT C. *Evans, of VA-195, scored seven bullseyes out of eight drops during competitive dive-bombing exercises at NAAF Fallon. Evans made his record in an AD-6.*

Morale High on Kearsarge

Ten Sailings without an Absentee

The USS *Kearsarge* has posted a "Can You Top This?" record. Ten successive sailings were chalked up without an absentee, demonstrating high morale aboard the carrier during its deployment with the 7th Fleet.

Under the command of Capt. E. O. Wagner, the *Kearsarge* entered Bremerton Naval Yard in July for overhaul.

UNDER THE AERIAL REFUELING PROBE OF PANTHER, A SQUADRON OF AD'S AT ATSUGI

JAPAN'S BUSIEST AIRFIELD

ACTIVITY, hard work, and efficiency is the order of the day. Pilots, flight crews, maintenance men, all personnel *must* be on their toes. For this is Naval Air Station, Atsugi, the "crossroads of the East."

Located 25 miles southwest of Tokyo, Atsugi is nestled among gently rolling farmlands. It has had a short but active career since it became a Naval Air Station in October 1950.

Six years ago, there were only 16 planes based at the field. That number has grown by leaps and bounds as the air station performs its two-fold mission of supporting the Naval Fleet Air Arm and the Fleet Marine Air Force.

Occupying only 1217 acres, Atsugi is, for its size, one of the world's busiest airfields. As many as 1400 operations may take place during a 24-hour period. Planes take off and land almost every minute of the day and night.

The operations staff of 250 men, under the direction of Cdr. W. E. Skill, considers a month with under 15,000 operations a slow month. Atsugi's busiest month was August, 1955, when 17,654 takeoffs and landings were logged. The traffic figures emphasize the diversity of aircraft activities taking place at the air station.

Carrier air groups in the Seventh Fleet use Atsugi as a training headquarters while their carriers are at Yokosuka. When still miles at sea, before the aircraft carriers dock, their planes leave the flight deck and head for Atsugi.

Several Atsugi-based squadrons aid the air groups in their training. VU-5 provides aerial tow targets for gunnery practice, plus photographic service. The squadron also tows targets for Fleet Marine Air Groups.

Fleet Aircraft Service Squadron Eleven provides maintenance support for the carrier aircraft and keeps a pool of planes as replacements.

Squadrons of MAG-11 provide aerial protection for the base and stand ready to help defend the Japanese home islands if necessary. The Marines provide all-weather interceptors, night fighters, day fighters and photographic airplanes. The station also houses Navy heavy attack bombers, airborne early warning planes and serves as a traffic terminal for Navy and Marine logistic support units.

All these activities earn for NAS ATSUGI a title for which it is justifiably proud: "Japan's busiest airfield."

GCA IS USED IN GOOD WEATHER AND BAD

Practice Bomb Contract

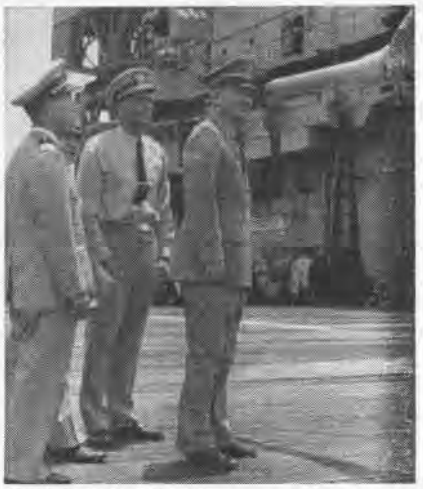
Supersonic Steel Bombs Ordered

A contract, worth $1,864,000, was awarded to Pastushin Aviation Corporation of Los Angeles. The contract calls for the manufacture of steel supersonic practice bombs. Deliveries are expected to be completed during 1957.

In drills, the bomb, designated *Mark 88*, will be filled with sand or water, depending on the weight desired for the airplane and the type of target. It will then be released under a variety of simulated combat conditions.

On impact, a mechanism in the nose of the imitation bomb sets off a charge which expells smoke from the aft end, providing visual location of the strike. Empty, the bomb weighs 167 pounds.

The advanced type "dummy" bombs are designed for universal use by the fleet's modern family of speedy jets.



LGEN. K. HAYASHI, *Chairman of Japan's Joint Staff Council, inspects refueling probe of jet aboard the USS Oriskany during a recent visit of some 20 Japanese military leaders.*

Foreign Aviators Train

NAS Hutchinson Hosts Navy Pilots

An air of international good-will has developed rapidly at NAS HUTCHINSON. This is due to the presence of foreign naval officers now undergoing flight training at the air station.

Five foreign nations are represented at the activity: officers of the Japanese Maritime Self-Defense Force, and the French, Chilean, Mexican, and Italian navies.

During the six-month training period, the students will learn to pilot the Lockheed P2V *Neptune* patrol bomber.

'COPTER SHORE-TO-SHIP SHUTTLE

by SSgt. Jack Baird, USMC

THE MARINES have landed, but this time they are not establishing a beach-head! Equally at home on land, sea, or in the air, the fighting Marines again show their versatility.

A new concept of modern day warfare was unveiled in July off the coast of Onslow Beach, N. C. Eight helicopters of HMR-261 and 262, Marine Helicopter Transport Group 26, transported combat-laden troops from the Marine Corps Air Facility, New River, N. C., to a waiting submarine off-shore.

Led in flight by their group Commanding Officer, Col. Howard E. King, the 'copter pilots made 28 sorties, or air-lifts, of 55 reconnaissance Marines, their weapons, packs and equipment.

Landing at five-minute intervals on the aft-deck of the USS *Sea Lion*, a troop-carrying submarine with a 65-man crew, the "Whirlybirds" created a modern and efficient shuttle service.

