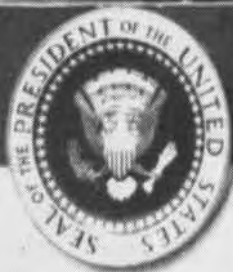


NAVAL AVIATION

NEWS



42nd Year of Publication

JUNE 1961

NavWeeps No. 00-75R-3





TRIBUTE TO SPAD DRIVERS ASSOCIATION

Because we managed to spell out a full 50 years of Naval Aviation without showing a single shot of the celebrated Skyraider and because we wish to affirm without mental reservation our deep, abiding respect for the sterling 'Super Spad' of yore and of current carrier chronicles, we print herewith in response to hundreds of irate demands one AD and one yarn (page 14).

FORTY-SECOND YEAR OF PUBLICATION, JUNE 1961

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Issuance of this publication was approved by the Secretary of the Navy on 3 April 1961.

■ COVER

At White House on 8 May, Naval Aviator and NASA Astronaut, Cdr. Alan B. Shepard, Jr., was awarded NASA DSM by President John F. Kennedy. At left is Mrs. Shepard. The honors bestowed for first U.S. space flight came on a significant date — the Fiftieth Anniversary of Naval Aviation.

Published monthly by Chief of Naval Operations and Bureau of Naval Weapons to disseminate safety, training, maintenance, and technical data. Send mail to Naval Aviation News, Op 05AS, Navy Department, Washington 25, D. C. Office is located at 2306 Munitions Bldg. Telephone: Oxford 62252 or 62259. Annual subscription rate is \$2.50 check or money order (\$1.00 additional for foreign mailing) made payable to Superintendent of Documents, Government Printing Office, Washington 25, D. C. Single copy, \$.25.



NAVAL AVIATION NEWS

Kitty Hawk Commissioned 1st Carrier Armed with Terrier

USS *Kitty Hawk*, newest carrier to join the Fleet, was commissioned 29 April at the Philadelphia Naval Yard.

Adm. Arleigh A. Burke, Chief of Naval Operations, principal speaker at the commissioning said, "*Kitty Hawk* clearly demonstrates our Navy's confidence in the future of manned aircraft at sea. The role of the attack aircraft carrier and her aircraft stretches far into the future . . . Unlike missiles, manned aircraft can be recalled. They can return, reload and re-attack. It is most appropriate that this ship join the Navy in 1961 as we celebrate the 50th Anniversary of Naval Aviation."

Kitty Hawk (CVA-63) is the first aircraft carrier in the world to carry *Terrier* guided missiles. Missile launching equipment was installed in place of conventional anti-aircraft armament.

Kitty Hawk's keel was laid 27 Dec. 1956. She was christened 21 May 1960. Capt. William F. Bringle is C.O.

Proficiency Rated Best Hart Award Given Ens. Zahller

RAdm. G.B.H. Hall, Commander Barrier Forces Pacific at NAS BARBER'S POINT, honored a 22-year-old Naval



RADM. HALL GIVES PLAQUE TO ZAHLLER

Aviator for outstanding achievement during his basic and advanced naval pilot training.

Recipient of the Silas C. Hart, Jr., Memorial Award was Ens. Richard D. Zahller of Airborne Early Warning Barrier Squadron Pacific. Included in the award was a gold chronograph and inscribed plaque.

The award is given annually to the student pilot who demonstrates the highest degree of proficiency in instrument flying while undergoing basic and advanced flight training in the Naval Air Training Command at Pensacola, Fla. It was established by Mr. and Mrs. Silas C. Hart, Sr., in memory of their son, Silas C. Hart, Jr., who was killed during an aircraft accident in January 1953 while undergoing instrument flight training at the Naval Air Training Command.

Ens. Zahller has been serving with the Pacific Squadron since Oct. 1960.



MRS. FIRIE CHRISTENS THE P3V 'ORION'

Navy Accepts First P3V-1 'Orion' Built for Many Missions

The Navy has accepted its first P3V-1. At the ceremonies in Burbank,

Calif., Mrs. R. B. Pirie, wife of VAdm. Pirie, Deputy Chief of Naval Operations (Air), christened the plane *Orion* as she made the traditional swing.

Representing advancements stemming from the Navy's anti-submarine research and development program over the past 15 years, the *Orion* features the most effective electronic, sonic, and magnetic equipment ever developed for this purpose.

"We have high hopes for the P3V," Adm. Pirie said at the ceremonies. "It is designed to perform several important tasks: off-shore surveillance, contact investigation, task-force protection, and submarine detection and destruction."

Although it has a cruising speed of more than 400 mph, once over target areas, the *Orion* can fly with perfect control at speeds of less than 175 mph. It carries a crew of ten in its fully pressurized, air-conditioned cabin.

Orion, a land-based aircraft, is powered by four Allison turbine engines. It has a 99-foot wingspan and an overall length of 116 feet, 10 inches.



UNDER SECNAV, Honorable P.B. Fay, Jr., bids Ens. Richard R. Baner, VF-124, as the outstanding NavCad for 1960. Baner received award at a dinner given by the Daughters of American Colonists, April 11



GOLDEN YEAR of the Golden Wings celebration prompted editor of Puget Sound Naval Shipyard paper, "The Salute," to send in these photos showing pilot Pete Bowers buzzing the decks of a modern attack



carrier, the Bon Homme Richard, in his 1912 Curtiss Pusher. Demonstration flight was made in Puget Sound in 1958. Bowers made his approach, practically hovered over flight deck, but did not land.

Change in Pilot Reports Year-end Report Serves All Needs

All active duty Naval Aviators, Naval Aviation Pilots, and Flight Surgeons, as well as those in the Naval or Marine Air Reserve, will be affected by a change in the manner of reporting annual flight time.

New forms embodying the new procedures became effective 27 March. Most pilots, however, will not be affected directly until 30 June when the next report is due. Fifty copies of the new Individual Flying Time Report (OPNAV Form 3760-4, Rev. 1-61), have been sent to all activities having custody of Naval aircraft. Additional copies may be drawn from Forms and Publication Supply Offices.

The basic difference in reporting flying time on the new form is that *only one report must be filed per pilot in a given year*. Heretofore, reports were required when a pilot changed duty stations as well as at the end of a fiscal year.

A DCNO(Air) spokesman advises that any partial year reports already submitted during this fiscal year because of changes in duty stations should be disregarded when year-end reports are prepared. Reports submitted on the new form will cover the complete fiscal year or the portion of the year during which a pilot was on flight status.

Annual Flying Time Reports are the Navy's main source of data regarding flying performed by individual aviators and flight surgeons. Information gleaned from the forms is used in flight safety and other analyses, budget justification, evaluation of past

and future flight programs, and, of course, in determining whether fliers have met minimum requirements.

The individual reports are the only central record of individual flying time for pilots and flight surgeons. They provide source data for bringing up to date each aviator's flying record which is contained in electronic data processing equipment in BUPERS.

New Helo on Mercy Flight Test HSS-2's Deliver O₂ to Liner

The Navy's new Sikorsky HSS-2, a twin-turbine anti-submarine helicopter, performed its first mercy mission before it completed its test phase. The Naval Air Test Center helos were

aboard *Lake Champlain* for a week of sea trials when assistance was requested by the British luxury liner, *SS Queen of Bermuda*, steaming in the vicinity of the *Lake Champlain* in the waters north of Bermuda.

