

NAVAL AVIATION

NEWS



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ANGELS: SEVENTH EDITION



Hardhats, faces and flying machines have taken on a new look in the Angel loft these days as Naval Air's No. 1 team goes TAD on the demonstration circuit. As shown in the accompanying photographs, newest edition of famed Blue Angels took a break to illustrate precision and teamwork which made their name a world-wide byword for the ultimate in close flight maneuvering at minimum altitude. Now operating the supersonic Grumman F11F Tiger, the Team, under new Archangel Cdr. Ed Holley faces busy schedule of flight demonstrations from coast to coast.



- ★ LT. HERB HUNTER
- ★ LT. NELLO PIEROZZI
- ★ LT. SHELDON SCHWARTZ
- ★ LTJG. BOB RASMUSSEN
- ★ CDR. ED HOLLEY
- ★ LT. THOMAS JEFFERSON



WINDS, WEATHER AND WARSHIPS

WEATHER HAS had a critical and lasting effect on history whether one thinks of Noah's ark, the campaigns of Caesar, the defeat of the Spanish Armada, or the Battle of Britain. Through the centuries, military men have scanned the skies, seeking the precise moment of advantage.

In the last 50 years, the scientific development of meteorology has made predictions increasingly reliable. "On-the-spot" transmission of weather reports all over the world has built up a solid source of information available to the forecaster. In wartime, such data is critical.

Samuel Eliot Morison, distinguished Naval historian, wrote of Normandy Invasion, 1944:

"At 0330 Monday 5 June, General Eisenhower turned out for the final weather conference. His trailer camp was shuddering under the force of

the wind, and the rain seemed to be driving horizontally. The low north of the Shetlands was filling up; the weather front was clearing across southern England. The RAF meteorologist predicted a fair interval of two days, starting early 6 June.

"'Ike' listened to final comments, paused a moment, and at 0415 June 5 made the great decision: 'O.K. We'll go.'"

Back of the forecast was a vast network of weather stations manned by thousands of officers and men of the military services of the Allies, each doing his part.



AG RELEASES PILOT BALLOON FOR STUDY



HYDROGEN GENERATOR SHELTER IS MANNED ON PACIFIC ISLAND



WEATHER HUT AT LITTLE AMERICA BECAME BURIED UNDER SNOW

TODAY THE WEATHER service of the U. S. Navy has achieved new stature as a special division. Op-58 has been created in the office of the Deputy Chief of Naval Operations (Air) and is called the Naval Weather Service Division. It is under the direction of Capt. Paul R. Drouilhet. Its sphere of action and service is the Fleet: air, surface and sub-surface. The Weather Service enters its mission with a rich background of 40 years of experience.

The development of instrumentation, the standardization of data on a national and international scale and, most of all, rapid communication systems, were required before the U. S. Navy could provide the kind of service needed. The introduction of automation and high speed computers makes possible today a high standard of accuracy. Year by year, the service has advanced on every front, and it is a far cry now from the early days of World War I.

What was primitive in 1917 has become today a highly organized enterprise. At that time, the Navy had no officers with special training in meteorology and no instruments except ship barometers, wet and dry bulb thermometers and mast head anemometers.

The Navy was by no means the first to collect weather data in order to make weather forecasts for military operations. Napoleon III of France had taken steps to bring weather maps into regular use in the 1860's. During the Crimean War, a storm hitting unexpectedly in the Black Sea seriously damaged the French Fleet operating there.

The scientist the Emperor turned to was the astronomer,

Leverrier, who had recently won world fame by forecasting the existence of a new planet, Neptune. Napoleon III decided that Leverrier might well put his scientific training to work to discover a method of predicting something as local as storms and weather. He placed upon Leverrier the responsibility of organizing a system of weather forecasting.

Using primitive surface weather maps and a postmortem technique, Leverrier soon discovered that the storm could be traced from one map to another and concluded that by having a large number of reporting stations and some speed in transmitting the information to a central office, one could plot, analyze and finally predict a storm from chart to chart.

There was a great deal of enthusiasm and optimism expressed for such a method, but the problem of forecasting turned out to be more intricate than it seemed to be at first. Interest declined, and it was not until World War I that the problem of weather forecasting was again seriously tackled on a rational scientific basis.

The need for it was convincingly demonstrated by the North Sea Campaign when adverse weather conditions sabotaged repeatedly the efforts of both the German and British fleets. Furthermore, weather conditions significantly affected the success of aircraft operations, gas attacks, and air raids made by zeppelins.

When the United States entered World War I, it was not possible for the U. S. Weather Bureau to provide the specialized types of forecasts required for various theaters of operations. The only expedient was to furnish the armed forces with equipment and trained meteorological personnel.

Assistant Secretary of the Navy Franklin D. Roosevelt in December 1917 asked a friend, Dr. Alexander McAdie, Director of the Blue Hill Observatory, Harvard University, to enroll in the Naval Reserve for the purpose of organizing a Naval Aeronautical Organization.

Asst. SecNav Roosevelt's proposal was implemented January 25, 1918 when a letter from the Acting Supervisor of the Naval Reserve Flying Corps to the Bureau of Navigation, requested the enrollment of Dr. McAdie in the Navy as a lieutenant commander. It was signed by none other than Lt. J. H. Towers, USN, one of the "early greats" of Naval Aviation and ultimately, in World War II, Chief of



BASEBALL AND EGG REVEAL SIZE OF HAILSTONES IN KANSAS

the Bureau of Aeronautics and Commander Air Force Pacific Fleet.

An intensive course in meteorology for Naval Officers was inaugurated at Blue Hill in connection with the aviation ground school at the Massachusetts Institute of Technology, Cambridge, Mass. A school for enlisted personnel was organized at Pelham Bay, N. Y., to provide weather observers and assistants. In a short time, weather units were set up at all Naval air stations, each unit coming under the direction of the station commanding officer.

By the end of WW I, 50 officers and approximately 200 men manned 26 stations in Europe and five in the United States. A year later, demobilization reduced the number of trained personnel on duty to approximately eight officers and 12 enlisted men. A few years later a long memorandum from the Chief of the Bureau of Aeronautics to the Chief of the Bureau of Navigation on the subject of aerological officers opened with this plaintive comment: "This Bureau has from time to time called attention to the serious shortage of aerological officer personnel." This has been heard again and again, even today.

In 1919, the Naval Aerological Service was established in the Bureau of Navigation where in terms of what was then deemed appropriate, it was combined with the Photography and Pigeon Section. Two years later, Navy Aerology was transferred to newly organized Bureau of Aeronautics.

As time marched on and demands for aerological officers increased, the need for postgraduate instruction in meteorology was evident and plans were made to meet it. In 1928, eight aerological officers were graduated from MIT and the number increased gradually from that time on.

Later, similar courses were given at the University of Chicago, California Institute of Technology, and New York University. Present training is concentrated at the U. S. Naval Postgraduate School at Monterey, California.



CAPT. DROUILHET, WEATHER SERVICE CHIEF

December 1941 found the Naval Aerological Service with 124 units, manned by 90 officers and 600 enlisted personnel. During WW II, the service increased rapidly and reached a peak of 1588 units, 1318 officers and 5000 enlisted personnel. By that time, too, Naval Aerology had become part of the office of DCNO(Air) because of its importance to naval operations.

With the end of WW II, operational requirements decreased rapidly. General demobilization and the trend toward economy reduced the number of aerological units to 271 by May 1950. These were manned by 221 officers and 1470 enlisted personnel.

The Korean War meant immediate expansion of the organization. At its peak in 1953, there were 386 officers and 2275 enlisted men. The figures are now about 400 and 2000 respectively.

Thirty years ago a description of the function of the Naval Aerological organization read as follows: "It should furnish that weather information which, because of its tactical application has a value peculiar to Naval needs. It should provide local upper air data and similar information which can be obtained only by observations on the site of operations. It should provide also a general weather service including storm warnings, etc., for the Fleet at sea where weather forecasts from general sources are not available. Its advices and data should be presented in such form as will enable Naval forces not only to lay plans which will minimize the influence of unfavorable weather, but also will enable them to utilize to the best advantage whatever favorable aspects exist in the weather situation. Finally, the naval aerological organization should make its observations available to general meteorological interests so far as practicable, and in other ways assist in the development of meteorological science."

Except for the enormous increase in scope, this definition of function might stand substantially as a description of



WEATHER MAPS FROM WASHINGTON ARRIVE BY RADIO FACSIMILE



AEROGRAPHERS DECODE RADIO WEATHER REPORT ABOARD SHIP



RARE PHOTO OF A WATERSPOUT, LITERALLY A TORNADO AT SEA

the work of the service today. The new requirements grow out of the tremendous advance of the U. S. Navy in the field of nucleonic, electronic and supersonic capabilities. Everything is far more complicated than ever before, and weather, unchanged in its constant variety, must be regarded more than ever as a significant factor.

The close association of weather and aircraft operations made the title of the U. S. Naval Aerological Service logical enough in the early days. But the U. S. Naval Weather Service is a more accurate description of its mission now. As its new title implies, this organization stands ready to provide all the Fleet from aircraft carriers to fleet support ships, from great bases to outlying auxiliary units, with weather analyses and interpretation that are important to the efficient execution of its missions.

Early in July, the Chief of Naval Operations established five Fleet Weather Centrals in place of the 14 that have operated the last several years. This was done in order to concentrate personnel and equipment at certain strategic points to meet world wide commitments. By establishing

fewer centrals with enlarged areas of responsibility, personnel are in a better position than ever before to handle multiple weather tasks and assignments.

The weather centrals are so located as to give maximum service. Manned by highly trained personnel and using the very latest communication and analysis techniques, these Weather Centrals command a world view of weather. Each one is directly responsible to the major fleet commands: The Fleet Weather Centrals at Guam, Kodiak, and Pearl Harbor are under the Commander in Chief, Pacific Fleet; the Central at Port Lyautey under the Commander in Chief, Northeastern Atlantic and Mediterranean; and Washington, under the Commander in Chief, Atlantic Fleet. Each Central is headed by a Commanding Officer.

These Weather Centrals, assisted by a large network of secondary activities, Fleet Weather Facilities, and even smaller shipboard and staff weather units, are responsible for specific and general meteorological and related services to the Naval Establishment and oceanographic forecasts to the Armed Services of the Department of Defense.

In the United States, the only federal activities providing weather services are the U. S. Army, U. S. Navy, U. S. Air Force, and the Weather Bureau. These agencies constantly work together to improve their exchange of vital information. The Meteorological Sub-Committee of the Air Coordinating Committee coordinates weather matters for civilian consumption, while the Joint Meteorological Committee under the Joint Chief of Staff does the same for the military services. Since substantially the same meteorologists serve on both committees, there is bound to be no major conflict of interest or system. By instituting standardization in practice, the civilian and military organizations are able to provide each other with valuable data.

Not only is the U. S. Naval Weather Service linked with major meteorological groups in the United States, but it works with such organizations all over the world. Weather knows no international boundaries and moves over land and sea whether in the tropics or polar regions, in such a way that the weather in Canada today is the weather in the United States tomorrow. It moves eastward across the Atlantic Ocean toward England and then on to Europe.



RADAR PHOTO, SHOWING EYE OF TYPHOON



CUMULUS CLOUD TOPS AS SEEN BY PILOTS



PBY NAVIGATOR WITH RAF METEOROLOGIST



CARRIER SKIPPER STUDIES THE WEATHER BEFORE MAKING STRIKE



WEATHER LIKE THIS SERIOUSLY AFFECTS PLANE LAUNCHINGS



SNOWFALL LITERALLY COVERED THIS CUTLASS AT NAS ATSUGI



HURRICANE HUNTERS STUDY CHARTS BEFORE FLYING INTO STORM

TO TAKE ADVANTAGE of this characteristic of weather and to forecast its movement has required the development of instrumentation, much faster communication procedures and standard methods of data collection and treatment. Internationally, one stumbling block had been non-standard practices. At one time, each country has its own system for reporting weather data and transmitting them, and this made the exchange of weather information complicated. Without standardization, each country had to take into account the idiosyncracies of practices of other countries before the weather data were usable.

One direct result of trying to overcome the difficulty of using this hodge-podge was that the directors of several meteorological organizations of various countries, haltingly at first, but still determinedly, created an informal international group called the International Meteorological Organization (IMO) in the year 1878.

Within the framework of this international body, scientists set out to standardize the types of observations, the codes for transmission, and the methods of portraying weather on maps. This organization succeeded in its purpose and after World War II and the birth of the United Nations, it was given official status as one of its agencies.

It became known as the World Meteorological Organization.

The Director of the Naval Weather Service is an appointed member of the Commission of Maritime Meteorology, one of the eight technical commissions of the WMO. In addition, from time to time, officers of the Naval Weather Service act as advisors to the U. S. delegations in connection with WMO regional or commission meetings and the working groups associated with it.

The interchange of data is tremendously important. Only data drawn from similar instruments translated in standard notations at regular intervals are truly comparable. Fortunately, most of the difficulties have been ironed out, so that nations and services represented in the WMO are finding their knowledge of weather phenomenon steadily increasing.

Cooperation between the several NATO nations contributes to the art of forecasting and the exchange of ideas and information thus advances the science of meteorology.

Coordination of NATO meteorological matters is accomplished through Standing Committees within the NATO Organization. The objective of the organization is to make data and equipment interchangeable, so that the services of the various NATO nations can operate together efficiently.

THE MILITARY importance of weather was dramatically stressed again and again in World War II. Often weather was a vital factor in the outcome of an engagement. In the Atlantic, the weather and sea cooperated with the German U-boat in the almost successful attempt to cut the life lines to Europe. Improved methods of antisubmarine warfare finally turned the tide; but this was not without the technical know-how of meteorologists and oceanographers in predicting the changes in the atmosphere and ocean, particularly at the interface of the two where submarine and antisubmarine forces clashed.

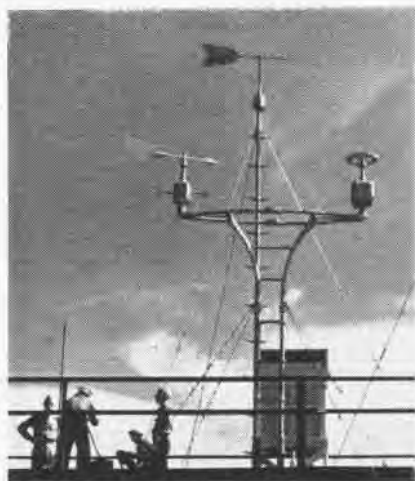
The allied landings at Normandy, as has already been indicated, climaxed the efforts of meteorologists in the Atlantic phase of WW II in which their successful predictions, under extremely critical weather conditions, contributed heavily to victory. This was true also of the assaults on North Africa and Sicily.

In the Pacific, weather factors were involved in almost all engagements. The attack on Pearl Harbor had us on

with unlimited ceiling and visibility practically guaranteed bombing efficiency.

As the task force headed for Rabaul, headwinds gave our airplanes the advantage of take-off in the correct direction and at the shortest aerial distance to the target. The task force commander thereupon utilized the wind direction change occurring on the two sides of the front. He simply steamed south of the wave and thus permitted the task force to start its withdrawal swiftly while at the same time headwinds were provided for retrieving our planes. So perfectly coordinated were the task force, the attacking planes and the weather that it merited the comment, "An angel was riding the yardarm!"

But weather forecasts and meteorological information are not limited to military operations. The Navy has many other programs and projects which require tailored forecasts. For example, the annual Arctic Resupply Operation which includes ice reconnaissance relies on meteorological data for efficient planning. Picket ships and barrier flights



WEATHER INSTRUMENTS OVER AIR STATION



RAWINSONDE BALLOON LAUNCHED AT SEA



TRANSOSONDE BALLOONS OVER MINNESOTA

the receiving end of a blow dealt after frontal weather had concealed the approach of the Japanese. Later the decisive battle of Midway was an example of weather conditions used to advantage by both forces, but to the ultimate greater benefit of U. S. forces.

At Midway, the Japanese had managed to get within 600 miles of the island using a storm that covered their approach, but at the critical moment of attack, the front disintegrated and they were exposed to our land-based and carrier-based aircraft. As a result, the Japanese Navy suffered its first decisive defeat in 350 years, a foretaste of things to come.

In November of 1943 occurred a perfect example of ideal conditions for a carrier-based attack on the enemy. An intertropical front lay in the vicinity of the spot from which U. S. airplanes were to be launched against Rabaul. The task force was safely protected by the frontal clouds. The clouds were sufficiently low to prevent detection by enemy scouts, but not so low as to hamper our pilots in their efforts to leave or return to base.

At the same time, the target Rabaul, west of the front, was wide open to our aircraft. Excellent flying weather

need forecasts, involving not only the customary ones of sea state, temperature, wind, etc., but also the refractive index which determines radar search capability. And a regular requirement, one which is of constant interest to the military and public alike, is hurricane and typhoon forecasts.

In the field of climatology, the U. S. Navy has made a recent, important contribution. It has published the first two volumes in a seven-volume series to be known as *The U. S. Navy Marine Climatic Atlas of the World*.

The atlas is designed to give an operational command the general trend of operating conditions likely to be encountered at the surface and aloft over the ocean areas of the world. In the absence of specific data newly gathered, he can use this information on a calculated risk basis. That is, it will show him what is likely to occur. It is, in short, a carefully determined "guestimate."