The successful operation, Phase I of Reconnaissance Exercise 3-56, was designed to determine the feasibility of boarding troops on subs at sea for further reconnaissance missions.

A combination of tests was carried out last May at Little Creek, Va., on the same type of operation. At that time a full company of Marines was not used.

The troops in July's "first" were members of the Second Amphibious Reconnaissance Company, Fleet Marine Force, Camp Lejeune, commanded by Capt. R. T. Lawrence.

After the troops learned first hand about life aboard a sub, they practiced debarkation and embarkation drills. This was followed by night surf training. The Recon Marines remained aboard the *Sea Lion* for two weeks.

HMR-261 is commanded by LCol. Richard Flynn. Maj. Kenneth Moss is the acting CO of Marine Helicopter Transport Squadron 262.

Contract to Republic
Production of New Bombing-Trainer

A contract for production of a new-type bombing-trainer, designed to teach Navy pilots the techniques of nuclear weapons delivery has been awarded to Republic's Guided Missiles Division.

The new contract for $350,000 worth of trainer units, is the first Navy production order in the Republic Aviation Corporation's history.

The long, cylindrical bomber-trainer is packed with electronic equipment. It carries four practice bombs which are released through bomb-bay doors. The device, called Practice Bomb Container, can be attached to many of the Navy's operational fighter-bombers.

The trainer's electronic gear simulates an actual bomb-drop on the pilot's instruments.

Since the practice bombs cost only $5 each, the bomber-trainer is expected to cut sharply training costs.

HRS HELICOPTER ABOARD USS SEA LION GAVE DELUXE SHUTTLE SERVICE FOR MARINES

CREW MEMBERS HELP LOAD PASSENGER GEAR

Mariner-Shuttle in Japan
One of Shortest Airlines in World

Connecting Itazuke U. S. AFB with U. S. Fleet Activities, Sasebo, is one of the shortest airlines in the world.

Leaving Itazuke daily, a PBM-5A *Mariner* makes the 60-mile flight over the mountainous Kyushu countryside. After passengers and freight are transferred at Sasebo, the amphibian makes the return trip.

Operated by NAF OPPAMA, the airline flights from Itazuke are coordinated with the arrival of a daily Marine R5D transport from NAS ATSUGI. No pilots are assigned permanently to airline duty, but each week, two leave their desk jobs at Oppama to spend a week flying the aircraft.

During the seven years the airline has been operating, a variety of VIP's have taken the short flight—Congressmen, entertainers and military leaders.

'Skylancer' Makes Debut
New F5D Powered by P&W J-57

The Navy has announced a new carrier plane, the Douglas F5D *Skylancer*. It is powered by a P&W J-57 gas-turbine engine with afterburner.

RAdm. John B. Pearson, Jr., Bureau of Aeronautics General Representative, told the Aviation Writers' Association that the all-weather jet fighter exceeded the speed of sound on its maiden flight at Edwards AF Base in April. Robert O. Rahn, Douglas test pilot, was at the controls.

The F5D is designed for catapult take-off from carriers and fast climb to high altitude for interception.

IN FOREIGN SKIES

Farnborough, 1956

The big annual aircraft exhibition at the Royal Aircraft Establishment Farnborough, England, took place in September 3-9.

Some 338 manufacturers, 20 more than last year, showed aircraft, components and equipment ranging from complete aircraft and engines to wine glasses, tools, wireless, television and radar equipment, lamps, propellers, flight instruments and components manufactured from unfamiliar metals.

One new aircraft which made its first appearance was the Vickers Supermarine N.113, built for the Royal Navy. It can break the sound barrier in a shallow dive and carry an atom bomb.

One of the spectacular exhibits was Marconi's televised picture of aircraft activity at London Airport. Another exhibit that attracted attention was Fairey's which featured, among other things, the moveable nose section of the experimental F.D.2, the holder of the world's speed record for aircraft. The nose, it will be recalled, is lowered 10 degrees when landing in order to give the pilot a good view of the ground.

Air-Minded America

A recent study by the Aircraft Owners and Pilots Association shows that when compared with civil aviation throughout the world, the U.S. is living in the 25th century.

The world's busiest airport, Chicago's Midway, with 381,737 plane movements for 1955, handled a volume of traffic equal to the combined traffic of London, Paris, Rome, Copenhagen, Oslo, and Geneva, with 8,886 plane movements left over.

Just New York's LaGuardia Airport and Chicago Midway together handle more traffic than eleven leading European cities combined, with enough left over to equal the present traffic volume of Portland, Maine.

Teterboro airport, which handles no airline traffic at all, chalked up more plane movements in 1955 than London, Rome, and Brussels combined.

Soaring Thor

A new British ramjet engine called the *Thor*, has been developed by Bristol Aero-Engines Ltd., with a view to possible use in tomorrow's airliners. Most effective at over two and a half times the speed of sound, the *Thor* would take over from the plane's conventional turbojet engines when this speed is reached.

NEW RAMJET IS USED TO POWER MISSILE

Picture shows four booster rockets as they fall away from a guided missile propelled by the *Thor* engine, after accelerating it to a speed of over 1,000 miles per hour.

Japanese Pilots at Oppama

NAF Oppama, Japan, held graduation ceremonies for its class of Japanese Maritime Self Defense Force aviators and enlisted men who had completed the *Tracker* S2F pre-training program.

The pilots and men, under the command of Cdr. Shoichi Ibuki, stayed at Oppama approximately one month undergoing training in aerology, navigation, airframes, and electronic equipment. Each pilot had Link trainer practice.