The liner requested large quantities of oxygen for a woman passenger stricken with "congestive heart failure." Capt. Ralph Weymouth, Commanding Officer of *Lake Champlain* stopped the routine ASW maneuver and dispatched the helos with the oxygen.

Cdr. Patrick L. Sullivan, head of the VTOL/STOL branch of Flight Test, piloted one HSS-2, while Cdr. C.B. Hamilton, head VTOL/STOL branch, Service Test, flew the other.



WORLD RECORD BREAKERS receive awards from Federation Aeronautic International at Aero Club of Washington. From left are Cdr. Leroy A. Heath, who set world class record of 91,450.8 feet in North American A3J-1; Lt. Henry L. Monroe, navigator on Heath's flight; Cdr. J.F. Davis, who holds world 100-kilometer, closed course speed record of 1590.21 in McDonnell F4H-1; E.W. Virgin, Aero Club President, and VAdm. R.B. Pirie, DCNO(Air), who presented the awards in behalf of the National Aeronautic Association. Marine ICol. T.H. Miller (not present) was honored for setting a 500-kilometer, closed-course world record of 1216.78 in F4H-1.



GRAMPAW PETTIBONE

Haste and Waste

Approximately 15 minutes after a night catapult launch, an A3D pilot was notified by radio that he "may have hit a tow bar on the launch." The pilot could find no discrepancies in his hydraulic system or landing gear, so he continued with his mission.

Thirty minutes prior to recovery time, he cycled the landing gear and had a visual inspection made of the nose wheel through the cockpit deck inspection plate. Hydraulic system pressure and the eyeball check were both normal. A CCA approach was then made, followed by a normal arrested landing. The A3D was pulled back in the gear on signal, and brakes were applied. The wings were folded, and the aircraft was directed up the deck, a slight turn being made to taxi across the foul deck line. Up to now he had normal braking.

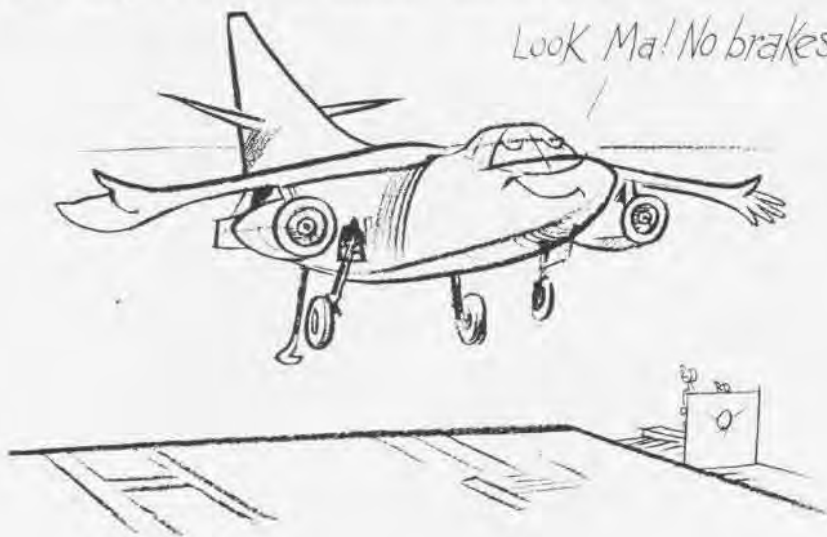
As the pilot taxied forward to the deck part on the axial deck, suddenly he had a complete normal system brake failure! The emergency air bottle was swiftly actuated, but there was no response!

Shutting down his engines, the pilot deliberately turned the A3D to starboard, using the nose wheel steering,



Gentlemen!

and aimed it for a parked and un-manned A3D. It was that or go over the side! The big aircraft smashed together, nose to nose. The runaway was halted. Inspection revealed both main and emergency brake lines had been severed at the wheel.



Grampaw Pettibone says:

Great jumpin' Jehosophat! Tow bars adrift on the deck are as deadly as a lighted stick of dynamite and could be just as catastrophic.

Appears to me that if wheel or brake damage was suspected, that A3D should have been inspected before movin' it an inch after arrestment. If time was a problem, a tractor and tow bar could have cleared the aircraft from the landing area mighty fast and done it a lot safer. Pri-Fly knew they had a "probable," why make it "positive" damage? There's just no substitute for good headwork.

Fire Ball

A division of A4D's were engaged in night MLP at an outlying field. Two full bounce periods had been completed, but the group of planes were running somewhat behind schedule. They were instructed by the LSO to expedite the turn-around for the next bounce period.

Fuel trucks were standing by, so three of the pilots remained in their cockpits while their aircraft were refueled. On one A4D, the plane captain immediately noticed there was no fuselage cap cover and that the fuselage cell cap was missing! Obviously the pilot had lost them during the previous MLP period. In addition, he was the only one who needed fuel in the fuselage cell, so it must have been siphoning in flight!

Climbing up to the cockpit, one of the plane captains told the pilot refueling was completed, but his gas cap cover was missing. The pilot told him to go get something to cover it and to hurry it up. The man checked the line shack and cruise box but found no cap. Returning to the cap-less A4D, he stopped another plane captain who was bringing out a "bundle of rags" to stuff in the filler pipe and told him NEVER TO DO THAT!

Climbing up the ladder again, the plane captain now shouted to the pilot that he couldn't find a gas cap. The pilot had his AP1-5 on, and the start-

ing unit was connected and running. He thought the man said only the cover plate was missing and signalled he wanted to start the engine. Figuring the pilot must know what he was doing, the man gave him a start and directed him out on the taxiway.

During taxi-out, the pilot informed the LSO in the mobile runway control that the A4D had a missing gas cap, and he was returning to the home base.

The LSO said, "Say again," and the pilot repeated his message. The LSO then asked if he was going to fly without a gas cap, and the pilot replied "Affirmative." Not believing anyone would be so foolish as to fly without a gas cap and thinking the young pilot obviously meant the fuselage cover plate, he cleared the A4D for take-off.

During the take-off roll, observers saw the plane burst into flames and heard an explosion! As the pilot heard the explosion and saw the flames in his rear view mirror, he cut the engine and braking to a fast stop, jumped out and ran for safety. The crash crew put out the fire promptly, but the wreck may be irreparable.



Grampaw Pettibone says:

This lad musta been standin' behind the door when they passed out the brains! With all the mish-mash about no fuel cover, no fuel cap, you'd think he'd at least get out to take a look! Sittin' in there like a chicken ready for the roastin' while they refuel a hot airplane is a prime boo-boo in the first place. It took a lot of people to set the scene for this one.

Night Hawks

An A4D-2N pilot and his wingman were engaged in night MLP at an auxiliary field. There were no other planes in the landing pattern upon their arrival and their signal was "Charlie." Passes with a wave-off because of heavy fuel state were initiated.

During the flight leader's second pass to the mirror, he heard the second section of his division, which had proceeded from the home field independently, cleared into the airfield traffic pattern, and then cleared to break and join the MLP pattern.

While taking a low wave-off, the flight leader suddenly became aware of a bright, distorted flashing light reflecting through his canopy. It seemed to be directly overhead, descending, and closing at a rapid rate!