Volumes I and II cover the North Atlantic Ocean and the North Pacific Ocean. Volumes still to be published will cover the Indian Ocean, South Atlantic, South Pacific, Arctic and Antarctic.

It is only in recent years that it was possible to pre-

pare such a thorough atlas. During the last decade, the ocean station vessel program conducted by various maritime nations of the world under international agreements has provided data from which various studies and statistical tables have been prepared. For the North Atlantic Atlas, the number of observations available for summarization was on the order of 9,000,000.

The atlas was prepared under the supervision of the U. S. Naval Weather Service (Op-58) on a contractual basis with the U. S. Weather Bureau. The work was done at the National Weather Records Center, Asheville, N. C.

Publication of the first two volumes has brought forth exceedingly favorable comment. Dr. H. Flohn, head of the Research Division of the German Weather Service, says, "The amount of information which can be gained from this new type of atlas is truly astonishing and the program is admirable. With this material one can now undertake studies of dynamic climatology in a scope much larger than before."

Not the least of the responsibilities of the U. S. Naval

In the field of weather forecasting, one of the most promising developments takes the form of the Joint Numerical Weather Prediction Unit at Suitland, Maryland. It is staffed and supported jointly by the Weather Bureau, Air Force and Navy, but credit goes to the Navy for the original impetus in inaugurating the program and supporting it.

Core of the program has been an IBM 701 computer, and a still newer computer is now being installed. Numerical techniques for the analysis and forecast of weather have been under steady development, and it is now possible to feed raw weather data from teletype machines into the computer. In a matter of minutes, an analyzed weather map emerges from the machine untouched by human hands. At present, the machine can do as well as a large group of plotters and analysts in preparing the forecast for the entire northern hemisphere at 500 millibars (about 18,000 feet), but the combination of skilled analysts and machine analyses provides better forecasts than either could alone.



GRASSHOPPER IS READIED FOR AIRDROP

WHEN DROPPED FROM PLANE, GRASSHOPPER WILL TRANSMIT IMPORTANT WEATHER DATA

Weather Service is research. The development of special meteorological equipment was given tremendous impetus during WW II when electronics provided a means of taking upper air observations and reporting weather by remote means. The rawinsonde which gives needed information on the upper atmosphere, the automatic weather station which is placed at isolated points, various instruments which are used in conjunction with radar, were all developed by constant research and experiment.

Only recently Transosonde balloons have been making their way across the Pacific to give Navy meteorologists weather data. (See *NANews*, June 1957, p. 1.) Also available are the aerograph, wiresonde and rocketsonde, the latter giving us important data at levels which cannot be reached by balloons.

Long range forecasting was one of the primary problems to be faced at the outbreak of WW II. The normal 24- or 48-hour forecast was not sufficient for planning purposes, so the Navy Long Range Weather Forecasting Unit was established. Today "five-day" forecasts are very nearly taken for granted as reasonably accurate predictions of weather to come. Even longer forecasts are envisioned.

One of the programs for meteorological research founded by the Navy is a Bureau of Aeronautics project called AROWA (Applied Research; Operational Weather Analysis). The purpose of AROWA is to take the results of academic research and put them into practical form for the use of the Navy.

AROWA assignments are many and varied. For example, studies include: improved forecasting of radar and sonar propagation techniques, ballistic wind computations, improved hurricane and typhoon forecasting techniques; and aids to forecasting for Arctic and Cold Weather Operations.

In recent years the task of the U. S. Naval meteorologist has become more varied and complicated. In sea and air operations he is an integral part of the team. His language, whether concerned with sonar, ice forecasting, testing of nuclear weapons, guided missiles or rocketry, is understood by commanding officers, and there is virtually no operation in which weather advice is not needed.

Experience, research, and constant experimentation makes the U. S. Naval Weather Service ready to contribute its part in the program of national defense. It is ready to meet the problems inherent in winds, weather and warships.



GRAMPAW PETTIBONE

Tiger Trap

After finishing his duties as chase pilot for another *Cougar* during a fam hop, the pilot made a simulated attacking maneuver on a flight of four F-80's at an altitude of 20,000 feet. Following the second attack, the flight of F-80's joined the simulated aerial combat.

After the jets had lost altitude down to 8000 feet during a period of air-to-air combat, the *Cougar* pilot rolled his plane to an inverted position and commenced a split-S. During the pull



through to recover, the aircraft struck the ground in a nose-high, right-wing-down attitude on a flight path of 30 degrees. The *Cougar* exploded on impact and disintegrated.

The accident board considered the primary cause of this fatal accident to be the pilot's attempt to perform an evasive maneuver with insufficient altitude to permit recovery. The board also stated that undoubtedly the pilot's immediate attention during the engagement was directed toward evasive maneuvers, and the fact that he attempted a split-S from so low an altitude would tend to bear this out. There is also the possibility that the pilot misread his altimeter.



Grampaw Pettibone Says:

It was well known around the base that the pilot was an eager aviator, a tiger who was extremely interested in his flying duties. But a really professional tiger doesn't let his zeal lead him into a trap. This



lad's inability to resist engaging in unbriefed, unscheduled, simulated combat with the four USAF jets cost him his life. The law is spelled out very clearly in paragraph 7 on page 25 of OpNav Instruction 3710.3A:

"a. Naval aircraft shall not simulate aerial combat with other naval aircraft except in the course of duly authorized operations and then only after all participants have been thoroughly briefed on the conduct of the flight.

"b. Unscheduled simulated combat between naval aircraft and aircraft of any other Service or registry is forbidden."

Reading and following rules is easy, but I wonder how many more pilots will have to learn the *hard* way that the rules were meant for everyone?

Memo from Gramp:



When getting your pre-flight briefing, don't be like a blotter: soaking it all in and getting it all backwards.

The Bounding Mains

Following a normal approach for landing, an SNB-5 touched down, bounced badly on the main gear, and began to porpoise down the runway. The pilot added power after the *fourth* bounce and took it around for another approach and an uneventful landing. Investigation after the flight revealed that both propellers had contacted the runway during the hard landing and suffered scraped and damaged tips.

The CO of the NAS attributed the accident to the pilot for his poor flare out and landing technique and his



faulty recovery procedure from a porpoising condition. He stated that the pilot would be given additional instruction and checkout as to proper landing technique.



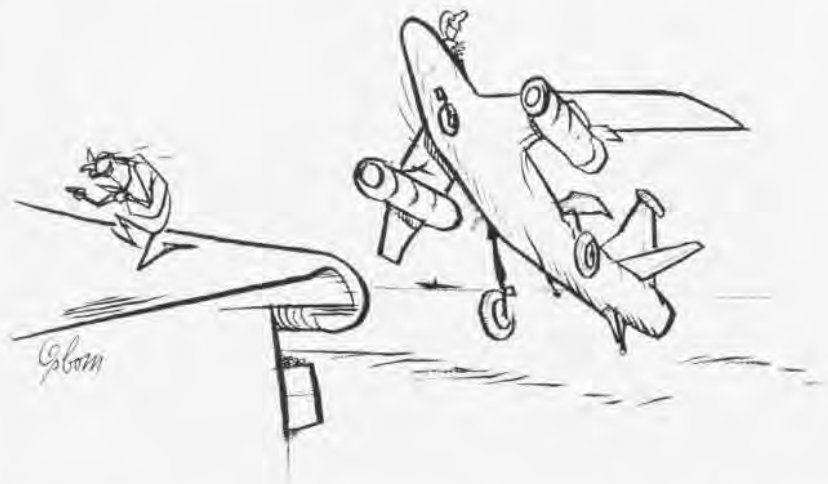
Grampaw Pettibone Says:

If this aerial jockey with the buckin' Beech had ever been to the seashore, he should've noted that sure as night follows day one porpoise follows another.

I figger it shouldn't take more than a couple of caroms to clue a pilot that the higher they bounce the harder they hit. He's lucky he only squared off his props before he squared himself away.

Home to Roost

The following was excerpted from the minutes of one of the safety councils: "Pilot executing flame-out approach after loss of oil pressure and encountering engine vibration under-shot runway and crashed in the water. The pilot had by-passed two good fields in an attempt to return to home base." Apparently, this bird never heard the old saw, "A bird in the hand is worth two in the bush."



Ramp Rammer

One afternoon three A3D-2 *Skywarriors* were launched from an angled deck carrier. The three planes of the flight joined the landing pattern immediately after launch and started to practice mirror landing approaches to wave-offs since the fuel state was too high for touchdowns.

One plane reached landing fuel state after two touch-and-goes had been made, and the pilot was advised to lower his hook on the next pass for an arrested landing. On the first touch-and-go landing, the pilot disregarded a wave-off signal from the LSO. On the second, the aircraft touched down short of the number one wire.

The third approach was normal until the aircraft was approximately 1000 feet out on the approach path. At that point the *Skywarrior* began settling below the descent path, and the LSO notified the pilot. The pilot responded by raising the nose attitude without adding power. He was then given a wave-off signal both by lights and radio. However, the pilot again increased the nose-high attitude without adding power. At this time, the deck changed from a steady deck at the stern to a rising deck.

In an extremely nose-high attitude, the A3D struck the round-down of the flight deck ramp with both the main gear and fuselage section aft of the main gear. The impact broke the empennage and ruptured the main fuel cell. The aircraft bounced upward onto the flight deck, slid a short distance, then became partially airborne before again striking the deck. Fire

broke out in the ruptured main fuel cell, and the burning wreckage slid off the angled deck at the outboard edge of the number two elevator. Of the three occupants aboard the aircraft, only the body of the bombardier/navigator was recovered.

The aircraft accident board felt that the pilot's disregard of or failure to notice the wave-off signals was influenced by his desire to be the first operational squadron pilot to land an A3D aboard a Pacific Fleet carrier, and that the pilot, in his own judgment, considered that the landing could be made safely. It was further believed that when the rise of the stern of the carrier became apparent to the pilot as the aircraft neared the ramp he further rotated the nose of the aircraft, thereby increasing the rate of descent and causing the aircraft to strike the round-down.

The following is excerpted from the squadron CO's endorsement on the accident report: "[He] was known to be a professionally competent naval aviator. His reason for ignoring the wave-off signals is not known. It can be reasoned that he failed to see the signal because of concentration on some other phase of the landing such as line-up, or that he shifted his attention to the deck from the mirror pass.

"As a means of preventing the recurrence of this type of accident it is recommended that the right seat occupant in the A3D monitor the mirror all the way to the deck and be prepared to give the pilot a positive hand signal (a slap on the shoulder) if he sees a wave-off signal is being given."



Grampaw Pettibone Says:

And while we're discussing carrier landing accident prevention, it seems to me that a few misguided pilots are tending to think of the LSO as just an advisor. They couldn't be more wrong!

In spite of the increased emphasis on the mirror landing system and the relative safety of the angled deck, the waveoff given by the LSO is still absolutely positively mandatory today as it was back when F4B-4's were being brought aboard. Offenders were hung from the yardarm, summarily landed aboard and thoroughly dressed down, or were sent to the beach. The LSO's job is more difficult when dealing with today's modern aircraft, but he's still an MIG—Mighty Indispensable Gent who Mustn't be Ignored in the Groove.

For long life, happiness, and retirement benefits, pilots should place self-preservation above pride, for it's well known that pride goeth before the fault.

For the Birds

While the helicopter was being air taxied, two main rotor tips of an HRS-3 struck some small trees. A precautionary landing was made, and the damage was determined to be minor.



Neither of the pilots had seen the trees which suddenly got in their way. They were subsequently re-instructed concerning the necessity of continual vigilance of both pilot and copilot while in close proximity of trees.



Grampaw Pettibone Says:

Like the high-jumping jack rabbit said when he made contact with a tree branch, "This is for the birds."

And he didn't mean whirly-birds.

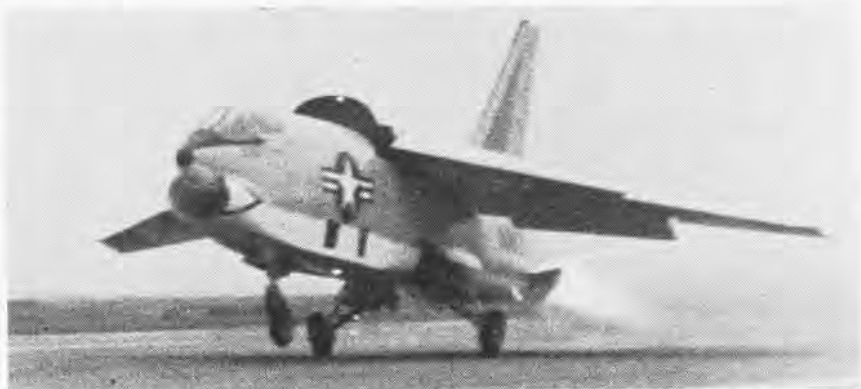
'BULLET' SETS TWO RECORDS

OPERATION BULLET, which saw Major John H. Glenn, USMC, aim his supersonic *Crusader* on a highly publicized, record-smashing speed run across the U. S. recently, established another record of sorts. This latter, albeit unofficial, is attributed to the project team that had but two weeks to level a mountain of problems in shaping the ground work and precise planning preceding the epic flight.

Headed up by RAdm. T. B. Clark, Commander, Naval Air Test Center, Patuxent River, and Cdr. Jess Barker, Service Test Division, NATC, the highly specialized group composed of both military and civilian representatives commenced initial planning a short two weeks prior to the actual target date for the attempt.

Into these two weeks was ground a crash program designed to provide optimum readiness of all supporting agencies concerned with the split-second operating schedule as well as pilots and aircraft. Time and safety margins were considered so closely drawn that the slightest miscue in any one of the three refueling operations would have spelled certain failure of the project.

First item on the lengthy check list was the obtaining of an official nod from the National Aeronautical Association, U. S. representative of the *Federation Aeronautique Internationale*. The sanction involved approval of proposed takeoff and terminal points, total distance, official timers, and aircraft markings. One NAA re-



MORNING DEPARTURE IN IFR CONDITIONS CAME WITHIN 4 MINUTES OF PLANNED TIME

quirement which was to cause concern later was that the geodetic center of the takeoff and landing airports had to be within a 60 kilometer radius of centers of the proposed sites. Los Angeles International and Floyd Bennett met these requirements and were established as the launch and land locations.

The project team, working on a round-the-clock basis, then turned its attention to support requirements. In-flight refueling, flight profile planning, aerological forecasts and flight surveillance were given primary consideration, and agencies possessing the needed capability were quickly enlisted.

AJ-1 tankers from VAH-6, VAH-11 and NATC were ordered up to participate in dry runs at Dallas and Mojave, and arrangements made to stage them out of NASWF Albuquerque, NAS OLATHE and NAS COLUMBUS, the three in-flight refueling locations

selected for the actual run. Because of its heavier weight, JP-5 fuel was chosen for the operation, thus permitting a higher fuel loading and therefore a longer range in afterburner.

Since it was planned to utilize the photographic capabilities of Major Glenn's FSU-1P, personnel from the Aviation Photographic Experimental Laboratory, Naval Air Development Center, Johnsville, and VFP-61, NAS MIRAMAR, were assigned the task of readying the *Crusader's* photo equipment for the run.

The major responsibility for flight profile planning and related technical assistance was assumed by Chance Vought Aircraft, Incorporated. The two pilots with other key personnel reported to the Dallas plant at the outset of the operation and commenced detailed flight planning under the supervision of Augie Shellhammer, CVAC project engineer.

Planning in this regard was based on an on-top clearance, tanker rendezvous under VFR conditions and with a mandatory requirement for VFR conditions at the intended point of landing. IFR takeoff was permissible and expected. An allowance of 8 minutes for each of the three in-flight refuelings was considered maximum, and dry run procedures were laid out to insure the feasibility of this concept from a time and maneuverability standpoint.

The next item on the agenda involved the services of aerologists experienced in jet stream planning and weather guessers extraordinary. Two



PROJECT TEAM ALLOWED MAXIMUM OF EIGHT MINUTES FOR EACH IN-FLIGHT REFUELING



BULLET PROJECT WAS LED BY RADM. CLARK

aerologists, borrowed from NATC and Fleet Weather Central, ComNavAir-Pac, were to be stationed at both ends of the 2446-mile course. In addition, arrangements were made to launch a path-finder A3D along the route of flight one hour ahead of the two *Crusaders* to facilitate the reporting of existing weather and to alert communications facilities.

Preliminaries were ended with a visit to the Continental Air Defense Command to arrange for GCI flight surveillance from takeoff to landing. Special call signs were assigned and excellent cooperation regarding this phase of the attempt was rendered by CONAD personnel.

To head off any liaison slippage it is noted here that support requirements were nailed down primarily by personal visit in addition to the message gimmick. During the period of five days, Cdr. Barker made several cross country flights while firming arrangements with supporting agencies located throughout the country.

The project team, on 15 July, entered what Cdr. Barker termed the "sweat" phase. Takeoff was planned, as originally scheduled, for 0600, 16 July. Despite shaky weather reports, the launching element moved into Los Angeles International Airport to commence final preparations.

At this point a balk was registered by airfield officials concerning afterburner takeoffs and a hasty conference was called to rewrite the "Bullet" script. A sixty kilometer radius overlay from the courthouse center of Los

Angeles (NAA regs), revealed two other airfields could be utilized; and of these, NAS LOS ALAMITOS was chosen for the emergency launching site.