At the official farewell ceremony, Capt. H. W. McDonald, Facility CO, wished good luck to the airmen. They are scheduled for nine months further training at Brown Field, California.

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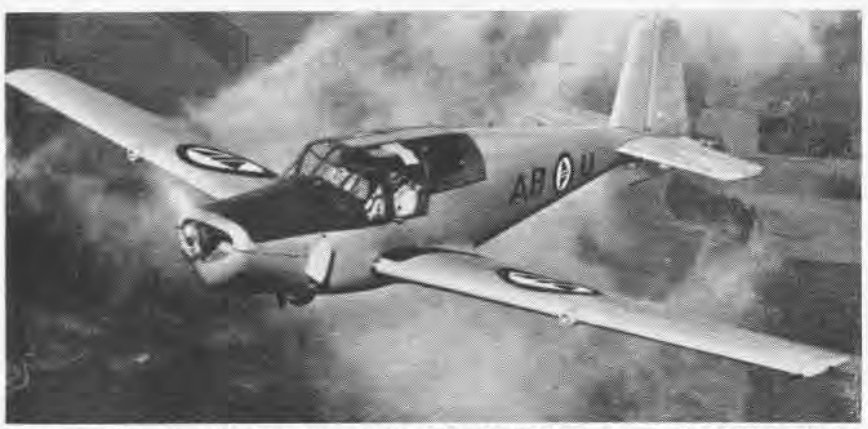


TRAINER BUILT BY SAAB AIRCRAFT COMPANY HAS PROVED TO BE A POPULAR MODEL

NORWAY ORDERS SAFIRS

The Royal Norwegian Air Force recently signed a contract with the Saab Aircraft Company for 25 Saab 91B-2 *Safir* trainers. The aircraft will be taken from a new *Safir* series now being built at Saab's plant in Sweden.

The Norwegian Air Force is the third air force — the air forces of Sweden and Ethiopia are the others — to adopt the Saab *Safir* as a standard aircraft for flying training. In Sweden where the *Safir* is now the only piston-engined trainer being used, pupil pilots go directly from this light aircraft to fast dual-control jet trainers.

The *Safir* is employed widely as a trainer for airline pilots. It is used by governmental commercial flying schools in Holland, Belgium, France, Western Germany, Indonesia.

KIDS LIVE IT UP AT LEX PARTY

THIS LAD TRIED THE CO'S HAT AND CHAIR

ALL THE ICE CREAM AND COOKIES YOU CAN EAT! OF SUCH THINGS ARE DREAMS MADE

YOU KNOW how you feel when you've finished a really tough job —when you get back from the last patrol of a long, hard month, or when you've finally got every blade in a *Cougar* throat set, or when you've signed the last fitness report. You close your eyes, heave a sigh of relief, and just feel glad that it's done.

And then, as tiredness seeps from your bones, there's the thought, "It's time to celebrate. Let's have a party!"

The *Lexington*, CVA-16, had been hard at work. Ever since the WestPac cruise started, every man aboard, ship's company and Air Group, had had work to do that crowded the hours of each day. The *Lex's* brand new angled deck, steam catapults and powerful arresting gear had kept up a steady stream of launching and landing planes, as *Cougars* of VF-111, VF-52's all weather *Banshees*, *Cutlasses* of VA-151, and the AD-6's of VA-196 moved out to engage in exercises.

And now, with another part of the operations plan completed, it was time for Rest and Recreation in Yokosuka.

Next thought—"Let's have a party, a real whing-ding with lots of company, lots to eat and lots to drink." And so they did!

On a Saturday afternoon, the *Lexington* was host to 400 Japanese children, from the Yokosuka Orphanage, a Tokyo junior high school, and Boy and Girl Scouts. Touring the ship from flight deck to mess deck, the children stowed away dozens of cookies, gallons of ice cream and punch, and movies.

As one of the crewmen said, "We had a party, and the kids had a ball!"

LEX CREWMAN HAD HANDS AND HEAD FULL

GIRL SCOUTS RODE PILOTS' ESCALATOR

CUB SCOUT GETS HELP AS HE 'BAILS OUT'

FROGMEN TEST SAFETY FACTOR

DOUGLAS AIRCRAFT "frogmen" at the El Segundo, Calif. Division, are playing an important part in a program to assure Navy pilots of emergency escape from jet fighters—even if the plane should sink into the ocean upside down.

These underwater swimmers are involved in tests to make certain that cockpit canopies can be jettisoned under water as well as in the sky. So far,

OVER THE SIDE GO SYNOVEK AND MCDONALD

the program has been carried out with the A4D, F4D and F5D.

The Douglas technicians lower a forward fuselage section into the water of a 24-feet deep tank. When the section

UP FROM BOTTOM OF TANK COMES CANOPY

is about 15 feet deep, the canopy is jettisoned, fired manually with a lanyard from the surface.

In the next step, frogmen Joe McDonald and Dick Synoveck, garbed in complete "frogmen" underwater equipment, submerge to retrieve the canopy. Since the underwater jettisoning often scatters parts of the canopy over the bottom of the tank, the divers also retrieve those parts for engineering studies. In addition, they inspect the triggering mechanisms and make whatever underwater repairs are necessary, bringing reports of their findings to engineers top-side on the tank.

Tests results have proved that the canopies will open in both upright and inverted positions—another safety precaution protecting Navy pilots.

FROGMEN ARE RETRIEVING CANOPY IN WATER KEPT CRYSTAL CLEAR FOR OBSERVATION

Pilot Rolls AJ Savage
Prevents Crash with Airliner

LCdr. Harold A. Willyard, of NAS MIRAMAR, prevented an air disaster by his quick thinking. Even though engineers says that the heavy AJ *Savage* can't be rolled, Willyard dared the impossible and by so doing averted a crash with a commercial *Constellation*.