Instinctively he pushed over in a descending right turn in an attempt to avoid what seemed an impending collision, and struck the runway slightly nose down and in a skid!

A momentary shower of sparks and a bright flash of flame was visible to everyone on the airfield, but these subsided as the pilot pulled the stick sharply back and the A4D again became airborne. At this point he glanced up and was able to distinguish the lights of two aircraft breaking overhead, the section leader's lights on DIM, the wingman's bright and flashing.

Climbing in a gentle port turn, the pilot now checked for signs of trouble. The warning light in the gear handle was ON, flight controls checked O.K. and wheel position indicators showed DOWN. He told the tower what had happened and was cleared for a low pass near the wheels watch and LSO for a damage check. After the pass, he was informed by the LSO that the main landing gear appeared to be at trail.

Climbing back up to 2500 feet and orbiting the airfield, the pilot now asked his wingman to do an airborne check of the damage. The tower came up on the air at this point to caution them on the possibilities of a mid-air collision during such a maneuver at night. Both rogered for the advice and did the check anyway, confirming the observations of the LSO.

About this time the utility hydraulic pressure warning light came on steady—no flaps or speed brakes would be available. The pilot now decided the home field would be better equipped for an emergency wheels-up field arrestment. The necessary radio calls were made to get clearance home, alert the home field to foam the runway and to announce an emergency.

About half-way home the whole port gear assembly fell off the airplane, but the two 300-gallon drop tanks still held fast. A check of stall speed was made, with 142 knots showing up as about the minimum speed he could use safely.

The hook was dropped and checked down. He made a long straight-in approach, no flaps and no gear, at 150 knots, to a successful field arrestment.



Grampaw Pettibone says:

Great balls of fire! I grant you that it puts an icy chill in your back to see what appears to be lights converging on you like that at night. He thought he'd had it for sure, but after such a scare why the heck INVITE another by doing a plane-to-plane damage check AT NIGHT? We had a fatal collision at the same field doin' just that a short time ago. These guys sure have short memories.

For the second section, why break directly over the MLP runway? Around the ship we come up the starboard side and take interval. It sure saves a lot of confusion there and might have prevented an accident here.





LOENING AMPHIBIAN PROVED IDEAL CHOICE FOR SURVEY. NO FLIGHTS WERE CANCELLED FOR MAINTENANCE THROUGHOUT OPERATION



The Beginning of Naval Aerial Surveying

THEY MAPPED ALASKA'S WILDS

Thirty-five years ago, an expedition put out from San Diego to spend the summer making aerial maps of unexplored territory in Alaska.

The following story of the adventure was written by Lt. Ben H. Wyatt, senior Naval Aviator and expedition commander. It has been condensed only slightly from the way it appeared in the February 1927 issue of World's Work magazine.

The portions appearing in standard type are those which were published in 1927. The paragraphs in bold face were written in this, the Fiftieth Anniversary Year of Naval Aviation, by the same author, now Commodore Ben H. Wyatt, USN, Retired. The bold face paragraphs may be construed as his afterthoughts of the expedition.

By Commodore Ben H. Wyatt, USN, (Ret.)

AS THE NOISELESS snows of Time have descended upon the eternal mountains of Alaska, so has the inaudible foot of the Past left imprint upon our memory, which remains as fresh as the newly fallen snows of today on those same Alaskan peaks which challenged our efforts of yesterday.

'Tis said that "the past is the prologue of Tomorrow." Since we are celebrating the 50th Anniversary of Naval Aviation, we beg your indulgence for a short review of those early years,

so that the picture of the future may be better developed.

The day was gray, the clouds were low, a dead calm prevailed, when on the morning of May 24, 1926, three heavily laden planes attached to the Aircraft Squadrons, Battle Fleet, took the air. Swinging over the Naval Air Station at San Diego, the planes, with their powerful motors thrumming a song, turned, assumed a cruising formation, and headed northward, Alaska bound. They were off, embarked on a photographic mission, the equal of which had not, as far as is known, ever been attempted by the air forces

of any nation—to survey from the air America's last frontier, the hitherto unexplored and almost inaccessible islands and portions of the mainland of southeastern Alaska.

Alaska has long been famed in fiction and picture as the land of ice and a land of saloons, and gold, and snow—the land which has for ages stood aloof and ignored the pleas, the struggles, and the conquering aspirations of man. Its towering peaks, covered with the snows of ages, have stood since time immemorial, forbidding man and his science the right to conquer.

Those words—"The Frozen North!"—flashed through my brain when I was notified by the Navy Department that I had been placed in command of an expedition to fly into that land of romance for the purpose of making an aerial photographic map of its topography. At that time, Alaska was to me the Alaska of Robert W. Service, a land of saloons, and gold, and "ladies" known as Lou.

Immediately upon receipt of orders to command the expedition, I set about to organize it. There was much to be done. First and foremost, there were planes to be selected; then cameras to be obtained, a tender to be found, and highly skilled pilots and personnel chosen and trained. Realizing that we should have to fly over foreign territory, we had to obtain permission from



ALASKA'S GOVERNOR PARKO, LT. WYATT

the British Embassy for the planes to operate in Canadian waters. Since much of the territory over which the planes would be operating was uninhabited and unexplored, it was necessary for us to gather information as to the location of probable bases as well as to cache supplies, food, gasoline, and oil at selected points. All of this and much more had to be arranged in a limited period of time.

The type of plane chosen was the Loening Amphibian which represents the very latest development in aircraft. This plane was chosen because of its ability to land either on the water or on the land. If the pilot desires to land on the land, he operates a lever which lowers a pair of wheels, and the plane becomes a landplane. The operation of raising and lowering

could have possibly withstood the storm, while moored out.

As we look back 35 years and review the Loening Amphibian which we used, our present day aviators may scoff at the crudeness of our equipment. Certainly no seaplane of *any year* could have withstood the storms that swept the seas and inlets during our stay in Alaska. No land areas were available upon which a "landplane" could operate.

Today with our "push button" practices, with time and effort-saving devices, we are far removed from the hand crank which lowered and raised the wheels of our planes. Though hand cranks we used, our tempers were not abused—and our wheels were down when they should be down, and up when landing on the sea.

the inverted motor is near the highest point.

The cameras chosen were of the type known as the "Tri-Lens" and were invented by Maj. Bagley, formerly of the Interior Department. This camera, as the name implies, has three lenses, which operate simultaneously, giving three exposures. The center picture is a true vertical, the other two are taken at angles of 35° on either side. In order to use the two side pictures, it is necessary first to transform them so as to give a projection in the vertical plane. For this purpose special transformers have to be built for each camera. The camera uses film which is made in rolls six inches wide and an average of 380 feet long.

Alaska is far removed from an aviation base, so it was necessary to find



MINESWEEPER GANNET, SUPPLY SHIP, AT FOOT OF TAKU GLACIER



YP-88 WAS CREW'S HOME. NOTE PIGEON COOP ATOP HER STERN

the wheels reminds one of the folding beds used in apartments.

This type of plane was chosen not with the idea that it would be possible to land in southeastern Alaska as a landplane, but rather with the thought that it could be landed on the water and then by lowering the wheels the plane could be taxied out of the water on to the beach where it could be securely tied down and otherwise protected from the severe storms which sweep up and down the narrow channels with hurricane-like force.