All hands turned to on the eleventh hour switch. Fuel, starting equipment and other special paraphernalia was trucked to the new location at NAS LOS ALAMITOS and the final preparations begun anew.

During the early hours of the 16th, the forecasts assumed a favorable slant and the decision was made to carry out the schedule as planned. At 0604, the first of the two *Crusaders* left the runway and the ground phase of Operation Bullet was ended.

The precise planning of all details paid off. With the exception of a brief in-flight refueling delay, the flight profile and support aspects of "Bullet" enabled Major Glenn to log a record time of 3 hours, 23 minutes, 50.5 seconds.

Back in California, a weary crew who had lived with "Bullet" night and day for the two weeks, shook hands all around and headed home.

Shangri-La Wins Battle 'E' Highest Peace Time Honor Given

The USS *Shangri-La* (CVA-38) has been awarded the Battle Efficiency Trophy for fiscal year 1957 as the outstanding ship of its class in the Pacific.

Appropriate entries will be made in the jacket of each man who was on board during the fiscal year and who participated in one or more competitive exercises.

For Capt. F. D. Foley, the award was a fitting climax to his career as a commanding officer before putting on the two stars of a Rear Admiral.

Battle 'E's' to Two Ships Honor Yorktown, Salisbury Sound

Two vessels home-based at Alameda have received efficiency awards from Commander Naval Air Forces, Pacific Fleet, for fiscal year 1957.

The USS *Yorktown*, CVA-10, deployed in the western Pacific under the command of Capt. Edward E. Colestock, received "E" plaques for top efficiency in engineering and air operations.

The other ship, the USS *Salisbury Sound*, AV-13, was awarded the big "E" Battle Efficiency Plaque designating ship and crew as the most efficient seaplane tender in the Pacific Fleet.

Crash Rescue Suit Tested New Suit Lighter, Flexible, Cool



BEFORE TEST, Fire Chief G. L. Chunko models new suit, Crash Crew Chief O'Toole old one.



CHUNKO enters oil spill where he spent 22 seconds in 1525-degree heat without danger.



DENSE SMOKE bides half of Chunko's body as he enters burning plane mockup by ladder.

ADMIRAL RADFORD RETIRES

WHEN ADMIRAL Arthur W. Radford completed his second two-year term as Chairman of the Joint Chiefs of Staff in August, he was completing more than 45 years of distinguished service to his country, years during which he had progressed from Naval Academy plebe to the highest ranking and most important military position in the Armed Forces of the United States.

In recognition of his contribution to the security of our country and that of the free world, Secretary of Defense Wilson, on behalf of the ten members of the Armed Force Policy Council, presented a scroll citation to Admiral Radford.

The citation rang with seldom-given accolades: "We, his colleagues, pay our personal tribute to the man whose devotion to duty and country have been paramount . . . unswerving in his efforts, deliberate and sincere in his conviction, Adm. Radford consistently displayed a profound and inspiring knowledge of world events as they affected the military, economic and political security of the United States."

From the day in 1920 that Lt. Radford completed his flight training and was designated Naval Aviator #2896, he served continuously with naval aviation until his final tour of duty. His name has appeared on the rosters of many famous ships: in aviation units in the battleships *Colorado*, *Pennsylvania*, in the tender *Wright*, the first carrier *Saratoga*, in the *Yorktown*, the *Enterprise*. His flag has flown from a number of these same celebrated ships.

Convinced that the early leaders in Naval Aviation still had one foot on a deck, and that many seagoing officers aboard ships equipped with planes regarded the aircraft as a hindrance rather than a help, Lt. Radford, in 1924 expressed his views in a memorandum directed to Adm. Moffett, Chief of BUAER.

Charging that BUAER was "in the peculiar position of having sold Naval Aviation to the Public but not to the Navy as a whole," he made sound suggestions for better utilization of aviation. Suggestions such as his bore fruit in that same decade, as integration of



A 'WELL DONE' FROM SECRETARY WILSON

aviation into the Fleet made marked progress.

Thirty-one years later, Adm. Radford, Chairman, JSC, was still firm in his belief in the concept of integrated sea-airpower. Speaking at the launching of the *USS Saratoga* he said: "At sea there can be no separate air force and sea force. They must be integrated as one. The aircraft carrier is the concept of sea-airpower that has been proven in combat."

Addressing the Academy graduating class on the 40th anniversary of his own graduation, Adm. Radford declared that the changes which he had seen in the world situation, in weapons, in tactics, and indeed, in the thinking of men, made the four decades separating the two classes seem more like forty decades.

He pointed up these fundamental changes in national military thinking and planning at the commissioning of the *USS Ranger*. In this valedictory as a military man and as Chairman of the Joint Chiefs of Staff, he declared that the circumstances of history and modern war have forced the United States to adopt a policy of relying on retaliatory strength to prevent or win a war, an adequate strength, ready for immediate application.

"The price of security," Adm. Radford has said many times, "is adequate preparedness for defense."

In substantiation of this conviction, he liked to quote George Washington, who nearly two centuries ago advocated the same preparedness for defense: "There is a rank due to

the United States among nations which will be lost by the reputation of weakness. If we desire to secure peace, it must be known that we are at all times ready for war."

Missiles Urged in 1846 Present Sea-Air Concepts Not New

President James K. Polk was urged 111 years ago to equip U. S. forces with missiles a young Naval officer claimed to have exploded electrically by remote control.

Lt. Henry Moor, inventor of the missile, in his letter to the President also set forth advantages he felt could be gained through underwater explosions, air bursts and proximity-fuse-type blasts.

The lieutenant said he had turned mortar shells into remote control missiles by using an electric switch to trigger the blasts.

Such missiles, he said, would provide striking power "to fly over the deck of a ship, attack the enemy on his own coast, destroy ships in his harbors, ascend into his rivers and penetrate into the heart of his country."

First A4D's Head for Sea VA-93 Skyhawks to Board Carrier

Attack Squadron 93, commanded by Cdr. P. E. Padgett, will become the first VA squadron to go aboard a Pacific Fleet carrier with A4D *Skyhawks* when they board *USS Ticonderoga* this fall. The first A4D carrier landing was made on the *Ticonderoga* Sept. 12, 1955.

In July VA-93 pilots completed 144 carrier landings with the *Skyhawks* in a single day aboard the *USS Kearsarge*.

NAVY WANTS YOUR STORY

THE NAVY is looking for stories of factual incidents during war and peace which can be used in developing television programs, motion pictures, magazine articles and books. Human interest is the keynote.

If you, or a friend of yours, were involved in an incident with an adventurous flavor, or one that has a strong emotional appeal, send your idea to the Public Information Division, Office of Information, Navy Department, Washington 25, D. C. Be as specific as possible with names, dates and places.

MOUNTAINS NAMED FOR AIRMEN

LASTING RECOGNITION has been given Naval Aviation for the role it played in exploring the Antarctic continent. Antarctic landmarks have been named for an air station, three aircraft carriers, an airplane, an aviation pioneer, an admiral and seven Naval airmen who discovered them in 1956.

Two mountain ranges discovered in the first phase of Operation *Deep Freeze* have been named the Forrestal Range (Latitude 81 to 83.30 degrees South, Longitude 20 to 42 degrees West) and the Neptune Range (Lat. 81 to 83.45 S, Long. 42 to 46 West). With two other ranges not yet named, they form the Pensacola Mountains.

Within the Forrestal Range are the Lexington Table and Saratoga Table, named for carriers, plus Chambers Glacier, Hill Nunatak and Blount Nunatak.

The Neptune Range includes Dufek Massif, Cordiner Peaks, Mount Gorecki, Mount Torbert and Mount Hawkes.

Two other mountains discovered on the same flight at approximately 80.45 degrees South, 31 West, have been named: Mount Spann and Mount Ferrara.

Crewmen of the P2V *Neptune* flight, longest in Antarctic history, were LCdr. John H. Torbert, pilot; Capt. William M. Hawkes, copilot; Capt. Douglas L. Cordiner, observer; Marine Staff Sgt. Robert C. Spann,

navigator; Jack O. Hill, PHC, photographer; Francis Gorecki, ATC, radio-man; Frederick J. Ferrara, ADC, plane captain; and Hartford E. Blount, AD2, first mechanic. In 18½ hours, the ski-equipped plane flew 3450 miles non-stop from McMurdo Sound on the Ross Sea, across the continent to the Weddell Sea, and back.

Subsequently LCdr. Torbert and Sgt. Spann survived a *Neptune* crash in a Venezuela jungle clearing as they attempted to fly the same plane to the Antarctic for a search and rescue mission after they had returned to the States. Spann survived a second *Neptune* crash on sea ice at McMurdo Sound in September, 1956, when his squadron returned for Operation *Deep Freeze* Two.

Dufek Massif is approximately 30 miles long and reaches heights of 10,000 feet. It was named for RAdm. George J. Dufek, Commander of Task Force 43 since Operation *Deep Freeze* began in 1955.

Chambers Glacier bears the name of the late Capt. Washington Irving Chambers, first officer placed in charge of Naval Aviation in 1910, and who recommended the establishment of NAS PENSACOLA for Navy pilot training.

Names of the new landmarks are official and they will appear on all official charts and maps of Antarctica.

New A3D Models Ordered Photo, Trainer Models Being Made

Contracts have been let for two new versions of the A3D *Skywarrior*. One is the A3D-2P, a photo reconnaissance plane, and the other the A3D-2T attack bomber-type trainer. Both are already in production.

A completely redesigned, reinforced and pressurized fuselage will maintain an 8000-foot environment in the new A3D models up to an altitude of 35,000 feet. Thermostatic air conditioning will keep a constant temperature of 70 degrees Fahrenheit.

The A3D-2T, first Navy jet bomber trainer, will carry a pilot, bombardier instructor and six students. It will contain a dual bombing system, one in the pilot's compartment and one in the aft fuselage.

External pylons will be installed under each wing and outboard of the twin J-57 turbojet engines for carrying bombs and other training gear.

Design Engineer Honored Frizbie Served Aviation 40 Years

A retired BUAER design engineer, William Z. Frizbie, has been awarded the Distinguished Civilian Service Award by the Assistant Secretary of the Navy (Air).

Mr. Frizbie, who served Naval Aviation for 40 years, was cited "For his distinguished service to the Navy in the selection of new aircraft designs for Naval Aviation.

"Virtually every new naval airplane, guided missile, helicopter and airship has been evaluated and selected under his direction," the citation continues.

"He has effectively coordinated these aircraft through the proposal, design, testing, production and service stages. He has brought into agreement the requirements of the Chief of Naval Operations and attainable characteristics as controlled by the current state of development of various components.

"Mr. Frizbie's executive and technical ability, engineering judgment and inspired leadership exemplify the highest traditions of the Navy and make him eminently deserving of the Navy's Distinguished Civilian Service Award," the commendation concludes.

The DCS award is the highest honorary award SecNav can give a civilian. Only 353 such awards have been granted since its inception in 1944.



BANSHEE INTERCEPTOR roars over newly completed CIC School at NAS Glyco, most modern electronic installation for CIC training in the world today. In August, Capt. L. V. Swanson became custodian of the school which was seven years in planning and construction. It has 100,000 square feet of floor space and contains mockups of shipboard CIC rooms for training.

GMU-61 HAS KEY MISSILE ROLE



IN ADDITION to the Grumman F9F-8 Cougar shown here carrying the Sidewinder, GMU-61 pilots fly six other types of operational jets while carrying out missile tests and evaluations.

WHEN FLEET pilots start pumping the Navy's newest air-to-air missile the *Sidewinder* through its paces, much of the doctrine concerning its use airborne and while being ground handled, will have originated with one of the Navy's smallest but most effective units—Guided Missile Unit 61 based at the U. S. Naval Ordnance Test Station, China Lake.

Composed of five officers and twenty-four men at present, the unit as GMTU-61, was established in 1952 as a training element under the military control of the cognizant Naval District Commandant, and under the

management and technical control of the Bureau of Ordnance. Its initial mission was to receive specialized training in the operation and maintenance of the *Sidewinder*, which was then in the development phase.

Subsequently, the unit was given its current designation and its mission enlarged to include flight test of the *Sidewinder* during development testing and BUORD evaluation, and to render technical assistance during the fleet evaluation of the missile.

Personnel assigned to GMU-61 normally are screened for combined technical and operational backgrounds. Aviators are jet qualified with both combat and recent shipboard duty. Enlisted personnel are Aviation Guided Missilemen and Aviation Ordnancemen. The majority are senior petty officers with a wide background of technical training and practical experience in the fleet.

The Aviation Ordnancemen perform all the assembly, handling and loading of the missile while the Aviation Guided Missilemen test missiles prior to firing and evaluate missile accessory equipment with technical assistance from the parent Test Department. Considerable work is conducted in the Michelson Laboratory with the missile engineers of the China

Lake Aviation Ordnance Department.

Application of the training and experience in missiles gained by GMU-61 since its formation has helped make the *Sidewinder* a simple and reliable but deadly weapon. Unit pilots have made several hundred firings and have engaged in the extensive testing of launchers and other equipment that must stand up under combat conditions, including jet cat shots and arrested landings on the "desert carrier deck." It is worthy of note that the *Sidewinder* specialists have flown over 2500 hours on the project without an accident, and the ground personnel present a similar record while handling hundreds of missiles and rockets.

In addition to its assigned mission, the unit has made its experience directly available to fleet units employing the *Sidewinder*. Unit personnel have trained key men from ships, squadrons and shore activities which are currently operating the air-to-air weapon. Training films and pilot handbooks have been produced with assistance from the Technical Information Department and the Aviation Ordnance Department which aids in the training of pilots and ordnance personnel. As an added measure, unit personnel are sent for duty to new activities receiving the *Sidewinder* to assist in weapon indoctrination.

Skipped by LCdr. Glenn A. Tierney, USN, GMU-61 is very proud of its enviable record and of its performance in the Navy's missile program.



PILOTS Tierney, Parry, Rogers (standing); McElmurry, Howard form missile test team.



GFI ASKEY (left), AO1 Fulbright load *Sidewinder* on a Cougar prior to its test firing.



UPKEEP AND LINE maintenance help establish new safety records. Here mechs Smith, Campbell, Donnelly and Walton ready a T-28 for flight.

NORTH FIELD tower crew of Coakley, Holland, Payne, Sheltman and Adamson constantly issues pilots go signals and landing instructions.

MASTERS OF SAFE FLIGHT SAVVY

NAAS WHITING FIELD'S Basic Training Group Three-North has made another bid for Grampaw Pettibone's affection. Not content to win the CNO safety award in fiscal 1956 by flying more than 32,000 accident-free hours in 97 days, BTG-3N flew 27,194 accident-free hours of flight instruction in the T-28 during 84 days of training which ended in late July this year.

The 1956 CNO safety award represented an unparalleled record by any basic training group flying non-aviator flight students in the Basic Training Command.

How are such enviable marks set? Here's how Whiting spreads the credit. First, the 135 flight instructors on board possess "superb aeronautical technique, high devotion to duty and fine *esprit de corps*" without which no safety accomplishment would be possible. Their attitudes and habits are passed on to the student pilots who currently number 550.

Efforts of instructors and students are directed by the Group Training Officer, LCdr. Bill McCall; Night Flying Officer LCdr. S. Carlisi, and squadron leaders Maj. S. W. Shaws, Maj. G. Q. Fagnon, LCdr. R. L. Graves, Lt. G. E. B. Sandberg, Lt. W. L. Smith and LCdr. E. R. DeSmet.

Cdr. W. W. Olson, Group Commander, is assisted by Cdr. Ralph Hein. Theirs is the chore of explaining to instructors and students how to

cope with the many potential accidents and emergency situations that arise in the air and on the ground, and how to turn these situations into successful forced landings or minor incidents.

Others making a major contribution to safety are the BTG-3N maintenance crew of 250 officers and men under LCdr. A. E. Tripp, supported by Cen-



MAINTENANCE problem is explained by LCdr. Tripp, North Field's Maintenance Officer.



CRASH CREW of Cantrell, Carpenter, Davis and Michelson stays alert for possible crashes.

tral Maintenance under Cdr. Harry McLaugherty. Operations and Utility crews who man outlying fields, operate the tower and administer many routine office functions contribute their share to safety.

Whiting's Training Office is headed by Cdr. F. W. Ackermann. This office coordinates and supervises changes in the training syllabi and oversees all training. Here new instructors are trained before reporting to flight groups and here they are given refresher training as necessary.

Cdr. J. C. Azab heads Whiting Field's Safety Office which investigates all accidents and makes recommendations for the improvement of training. Like all good safety programs, his guideline is the adage, "An ounce of prevention is worth a pound of cure."

Aviation safety is constantly alert for improvements in training methods which contribute to safety. Group Safety Officer is Lt. C. B. Snyder whose main effort is publicizing safety within the group.

If any one slogan could express BTG-3N's safety program, it would be the words, "Be Safety Conscious at all Times."

Beside the slogan would run the motto, "There is no substitute for quality and precision" in the important job of instructing tomorrow's aviators.

It seems these attitudes and habits are contagious, judging by the number of records being reported to NANews.