On a regular practice photo course near Los Angeles, the VJ-61 pilot noticed a huge "Connie" pulling up right under him. The only way to escape a crash was to roll.

"Those big AJ's aren't supposed to do it," says LCdr. Willyard. "But I jammed down the pedal, pulled the wheel and over we went. The 'Connie' slipped by just ahead of us."

The action was accomplished so smoothly that Holland Mills, AD1, plane captain, continued to drink his coffee without spilling a drop.

Contract for Regulus II
A New Supersonic Guided Missile

The Navy has contracted with Chance Vought Aircraft for the production of *Regulus II*, a new, high performance supersonic guided missile. The new missile stems from the successful utilization of *Regulus I*, which was used in extensive operations at sea with submarines, cruisers and aircraft carriers, and from shore bases.

Design of the *Regulus* included the recoverable test missile, as well as a tactical version, which resulted in substantial dollar savings.

Missile Frigate Named
Adm. Ernest King to be Honored

One of the new guided missile frigates authorized for construction in fiscal 1956 will be named the USS *King*, in honor of the late Fleet Admiral Ernest J. King.

The keel of the *King* will be laid in 1957 at the Puget Sound Naval Shipyard. She will have an extreme beam of 50 feet and will measure 512 feet in length.

The *King* (DLG-10) will be equipped with *Terrier* missiles aft and five-inch gun batteries forward. She will be used primarily in defense for high speed task forces.

VADM. WILLIAM *V. Davis, Jr. (L) DCNO (Air), has been appointed by the President to membership in the National Advisory Committee for Aeronautics. He was sworn in by Dr. J. F. Victory, Executive Secretary of NACA.*

O&R Corpus Gets First R4Y

Slated for Progressive Maintenance

Progressive maintenance of a Convair R4Y aircraft has begun in the O&R Department at NAS CORPUS CHRISTI. The plane, used by the Secretary of the Navy, checked in at O&R in June.

The crew which ferried the plane from NAS ANACOSTIA was Lt. S. A. Minervino, pilot; LCdr. R. B. Cavanaugh, co-pilot; I. N. Ebbs, ADC, plane captain; T. J. Carroll, AD1; W. W. Winters, AL1.

The O&R Department expects to receive a minimum of seven more R4Y *Convairs* during the next fiscal year.

New High Speed Refueling

Moffett and Miramar Equipped

NAS MOFFETT FIELD and NAS MIRAMAR have been equipped with what is known as the "High Speed Refueling System." Eight aircraft can be serviced simultaneously.

Originally, aircraft had been refueled by trucks which could service only one aircraft at a time. The multi-service capabilities of the new facility

F9F-8 BEING REFUELED AT MOFFETT FIELD

should result in greater efficiency and a considerable saving of time.

The Moffett installation consists of a 105,000 gallon tank, water separators, necessary electrical facilities, and approximately 6,000 yards of concrete fueling aprons and connecting roadways.

The majority of aircraft based at the two locations will be able to take advantage of the new system, since 95% of all jet aircraft manufactured today are fueled from the under side.

FUJI *looks like this through the bomb director system of an A1-2 Savage, flown by VAH-6. Although the A1 is equipped with radar, the Savage has an optical system as well.*

ADM. ARLEIGH *Burke, CNO, is met at NAS New York by Edward R. Murrow and Capt. W. M. Ryon, air station CO. The Admiral and Murrow helicoptered to the Saratoga for filming of a TV show to be released this fall.*

ATU-206 Men Commended

RAdm. Clarke Lauds Quick Action

Two seamen of Pensacola's ATU-206 were personally commended by RAdm. R. S. Clarke, CNABaTra.

Franklin E. Jenkins and Harry E. Huggins rushed a badly injured Pensacola boy to the hospital after the youth had sustained a brain concussion in a drive-in movie theatre playground accident. Quick action on the part of the seamen in bringing the boy to surgery is credited with saving his life.

ATG-3 to Moffett Field

Prepares for Carrier Deployment

Recent arrival at Moffett Field was Air Task Group Three. Originally from NAS MIRAMAR, the group will spend approximately one year at Moffett while undergoing training for deployment aboard a carrer in late 1957.

The task group, under the command of Cdr. Paul Gray, will include VF-53, VA-26, and VA-96.

Cdr. J. Pariseau commands VF-53; skipper of VA-26 is Cdr. R. D. Greer. Cdr. Luke Dennis is CO of VA-96.

USS ESSEX *was the "host with the most" in June when the big carrier had 27,014 guests on board during a six-hour period—three hours on one day, and three on another.*

NAVY'S *newest utility helicopter, the Bell HUL-1, participated in service test trials aboard the Tarawa off the coast from Quonset Point. Pilots from NATC operated the 'copter.*

EDGAR, MASCOT *of Norfolk's GCA unit, seems to know quite a bit about the equipment used by the men who help land planes. He delights in explaining the set-up to visiting novices.*

TIRED AIRCRAFT REJUVENATED

A METHOD by which the tours of operational aircraft can be extended before overhaul has been developed at NAS SAN DIEGO. What has come to be called a "fountain of youth" treatment for aging craft takes only seven weeks.

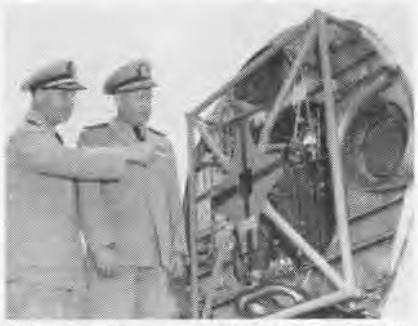
The problem of keeping aviation units up to strength over the vast areas of the western Pacific early in 1955 was a hard one. There was a minimum number of aircraft available. Furthermore, many of the operational aircraft were due to reach the end of their service tours simultaneously, and overhaul points were not in a position to absorb such a heavy workload at one time.