The wisdom of our selection of this plane was brought forcibly to our attention during our first month's operations, when a very severe storm caused much damage to fish nets and small boats throughout the entire Alexander Archipelago. No seaplane

The altitudes at which today's planes fly and the range of the cameras bear the same relationship between the hand crank of yesterday and the push button miracles of today's marvels. We of the Alaska Survey in our days were pioneers in our field.

Another new feature of this plane is the fact that it is equipped with an inverted Liberty motor. Instead of the motor being placed in the normal upright position, it is placed upside down. That is, the pilot, instead of looking out over the top rows of cylinders, is looking over the crank case. The advantages claimed for this motor are additional horsepower, owing to better cooling and lubrication; better vision for the pilot; and a higher application of the thrust, since the propeller is mounted on the crankshaft, which in

a tender to serve the planes and provide supplies for the base. The USS *Gannet*, a vessel of the minesweeper class, was designated to do this duty by Adm. Charles F. Hughes, then Commander-in-Chief of the Battle Fleet. Since it was not deemed feasible for the *Gannet* to quarter the aviation detachment as well as her own crew, some means of quartering these men in the vicinity of the airplane base was necessary.

After considerable thought and worry, the plan of quartering them ashore in tents was abandoned because of the torrential rains and cold. Instead of tents we used a floating, covered barge, 110 feet long and 40 feet wide. This barge was fitted with sleeping quarters for the crew, a galley where the food was prepared, a motor over-

haul shop for the care of the plane motors, a photographic laboratory where the film was developed immediately upon the return of the planes from a mapping flight, radio equipment for communicating with the planes and tender when they were away from the base, hot and cold showers, a barber shop, and all the necessities of life as well as many of their discomforts.

The opinion that the barge was a fine place to live in was jointly held by the crew and the mosquitoes.

The covered barge YP-88 met with much opposition from the marine experts and particularly the marine pilots of Alaska. Having had a limited sea-going experience in World War I aboard destroyers, I shared this concern with our critics. After a thorough investigation, I made my concern known to Admiral Hoogeworth, Commandant of the Bremerton Naval Shipyard where the barge was being prepared. I also secured the services of the man whom I believed to be the best Alaskan pilot available.

The thorough work of the shipyard and the able handling by our pilot and Captain Spears of the *Gannet* saw us through to the successful completion of our task without incident.

The barge YP-88 was mostly referred to as the "Pigeon Roost." Although we had radio sets in those days, they were heavy and bulky. Since we had to get as much altitude as possible with our planes, we had to limit their load.

Communication by radio between two points at sea level in mountainous areas was and is very erratic owing to intervening mountains which trapped the passage of the radio wave. Hence we carried homing pigeons in

our planes for release in case of emergency.

The "Pigeon's Roost" was on the upper after section of the roof line of the barge as shown in the photos. Except for trial flights, the pigeons were used on only one occasion.

We were completing our survey for the day and were on our eastward run. In our flights we seldom saw any evidence of human beings or habitation. However, as we turned westward to return home we saw someone on the leeward shore of the lake over which we were flying. We landed and taxied to the beach. There on the shore with a canoe snugly moored to her trim waistline was a young lady who presented a picture requiring the talent of a master painter to match her beauty and harmonious setting of the scene before us. Unfortunately at this moment my attention was diverted from the shore by the disembarking movements of the bachelor Lieutenant in the rear seat behind me.

"My name is Whitehead, what's yours, and what are you doing here?"

"Ketchin foxes or any animals fit to be had . . . Kin I do much for you folks?" she answered.

"Well, we thought maybe you were in trouble and needed our help. Where do you live?"

"Over a distance there, five miles or more, t'other side of the lake."

Dick, with a twinkle in his eyes, reluctantly said to me, "Ben, could we tow her home if she wishes?"

"Sure we could," I said. "Load her in your seat, then you and the traps get into the canoe. Tie it astern, and off we'll go!"

And this was the only use of our pigeons: to report our delay.

comprised three units—the planes, the tender, and the covered barge. The force was entirely self-supporting as well as a mobile, sea-going unit. With the *Gannet* as a means of transporting supplies from their permanent source and of towing the barge to isolated sections, the only requirements for a suitable base were an anchorage protected from the wind and sea, a sufficient quantity of fresh water for use in photographic work, and a beach upon which to run the planes out of the water.

The personnel comprised 12 officers and 100 men. The aviation detachment numbered seven officers including five pilots, a flight surgeon, and a supply officer, and 40 enlisted men of various ratings. The *Gannet*, under command of Lieutenant William R. Spear, carried her regular crew of five officers and 60 men.

At Seattle, after a 1300-mile journey up the coast, the planes and the *Gannet* made a rendezvous at the Navy Yard in Puget Sound. Here the covered barge was awaiting the arrival of the expedition. Aviation stores, the 40 men of the aviation detachment with bag and baggage, commissary equipment, fresh water, and provisions were loaded helter-skelter aboard the barge—and the long journey to Alaska began. We were finally headed for Ketchikan, our first operating base.

Ketchikan is built on the side of a mountain and on piling over the water. Most of the main thoroughfares are nothing more than docks built up in the manner of streets. The entire business district is on piles with the floor a few feet above high water.

As we circled the city preparatory

The organization of the expedition



SHOTS FIRED BY CAMERA CREW WERE 'HEARD AROUND THE WORLD'



PIGEONS ARE LOADED TO BACK-STOP NAVIGATOR AFTER MISSION



PLANES ARE PARKED OUTSIDE CREW'S HUT AT FIRST BASE SITE, SOUTH OF KETCHIKAN

to landing in the channel—which was barely wide enough to turn the planes in—it appeared that the entire population of 5,000 inhabitants was lined up on the docks and hillsides to give us a welcome. As soon as we landed, we were met by so many small boats that it was necessary for me to stop my motor and direct one of the boats to clear the way ahead, so that we could go on to the beach.

The boat led us into the dock and pointed to an area covered with water and told us that that was the beach. At first we thought that the Commercial Club of Ketchikan, which had written that they had a sand beach, had sold us a gold brick. However, we went in and anchored in about two feet of water. In about an hour we were resting on a firm sand beach, and in two hours there appeared before our eyes a perfect hard sand beach with a baseball diamond laid out ready for play. The range of tide is more than 20 feet.

On the next day, while awaiting the arrival of the *Gannet*, I made a reconnaissance flight around the Island of Revillagigedo (pronounced Ra-ve-yah-he-ha-tho, according to the *Gazetteer*, and in various other ways, mostly incorrect, by the populace), and over to the International Boundary. I shall not soon forget the feeling of awe that overcame me on this flight. Here we were, ready to begin the aerial mapping. As we climbed upward to 4,000 feet, 6,000, then 8,000 and 10,000 feet, and finally we were more than two miles above sea level, and at times were passing only a few hundred feet above the snow-clad peaks and the next moment looking down from their dizzy heights to sea level, I realized that we had undertaken to assist in conquering America's last frontier.

At that moment the task seemed hopeless. But on the arrival of the *Gannet* the next day, we made our first photographic flight, starting at three o'clock in the afternoon and ending at eight-thirty, covering about 400 square miles of territory so rough and at places so inaccessible to man that months or perhaps years would be required for a survey by man on foot.