EIGHT MILLION PAGES A WEEK



BRIEFING CONFERENCE at Naval Air Publications Facility finds Cdr. Putman, center, outlining an undertaking to his department heads. *from left: Lt. Waite, Miss Moore, Mr. Ferree, LCdr. Cole, Miss Dawkins, center, outlining an undertaking to his department heads. Putman, Lt. McCaw. They share key responsibility for air manuals.*

NEXT TIME you reach for a technical aeronautic publication, treat it with care. You'll be holding one piece of the eight million pages published weekly by the Naval Air Publications Facility in Philadelphia.

Odds are that your need for the particular handbook won't be as acute or as dramatic as the *Neptune* pilot who was grounded two days at the South Pole for engine repairs or the NavCad who landed his trainer in a farmer's meadow, but technical publications are an important part of your daily job in Naval Aviation.

The Naval Air Publications Facility's mission is to "procure, publish and control the distribution of technical aeronautic publications, aeronautic training literature, periodicals and hydrographic charts and to provide for all Bureau of Aeronautics printing requirements."

Head of this quiet, but smooth-running, \$30,000,000-per-year business on the second deck of building 26 at Philadelphia's Naval Aviation Supply Depot is balding, dynamic Cdr. M. V. Dawkins. He's developed a full appreciation of technical manuals while

logging 6600 flight hours and he's fresh off the carrier *Randolph* where he was air officer.

His assistants are LCdr. W. R. Cole, with 25 years in ground maintenance; Lt. H. W. McCaw, who's qualified in helicopters and heavier-than-air; Lt. C. E. Waite, a blimp and HTA pilot; and a hard core of 77 civilians headed by K. P. Ferree, executive assistant who moved with NAPF from Washington in 1954 under a decentralization transfer.

With some 243 aircraft configurations on the Navy's rolls, NAPF has to provide a bigger variety of technical publications today than were required at the height of World War II.

NAPF controls more than 42,000 items and mails regularly to 1500 addressees. With new airplanes joining the fleet air arm and with old planes being constantly modified, the facility averages 5000 printings per year.

One recent order required 2200 pounds of unclassified and more than 500 pounds of classified publications to put a new squadron into commission.

Yet with this volume of business, the four officers and 77 civilians at

NAPF strive daily to give you faster and better service with the publications you need to fly airplanes.

They've made great strides in indexing the available publications and they have ideas which will lead to better indexing. As it stands now, Cdr. Dawkins refers to the three indexes, NAVAER 00-500 as his "general telephone book"; -500A as his "yellow pages" and -500B as his "directory." These indexes, used collectively, represent all the information about the available publications required to operate, maintain and overhaul Naval aircraft and related equipment.

NAPF is working out a system whereby a request for a specific index, say electronics, can be pulled from the book and mailed as an entity. "When that day comes," says the commander, "we'll have our 'Sears-Roebuck catalog' because we can give the man in the Fleet exactly what he needs."

Another area being fast improved is the time required to get a new index to the Fleet. Formerly it was necessary to edit and re-edit each line of the bulky index at the end of June and December. All changes had to be as-

sembled before printing could begin. Now NAPF uses a new system to record all changes and revisions daily on IBM cards which can be photographed and ready for insertion into the new index on a day's notice. Publication time for a new index has been shaved from seven months to seven days.

A major step in providing prompt service to the Fleet is NAPF's desire to get on a common footing with the man or the command who needs a technical publication. As Lt. McCaw puts it, "We're prepared to give the squadron or the station anything it needs in the way of publications, but we need to have their cooperation. We can't anticipate their needs."

Asked to lay down a set of rules for officers just reporting to squadrons as publications officers or for seasoned publications officers who might be making time-consuming mistakes in the way they request publications, he scored these points:

1. *Know your references*, especially the three-part index, so you can learn what publications are available. Procedures for obtaining such publications are outlined in the introductory pages.

2. *Know your two basic forms* for ordering technical publications. NAV-AER 2126 is a permanent proposition. After commissioning and establishment of your basic technical library, fill out this form and list the types and quantities of publications you need for the type equipment your activity operates. Your command is then placed on a mailing list to receive those type publications and the quantities indicated *automatically* as they are issued, re-

issued or reversed. Review this form periodically to insure your latest requirements are recorded and also to delete publications that are no longer needed. Form NAV-AER 140 is a "one-shot" order for publications and will not result in automatic distribution. This form should be sent to the Aeronautics Publications Supply Point serving the geographic area in which you are stationed. These areas are listed on the reverse side of the form. Remember: Form NAV-AER 2126 is a permanent proposition—mail it to NAPF—not to an aeronautic publications supply point. Mail Form NAV-AER 140 to the proper aeronautic publications point, not NAPF.

3. *Anticipate your needs* intelligently because any reissue or superseding books will come in the same quantity as the initial order. Of major importance to NAPF in filling your needs is notification of: change in equipment (model or configuration); and, of course, change of address, including change of designation.

4. *Don't request classified and unclassified publications on the same form, Nav Aer 140.* They are processed separately and it takes time to retype such orders at the Aeronautic Publications Supply Points.

To serve the Fleet's needs for aviation technical publications, NAPF is divided into three major departments; Requirements and Procurement, Publishing, and Distribution and Indexing. Each department plays its part in the evolution of a technical manual from the time a requirement for the specific type of manual is determined until the

printed copy has been indexed and distributed to all NAPF addresses.

LCdr. Cole and Miss M. A. Putman study the annual BUAER shopping list to see what planes will be procured. From the cognizant desk in BUAER, they get a set of specifications for the technical publications that will cover the new aircraft.

When the initial aircraft is ordered by BUAER, one distinct section of the contract requires the manufacturer to provide technical publications by the time the first plane is delivered. These pubs cover every aspect of the new aircraft, from pilot's handbook to maintenance manuals.

If the manufacturer has sub-let contracts for parts to be used in the plane, he is in turn responsible that the vendor of those parts provide a handbook to cover them. If Government-furnished parts are used, NAPF is responsible for obtaining the handbooks which cover those parts. The handbook requirement is a permanent part of the aircraft contract.

The first handbooks on a new plane cover all major systems and components. As changes are made in the plane or as new items are procured, the manufacturer sends monthly supplements to NAPF, so that when the plane is provisioned, handbooks are available to cover all accessories. After the plane is provisioned and any engineering changes have been made or new equipment installed, the list of covering publications is completed.

The basic list of contractor-furnished equipment for the FSU-1 contained 189 items that required publica-



IN PRODUCTION, Miss Blanche Rodgers makes an opaque correction to a photo-offset negative before new technical manual goes to press.



IN WAREHOUSE, Wm. Thomas (at machine) and Wm. J. Keenan seal revisions to technical pubs so man in fleet gets latest information.

tions. Seventeen months later, 167 new items were added, 63 basic items were revised, and 22 of the originals were cancelled. Of the 334 items reported, 98 didn't require new publications. Thus 236 contractor items required manuals before reprovisioning.

Government-furnished equipment in new planes provides a great deal of work for NAPF. This material has usually been bought from several manufacturers under small business contracts, each of which was required to publish a covering technical manual. In the case of a generator on a particular plane, for example, several manuals on basically the same generator have been published. NAPF has no way of knowing what type of generators are installed in the planes of any one

new book is not published. It is drawn from stock or from the Air Force under a joint agreement between the Chief of the Bureau of Aeronautics and the Commander, Air Material Center.

Once the complete set of manuals has been procured, the job falls on the Publishing section headed by Miss Melba Moore. She places the order through the Government Printing Office in Washington, and usually GPO farms the work out to small printing contractors. An average week's printing is eight million pages to meet the needs of the 1500 addressees listed.

Average printing time for a publication is six to 15 working days, then the publication is stocked at the Supply Depot, Philadelphia, or one of the

million mailing labels per year in its addressograph department to get technical publications on their way. There was a time when pubs bound for the West Coast were loaded aboard ships to be ferried around via the Panama Canal. Nowadays, with the rapid changes in aircraft components and the ensuing need for speedy delivery of covering technical publications, the pubs are sent by freight parcel post and even by air mail to reach their destinations on time.

Special Requests, under Lt. McCaw, handles those orders which can't be classed as fish or fowl—generally those requests for information rather than for a specific publication. For example, a mech in some O&R shop has an unfamiliar valve from the engine of a



LCDR. SAM ZIEGLER of Aero Publications Supply Branch sees crew make fast revisions to an aircraft handbook before parcel post mailing.



FOR AUTOMATIC shipment to Utility Squadron Three, Norman Glover places new technical manual into proper box as Lt. McCaw looks on.

squadron, so complete sets of generator manuals are sent to each activity using that type of plane.

Once all covering publications have been distributed and the plane reaches the FIP stage, any bugs or weaknesses found in maintenance are brought to the attention of the Technical Review section in BUAE and an interim revision is published, generally as a pen and ink correction, until NAPF can require the manufacturer to publish replacement pages. Most contracts call for revision of technical manuals every 90 days.

To avoid duplication and waste, NAPF reviews each increment of the plane for which a publication is required. If there is a pub on hand or if one is available from the Air Force, a

many aviation supply points in the States or overseas for issue as ordered.

Stocks on hand, Lt. McCaw's Distribution section works on the premise that the user knows his needs better than NAPF knows them. Non-classified pubs are mailed in the amount requested unless there is a conspicuous overage noted. ("We'll stand still for the command to order a manual for the library, one for the ready room and one for the maintenance shop—even a few spares. But when they want individual copies for each mess cook, we pull the string.") Classified orders are reviewed very carefully, and distribution is made on a need-to-know rather than an unlimited basis for obvious security control.

The Distribution section cuts two

plane not completely covered in his station's technical library. He feeds whatever information he can get on the part to NAPF through his publications officer, and Special Requests sets about finding what publication covers the part, then mails the pertinent publication promptly.

So between Requirements and Procurement, Publishing, Distribution and Indexing, the Naval Air Publications Facility stands ready, even eager, to fill any technical publications need. They have the facilities, the working tools and the desire to put the right publication in the hands of the right man.

"But," says Cdr. Dawkins, "the main point I'd like to make is this: We must, first of all, know your needs. Only then can we serve you promptly."



DRILL STARTS AS CREW ABANDONS PLANE VIA EMERGENCY EXIT



THE VP-11 TRAINEES GET LIFE RAFT EXERCISES UNDERWAY

SURVIVAL DAY . . . THE VP-11 WAY

ROBINSON CRUSOE could pick up a few tips on wilderness conquering from the members of VP-11 at NAS BRUNSWICK, Maine. The squadron started its own survival program over a year ago and is now wise in know-how.

The one-day operation, named "Survival Day," covers practice on both land and sea. The wooded training site borders on an inlet and includes a static display area for demonstration purposes. Individual crews start the exercise early in the morning. Before the full day is over they have inflated and launched life rafts, signalled by mirror and flare and used other emergency equipment.

They have learned how to hunt, trap and fish without benefit of the latest sports gear and to prepare a tasty meal of the catch. They have made shelters, maps and backpacks from parachutes, used compass and sun to find the homeward trail and watched a helicopter pick-up.

Cdr. William B. Oliver, CO of the squadron, has backed the project from the start. His men are enthusiastic. Survival is serious business. It's best to learn by doing.



AN INSTRUCTOR GIVES POINTERS ON CONSTRUCTION OF SHELTER

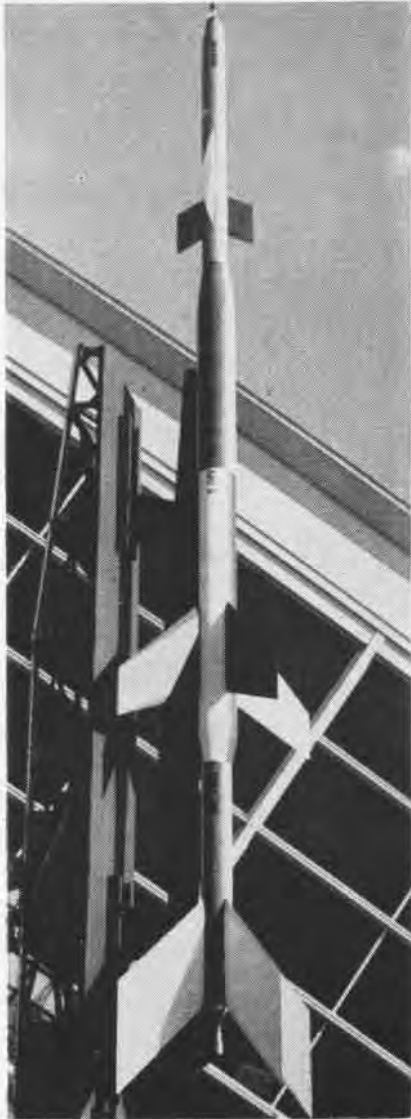


SQUADRON PARATEEPEE BUILDERS USE MODERN SMOKE SIGNALS



A CHARRED STICK MAPS THE HOMEWARD TRAIL ON CHUTE CLOTH

INTERNATIONAL AIR SHOW AT LE BOURGET



THE FRENCH ATMOSPHERE RESEARCH ROCKET



LARGE FIN BOOSTER USED FOR FIRST STAGE



JET ENGINE IS PLANNED FOR VTOL CRAFT



ALOUETTE II, RESCUE HELICOPTER, IS POWERED BY A TURBO ENGINE



AVIA 14 IS THE CZECHOSLOVAKIAN-BUILT SOVIET CRATE (THE IL-14)



FRENCH MISSILE IS DESIGNED PARTICULARLY AS ANTI-TANK WEAPON



GROUND-TO-GROUND TACTICAL MISSILE IS SET FOR LAUNCHING



DEADLY POWER CARRIER IS VAUTOUR WITH MOUNTED ROCKET POD



THE FRENCH GERFAUT II MADE ITS MAIDEN FLIGHT ON 17 APRIL 1956

The thirty-second International Air Meeting at Le Bourget Field, France, brought out tremendous crowds to witness varied flying events and static displays. In the flight demonstrations, 58 numbers listed in the program included aircraft or helicopters from ten nations. Of the 201 aircraft observed in flight, France had 104; USA, 38; Canada, 25; Great Britain, 20; Italy, 6; Czechoslovakia, Germany, Holland, Spain, and the USSR one each. Over half a million persons attended the show.



A VAUTOUR II AIRPLANE MOUNTED WITH FRENCH MATRA ROCKETS



SUD AVIATION HAS BUILT PA. 49 TO USE FOR EXPERIMENTAL WORK



MARCHING Marines of VMF-321 and MACS-24, based at NAS Anacostia, participated in Operation Vigor at MCAS El Toro. MACS-24 won the Marine Air Reserve Trophy for all-around proficiency. VMF-321 pilots logged over 750 air hours.

SUMMER IS THEIR BUSY SEASON

NAVAL AND MARINE Air Reserve Training programs operate at full speed throughout the year. The stops are pulled out and they shift into flank when summer cruise time comes around.

Thousands of Weekend Warriors leave civilian occupations behind for two weeks of intensive training in many phases of Naval Aviation. Air stations throughout the country and the world participate in the annual all-out effort for maximum readiness.

Reservist to the Rescue

Ltjg. James J. McGinnis had quite an adventure during his active duty tour at Los Alamitos. He was flying his Douglas AD-6 Skyraider in the San Diego area when he heard a frantic "May Day" on the plane's radio. The call came from the pilot of a small civilian airplane on top of a thick overcast who had become disoriented.

Radio contact was impossible when McGinnis spotted the plane in distress so he executed a series of maneuvers which could only mean "Follow Me." He led the tiny craft to a hole in the thick clouds over the Camp Pendleton



RADM. H. H. Caldwell, GNARESTRA, addresses 1500 Columbus Reserves after AMI.

Marine Base. It landed there safely.

Ltjg. McGinnis was operating over unfamiliar terrain. He is attached to VA-892 which trains at NAS SEATTLE.

VMF-216 Proud of Cruise Record

Marine Fighter Squadron 216 reported aboard NAS SAND POINT for summer training with 25 pilots. With

an availability of 18 AD-6 Skyraiders and flying round-the-clock missions, the squadron logged 1,212 pilot hours during the two-week period in weather considerably less than perfect.

On the fifth day of training, an all-time record was set for the air station when the pilots logged 127 hours.

At the conclusion of the cruise 216 led all Marine Reserve Squadrons.

NAS Atlanta Will Have New Home

Military and civilian dignitaries witnessed the ground-breaking ceremony for the new site of NAS ATLANTA. It was officially performed by the Honorable Herbert C. McCollum, Cobb County Commissioner. Navy, Marine and Air Force troops formed an honor guard.

Three commanding officers were present at the occasion: Capt. R. E. Steiler, NAS ATLANTA; Col. J. L. Sullivan, Dobbins AFB and Lt. Col. J. F. Wagner, MARTD. Upon completion of the project their commands will work in even closer harmony.

Relocation of the Naval Air Station will provide facilities for accommodating jet aircraft. It will be located



BULLDOZERS were already at work as three CO's witness ground-breaking for Atlanta.

adjacent to Dobbins Air Force Base in Marietta, Georgia, and the Navy will have joint use of the 10,000 foot runway. Naval facilities to be built include a hangar with lean-tos, a public works building, a boiler plant, aviation storage buildings, liquid fuel facilities, railroad trackage and utility connections. Construction is due to be finished in December 1958.