The situation was particularly critical with respect to the AJ heavy attack bomber.

Logistic members of ComAirPac staff pointed out that since the AJ had been kept at such a high maintenance level, the service tours could be extended, provided certain "rejuvenation" measures were taken. By introducing these measures and essential changes, the service of the AJ *Savage* could probably be extended for at least 12 months before overhaul.

ComAirPac recommended an interim rework plan for the AJ on a trial basis. CNO and BUAER agreed to this proposal. BUAER sent a study team to North Island to review with the O&R Department and the operating squadrons the best approach to the problem.

Normal procedures for overhaul of the big plane allowed for a planned out-of-service time of about five months plus an expenditure of about 24,000 labor hours. It was clear that total aircraft availability would be increased at no sacrifice of safety or performance if the aircraft could be "turned around" in approximately eight weeks with an expenditure of some 4000 labor hours. Personnel from Engineering, Inspection, and Planning (O&R), ComAirPac's staff members, and VC-6 maintenance personnel set out to develop the details which would enable them to meet these objectives.



CDR. R. L. *Moser of VC-6 and Capt. M. W. Mason, O&R, helped work out the program.*

PLANNING *team stands beside AJ-2 Savage at O&R ground check section at NAS San Diego.*

O&R, North Island, was charged with the responsibility of performing a detailed 480-hour check, correcting discrepancies, and incorporating necessary changes. The Fleet was to perform engine changes and process certain major electronics equipment. This plan required a high degree of coordination and cooperation between the Fleet and O&R.

The program worked out well. The "rejuvenation" was accomplished with an approximate expenditure of 3300 man-hours per aircraft. The average time out of service for each plane was seven weeks.

Present plans call for putting the same aircraft through their second rework cycle. This will be followed by another tour before overhaul.

The success of this program has prompted ComAirPac to recommend similar procedures for other aircraft.

● After the Temco Aircraft Corp. at Dallas overhauls Air Force F-84G jet fighters, the planes are test flown first by Temco pilots and then by Navy pilots assigned to the Dallas office of the BuAer Representative.

Flight Simulator for Army
Developed under ONR Cognizance

The Naval Training Device Center, Port Washington, under the direction of ONR, will administer the contract for a new helicopter flight simulator now under development by Melpar, Inc., for the Army.

Scheduled for completion in 1958, the flight simulator will incorporate the cockpit of the Army's H-37A, Sikorsky 'copter in its design. The Navy's Training Device Center will assist in the technical details of development.

The device will be used to train Army helicopter pilots in all phases of operation. The trainer will also simulate types of flight conditions.

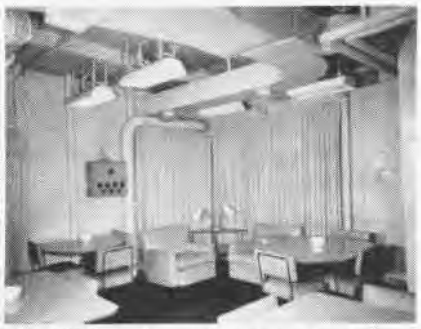
New Activity Established
Authorized for NTDC by SecNav

The Navy Training Device Supply Office was commissioned in July at the Naval Training Device Center, Port Washington. RAdm. R. J. Arnold, Chief of BUSANDA, and other Navy and civilian officials attended the ceremonies.

Originally established in July, 1954, as the Program Support Department, the office will now function as a separate activity under BUSANDA. Its main responsibility will be inventory management of the devices developed at the Center.

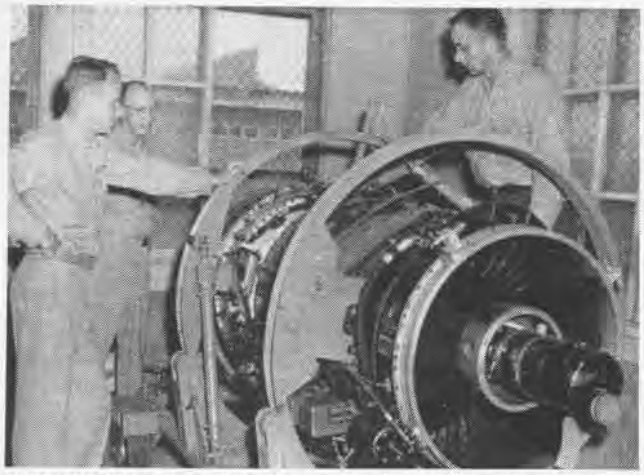
Authorized by SecNav, the activity is a supply demand control point. It will have complete logistic control over the Center's devices from the time research begins, until a device is surveyed.

First Commanding Officer is Cdr. C. E. McLanahan, original head of the Program Support Department, NTDC.