In fact, because of the ruggedness of the high country and the almost impenetrable, jungle-like forests of the lower country, coupled with the inclement weather, little progress had been made in this region by the ordinary methods of survey. By the old methods of surveying, a base line had to be run with a transit and chain, and much of the area had to be covered on foot. By the aerial method the flyer takes his film and camera aloft, flies over the territory and takes photographs. These are developed and then adjacent prints are matched together and a complete picture is made which shows the entire territory under survey. It is possible to scale this picture as accurately as any chart or, for that matter, blue print.

In short, an aerial survey is a picture which shows all objects in their exact position and size in relation to one another. The cameras are mounted in the bottom of the plane and kept in the vertical position, so that the photographs are taken looking straight downward. The exposures of the films are timed so that the objects on the ground overlap on the print about 40 per cent.

In other words, aerial mapping is nothing but a motion picture reversed—the camera does the moving while the objects photographed are stationary. The rapidity with which an aerial survey can be made is astounding. A

plane flying at 10,000 feet above sea level making 100 miles an hour can survey a strip seven miles wide and 100 miles long—that is, 700 square miles, in an hour.

The aerial survey of Alaska aroused world-wide interest in the use of the airplane for topographical survey covering rugged and inaccessible areas. By reason of the variation in the heights of mountains, the scale of the photographs is constantly changing. It was therefore necessary to work out a "transforming scale" to cover all land areas.

During the summer of 1925, we made a survey of the U.S. Naval oil shale reserves bordering on the Colorado River in the vicinity of Rifle, Colorado. The variation of the land heights there ranges from 3800 to 8800 feet. By using the negatives obtained, we were able to develop a satisfactory transforming scale to meet the requirements of Alaska.

As a result of this survey we were asked to attend and present a report on our work to the International Photogrammetric Conferences in Switzerland and Germany.

Only two of the planes were used for mapping. The third was equipped with a radio and, with a pilot, was kept on the beach, in readiness to institute search for any plane that might fail to return to the base within 45 minutes of its schedule. Prior to the departure of a plane for a flight, the exact area, courses, and routes were laid down on flight lines over the chart so that the position of a missing plane could be fairly well approximated, in the event it became necessary to search for it. All planes carried emergency rations for five days, guns, ammunition, fishing tackle, smoke flares and homing pigeons in case of a forced landing. Fortunately, it was not necessary to resort to any of our emergency kits since no forced landing from any cause whatsoever occurred.

Not all of our time was spent in work. There were fishing and hunting trips. The mountains of Alaska abound in big game and constitute a hunter's paradise. The Alaska Brown Bear is said to be the fiercest flesh-eating animal in North America. This, no doubt, would be a pleasant thought to the pilot and crew as they were plodding their weary way homeward after having been forced to land by motor failure on a snow-clad mountain peak a

hundred miles or so from their base.

Our contact with the bears, however, was not limited to the stories told us by the natives. The sentry standing watch on the planes one night looked up from his fishing and suddenly discovered a husky fellow making inroads on his catch. When questioned later he was unable to state whether the intruder was a black or a brown bear. He didn't wait to see.

Of fish there were plenty. Captain Spear on his last fishing party brought back 300 good-sized trout. For my part, however, I felt that if some local Burbank should cross the fish with the mosquitoes I should stand a better chance of getting a bite.

The Alaskan mosquitoes are industrious, ambitious, and successful. There is also another pest, in the nature of a gnat, which inhabits the woods and is so small that the Indians call them "No See 'Ems." Many of my shipmates, being men of intelligence and reason, believe only what they see, but I, intelligent or not, believe in them.

Little did I know that my encounter with the mosquitoes and gnats in Alaska was merely a training course for the experiences to follow. Soon after our return from Alaska, I went to Peru where in the organization and operation of their aviation activities we engaged in photographic surveys extending from the Pacific coast across the Andes and to the upper headwaters of the Amazon River and along the river to Iquitos.

Throughout all this region, the steaming tropical jungles were infested by the malarial mosquito and every pest that flew, ran, crawled or swam.

Then, during WW II with our Pacific carrier groups in the Guadalcanal area and later as Commander of the Central Pacific Islands, I engaged in a combination mosquito and pest contest—in which, despite the advent of DDT and all its allies, the mosquitoes emerged victorious. So, today, as we did in Alaska, I reaffirm my belief in the might of the mosquito.

Much time was lost owing to low clouds and rain. An aerologist attached to the expedition kept a weather log, prepared a daily weather chart, and issued forecasts. However, the aerologist met with keen competition in the matter of forecasting weather. The native Indians have considerable weather lore which they fall back upon when forecasting. One of the old In-

dians who frequented the operating beach was very accurate in his estimates. He claimed that the ravens change the tone of their cry with a change of the weather. Another one told us that when the sea gulls come in and hover over the mountain the winds are going to be strong from the southeast and will bring rain.

Many of the steamship captains have given up the hope of forecasting the

consumed more than 600 gallons of gasoline per day. When the good weather did arrive, it usually lasted for about ten days, so that our plans had to be laid well in advance to prevent any delay in mapping operations.

We were fortunate that not one day of mapping weather was lost for any cause whatsoever—nor was any plane out of commission when it could have been used for mapping.



GLACIER BAY AND THE APPROACH TO MUIR GLACIER. CLOUDS HIDE MOUNT FAIRWEATHER

weather and close the question by saying "You never can tell." Experience with the weather chart, however, has indicated that it is just as easy to forecast weather along the southeastern section of Alaska as it is elsewhere along the Pacific Coast. Certainly the forecaster will make a far better record than the average, should he forecast daily, "Rain today and tomorrow."

From Ketchikan we worked our way northward, shifting our bases as the necessity arose, taking in the entire area from the International Boundary on the south to the Canadian Boundary on the east and the Pacific on the west. At times the weather was discouraging—it seemed that it would never stop raining. When the weather was clear much progress could be made. Our average day's work for two planes was better than 1000 square miles. On two successive days, 1600 square miles each day were surveyed.

As one area was finished the *Gannet* would tow the barge and supplies to our next base. The planes as a rule would proceed with mapping and, upon completion of the work, fly to the newly selected base. Obtaining gas and supplies was quite a problem. While engaged in mapping, the planes

During our summer's work many new lakes were discovered—the power of which no doubt will be used to turn the wheels of industry when the time comes to develop the tremendous resources of Alaska. Millions of acres of invaluable timber were brought to light—timber for the manufacture of pulp and paper—and much airplane spruce. The famous and treacherous waters of the Chickamin River, down whose shores have washed the richest and most valuable gold deposits in America, were thoroughly explored and mapped.

We surveyed the chain of glaciers throughout the northern rim of the Alexander Archipelago whose great ice caps tower upward to heights as great as 15,000 feet and end abruptly in great precipices miles in width and hundreds of feet high at the water's edge. These great glaciers are remnants of the Glacial Age. Some are still alive today—moving slowly but surely a few feet a day, throwing off huge icebergs which fall into the sea with the roar of thunder.

In our crew we were fortunate to have Mr. Sargent, a representative of

the Department of the Interior. He was a gentle, quiet man of wisdom and understanding. Being the oldest in our crew, he was our counselor and advisor; in return he received our thanks and respect.