RAdm. Henry H. Caldwell, Chief of Naval Air Reserve Training, stated that: "Start on construction of the new Naval Air Station is a step forward in progress, training Naval and Marine Reserve pilots and crewmen."

VR-693 Found Road to Morocco

VR-693 compiled an enviable record for airlifting vital supplies and equipment throughout the Mediterranean area during their two-week training period at Port Lyautey, Africa.

The squadron also found some time for sightseeing and souvenir hunting.



NATIVE Arab vendor? No, Lt. J. Kohler showing shipmates his souvenirs of African tour.

They returned to NAS COLUMBUS with exotic reminders of the cruise.

VS-872 Is Two-Time Winner

Each year the Navy Department awards the Noel Davis trophy to the Aviation Division most proficient in reserve training on an overall basis including drill attendance, flight accomplishments and all phases of personnel training and administrative functions. The units compete by types.

VS-872 at NAS OAKLAND ranked first among Air Anti-Submarine Squadrons for two successive years. The presentation of the coveted prize was one of the highlights of the summer cruise.

Each participating member received a special certificate in recognition of the fact that the award would not have been possible without them. It reads in part: "Noel Davis Trophy—awarded annually by the Navy Department to the most efficient aviation division of the U. S. Naval Reserve."

Round the World in 14 Days

The Weekend Warriors of VA 881 and 884 ended their annual cruise at NAS OLATHE with one of the best records ever accomplished there.

They flew 817.1 hours, or approximately 426,000 statute miles, during the two week period. That's seventeen times around the world! Each pilot covered an average of 22,000 land miles. That would be equal to a plane flying from Olathe to New York, London, Moscow, Tokyo, Manila, Hawaii and San Francisco. The squadrons actually flew to Las Vegas, San Francisco, Albuquerque and then to El Centro in their F9V-8 *Cougars*.

FASRON 665 Selects Man of Year

It's second nature to Joseph W. Vickers, Jr., AD2, to watch his military bearing, attend 100% of his drills and participate in annual training duty. As a matter of fact, he even enjoys recruiting reservists on his own time.

FASRON 665, based at NARTU ANACOSTIA recognized Vickers' outstanding contribution to the efficiency of the squadron. He was selected Man of the Year. VAdm. William V. Davis, Jr., Deputy Chief of Naval Operations for Air presented the Weekend Warrior the handsome trophy. Vickers is first to be so honored. FASRON 665 first set up the annual award last year.



FIRST FASRON 665 "Man of the Year" receives trophy from VAdm. Davis at Pentagon.

Jacksonville Greets Brunswick

Annual training duty always entails a good deal of hard work. However, reunions with old buddies, off-duty sightseeing sprees and exchanges of hospitality bring many lighter moments to offset rugged routines.

VP-741 of NARTU JAX spent their active duty period at NAS BRUNSWICK. They brought along a touch of Florida "Sunshine" in the form of the squadron mascot, an alligator so named. The Mayor of Jacksonville, Haydon Burns, also gave Cdr. John E. Briggs, the skipper, a supply of Florida Fountain of Youth Water to present to Thomas M. Libby. Mr. Libby is the Town Manager of Brunswick and took part of his flight training in Jacksonville to become a Naval Aviator in World War II. The gift brought back memories of his flying experiences.

VP-741 flew many patrol missions in their fourteen days in the north.



"SEE YOU later..." Mayor Burns bids farewell to Cdr. Briggs and Sunshine of NAS Jax.

ASO KEEPS RESERVES ON THE GO



RADM. J. W. CRUMPACKER MEETS SOME RESERVE OFFICERS DURING ASO SUMMER CRUISE

FORTY-TWO Naval Reserve Officers have completed a two-week cruise at the Naval Aviation Supply Office, Philadelphia. The Supply Corps officers represented 19 states and the District of Columbia. From Maine to Florida and as far west as Washington State, they came by car, rail and plane for their annual tour of active duty.

The diversified civilian positions held by these Reserves included: attorney, budget and financial specialist, hospital personnel director, health equipment distributor, State Department foreign officer, university professor, and store manager.

ASO conducted two separate two-

week programs during the training period. The cruises are designed to keep Supply Corps Reserve Officers abreast of the latest inventory techniques and developments at supply demand control point level.

This comprehensive training pro-



NAMC TOUR TEACHES MORE TRADE-TRICKS

gram is of recent vintage. Prior to 1953, ASO's experience in presenting "words-eye" views of ASO operations was limited to brief two-bit tours and lectures for various "visiting firemen". In February 1953, the Bureau of Supplies and Accounts urged the development of a formal training program for Supply Corps Reserve officers as part of their annual two-weeks training.



MODEL SHOWS PLANE LAUNCH OPERATION

BU SANDA wanted to insure that the Reserve Supply officers received the latest information on inventory control technique changes and developments at the inventory control center level. Through this, they would be better armed to fill their important assignments in times of emergency.

Twenty-five billets were allocated with the quotas filled by representatives of the First, Third, Fourth, Fifth, Sixth, Eighth and Ninth Naval Districts and the Potomac River Naval Command. Ten more billets were given to Chief, Naval Air Training.

An excellent set of ground rules has been developed for the course. ASO instructions insist that the lectures be long enough to cover the subject but short enough to be interesting. Field trips are interspersed throughout the program to vary the schedule. Movies and other visual aids supple-



OFFICERS SEE 'REAL THING' ABOARD WASP

ment lectures. In short, particular emphasis is placed on the administrative details that can either "make or break" a training program.

The Naval Aviation Supply Office is the first and largest inventory control center in the Navy Supply System. It has the global mission of supplying the necessary aeronautical spare parts to keep Navy and Marine Corps planes in condition to fly. RADM. John W. Crumpacker, Supply Corps, is Commanding Officer of this activity which controls over 450,000 items of material with inventory value of more than \$2,000,000,000. Besides these achievements, ASO has an outstanding program for Reserve Officers. It is the product of good planning, efficient execution, hard work, and a lot of cooperation and enthusiasm.



OXYGEN EQUIPMENT CHECK IS MADE BEFORE CHAMBER FLIGHT



LCDR. KEENER OBSERVES PILOTS IN LOW PRESSURE CHAMBER

KEENER OXYGEN COURSE FOR SAFETY

A CARDINAL RULE of Naval Aviation, inflexibly adhered to in these days of high speed, high altitude flying, is that there can never be a compromise with safety.

The Navy surrounds its high performance planes, and the men who fly them with carefully worked out safety. Navy flyers are the best trained in the world; its planes are exhaustively tested before being approved; into these planes goes equipment of equally high quality, especially designed for definite purposes.

But for all the aircraft and equipment of finest design, manufacture and performance, for the pilots and crewmen thoroughly trained in their operation, there is still a vulnerable link—the human body itself. The plain fact is that man is not naturally adapted to altitudes and speeds modern planes are capable of reaching.

Since the early days of experimental high altitude flying when VAdm. (then Lt.) Apollo Soucek flew to the record height of 43,166 in 1930, in his supercharged 70 mph craft, development of planes has continued until we have the faster-than-sound craft of today's aviation. But the body has remained the same old model-T variety. The pilot must be "souped up" and "modified" by personal protective equipment to take his model-T out on the speedway. This equipment is useless, however, unless the flyer under-

stands its necessity and has been thoroughly trained in how to use it. OPNAV Instruction 3740.3A leaves no doubt as to CNO's stand in regard to the Aviation Physiology Training Program: "The objective is to train flying personnel so that they will be prepared in every respect to cope with the hazards of flight which they may encounter." Responsibility is placed squarely on CO's to ensure that all flying personnel are adequately trained, *prior to flight*, in the fundamentals of aviation physiology, in use of oxygen breathing equipment, cabin pressurization, personal airborne protective equipment, use of the ejection seat, and in factors governing night vision.

SOME DOZEN or so psychological training units located among the Navy's air stations and aviation activities give this training. NAS NORFOLK believes it has a "first" in that the O-in-C of the unit there is a Wave. LCDR. Mary Faye Keener, MSC, had a medical science background Premed (graduate of the University of Alabama) when she joined the Navy in August 1942. Training at the Pensacola School of Aviation Medicine, and duty later at the National Naval Medical Center's Medical Research Institute fitted her to conduct the Aviation Physiology Training Unit which she took over at NAS NORFOLK in 1949. A year's post graduate work in physi-

ology at George Washington University in 1953-54 gave her a still further comprehensive grasp of the subject.

Every third day a class of pilots and aircrewmembers reports to Miss Keener for the two day training in aviation physiology. The instruction is in three components: basic aviation physiology and use of oxygen equipment; escape techniques; and night vision. The first of these receives the greatest emphasis. A lecture on the effects of high altitudes on the body, and the construction and use of oxygen equipment is followed by a "run" in the pressure chamber to 30,000 feet, during which two students remove their oxygen masks and experience the effects of hypoxia, observed by the other trainees.

The second day, after a lecture on breathing against oxygen pressure, necessary above 30,000 feet, the class gets a "run" in the chamber to 35,000 feet for practice in proper breathing against that pressure. A lecture on ejection seats, practice shots from the trainer, and instruction in night vision complete the course.

LCDR. Keener's work, much of it done in the low pressure chamber, is classified as hazardous duty. But the training she gives flyers is a prerequisite to their flight safety and may ultimately make the difference between the failure or the success of a vital military mission.



HISTORIC BUGLE CALLS CREW TO QUARTERS

CVA Has Civil War Bugle Passed Down by 5 Generations

The bugle that blew battle calls for Confederate General Robert E. Lee is sounding battle stations for the crew of the USS *Randolph*.

The battle-scarred bugle that inspired thousands of grey-coated Confederates is now blown by Robert Lee Smith, seaman, a bugler aboard the *Randolph*. He is from North Carolina.

Smith's great-great-grandfather, a bugler in Lee's Army of Virginia, was first to use this veteran Civil War bugle which has been carefully handed down from generation to generation.

"Bugle" Smith brought the bugle aboard the *Randolph* a few days before its departure for the Sixth Fleet in the Mediterranean. It has since made more miles than it did in the stormy days of the war between the States.

Theory Put to Practice Monterey Students Work in Field

For one month during the summer selected students of the U. S. Naval Postgraduate School, Monterey, California, escape from the world of classrooms and textbooks. The period is spent touring aircraft industry and military production plants. Douglas Aircraft, North American Aviation, Airesearch, and Hughes Tool Company are among the Southern California corporations cooperating in the program.

The officers work side by side with seasoned aircraft and industrial engineers in an attempt to solve certain aviation problems. The analysis of the stress of Mach 3.7 on aircraft wings is typical of the projects tackled by the students.

Invaluable practical experience plus an understanding of the manufacturer's point of view are gained during this important phase of the course.

60,000th Landing Logged 8 Become Centurians on Yorktown

Another milestone in the "Fighting Lady's" career was reached when Lt. George Maige of VF-193 made the 60,000th landing aboard the *Yorktown* since her recommissioning.

VAdm. Wallace M. Beakley, Seventh Fleet Commander, observed the landing, which was made one day before *Yorktown's* latest operation ended.

Eight pilots joined *Yorktown's* Century Club during the Far East cruise. Cdr. Joseph Rees of VF-193 logged his 107th landing; and Lt. Maige, Ltjg. William Peters and Ltjg. Richard Dupree (all of VF-193), Cdr. William Rawls, Lt. Jerry Solomon, Ltjg. Robert Beat and Ltjg. Harold Gray (all of VA-195), became bonafide Centurians.

10-Year-Old Film Usable Returned from Little America III

Tests recently completed at the Naval Photographic Center proved that film left ten years at Little America Three was still usable.

Two rolls of 35-mm motion picture film, a roll of Plus-X and one of Super-XX, were recovered by men of *Operation Deep Freeze* from the camp now buried under 20 feet of snow.

Camera tests and fog tests proved the film had good speed and contrast.



COPTER LANDS DRUG BESIDE WAITING F3D

Mercy Flight Saves Life Navy, Marine Pilots Deliver Drug

Navy and Marine pilots teamed to rush a vital drug from Yokosuka, Japan, to NAS IWAKUNI, to save the life of a Japanese laborer hospitalized with a gangrenous infection.

Civilian doctors requested the drug first from NAS IWAKUNI. It was not available. The request was relayed to Yokosuka, the drug placed aboard a Navy helicopter and raced to NAS ATSUGI. A waiting F3D *Skynight* piloted by Marines took off in four minutes and delivered the serum to Iwakuni in 55 minutes. Normally such a flight would take an hour and a half.

Kenichi Shio, the laborer, is on his way to recovery, thanks to Japanese and American medics and fliers.



EIGHTH of a long line of ships to bear the illustrious name, the USS *Ranger*, CVA-61, is shown following commissioning ceremonies at the Norfolk Naval Shipyard. New flight deck marking pattern is dark grey with white lines and has been adopted as a result of human engineering studies. The 60,000 ton giant will be the first of the Forrestal class to join the Pacific Fleet.



DURING THE summer, this Kaman robot helicopter was put through its paces by radio signals from a ground control station. The aircraft took off vertically, hovered, flew forward, backward, sideward, then landed with the same precision and ease as a piloted helicopter. A line attached to the robot several hundred feet long, one end of which was fastened to the ground, was used during the pilotless flight in accordance with Civil Aeronautic Administration rules.

New Director for Waves Capt. Quick Replaces Capt. Wilde

Capt. Winifred R. Quick became the fifth Director of Waves on August 1 when she relieved Capt. Louise K. Wilde, who has served in that position for the past four years. Capt. Wilde's next duty will be at Monterey, Calif., where she will be Special Assistant to the Superintendent of the Post Graduate School.

Capt. Quick comes to her new job from London where she was a member of the Staff of Adm. Walter Boone, CinCNELM. No stranger to BUPERS, Capt. Quick was Wave Detail Officer from April 1947 to August 1950.



CAPTS. QUICK, OFSTIE, WILDE (L. TO R.)

Among the more than 200 well wishers at a 'hail and farewell' reception for the incoming and outgoing Directors given by the Washington area Waves, was Capt. Joy Hancock Ofstie (Ret.), a former head of the Waves.

Capt. Ofstie, a plank owner of NAVAL AVIATION NEWS (she was the first editor, 38 years ago), served as Director of Waves from 1946 to 1953 when she retired from active duty.

Teachers at China Lake See Demonstrations, Tour Facility

Forty-eight Oregon school instructors and administrators toured NOTS CHINA LAKE as a part of an Aviation Education Workshop program conducted by the Oregon State System of Higher Education.

The workshop is designed to promote interest in aviation. During the four-week program, the educators learned the place of aviation in relation to the economic, political, geographical, and social standards of today's world.

While at NOTS, the group watched aerial demonstrations, guided missile firings, and toured the laboratories.

Safety Award to Navy Seventh Time Navy Has Won Honor

The Navy has received, for the seventh time, the National Safety Council's Award of Honor for accident prevention.

The Council's Award of Merit also was presented to the Navy Magazine, "Safety Review," for the seventh time.

The Navy won the award for a reduction over previous years of 5.1 percent in the 1956 average of a list of six different accident rates.

Atsugi Trains Jap Airmen Instructor Praises High Interest

A handful of Japanese sailors are being trained in air traffic control at NAS ATSUGI, Japan. Some twelve years ago Atsugi was used by thousands of Japanese Navymen when three separate commands operated from the strip.

Today's Japan Maritime Self Defense Force (JMSDF) sailors are presented a thorough 10-week course which includes civil air regulations, airport traffic control, air route traffic control, radio aids to air navigation, and weather.

Marine Technical Sgt. H. P. Hudson, Jr., instructor for the two officers and nine enlisted men who just completed the course, commented, "I've never seen anyone so eager to learn as these officers and men."

Hudson is a veteran instructor and holds two senior ratings with the CAA Controllers.

On completion of the course at NAS ATSUGI the students are given their final test at the American Embassy in Tokyo, then become control tower operators at the JMSDF air station at Konoya, Kyushu, Japan. Some of Atsugi's current guests will eventually be instructors for Air Controllers.



TSGT. HUDSON INSTRUCTS JMSDF STUDENTS



MRS. R. D. GOMEZ had a husband-guided tour during airlift to the squadron's new base.



QUALIFYING as 'Junior Navigators', these youngsters, part of VR-7's dependents being moved from Hickam to Moffett, intently watch as Lt. O. B. Sharp explains his navigational charts.

VR-7's HAPPY DEPENDENTS' SPECIAL

WELL, NOW, THIS was it! Last stronghold of a man's world had been invaded by his womenfolk. Time was, a man's airplane was all masculine, sacrosanct from women's invasion. But not any more. VR-7 started it, and, according to one VR-7 crewman, only goodness, and AirPac, know where it could end.

Early in August a group of Navy wives had a first-time opportunity to do a little "back seat" flying with their husbands on a VR-7 *Super Connie* transport. Their husbands are members of Military Air Transport Squadron Seven which, with VR-8, is being transferred from HICKAM AFB, Honolulu, to NAS MOFFETT FIELD.

Every family in the Navy hopes for those blessed words "concurrent travel" whenever there is a change of duty involving overseas travel. In the case of VR-7's trans-Pacific move, not only were arrangements made for squadron personnel to accompany their families via air, but when possible, were assigned to their own planes.