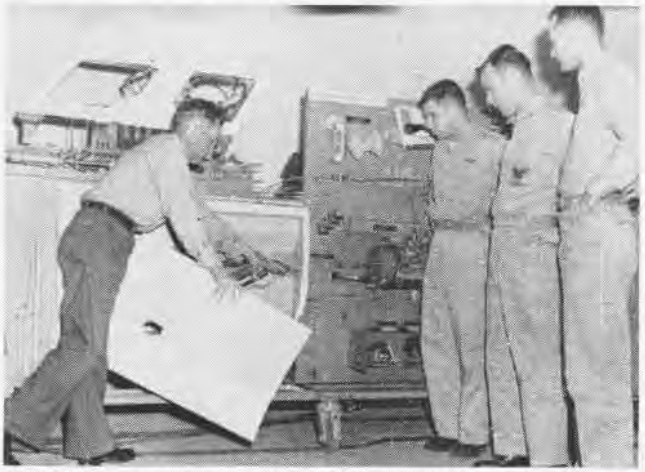


THIS VIEW *of the crew's writing room aboard the USS Philippine Sea (CVA-47) is but one aspect in the big carrier's overhaul phase at the Naval Shipyard in San Francisco, Cal.*

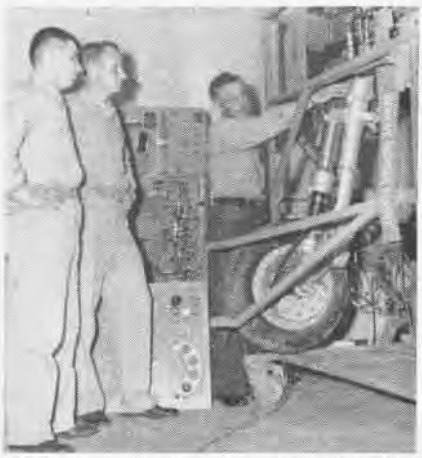
INTRODUCTION TO THE FURY



VARIOUS PARTS *of the FJ-4 Fury power plant, J-65-W-4, are explained by L. L. Kasper, AD1, to Lt. J. A. Wells and D. F. Tainsh, AMC.*



A PANEL *showing operation of the FJ-4 speed brakes is demonstrated. J. A. Jones, AM1, points out lock mechanism to squadron personnel.*



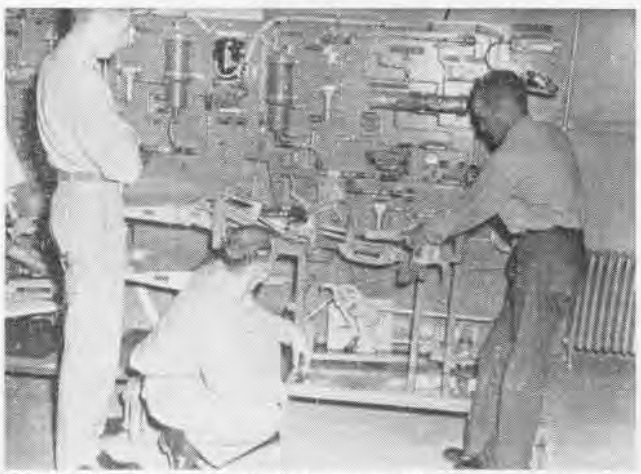
MOCK-UP *of main landing gear is explained by Jones to Lts. D. A. Mayo and J. A. Wells.*

LEARNING to repair and maintain a new airplane without seeing it is a complex task, but over 100 officers and men of MAW-1 have done it.

A Maintenance Training Unit, which brings to the field the latest techniques, started its activities at NAS ATSUGI in May. Squadrons of MAW-1 expect to receive the FJ-4 *Fury* in the near future, so the Unit is rapidly checking out the Marines on their new airplane.

By using panels, cut-aways, slides, charts and other materials, qualified instructors explain and demonstrate the various malfunctions which may arise throughout the actual aircraft. This gives students a comprehensive picture of the new *Fury's* mechanisms.

FIX-IT MAN *C. C. Ulsh, AE1, repairs the rectifier unit to boost current required.*



OPERATION *of an artificial field bungee (double acting spring) is demonstrated by Jones, to Capts. L. A. Shane and W. K. Parcell.*

USING A MOCK-UP *cockpit, Instructor Jones outlines operation of the ejection seat to Lieutenants Mayo and R. J. Beach, two MAW-1 pilots.*

TRAINING DEVICE AT REAM FIELD

THIS IS ONLY A THIRD OF HSS-1 TRAINER

WITH THE ACQUISITION of the new HSS-1 Maintenance Trainer, NAAS REAM FIELD, San Ysidro, Calif., is convinced that its training has been moved up one more notch in efficiency and effectiveness.

So immense that it must be housed in three different rooms, this highly complex equipment, Sikorsky-made and one-of-a-kind, was procured for the express purpose of familiarizing qualified personnel with the HSS type helicopter, and for instruction in the maintenance techniques required by these whirlybirds.

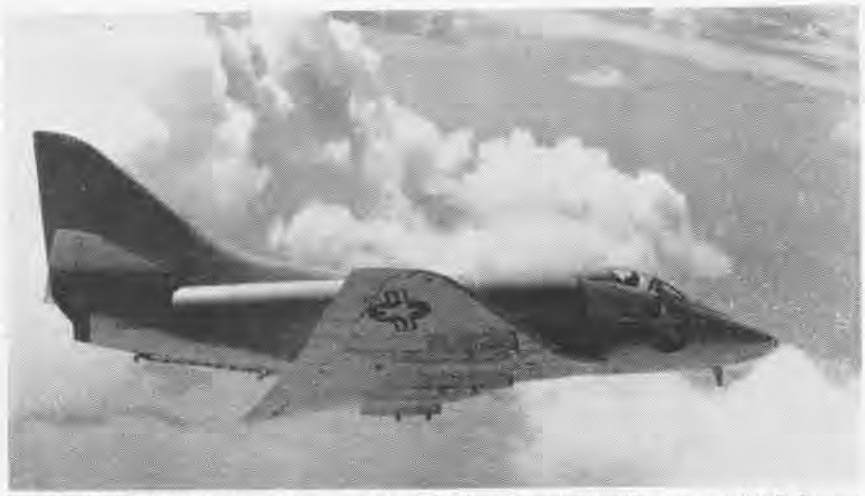
Ream Field, self-styled 'Helicopter Capital of the World,' is the home base for all ASW helicopter squadrons on the West Coast. Training in helicopter operation and maintenance is continually under way at this bustling Southern California base. Two-week courses based upon utilization of the Maintenance Trainer, have been initiated.