To him there was no task too difficult, no mountain too high to climb, no glacier too slippery to scale. As we worked northward in our survey he constantly reminded me that we should "cover Glacier Bay and get some sealed photos of Muir Glacier and Mount Fairweather," which rose at the base of Muir Glacier at the head of Glacier Bay and continued on to the westward slope where it sank into the Pacific.

Mount Fairweather is the southern extremity of the northwestern mountain range extending from Glacier Bay in the south to the Seward Peninsula in the north. This range forms the western barrier of the North American continent where the storms that sweep with violence out of the Bering Sea set their course en route to the United States mainland.

Mount Fairweather rises to a height about 15,000 feet. Our planes, lightly

Glacier and the upper slopes of the mountain on the southern exposure. The normal wind which brings fair weather in that area was from the northwest. What we needed was a southeast wind to give us the upward flow of air on the south side. A southeast wind, however, brought clouds which prevented photography.

A detailed study of the weather conditions indicated that a period of five hours of clear weather might well prevail after the reversal of the wind currents from northwest to southeast. With the weatherman embarked on our tender, the *Gannet*, anchored in Glacier Bay, we were lucky in our calculations and arrived on location with a fair southeast wind and clear skies.

We flew a carefully measured zig-zag course from the end of the glacier at the head of the bay and gradually rode upward on the rising air currents until we had covered the entire southern section.

When we developed the negatives, an examination of our prints showed occasional black spots at irregular intervals along the entire lower section of the glacier. This interested all of us,

and maybe we have discovered a forest which, if so, is a 'Pre-Glacial Forest.'

"All right, Mr. Sargent—what do we do about it?"

"We send an expedition in there to examine it and find out about it."

"O.K., it's your project. Name your leader, pick your men, outfit them, and we'll settle this argument."

We did. Mr. Sargent led a group of hale and hearty young men (he was, I presume, around 50), and returned with sections of logs from the "Pre-Glacial Forest of Glacier Bay" which are "more than one million years old."

The trees are not petrified; but preserved in their natural form with the snow and ice that fell and froze during the "second glacial age." My souvenir is a small section of a log said to be of the pine family, and it is still well preserved.

It is my understanding that the Smithsonian Institution has some of Sargent's samples and that he turned a report of the "Pre-Glacial Forest" into the Institution.

On the island of Revillagigedo, a valley and low pass were discovered which in the opinion of Charles H. Florey, the Alaskan District Forester, will permit the linking up of all the important water power sites of Revillagigedo with the mainland and deliver more than 85,000 horsepower to the city of Ketchikan.

Our work, aside from proving the feasibility of surveying by aircraft, was an acid test on the airplane itself, and it proved its ability to operate for long periods of time away from the home base under the most severe climatic conditions and with little or no protection from rains, storms, and seas. After the completion of the summer's work, the planes were flown back to San Diego and were ready to begin operations with the Fleet on the day of their arrival.

The dramatic, eternal landscape of Alaska, the rugged, forbidding, snow-capped mountains, suddenly and abruptly turning to the calm and glistening emerald of an ocean inlet, the furious and fast moving billowing clouds that suddenly burst with torrential rain or snows, followed by the rainbow that reveals the landscape in all its glories of ageless ice and snow—all of these we well remember. However, indelibly engraved upon our thoughts is the cordial friendship we received; a comforting and enduring gift of the people of Alaska.



BURKETTE MOUNTAIN (PEAK SHOWING UPPER LEFT) WAS NAMED FOR A NAVAL AVIATOR

loaded, could reach 15,000 feet at most. "How, then, Mr. Sargent, can we make a sealed photo of Mt. Fairweather?" we asked.

"Let us go to the laboratory and work out a method," he said. "At any rate, let us try it." And try it we did. Our efforts repaid us by the results obtained. They incidentally led to the discovery of what was later termed "the Preglacial Forest." I believe it of sufficient interest to describe briefly its discovery.

Our interest in the survey was the

Mr. Sargent, after studying many pictures, said to us: "These are trees, that's what they are!"

"Well, let's say they are trees, what of it?" I countered. "I've seen igloos covered with snow and ice."

"But, Ben, you don't realize that the snow and ice of that glacier have been there for a million years or more—and those trees, if trees they are, were there growing before the glacier was formed.

"These glaciers are remnants of the second Glacial Age. Most are dormant as this one and gradually disintegrated



XP2V-1 MADE FIRST FLIGHT 17 MAY 1945



MOST FAMOUS OF ALL, TRUCULENT TURTLE



P2V-2 HAD SOLID NOSE AND BELLY RADOME

FAMILY TREE OF P2V NEPTUNES

Now in Seventh Generation, a Thousand P2V's Have Rolled Off Production Line

Few basic airplanes remain in service long enough to go through seven modifications. There were the Loening OL's which reached "dash nine," and the Vought F4U's that hit "dash seven." Only three current planes which have made the grade are still operational; the Grumman F9F's, the Douglas AD's, and the Lockheed P2V's.

Since the initial flight of the first XP2V-1 on May 17, 1945, *Neptunes* have earned a solid reputation in Fleet service. Designed primarily for anti-submarine warfare and long-range bombing missions, P2V's have been used for aerial mapping over the North and

South Poles, one set a distance record which still stands, three operated from the carrier *Franklin D. Roosevelt*, and others flew with the *Hurricane Hunters* in finding and riding herd on tropical storms. Still others have been used as launch platforms for missiles and target drones.

Squadrons of P2V's have been designed for aerial mine-laying, while individual planes have been equipped for airborne early warning, electronic countermeasures, and, with skis, for polar logistic support missions.

The P2V-1 named *Truculent Turtle* carried 52,392 pounds of fuel and 22 pounds of live kangaroo when it lifted

260% of its empty weight from a runway at Perth, Australia, to head east and fly nonstop for 55 hours and 17 minutes before landing at Port Columbus, Ohio, 11,235.6 miles away.

After blasting off with JATO from the *Franklin D. Roosevelt* off Jacksonville in February 1950, three P2V-3's crossed the Gulf of Mexico, flew to the Panama Canal, turned north and cruised to NAS MOFFETT before landing—a flight of 5156 nonstop miles after a carrier take-off.

Neptunes now wear the flags of eight Free World nations: the United States, Japan, Canada, France, the Netherlands, Brazil, Argentina and Australia.

The original P2V was designed to meet the requirements of large fuel, electronics and armament loads, with the ability to fly from small, advanced fields, and to attain high speeds.

The P2V-1 used two 2300-hp engines. Its maximum take-off weight was 61,153 pounds, speed just above 300 mph, and its range was 4100 miles.

By 1948, engine advances raised available horsepower to 3200, which gave the P2V-3 a 320-mph speed and a 64,100-pound weight with comparable range. When Wright produced its turbocompound engine the next year, horsepower increased to 3750. Lockheed found space to boost fuel capacity from 3350 to 4210 gallons and booted the *Neptune's* speed up to 352 mph.

The P2V-7, still in production, uses two Wright R3350 engines and two Westinghouse J34 jet pods to develop speeds of more than 350 mph and a max range of more than 4000 miles.