First plane of this 1600 passenger airlift was commanded by Cdr. F. H. Gage, whose wife and three children were aboard, as was copilot Ltjg. L. G. Bonner's wife Jean. Families of flight engineers G. E. Singleton, ADC, and R. D. Gomez, AD1, and of radioman

G. R. Hudson, ALC, also accompanied them on the flight.

Enroute, these families and the others aboard, watched with admiring interest while their men went about the many complicated duties that must be performed in flight. Navigator Ltjg. G. A. Drew made a hit with his "assistants, the junior navigators."

Given a royal Hawaiian send-off at Honolulu, the leis-laden families had

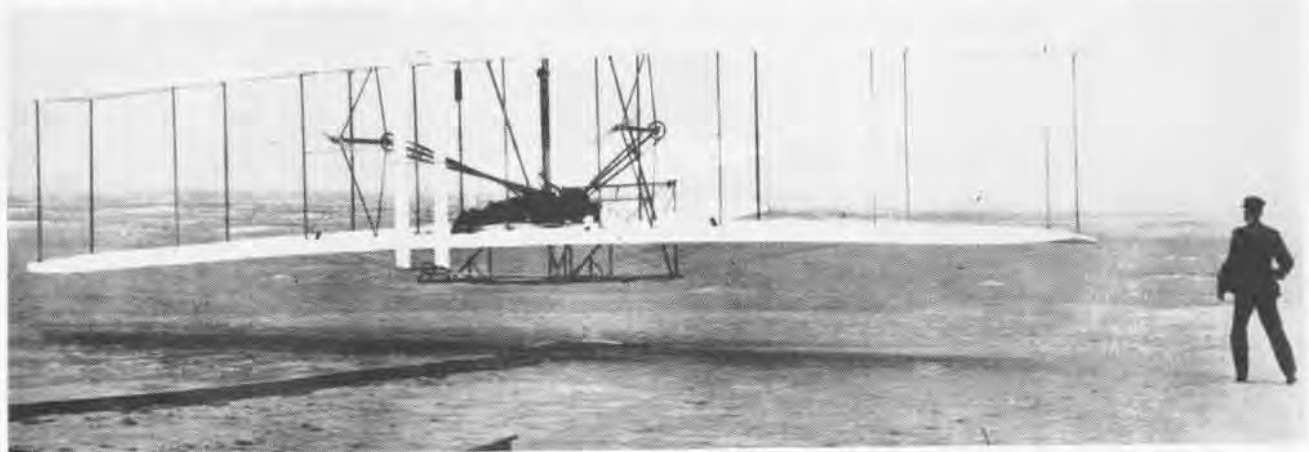
explained to the strains of "Aloha."

This festive atmosphere was not lost when they landed at Moffett. Here, "Aloha" became "California, Here I Come," and they were greeted by a party of Moffett officers and town officials, welcoming home this first contingent of VR-7, the squadron that, from its commissioning in 1943 under another designation, had been operating entirely in the Pacific.



WITH ONE LOAD delivered to California, this *Super Connie* comes back to Hawaii for another. This is the first time the squadron has airlifted its own dependents in a full-scale move.

NAVAL AIR AND CURTISS-WRIGHT



ORIGINAL WRIGHT biplane takes off on its first flight at Kitty Hawk, N. C., on 17 December 1903. Plane has a single motor and two chain driven pusher-type propellers. Orville is lying on the wing at the controls. His brother Wilbur is shown at the right of the picture.

OPERATIONS ABOARD the world's largest carrier, the *Saratoga*, flight activity at such a test station as NATC PATUXENT RIVER give an observer an idea of the scope and far-reaching influence of Naval Aviation. The Navy's air arm has participated in two World Wars and Korea, each time emerging as a more vital participant in the war effort. Today, Navy planes fly to the four corners of the globe, on the alert to prevent aggression, their mission to preserve the peace.

Naval Aviation traces its origins to the two earliest names associated with successful heavier-than-air powered flight: Wright and Curtiss. These names today live on in the Curtiss-



NAVAL AVIATOR No. 3, Lt. John Towers got his wings from Glenn H. Curtiss (L) in 1911.

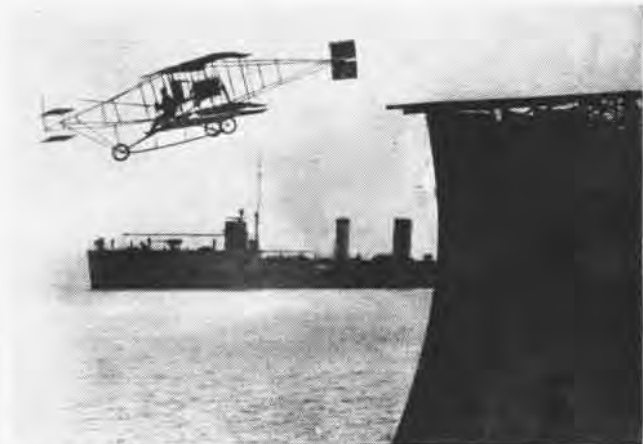
This is the tenth in a series of feature articles on companies which have built aircraft for the U. S. Navy. It was written by J. K. Ready, JO3.

Wright Corporation, of Wood-Ridge, N. J., a manufacturer of aircraft engines, an important contributor to the field of aeronautical research.

On 17 December 1903, years of research and effort on the part of two brothers, Wilbur and Orville Wright, were successfully culminated. Though proprietors of a bicycle repair shop, these men were more interested in proving that man could fly in a heavier-than-air craft. On the cold, windswept sands of Kitty Hawk, N. C., the world's first such flight became an accomplished fact. Weighing 750 pounds, powered by a 12 hp Wright-developed engine, the airplane remained airborne for 59 seconds and covered 852 feet on the fourth flight.



ELY BRINGS HIS Curtiss machine aboard USS *Pennsylvania* in January 1911. Lines and sandbags on the platform check the aircraft's run.



CURTISS BIPLANE, with Ely at the controls, makes first flight from the temporary deck of cruiser USS *Birmingham*, 14 November 1910.

IN 1906, the Wrights were issued a patent on their "flying machine." By this time, the public was awakening to the fact that the airplane was not just a crackpot idea. Wilbur demonstrated his machine in Europe and in 1907, completed purchase negotiations with Great Britain, France, Italy, and Germany.

One year later, the Army Signal Corps signed a formal contract for its first airplane—military aviation was spreading its wings. On 31 December 1908, Wilbur Wright set a distance and endurance record at Le Mans, France, in one of his own planes. He remained aloft for two hours, 30 minutes, 23 seconds, covering a distance of 77.5 miles. In 1909, Congress voted a \$300 gold medal to the Wrights in recognition of their achievements, and this same year, the Wright Company was established, with its factory at Dayton, Ohio.

After the turn of the decade, Wilbur and Orville flew very little, and devoted their time to the company, manufacturing aircraft under government contract. The craft were test-flown by Wright-trained pilots. Wilbur died in 1912, and Orville took over management of the company. (Orville lived to see aviation grow and mature. He died in 1948.)

The Wright's most formidable competitor was a motorcycle manufacturer, Glenn H. Curtiss, who joined Alexander Graham Bell and others to form the Aerial Experiment Association at Hammondsport, N. Y., in 1907. The group disbanded a year later, after four successful airplanes were built. Curtiss continued on his



F-BOAT, PRODUCED by Curtiss in 1918, was powered by Curtiss-developed engine, OXX.

own, rapidly developing a reputation as both a pilot and designer.

More publicity-minded than the Wrights, Curtiss won, on 4 July 1908, the *Scientific American* Trophy offered for the first public flight of one kilometer. He won this Trophy twice more: flying for three-quarters of an hour, covering 24.7 miles on 17 July 1909; making the longest continuous flight by an airplane up to that time, from Albany to New York on 29 May 1910. On 29 August 1909, at Rheims, France, Curtiss topped a speed test by six seconds over a 20 kilometer course, traveling at a speed of 46.5 mph.

Curtiss gained so much publicity in his flying exploits and from others flying Curtiss-built planes, that he began what was considered large-scale production in those days.

Both Curtiss and the Wrights established schools for pilot training. This is where the first military aviators learned to fly. The Wrights trained Naval Aviators Two and Four: Lts. John Rodgers and V. D. Herbster. Curtiss-trained were Naval Aviators

One and Three: Lts. T. G. Ellyson and J. H. Towers.

The first craft built by Curtiss were biplanes, powered with water-cooled engines driving single pusher propellers. Experimentation with hydroaeroplanes began at Hammondsport, N. Y., however in 1910, Curtiss went to North Island, San Diego, where the climate would allow him to work year-round. Here the first U. S. seaplane took to the air on 26 January 1911.

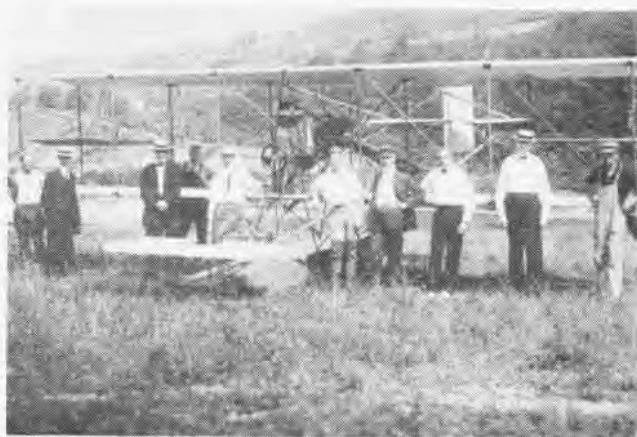
Curtiss successfully undertook to demonstrate that Naval Aviation was feasible. On 14 November 1910, Eugene Ely, a Curtiss test pilot, flying a Curtiss plane, made the first successful flight from a temporary platform on the deck of a warship, cruiser USS *Birmingham*. Ely, on 18 January 1911, made the first successful landing-and-takeoff aboard a warship, the cruiser *Pennsylvania*. To further prove to the Secretary of the Navy that planes could operate from Navy ships without specially constructed platforms, a Curtiss seaplane flew out to the *Pennsylvania* on 17 February 1911, landed on the water, was hoisted aboard, swung back into the sea, and returned safely to land.

For his work in the development of the hydroaeroplane, Glenn Curtiss was awarded, in 1911, the first Collier Trophy. He won the trophy the following year for the development of the flying boat—a seaplane whose hull structure served as a pontoon.

The Navy's first planes were delivered in July of 1911. These were the Curtiss A-1 and A-2, and the Wright B-1. The A-1 *Triad* hydroaeroplane was equipped with a single float and



THIS CURTISS PUSHER plane was used to demonstrate the newly developed compressed air catapult at the Washington, D. C. Navy Yard.



NAVY AND CURTISS representatives, including G. Curtiss, T. Ellyson, J. Towers, before Navy's first airplane, A-1 hydroaeroplane, *Triad*.



GIANT NC-1, LARGEST flying boat in 1918, with a wing span larger than B-17's of WW II, made record by carrying 51 passengers. Its

sister boat, the NC-4, won fame by making the first trans-Atlantic flight in 1919, with pilot, Cdr. Albert Read and a crew of five men.

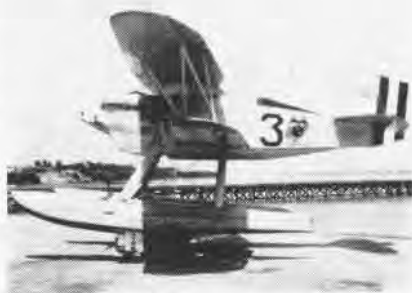
wheels. The A-2 and B-1 were land-planes, but both were later modified to operate from the water.

In 1913, Orville Wright was awarded the Collier Trophy for the development and demonstration of his automatic stabilizer. This device automatically banked the airplane at the correct angle when in a turn.

During the next four years, both the Wright and Curtiss companies continued to build engines and planes. More and more people became interested in aviation, and governments throughout the western world saw the possibilities of the use of this flying machine for commercial transportation and in the mechanics of warfare. The Age of Flight had arrived.

America's entry into WW I found the companies ready to contribute both aircraft and engines to the war effort. During the early war in Europe, Curtiss delivered planes to both Great Britain and Spain. During the war, Curtiss built R-6 and R-9 seaplanes for the Navy; also F-Boats, H-12 flying boats, H-16 and H-16A types, N-9 trainers, L-2's, HS-2L's, and F-5's. Probably the most well known of the WW I planes was the JN-4, familiarly called the *Jennie*. It was a two-place biplane, used as a trainer. Curtiss production totaled about 4000 airplanes.

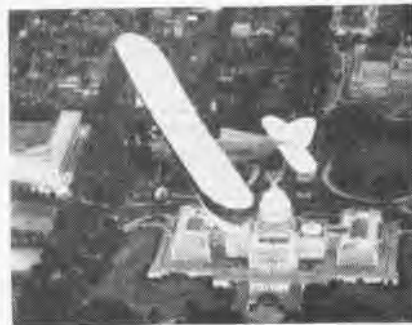
Principal aircraft production at the Wright Company centered around the British designed deHavilland-4 (DH-4), used primarily by the Army Air Service, but also by the Navy and Marines of the Northern Bombing Group. A day-bombing machine, equipped with a Liberty motor, the DH-4 was noted for its climbing ability and speed, and saw service in



CAPT. PAGE, USMC, won the last Curtiss *Martine Trophy Race* in this F6C, during 1930.



CR-3 CURTISS-NAVY racer, piloted by Lt. Rittenhouse, won 1923 *Schneider Cup Trophy*.



APOLLO SOUCEK breaks world's altitude record in 1930 in this F2W Wright *Apache* airplane.

Europe at the Western front. Wright also produced a two-place primary trainer, the SJ-1. Wright production during WW I totaled over 3500 aircraft and 5816 engines.

Naval aircraft performed scouting, coastal patrol, and some offensive action against enemy aircraft and surface craft. Naval aircraft, patrolling the U. S. Coast and European waters, were especially valuable against submarines. Owing to the effective action of Navy's planes, shipping losses due to enemy subs were cut drastically during the last ten months of the war.

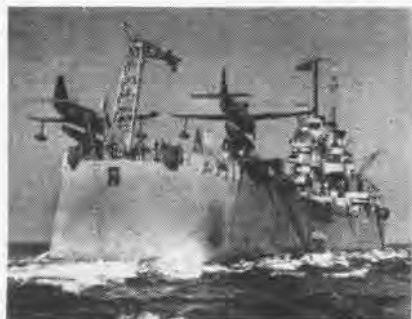
One of the more important developments stemming from WW I requirements was the NC type flying boats. The plane was originally designed for long distance patrols and to carry heavy armament for anti-sub warfare. The NC-1 was test flown on 4 October 1918. The plane type arrived too late to see war service, but was to become one of the most famous aircraft of its day.

The NC was the largest aircraft at that time. Its 126-foot wing span, 90 mph speed and graceful hull were distinguishing features of the large flying boat. The NC-1 broke the world's passenger carrying record in late 1918, by carrying 51 passengers. The NC-4, on 16-27 May 1919, carried Cdr. Albert C. Read and a crew of five from Trepassy, Newfoundland, to Lisbon, marking the first trans-Atlantic flight. Stops were made at Horta, and Ponta Delgada, Azores.

When the Aerial Mail Service was inaugurated in 1918, the first aircraft to carry the mail were JN-4 *Jennies*, R-4's, and deHavillands, plane-types produced by the Curtiss and Wright

companies. Because of the war, and the shortage of commercial aircraft, these planes were transferred from military service to that section of the War Department which had cognizance over the Aerial Mail Service. After three months, on 10 August 1918, the service was taken over by the Post Office Department.

After the war, Wright began to give less emphasis to airframe production, and concentrated on aircraft engines. By 1921 the company was probably the foremost aeronautical engine builder in the United States. In 1925, Wright developed the F2W *Apache*, originally designed as a shipboard



SO3C'S ON AFT turn-table catapults aboard light cruiser USS *Denver* (CL-58), about 1943.

fighter, but used by the Navy for experimental purposes. Lt. C. C. Champion, on 4 July 1927, set a world's landplane altitude record of 37,995 feet in the *Apache*. Three years later, Lt. Apollo Soucek, in the F2W, set a new altitude record of 43,166 feet.

Curtiss continued in the production of both aircraft and engines. Its Navy racers brought many trophies. On 3 November 1921, Bert Acosta, a civilian, set a new world's record for speed on a closed circuit, flying at 176.7 mph at the Pulitzer race in Omaha. The year 1923 saw Curtiss-Navy racers win two top awards: Lt. David Rittenhouse won the Schneider Cup trophy flying at an average speed of 177.38 mph over a 200-sea-mile course. The Pulitzer Trophy was won by Lt. "Al" J. Williams with a speed of 243.67 mph. Navy took first four places; the first two with Curtiss-Navy racers; the next two with Navy-Wright racers.

In 1923, the Wright Company took over production of the Lawrence-developed J-1 *Whirlwind*, radial, air-cooled engine, used extensively in many advanced modifications by the

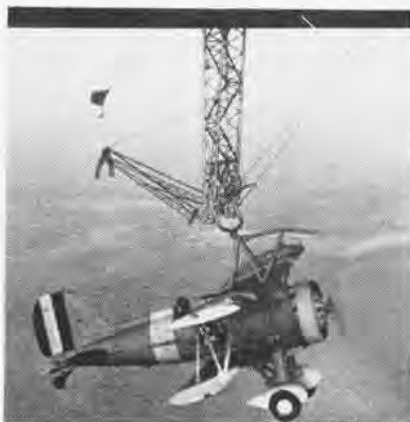


SC SEAHAWK was the last scout observation plane built for cruiser, battleship operations.