These courses are designed to encompass all facets of the Maintenance Trainer's three components — flight control, electrical, and engine panels. The classes, intended for the support of fleet air units, are being taught by a team of six instructors from Naval Air Mobile Trainer 1092. This group, operating under the supervision of LCdr. E. J. Purtzer, area representative for the Naval Air Mobile Training Detachment, is a unit of the Naval Air Technical Training Center, Memphis, Tenn.

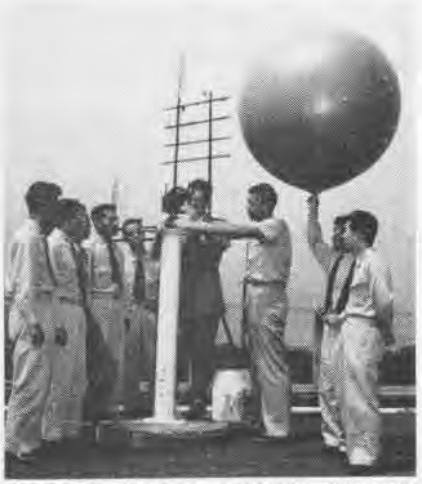
At the discretion of the helicopter squadron commanding officers, individual pilots, crew members, mechanics, and machinists will be selected for attendance at the two weeks' courses. The size of each class will range from six to 12 men, with all participants devoting a full eight hours a day to the school.

The comparatively small number of students per class makes it possible to stress detailed personal instruction and group discussion. Maximum use is being made of the HSS-1 Maintenance Trainer, with maximum benefit to both flight and ground crews.

Commanding Officer of Ream Field at this time is Cdr. A. A. Giesser, USN.



THE DOUGLAS *A4D Skyhawk is now in the FIP, Fleet Introduction Program, at NAS Quonset Point, under direction of NATC Patuxent. Cdr. M. E. Stewart, A4D project officer for the Service Test Division of NATC, will head the FIP trials. This is last step before fleet deliveries.*



HERHUSKY TEACHES JAPANESE STUDENTS

Japanese Officers Trained

Meteorology Course Given at FWC

Nine Japanese Maritime Self Defense Force personnel are undergoing a 16-week applied meteorology course at Fleet Weather Central, U. S. Fleet Activities, Yokosuka, Japan. Four officers and five petty officers began the course July 16.

Under the direction of Ltjg. L. J. Swiatkowski, and Chief Aerographer's Mate John F. Herhusky, USN, the course opens with theory, and applied meteorology is gradually worked in. About the fourth week, the students began standing watches with the Fleet Weather Central duty officer where they observe standard procedures. This on-the-job training with U. S. Navy personnel prepares them for weather work in the JMSDF.

The curriculum includes general meteorology; meteorological codes; surface and upper-air observations; Fleet Weather Central broadcasts; principles and techniques of surface analysis; constant-pressure charts; principles and techniques of forecasting surface weather; severe weather (typhoons, thunderstorms, fog, etc.) and practical applications.

Most of the students already have some knowledge of the English language, and Ltjg. Swiatkowski conducts English lessons to simplify classroom work. However, despite the language barrier, Chief Herhusky says the students are intelligent and are eager to learn. "We manage to get along pretty well," he adds, "and the work is tremendously interesting."

Ranger Launching Planned
Third Forrestal-Class Carrier

The Navy planned to launch the third *Forrestal*-class aircraft carrier, the USS *Ranger*, on September 29 at the Newport News Shipbuilding and Dry Dock Company.

The 1,046-foot *Ranger* is equal in length to the *Saratoga* which joined the fleet in April, and seven feet longer than the *Forrestal*, in service more than 10 months.

Even more up-to-date than her sister ships, the *Ranger* boasts major advances in her weapons-handling equipment, and an all-welded aluminum port elevator.

Named after the first ship ever completely designed and built as an aircraft carrier, the new CVA-61 will slip out of dry dock 26 months after her keel was laid on 2 August 1954.

New Technique at NRL
Method Cuts Cost and Man Hours

What was once a complex cutting operation requiring 80 man-hours can now be accomplished in four man-hours. A new machining technique was developed by Harold E. Pryor, instrument maker at the Naval Research Lab.

The new method permits the nose cones of high altitude rockets to be cut with greater precision and ease. Built at a cost of $116.80, the machine is

PRYOR DEMONSTRATES HIS NEW TECHNIQUE

expected to save NRL $6000 in its first year of operation.

With Mr. Pryor's simple method, the cone is rotated on a true axis, and the skin is cut with a circular saw. Formerly, much time was lost in checking that the cut was true to the center line and square to the rocket's base. The new method assures perfect alignment by use of special rollers and end-plates.

The new device not only saves time, but also eliminates the use of equipment needed for other vital operations.

DECELERATION *parachute, now being fitted to all production A3D Skywarriors, reduces roll-out of the Navy's largest carrier-based bomber. Designed for a normal touchdown speed of 150 knots and an emergency speed of 170 knots, the 'chute has proved its value in making landings on wet runways, during GCA landings, or on emergency landings made with high gross weight. Actuated by a single electrical switch, the pilot-controlled 'chute is deployed after touchdown. It is for landing conditions on land only and is not intended for shipboard use.*

Contract Awarded To Todd
APA To Have Helicopter Platform

Within the next few months, the first attack transport equipped with a helicopter landing platform will join the operating fleet.