P2V-3C'S USED JATO THRUST TO TAKE OFF FROM USS FRANKLIN D. ROOSEVELT IN 1950



HALLMARK OF -4 WAS TURBO-COMPOUND ENGINES, BIG RADOME

P2V-5F IN CURRENT MARKINGS HAS DETECTION, KILL EQUIPMENT



PILOT OF THIS P2V-5F DEMONSTRATES USE OF WESTINGHOUSE JETS ONLY, WITH PISTON ENGINES SHUT DOWN, PROPS FEATHERED



P2V-6 WAS CAPABLE OF ROCKET ATTACKS, HIGH LEVEL BOMBING



CURRENT MODEL IS P2V-7, SHOWN HERE IN ALL-SILVER SCHEME

'SAFEST' CARRIER ATTACK SQUADRON



Dear Editor:

The enclosed feature article and photographs were especially written for Naval Aviation News. They have been verified for accuracy and are cleared for immediate release....

Thank you for your consideration of this article. Remember I wrote that you'd be hearing from us? Well, I told you so!

Very respectfully,

W. W. Mellette, Lt.
Public Information

With this letter came the account of Attack Squadron 75. Here is the record as its members lay claim to being the "safest carrier attack squadron in the Navy."

THE SUNDAY PUNCHERS of Attack Squadron 75, who have now logged well over 15,000 consecutive flight hours without a single accident, were pleased and proud to learn that they have established a new Navy safety record for carrier attack squadrons. The Commander, Naval Aviation Safety Center, recently informed the squadron that VA-75's accomplishment is "indeed a record for carrier attack squadrons presently in commission . . . and . . . all members of VA-75, past and present, who contributed to this outstanding safety record are commended."

The *Punchers* have now operated more than two years and three months—since December of 1958—without a single aircraft accident. And they are still flying it safe! The squadron is particularly proud of the fact that they set the new record despite a long and demanding period of sea duty.

Led by Cdr. Stanley Montunna, the *Punchers* Commanding Officer, VA-75 recently completed nine months of continual fleet operations aboard the "Greatest of the Latest," USS *Independence*. This included an arduous seven months of deployment with the Sixth Fleet in the Mediterranean Sea, and two months of intensive Atlantic Fleet exercises preceding the Med cruise. The squadron has not shore-based since the first of June 1960.

During the recent Med deployment, VA-75, while keeping its safety record perfect, flew over 1000 hours more than any previous *Puncher* deployment. VA-75 pilots made in all over 1400 day and night carrier landings. Besides being the safest, the squadron also led the rest of Carrier Air Group Seven, commanded by Cdr. Hal E. Lang, in total hours flown.

Seventeen of the 20 *Sunday Puncher* pilots are Centurions (over 100

landings) aboard the *Independence*. (The other three, who reported to the squadron in the Mediterranean, did not have sufficient time to make it 100 per cent.)

The *Sunday Punchers*, incidentally, probably have one of the most experienced groups of aviators in the Fleet today. The squadron pilots average over 200 carrier landings each, made on various carriers of the fleet. The *Punchers* also average about 2000 hours of flight time per pilot.

VA-75 flies the Douglas AD-6 *Skyraider*, the most versatile attack aircraft ever designed. Its capability for hauling a tremendous tonnage of con-

We are especially proud of the *Punchers* team; our maintenance personnel, line, ordnance, and supply division as well as the pilots. In fact all members of the squadron are important. Little things as well as big ones can cause accidents. A sloppy job on the part of a crewman or the pilot, a single act of commission or omission, can down a safety record—pilot and aircraft. We have great team spirit. We preach safety—and practice it.

"We have other people, outside of the squadron on the team, too. The carrier personnel, for example: supply department which provides our parts and feeds us . . . the "Black Gang"

Sunday Punchers record!" he added.

Air Group Leader Cdr. Hal Lang, commenting on the unsurpassed record of the *Skyraider* squadron, emphasized the part that maintenance department personnel played. "Day in and day out, loving care by the maintenance department and the pilots are to be commended."

Capt. Harvey P. Lanham, C.O. of the *Independence*, looked at the more than four acres of flight deck on his ship and commented: "When I think back to the early days of Naval Aviation, of the feeble aircraft and ill-equipped ships, it is remarkable how much we have progressed. It is men



ALMOST PERFECT STOGIE COUNT IS APPARENT AS PUNCHERS POSE FOR THEIR PORTRAIT. THEY BOAST 17 CVA-62 CENTURIONS

ventional ordnance cannot be matched by any other attack light aircraft in service today. The *Skyraider*, a single-engine propeller aircraft, can carry more tons of bombs than the four-engine B-17 of WW II fame. The AD-6 can deliver all types of conventional weapons in any combination—whether it be bombs, rockets, napalm, or 20 mm cannon fire. For example the AD-6 can salvo well over 100 high velocity rockets in one pass!

The conventional punch of the *Skyraider* was proved during Korea, in an earlier model of the AD, where it earned the proud nickname "the workhorse of Korea." The ability to fly tremendous ranges at low altitude all the way to avoid detection cannot be matched by any attack aircraft, jet or prop.

To what does VA-75 attribute its outstanding safety record? "Team-work!" says Cdr. Montunna. "Team-work on the part of a lot of people.

that makes the steam for the catapults . . . the Air Department crews who handle, launch, and recover our aircraft . . . the Landing Signal Officer, who brings us aboard . . . and of course, the Captain and his able assistants who direct our operations. All are important to our safety. Every man on the *Independence* contributes directly or indirectly.

"Captain Lanham can certainly be proud of his team—our team, and his fine ship. The Navy has given him the best and safest equipment available anywhere in the world to help us do our job safely. The flight deck mirror as a landing aid, the canted deck to permit landings without jeopardizing aircraft already on deck, and the tremendous capability of the steam catapult are examples of the progress the Navy has made in making carrier flying safer.

"And I think we proved it with our

such as the men who make up this squadron who have helped reach this high state of development of carrier aviation, men who have never been satisfied with the way they were doing their job. And that is why I am so proud to have this fine squadron on my ship, the *Independence*. I commend all of them for their noteworthy achievement."

RAdm. Ray C. Needham, ComCarDivTwo, in congratulating the *Punchers*, stated "In all my almost 30 years of experience I do not remember any squadron which has had 15,000 hours of accident-free time, especially when they have been operating from a carrier continually for nine months."

Now temporarily based ashore at NAS Oceana, Va., the *Sunday Punchers* have their sights set on new records and goals . . . with safety. The safest carrier attack squadron in the Navy intends to *Stay Safe!*



IN LAST THREE YEARS, VT-31 HAS FLOWN T-34, SNB, P2V AND NOW P5M MARLINS

VT-31 SHIFTS TO P2V'S, P5M'S

TRAINING SQUADRON 31, which last year began phasing out its SNB's in favor of P2V's, now is training students in P5M seaplanes as well. Instead of teaching instrument flight to students when they first enter advanced training, VT-31 now will be the last stop for patrol plane pilots before they report to fleet squadrons.

In the three years since VT-31 changed its name from Advanced Training Unit 601, staff and student pilots have logged 25,000 SNB flights for 74,000 hours. Another 9000 hours were flown in 26 TV-2 jets and 41 T-34 trainers used to indoctrinate midshipmen.

With combined flights totaling 83,000 hours, VT-31 has had but three aircraft accidents—all of them minor—to earn the CNO Aviation Safety Award for Fiscal 1960 and the CNA-VanTra trophy for calendar 1960.