Navy for over 20 years. It was a *Whirlwind* that powered Adm. Richard Byrd's flight over the South Pole. The 1927 Dole Race was won with a plane powered by a *Whirlwind* motor. Lt. William Davis, Jr. (now Vice Admiral) navigator on this flight from Oakland to Honolulu, and current DCNO(Air), won the DFC for his part in the victory. Lindbergh's "Spirit of St. Louis" was built around a *Whirlwind*. In 1927, the famous Wright *Cyclone* radial air-cooled engine made its debut, the result of a Navy contract. Advanced *Cyclones* are still produced.

The F6C *Hawk* series appeared in 1925, and the last was delivered by Curtiss in 1927. A biplane convertible, the carrier version was equipped with a deck-landing hook. It was in an F6C that Capt. A. H. Page, USMC, in 1930, won the last Curtiss Marine Trophy Race with an average speed of 164.1 mph. The trophy was presented by Glenn Curtiss personally, during one of his last public appearances before his death.

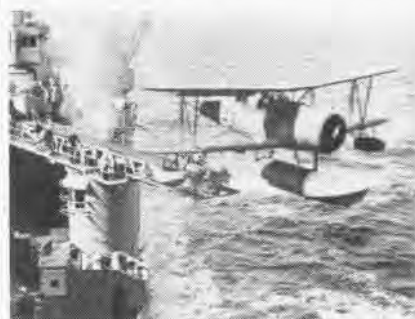
The late 1920's also saw these other



CURTISS-NAVY fighter, the F9C-2, attached to the airship USS *Macon*, is hoisted aboard.

Curtiss planes: the F7C *Sea Hawk*, a single-seat biplane, was designed as both a battleship and carrier-based fighter. The F8C *Helldiver* was a two-place carrier fighter (versions of this type, designated oc's, were used by the Marine Corps as observation planes). The N2C *Fledgling* was a two-seat training biplane, powered by a Wright *Whirlwind*.

In 1929, the Curtiss and Wright Companies, which had made their marks separately in the aviation industry, merged to form the Curtiss-Wright Corporation. The Wright Division was given the responsibility for manufacturing engines while Curtiss

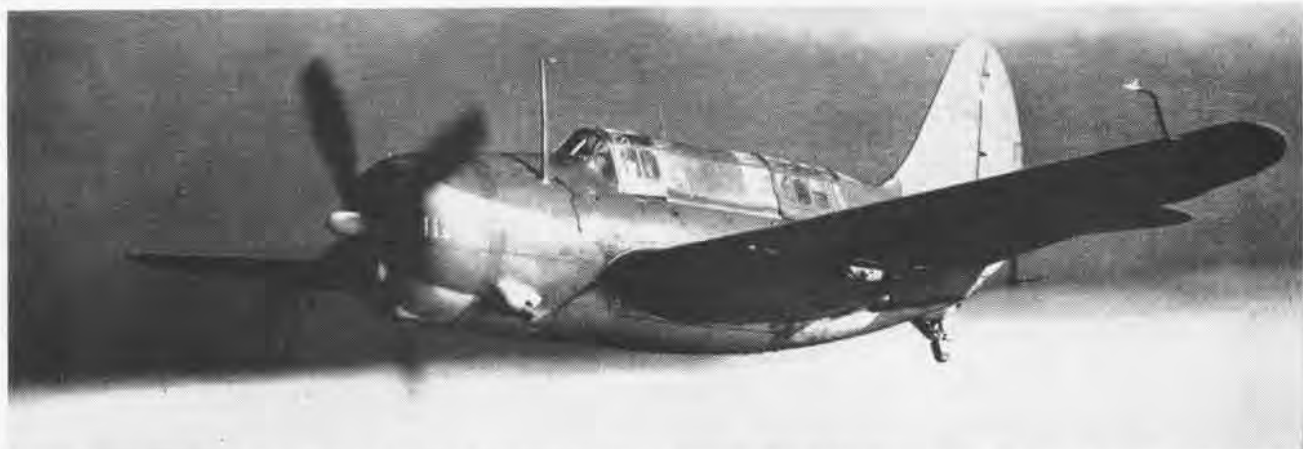


NAVY SOC *Seagull* is catapulted from a heavy cruiser for recon flight during WW II ops.

continued in the production of airframes.

During the early 1930's, the F9C was produced for the Navy. It was a light, single-seat fighter. Six F9C-2's operated from the airship, USS *Akron*, which acted as a floating, lighter-than-air hangar. The Navy ordered 57 F11C *Hawks* in 1932. These were single-engine biplanes, a development of the original *Hawk* series. This plane-type was assigned to the carrier *Ranger* (CV-4) after it was commissioned.

Between 1937 and 1941, more than 200 SOC *Helldivers* were delivered to the Navy. A two-seat scout bomber biplane, this carrier based craft featured retractable landing gear. The SOC *Seagull* first arrived in the Fleet during 1936 and continued in production until 1938. Over 250 of these scout observation biplanes, featuring folding wings, were built for the Navy. Convertibles, many of these planes were based aboard battleships during WW II. These were referred to as the "workhorses of the scouting fleet." Two years before America's entry into WW II, Curtiss provided



FAMOUS SB2C HELLDIVER returns after unleashing lethal payload during WW II aerial action. Two seat dive bomber was built around a powerful Wright Cyclone engine. It fought primarily in the Pacific theatre, finally carrying its deadly payload to the Japanese mainland.

the Navy with 503C *Seagulls*, monoplane version of the SOC. The last was delivered in 1944.

Probably Curtiss' most famous WW II plane was the SB2C *Helldiver*. Its U. S. Army Air Force designation was A-25. The experimental model first flew in 1940, and Fleet deliveries continued until late 1945. A two-seat dive bomber, it was powered by a Wright *Cyclone* engine. The *Helldiver* carried a heavy payload over a long range. It fought primarily in the Pacific theatre, from Tarawa to Manila, Rabaul to the Ryukyu Islands, and over Japan itself. SB2C's played a heroic role in victories in Asiatic waters.

During the early part of the war, the Navy ordered over 100 advanced combat training monoplanes from Curtiss. Designated SNC, they were called *Falcons*. About 1942, the R5C *Commando* made its appearance. It

was the largest twin-engine cargo transport in existence at that time. Wide doors and a loading ramp allowed light artillery and light vehicles to be loaded under their own power. Used by the Navy in its Air Transport Service, the R5C was flown by Marines in combat areas of the Pacific to evacuate their wounded. In operation until the early 1950's, the *Commando* was the last Curtiss-Wright aircraft in Naval service.

Development of the SC *Seabawk* was begun in 1942. This scout seaplane first saw combat during the softening-up operations prior to the June 1945 invasion of Borneo. Designed to operate from catapults on battleships or cruisers, the SC also performed rescue missions. It was the only plane complement aboard the battleship *Missouri* when the Japanese surrender treaty was signed.

Between 7 December 1941 and 14

August 1945, Curtiss-Wright produced over 26,000 planes. Engines and propellers also were delivered in quantity.

After war production ended, Curtiss-Wright discontinued the building of airplanes. Emphasis was placed on research and development of gas turbines and other types of advanced power plants. Delivery of *Cyclone* engines continued.

At present, Curtiss-Wright is producing turbo-compound engines, advanced *Cyclone* models, and J-65 turbojets. The corporation is also engaged in the development of ramjet engines for missiles. It produces industrial and scientific equipment, flight simulators, and propellers. Curtiss-Wright carries on research in the fields of atomic energy, propulsion and aerophysics.

Navy-Curtiss Wright association dates back to the origin of Naval Air.



DELIVERED ABOUT 1942, the huge R5C *Commando* transport, featuring wide doors and landing ramp, saw naval service until early 1950's.



THE SBC, EARLY Helldiver, a two-seat scout bomber, was used by both the Navy and Marine Corps, aboard carriers and from land bases.



FIGHTING FIFTY-TWO'S pilots pose beside an F2H-3 Banshee that helped set a new West Coast VF squadron safety record of 1036 hours.



NAAS KINGSVILLE'S safety officer, Cdr. F. R. West, congratulates 1st Lt. D. A. Heiser for flight that set a new ATU-102 safety record.

SAFE, PRODUCTIVE PACE IS SET

IN THE WAKE of an announcement that fiscal 1957 was Naval Air's best year of flight safety came these reports of smashed individual unit records, both in safety and achievement. (See page 15 also.)

Advanced Training Command

Three Advanced Training Units celebrated one year of accident-free flying August 3 in the two-place T-28 Trojan for the first time since the plane was assigned to the Naval Air Advanced Training Command.

ATU-105 at NAS MEMPHIS, 102 at NAAS KINGSVILLE and 107 at NAAS CABANISS FIELD, Corpus Christi, compiled the greatest number of accident-free flying hours ever amassed in the Advanced Training Command for a particular model of aircraft.

The last accident in the T-28 at Corpus Christi was a mid-air collision August 3, 1956. That crash was attributed to congested ground radio aids used in instrument flying. A new instrument radio aids system was put into commission immediately after the accident, which improved the safety of instrument flying in the Corpus Christi area.

Tells How It's Done

Cdr. W. E. Harrison, NAATC Safety Officer, said, "The T-28, like all aircraft, was designed to be an accident-free plane. The ease of main-

tenance and exceptional cockpit arrangements make it one of the safest aircraft in the air. It is particularly suited for its mission of training students in instrument flying.

"Probably the greatest contribution to this outstanding safety record, however, is the fact that each unit is stressing the importance of safety in flight. Knowing exactly what to do in the event of an emergency and always being safety conscious has played a large part in making this fine record.

Fury-ous Pace Set

Twelve FJ-3 Furies of Fighter Squadron 91 set a squadron record in July when the Red Lightning Squadron flew a total of 912.7 hours. Holder of highest total flight hours for the month was Ltjg. R. P. Rice, with 83.3. Ltjg. D. J. Thigpen was second with 59.5 hours.

Availability for the month ran above 80 percent, even though eight engine



T-28 TRAINER that permitted 3 NAATUnits to celebrate a year of accident-free flight.

changes were made. This allowed each of the NAS ALAMEDA-based Furies to average more than 75 flight hours.

201's Tigers are Careful

Also from Corpus Christi came word that Advanced Training Unit 201 set a new safety record on July 18, flying 16,740.9 accident-free hours in 192 days.

The Tigers of ATU-201 began working on their latest safety record January 7, the day a previous record of 14,860.9 hours in 142 accident-free days was set.

During 201's latest record heat, 106 Naval aviators were trained in advance tactics and weapons in the Panther jet. They also made a transition from the F9F-2 to the F9F-5 without incident.

Busy Banshees of VF-52

NAS ALAMEDA's Fighter Squadron 52, commanded by Cdr. C. N. Seaver, claimed a record for the most hours flown in one month by an F2H-3 Banshee squadron on the West Coast.

During July the Sealancers flew 1036 total accident-free hours, a feat reportedly unequalled previously by a 12-plane Banshee squadron.

- The control system on a new guided missile has a total of some 1,500,000 parts.

- The fire detection system on a modern jet fighter "sees" a 2000 mph bullet as it strikes and smother a fire before it happens.

MODEL AVIATION'S WORLD SERIES



WILLOW GROVE'S Capt. W. H. McClure explains Corsair model to beauty contestants.



AVID MODELER Steve Stackhouse warms up his amphibious plane while LCdr. Edward Praete, assistant project officer, briefs Miss Model Meet contestants Eleanor Wendt, Barbara Gottsbull.

SIXTEEN HUNDRED contestants from North America, South America and Europe converged on NAS WILLOW GROVE for the 1957 National Model Aviation Meet this summer. An estimated 85,000 spectators saw the



MODELING is a family hobby with Ralph Biddle and daughter Karen, set here to launch.

Blue Angels fly in the feature event.

Three records were broken and one was tied. Vernon Kroamer, an electronic scientist with the Naval Air Development Center, topped the existing distance record set in Russia. His radio-controlled J-3 Piper cub flew 4.5 miles, topping the 1.49 mile mark set behind the Iron Curtain. Endurance and speed records were also set.

The meet was so well attended that motels and rooming houses in the area were soon filled. With NAS WILLOW GROVE'S barracks jam-packed as well, a tent city was assembled.

Local modelers entertained contestants and visitors by performing intricate maneuvers during take-offs and landings on the simulated aircraft carrier USS *Smallfry*. Kroamer then

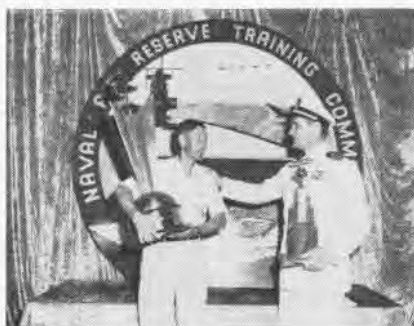
demonstrated the proficiency of his record-setting model by having it perform loops, inverted rolls and dive bombing techniques. Next he chopped the throttle and brought the model in for a perfect three-point pancake.



RUSSIA loses a world record as Vernon Kroamer controls his model for 4.5 mile flight.



DEVILLE AND DIAZ, mechanic and owner, show model that set world endurance record.



WINNER of Perpetual Hiller Trophy, Parnell Schoenky is congratulated by LCdr. Sobien.



GRAND National Champion trophy is presented to James Z. Paysen by RAdm. Kivette.

TV SPEEDS WEATHER REPORTS



MISS STRINGER WITH CAPTAINS O'CONNOR AND VAN EVERA IN LAKEHURST TV 'STUDIO'

NAS LAKEHURST became the first of eight stations to inaugurate Weathervision, a closed circuit television system for briefing pilots.

The device, designed and manufactured by the Dage Television Division of Thompson Products, Inc., enables the instantaneous transmission of weather information to many squadrons at one time. Thus time is saved and pilots can act more quickly in case of emergency.

A television camera transmits weather maps and other aerological information from the station aerology office to receivers in several locations around the station. Two-way radio communication enables pilots to get additional information from aerology.

Other stations scheduled to get Weathervision are Oceana, Va.; Patuxent River, Md.; Dallas, Texas; Argentia, Newfoundland; Whidbey Island, Wash.; Corpus Christi, Texas and Midway Island.

That Lakehurst was first station to have Weathervision in actual operation and that it was put into operation at a savings of \$10,000, was credited to LCDr. David H. Minton, Aerology Officer at the Lakehurst Air Station.

Last May, when the Bureau of Aeronautics first authorized the establishment of Weathervision at naval air stations, LCDr. Minton realized that the coaxial cable for the closed-circuit television would be laid along the same path as electrical power cables for a new airplane hanger under construction, he contacted BUAEER and obtained permission to go ahead with the project ahead of schedule. As a result, both cables were laid at the same time, reducing the cost of the project by some \$10,000 and completing the system well ahead of schedule.

Present for the inauguration of Weathervision at Lakehurst were Capt. John R. Van Evera, station CO; Capt. Michael G. O'Connor, Commander Naval Air Bases, Fourth Naval District and CO, NAS ATLANTIC CITY; and Miss Tippy Stringer, weather announcer for television station WRC-TV in Washington. Miss Stringer gave the first weather briefing from NAS LAKEHURST's new television "studio" at the station aerology office.

Dage Weathervision equipment has been delivered to the other seven stations and will be put into operation as soon as it can be installed.

Air Force Pilot Praised Stops Fury After Catapult Mishap

An Air Force pilot, 1st Lt. R. B. Collins, serving with VF-33 aboard USS *Intrepid*, was commended recently for his "superb pilot reaction" during a catapult shot which failed to launch his FJ-3M *Fury*.

Spotted on the starboard catapult, the aircraft commenced a normal run after being fired; but after initial acceleration, the forces upon the aircraft began to decrease.

Collins immediately reduced his throttle to idle power and started maximum braking. The shuttle hit the nose wheel, breaking the shimmy damper, and the plane began to skip along the flight deck, angling to the right.

The pilot continued braking action, easing up on the starboard brake in an attempt to straighten out the aircraft.



THIS PILOT'S TAKE-OFF WASN'T ROUTINE

His plane traveled 140 feet and remained upright on the deck as it came to a stop.

Collins was commended by Capt. F. Massey, Commanding Officer of the *Intrepid*, for preventing a possible fatality and the loss of his airplane.