A contract amounting to $10,110,000 has been awarded to Todd Shipyards Corporation of San Pedro, Calif., for the conversion of the Maritime Administration ship SS *Diamond Mariner* to an attack transport, to be designated APA 248.

One of the major items of conversion will be the installation of a helicopter landing platform on the after deck.

An APA's missions are primarily to combat-load, transport, land a battalion landing team with its essential assault equipment, and to furnish it with supplies on a hostile beach by means of embarked landing craft. The services of the helicopter, operating from the landing platform, will greatly expedite the transport's missions, and may be expected to expand them. Evacuation of the wounded will certainly be hastened.

The fleet already has one attack cargo ship equipped for helicopter operations, the *Tulare*, operating with the Pacific Fleet. This AKA is also a converted *Mariner*. Built for the Maritime Administration after the Korean war, this group of cargo ships is the largest and fastest of the cargo carrying vessels owned by that Administration. The *Diamond Mariner* has an overall length of 563 feet, a beam of 76 feet, and speed, 20 knots.

AFTER MISSING *a pendant on the flight deck of the carrier USS Forrestal (CVA-59), this AD-6 Skyraider pilot guns his engine for take-off from the super carrier's angled deck.*

Scientists Lower Boom
Investigate Sonic Shock Waves

In an attempt to alleviate sonic booms, the cause of shattered windows and unnerved citizens, the Wright Air Development Center, Wright-Patterson AFB, is studying the situation.

Scientists at Armour Research Foundation of Illinois Institute of Technology are carrying out one phase in the study of this phenomenon, caused by airplanes exceeding the speed of sound.

The motion of the aircraft and the disturbances it produces in air pressure brings about the boom. When the plane achieves a speed faster than sound, it creates shock waves which are merely strong sound waves. Factors influencing strength of shock waves are plane speed, size and shape of the craft, and the height at which it is flying.

From data gathered in this study, scientists may be able to specify altitudes and speeds for certain meteorological conditions at which damage from shock waves may be eliminated.

LETTERS

SIRS:

In the issue of July 1956, the caption accompanying the two pictures of the T-28C on page 39 states that the plane took off from the *Forrestal*, but in the take-off picture, the AA tubs and the five-inch guns of an *Essex* class carrier are easily visible.

ALFRED J. RANK

NEW YORK, N. Y.

¶ You're right, Mr. Rank, it was the CVA-40, USS Tarawa.

SIRS:

This is unofficial and in lieu of a highly desirable visit to the editorial offices of your excellent publication. We here at this flying training center enjoy it immensely and must confess that your high standards are the goal of our own Army Aviation Digest.

WILLIAM E. VANCE, EDITOR

Fort Rucker, Ala.

Radar Tracks Hurricane

FWC Miami Watches Betsy Caper

The AN/CPS-9 radar at Fleet Weather Central, Miami, established what may prove to be a record when hurricane Betsy traveled up the Bahamas in August.

Betsy was initially detected at a range of 293 miles and presented a perfect scope picture for the next 26 hours, until she was lost at 269 miles. During the period, she came within 203 miles of Miami. No other South Florida area radar was able to detect the eye of the hurricane in its course.

Half-hourly Polaroid photos were taken during the entire period, and the sequence should prove valuable to Naval meteorologists and scientists.

Capt. F. A. Davisson, O-in-C, commended technicians R. G. Wooster, ET1, and S. T. Martin, ET3, after the feat.

RADAR PHOTO OF BETSY 'EYEING' MIAMI

CAPT. DAVISSON, MARTIN, WOOSTER (R)

School Days on Coral Sea

Every Crewman a Graduate is Goal

It's "back to school" on the *Coral Sea*. With a high-school educated *Coral Sea* as the laudable goal, the ship's skipper, Capt. W. E. Gentner, Jr., has initiated a mass educational program aboard the CVA-43.

Ship's personnel without a high school diploma, who are not eligible to take the General Education Development tests are enrolled in science, English, math and history classes. Students average three classes per week in each deficient subject.

IFR-IQ?

According to OPNAV Air Traffic Control Procedure Section, the answer is: Time, plus or minus five minutes; Distance, ten nautical miles in a domestic ADIZ and 20 nautical miles in a coastal ADIZ; and altitude, no deviation without prior notification to an appropriate aeronautical facility, except that descent may begin within a reasonable distance of destination without report.

Ref: SFID dated 1 Jan. 1956, page 139.

CONTENTS

COVER

Smiling Cdr. R. W. 'Duke' Windsor poses in cockpit of the Chance Vought F8U Crusader in which he set a new national speed record and won for the Navy the Thompson Trophy.

SUBSCRIPTIONS

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'COPTERS TESTED FOR SHIPBOARD TEAMWORK

HSS-1 LOOKS AT HOME ABOARD THE USS NEPTUNE WHILE PAX TEST CREW CONFERS WITH SHIP'S OFFICER

HUL-1 ON DECK OF NEWPORT NEWS DURING TESTS

KAMAN HOK-1 SETTLES ON DECK OF THE SAME SHIP

NAVAL AVIATION NEWS

Above is XKDB-1 Target Drone. It is radio-controlled, with no pilot needed. But today's complex aircraft, with their wide variety of missions, do need pilots, highly trained pilots. Naval Aviators fly the best and safest equipment, and it is a combat-proven fact that they get the best training possible. As aircraft technology advances and tomorrow's planes become more complicated, that training assumes even greater importance. Navy training keeps up with these advances. Get the best. Be a Naval Aviation Cadet. Make a call on your nearby Naval Air Station or Navy Recruiter.

TAKE THIS TIP! BE A NAVCAD