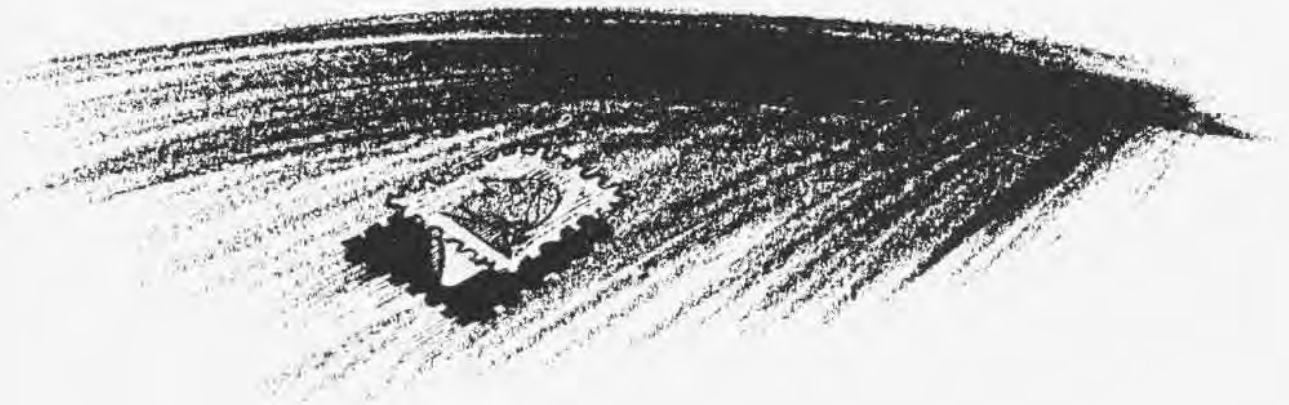
67,000 Landings on CVS-37 Ltjg. Daulton and His Crew Feted

The 67,000th fixed-wing landing on the USS *Princeton* was made by Ltjg. Daulton and his crew in their S2F *Tracker*.

Special ceremonies and a giant cake shared by the "Sweet Pea's" company celebrated the event. On hand to congratulate the pilot was Capt. John Chittenden, CO of the carrier.

Sharing the spotlight was co-pilot Ltjg. R. Louis Reasonover, Jr., and two crewmembers: James D. Webb, EM3, and John V. Aquilina, AM1.

LATEST 'SENSE' MAKES SAME



'WAY BACK in the dashing days of WW II, a lad named Stillsonwrench, one of the tailhook Tennysons of that era, summed up carrier life in the Pacific thusly:
*"This landing at night on a tossing ship,
With your heart playing tag with your upper lip,
Where the groove means the start of a one-way trip—
That's for the seagulls, not for me!"*

Obviously, Stillsonwrench was a prop pilot who developed a phobia re LSO's and a belated respect for the obstructions on the "tilt" end of what he evidently considered the very narrow and very short *Essex* class flattop.

Since his time, most of the inspirations for this barrier bard's versifying have long since given way to the vast progress made in both aircraft and modern day carrier types, equipment and procedures.

The net effect of these changes, with some realistic and sound advice concerning deep water decorum, is set forth in the latest Sense Pamphlet, *Carrier Sense*, issued by the Aviation Training Division of OPNAV.

Timing and *Teamwork* are pointed up as being the most important things in the life of today's carrier pilot. Even though they're doing it with mirrors, the Twin "T" adher-

ent is still regarded as the most valuable man around; and from a life insurance standpoint is a joy to the entire crew as well as himself.

The Sense Pamphlet makes no claim that carrier flying is the easiest way to bend a throttle. Nor is it considered the hardest. Requiring an exacting and precise kind of flying, it demands training and skill—both of which have been received and developed in large doses by Navy carrier pilots as a matter of routine.

To the Two "T's" the booklet, for the "L" of it, recommends a third important addition—*Learning*.

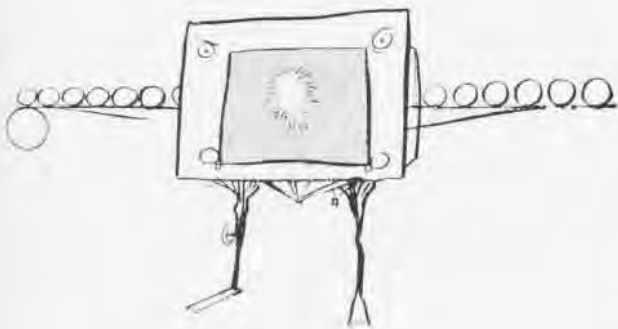
"No man who has been in this business for any length of time—admiral, air group commander, or squadron CO—figures he knows it all or ever will. Everybody is always learning in carrier flying because it is always changing.

"Planes are faster and heavier. Armament is being subjected to all sorts of experiments and reconsiderations. The carriers themselves are being altered radically in appearance and in hundreds of less obvious ways. These innovations take nothing away from the Two 'T's', timing and teamwork, but they emphasize the need for constant application to the task of learning. One cheerful fact is this: in spite of the greatly increased speed and weight of the new aircraft, certain changes have brought about a sharp decrease in accidents. The angled deck and the Mirror Landing System, for instance, have reduced crack-ups drastically."

The "Compleat Carrier Pilot" is described as one who assures himself of thorough mission briefing; makes a detailed external and internal pre-flight check; practices the established catapult procedures; maintains a rigid espousal of air discipline and an even more rigid regard for radio discipline; and, when the chips are down, has a working knowledge of squadron survival procedures.

Landing by means of the "looking glass" is given admirable treatment and even the members of L.S.O. Local No. 573 should find it a convincing and informative rundown on the optical landing system.

Carrier Sense is loaded with Osborn's inimitable art and is available via your favorite channels now. Like the man says at the end of the pamphlet, "School is never out."



Air Controlman Honored Awarded Plaque for Fast Thinking

A grateful VA-176 skipper has presented a plaque of appreciation to Winton Ellis, AC1, tower operator at NAS JACKSONVILLE. An AD-6 *Skyraider* piloted by Ltjg. Gordon Richardson had just taken off when controlman Ellis noticed the plane was trailing what appeared to be fuel.

He notified the pilot and cleared



LCDR. CUMMINS PRESENTS PLAQUE TO ELLIS

him for an immediate landing on any runway. When the plane landed safely, inspectors learned that more than nine gallons of oil had been lost in less than four minutes.

LCdr. Scott Cummins, CO of the Thunderbolt squadron, expressed special thanks for Ellis' quick action which saved possible loss of the pilot's life as well as the *Skyraider*.

CPO's Record Outstanding Leaves VF-174 After 7-year Tour

After more than seven "outstanding" years with VF-174, Edwin R. Farady, AOC, has been transferred to the Staff of Commander, Fleet Air, Jacksonville. Except for a stint as leading chief, Farady has been chief ordnanceman for the "Hell Razor" squadron since February, 1950.

In these seven years, Farady's department won five outstanding awards and two excellent awards during annual inspections.

ComAirLant has twice commended Farady for designing new and time-saving ordnance tools. BUAER and ComNavAirLant commended him for designing the first tow release for F4U aircraft.

Farady's efforts are also reported to have contributed to VF-174's winning of two Navy E's as the best day interceptor squadron in the Atlantic.



NAVY AND INDUSTRY DISCUSS AIR SAFETY

Safety Symposium is Held Emphasis Placed on Pilot Factor

Naval aviation specialists attended the 29th USAF-Aircraft Industry Safety Conference at Santa Barbara. More than 170 military and industry representatives participated in the meeting, sponsored by the Directorate of Flight Safety Research, Norton Air Force Base.

Major theme of the symposium was "Pilot Factors in Aircraft Accidents." Many aspects were discussed and evaluated. Addresses included such topics as: "Pilot Error," "Human Limitations of the Pilot," and "Pilot-Caused Aircraft Accidents."

Among the Navy conferees were: Capt. E. L. Farrington, Director, Aviation Safety Division, CNO; Capt. E. W. Humphrey, Deputy Director, Naval Aviation Center, Norfolk, and Mr. W. L. Lovejoy, Instrumentation

System Coordinator, BUAER. In picture above Capt. Farrington is seen with Messrs. C. O. Miller and J. W. Lankfort of Chance Vought Aircraft.

Warren Visits Kearsarge Recalls Unusual Plankowner Role

Alfred K. Warren, Jr., has qualifications that set him apart from run-of-the-mill plankowners. He put an air station—North Island—into commission in 1918.

A recent guest aboard the attack carrier USS *Kearsarge*, Warren recalled his experiences. When he reported to North Island as a flight instructor there were no buildings and no quarters for the pilots. They lived in quarters in San Diego's Balboa Park and commuted by small boat to North Island.

"We had only three NV-2 single float seaplanes and only one of them was flyable when I first reported. Since there were five pilots, we took turns," the old-timer reminisced.

New Poopy-suit is Tested Combines 5 Suits into 3 Garments

A new suit for pilots of supersonic aircraft has been water-tested. It combines five protective suits into one three-piece garment and will float an unconscious pilot face-up. Even the boots are buoyant.

The new suit was developed by the Convair Division of General Dynamics.



THE FRENCH BREGUET, the Br-1100, is a lightweight jet fighter equipped with two turbojet engines. A similar aircraft, but with one engine, the Br-1001, was designed for NATO. The Br-1100 was designed for the French Navy and Air Force. It has a take-off weight of 14,600 pounds, a maximum speed of Mach .92 and was designed to operate from 3000-foot grass strips.

CPO Ends 37-year Career Fueled Planes by Bucket Brigade

Edward Augustine, ADC, who watched Corry Field grow from a sandpile to a modern airfield, retired July 1 after 37 years Naval service.

When he reported to Pensacola in 1921, Corry Field was a square of ground cut out of wilderness in North Pensacola. He stayed over four years on that tour.

In 1929 he returned to find Corry had been moved to its present location. It was "just a sandpile with a few shacks and one permanent building." When he drew the watch, he slept in a pup tent pitched in the clearing just off the grass runways. Cows and pigs roamed the field by day and night. Airplanes were gassed by bucket brigade because trucks bogged down trying to drive on the field.

Augustine returned for a third tour in 1935-38 to find Corry had undergone a face lifting. Its runways had been paved, gas pits had been sunk just off the runways and long hose connections stretched from pits to planes.

"But nightly we had to check the hangars for snakes, 'possum and skunks," he recalls. "It was easy to kill the snakes and chase the skunks with a fire hose but the 'possum would climb up into the rafters and hide."

Augustine returned to Corry in 1947 and again in 1953 to complete 16 of his 37 years in the Pensacola area.



GRASSROOTS service cooperation is evidenced by these mechs of FASRon-51 who change an Air Force C-47's engine at NAS Sanford, allowing AF plane to reach Albuquerque, N. M.

Ducted Fans Up for Study Vertol, ONR to Undertake Project

A \$66,547 contract has been awarded Vertol Aircraft Corporation to explore the use of ducted fans in aircraft wings. Money was provided by the Army and the research program will be carried out in cooperation with the Office of Naval Research.

The use of ducted fans in the wing for propulsion and lift of VTOL airplanes appears "very promising," a Vertol engineer said. Vertol's primary area of investigation will be the aerodynamic effects of the transition from hovering to forward flight.

Engineers will study how airflows from ducted fans react to various wing shapes and will study the possibility of using ducted fans for forward propulsion as well as vertical lift and their use in control surfaces.

Redesignate Fleet Titles Changes Affect AirLant, AirPac

The old and familiar terms, AirPac and AirLant have gone by the boards. Spelled out in a recent instruction and effective 31 July, Air Force Pacific Fleet and Air Force Atlantic Fleet were re-designated Naval Air Force Pacific Fleet and Naval Air Force Atlantic Fleet.

Also noted, the proper abbreviated titles are NavAirPac and NavAirLant.



STEFFES AFTER 7000TH LANDING ON CVA31

Jaygee Catches Two Wires 7000th Landing, Word of Daughter

Immediately after he caught the wire for the 7000th landing aboard the attack carrier USS *Bon Homme Richard* July 22, Ltjg. Herbert J. Steffes was handed a wire saying his wife had just given birth to a girl.

Steffes made the landing in an F9F Photo Cougar. He flies with VFP-61 which operates from NAS Miramar. His unit is now attached to CAG-15.

C-130 Tested as Refueler Marines Test Second as Transport

Marine pilots are testing a Grumman C-130 turbojet *Hercules* transport for possible use as an inflight refueling tanker. Another C-130 is being tested as a Marine combat transport.

The four-engined C-130 recently began operational service with the U. S. Air Force as a troop-and-cargo carrier. It can deliver men and cargo by parachute or by landing on short, hastily-prepared fields and can be converted into a hospital plane.

Lockheed's Marietta, Ga., Division was given contractual coverage by the Air Force for modifying the C-130 for testing as an inflight refueler.



SYMBOLIC of Naval Aviation history during the past 25 years, these 40 Navy aircraft types comprised the "Progress of Naval Aviation" exhibit at the Norfolk International Naval Review. The display ranged from pre-World War II planes to modern jets. Planes were brought in after a search of bases throughout the country. Many are slated for the National Air Museum.

LETTERS

SIRS:

For 13 years I have been reading the NAVAL AVIATION NEWS, seeing records for various things and pictures of old friends who have flown over 1000 mph or survived three tours at Pensacola.

Being no different from other aviators, I thought maybe I could dig up some sort of "Can You Top This One?" claim. At first I thought perhaps I might claim to be the oldest "fighter" pilot who has ever flown a jet. Or after reading Grampaw Pettibone for years, I just knew I was the only pilot left that had not landed wheels-up or hit a barrier. After investigating all these claims both in the Atlantic Fleet and the Pacific Fleet, I found my hopes shattered on that score.

I have but one "Can You Top This One?" claim that has not been refuted by competent authority as yet. I claim to be the only hangar deck officer in the U. S. Navy on active duty that has been a commissioned officer and aviator in three different branches of the service: A Second Lieutenant Marine Aviator, a Second Lieutenant USAF aviator, and now a Lieutenant U. S. Naval Aviator.

If there is some one else that can claim this in the Navy, Marines or Air Force, I won't ever write to you again—even if I'm the first man to fly to the moon.

JACK SARGENT, LT.

USS Princeton

* We'll give you a by-line on the moon epic.

SIRS:

Enclosed is a snapshot taken while I was stationed at NAS OCEANA, VA. It was taken in the fall of 1952 during an air show.

The blimp was hovering at an altitude of about 300 feet, and fortunately I had my camera ready at the right moment to get this interesting shot.

NICHOLAS R. NUZZI, ACC

* Clever mooring!



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SIR:

The cooks here at NAS Corpus were wondering how the plane in the pic (August issue, inside front cover) was using the Cat. Nearly all of the commissary personnel have served on CV-type ships and no one can recall spotting a catapult in the center of the flight deck.

Also the 444444 seaman was mess cooking on the *Valley Forge* when the pic was made, so I think the *Happy Valley* should have the praise.

THE COOKS AT GALLEY 147

* You caught us cold on the first count but you're mistaken about the ship. It is the *Essex* off Japan.

GENTLEMEN:

The article "A Prop Pilot Looks at the A3D" by Cdr. Huff appearing in the August '57 News was a doubt-dispelling and mysteriously motivating piece. Being an "old" (41) VP pilot I have had some doubts interspersed with desire about transitioning to jets. His article sold me.

When do I get my orders to an A3D squadron?

R. W. (for Willing) CHRISTIANS
Commander USN
Officer in Charge

SIRS:

The August NANews is a top-notch issue. Without a doubt Huff's "A Prop Pilot Looks at the A3D" is one of the best pieces of writing I've read in anybody's magazine for a long time.

MATT PORTZ, CDR.

Cleveland, Ohio

SIRS:

Reference your article in July issue concerning FJ-4B Fleet Introduction Program. This is not the first FIP to be held at an operating naval air station as stated.

Prior claim must go to the A4D-1 FIP which was held at NAS Quonset Point in September 1956 with pilots from VA-72, VF(AW-3) and VMA-224. In fact, Lt. Ernie Schorz of VF(AW-3), pictured in your article, participated in the A4D-1 FIP.

LCDR. H. A. ENGELMANN

NAS Quonset Point

* Keereet! And this further strengthens our resolution to deep six all allegations of the primal variety. In fact, there just ain't no such thing as "first, biggest or best" anymore.

● A new U.S. supersonic research plane, if possessing sufficient fuel, could circle the earth twice at the equator in twenty-four hours.

● 72,000 fluorescent lights are required to light production lines of one aircraft plant. Thirty-two carloads are used each year.

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● COVER

Wind, waves and weather combine to make the cover shot of the USS *Forrestal*, CVA-59, a damp scene. The science of forecasting such weather conditions is this month's feature.

● SUBSCRIPTIONS

Naval Aviation News is now available on subscription for a \$2.25 check or money order (\$1.75 additional for foreign mailing) made payable to Superintendent of Documents, Government Printing Office, Washington 25, D. C. Single copies are 20 cents each.

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SQUADRON INSIGNIA

A winged mountain lion, fiercely stalking the sea in search of prey, graphically portrays the aggressiveness of VP-661. The Naval Air Intercept Training Facility shows its mission by the hooded falcon leashed to an antenna. Although blinded by the elements, the striking power of Naval Aviation is guided to its target by radar. VF-211's strength, readiness and dedication to national defense are symbolized by the unsheathed sword and shield. The checkerboard design is its trade mark. The solitary and electronic nature of AEWron-15 patrols is depicted by a lone wolf crying a warning to his pack, against a moon slashed by a bolt of lightning.



VP-661



NAITF



VF-211



AEWRON-15



NAVAL AVIATION

NEWS

Four acres afloat! From its vast flight deck, the mighty carrier, Saratoga, launches one of its versatile and deadly brood—a McDonnell F3H "Demon." Together, they represent a vital punch that is repeated throughout the world by our carrier forces. Follow the progress of Naval Air Power by reading Naval Aviation News. For 12 issues, send a \$2.25 (\$3.00 foreign) check to:

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