Transition to P2V training began when the first of 12 *Neptunes* arrived



P2V STUDENTS, LTJG. KLAPP, ENS. WOOLSEY

last fall. After instructors trained for three months in the bigger aircraft, the first students arrived in January. P5M's were received in January, and the first *Marlin* students began their flight training in May of this year.



CDR. R.W. CHRISTIANS, VT-31 C.O., AND LTJG. F.S. DEAN WAVE FAREWELL TO BEECH

New Rocket Pad for Mugu Research Traffic is Still Rising

A multi-purpose launch pad from which high-altitude research rockets of various types can be launched will be built soon at the Navy Missile Facility, Point Arguello.

The pad, which will handle rockets with up to 150,000 pounds thrust, will be built on the north rim of Honda Canyon, about one mile from the Pacific.

The new facility is designed to centralize launch operations in order to save on roads and utilities. The number of research rocket launches from Point Arguello has climbed from ten in 1958 to more than 50 in 1960 and is still going up.

O&R Reworks Sparrow III's Missile Age Comes to Alameda

A 26-man crew from the O&R Department at NAS ALAMEDA worked around the clock to move more than 200,000 pounds of *Sparrow III* Missile Rework equipment from Point Hue-neme to Alameda in four days in a move which had been expected to take a month.

Thus, the missile age came to NAS ALAMEDA. Last April, O&R Alameda's top management decided to accelerate the missile program, setting a target date of September 1960 for establishment of a missile overhaul program.

The program manager method was used to select the best people available.

The first missile workload was assigned to O&R in August, with *Sparrow III* as the first type processed.

Noting the successful example of O&R Alameda's ability to overhaul complex Navy missiles, BUWEPs assigned the *Sparrow III* overhaul program to Alameda, starting 1 June 1961.

A Missile Branch for O&R was formally organized and other divisions expanded to meet the challenge.

Field trips were made to NOTS CHINA LAKE, NMC POINT MUGU and other project centers for facts regarding the specialties of such individual missiles as *Sidewinder* and *Bullpup*.

• The USS *Dahlgren* (DGL-12) is the third naval vessel named in honor of the late RAdm. John A. Dahlgren, the "Father of Naval Ordnance." The 1400-ton, 512-foot missile frigate is equipped with Terrier missiles, ASROC and the very latest weapons systems.

CV Trains O&R Technicians Do Actual Work on the F8U-2N

O&R shop technicians are receiving a new type of training in systems of the F8U-2N *Crusader* at the Chance Vought plant in Dallas.

The company, under a six months contract with the Navy, has been giving classes of technicians checkouts in various systems of the limited all-weather fighter. The new feature is that the students must spend 60% of their time doing actual maintenance work on an F8U-2N airplane and only 40% in classroom instruction. Heretofore students only went to class.

An F8U-2N was set aside in the company's experimental hangar and used by the Navy O&R technicians attending the school.

Classes range from two to five weeks. Under supervision of company instructors, students remove components of the plane, bench test them, re-install the equipment and perform operational checks on the plane.

Classes have covered the fire control system of the *Crusader*, electrical and electronics components, autopilot, flight controls, power plant, fuels systems, air conditioning, safety and survival systems and hydraulics.

Medical Scientist Honored Conrad Award Goes to Dr. Karsner

Dr. Howard T. Karsner, Navy medical research scientist, has been honored with the fifth annual Captain Robert Dexter Conrad Award. The medal and citation were presented at a three-day symposium at the U.S. Naval Academy sponsored by the Office of Naval Research.

The award, named for the late Capt. Robert Dexter Conrad, USN, who was primary architect of the Navy's basic research program, is made for outstanding achievements in research and development for the Navy.

Dr. Karsner, Medical Research Advisor to the Chief of BUMED, was selected for his contributions to submarine and aviation medicine, and to the establishment of clinical naval research facilities all over the world.

The medical scientist has supported and guided the development of a medical program at the Aviation Medical Acceleration Laboratory, Johnsville, Pa., the Air Crew Equipment Laboratory, Philadelphia, and the School of Aviation Medicine, Pensacola, Florida.

HSS-2 SIMULATOR ACCEPTED BY NAVY



SIMULATOR DUPLICATES COCKPIT OF HSS-2

A TRAINING DEVICE which duplicates the full performance range of the all-weather HSS-2 ASW helicopter has been accepted by the Navy. It was built by Melpar, Inc., under contract to the Naval Training Devices Center.

The Sikorsky HSS-2 can be operated in daylight, at night, or under instrument flight conditions. It is capable of the detection, tracking and destruction of enemy submarines, as well as sea rescue and visual reconnaissance.

The training device will be used to develop a high degree of skill on the part of the helicopter's crew—pilot, co-pilot, two sonarmen.

It will train crewmen in all phases of tactical missions, including communications, navigation, ASW search procedures, target tracking, detection and classification, and weapons delivery.

Flight control equipment, cockpit and sonar compartment in the trainer



INSTRUMENTS SIMULATE ACTUAL OPERATION

duplicate the actual helicopter. Forces felt by the pilot trainee on his control stick and rudder pedals during operation are the same as those in the aircraft.

An instructor can present the student with problems involving as many as five underwater targets. The speed, rate of turn, heading, location and depth of each target can be controlled. Oceanographic conditions such as sea state noise, bottom effects, and detection are the same as those in the helo.

The HSS-2 simulator marks the first time a flight trainer has been delivered before the aircraft itself has been placed into fleet operations.

Safety Mark Set by VS-30 10,000 Safe Hours for S2F RAG

VS-30, the ASW RAG squadron at Key West, logged its 10,000th accident free hour in March. During this period the squadron, which flies the S2F *Tracker*, trained 41 replacement pilots, 54 aircrewmembers, and 122 maintenance personnel.

The squadron took two detachments aboard the *Randolph* and six aboard the *Antietam* for carrier qualifications during the period. Twenty-three of the replacements have been carrier-qualified during their eight weeks of training with VS-30.

The squadron reports that the maintenance quality control program worked out by Lt. Ken Myatt has been of unquestionable value in establishing the new VS-30 safety record.

Clansmen Keep up the Pace Tops on Ship First Month in Med

According to the *Clansmen* of VA-46, they have displayed their ability to live up to their slogan, "We can hack it." During the first month of the 1961 Mediterranean cruise, as members of CVG-10, based aboard USS *Shangri La*, VA-46 tallied the highest number of flight hours of any jet attack squadron aboard.

Clansmen claim such achievements are routine. During the 1959 Med cruise aboard USS *Intrepid* and the 1960 cruise aboard USS *F. D. Roosevelt*, the squadron captured both the monthly flight time record and the cruise flight time record for jet attack squadrons based aboard the carriers.



PROCLAMATION

WHEREAS, THE SUBMARINE FORCES OF THE UNITED STATES NAVY AND PARTICULARLY THE SUBMARINE FORCE, U. S. ATLANTIC FLEET, ARE CELEBRATING THEIR SIXTY-FIRST ANNIVERSARY, AND

WHEREAS, A LONG AND GLORIOUS HISTORY OF SILENT SERVICE, FROM THE USS HOLLAND TO THE USS ABRAHAM LINCOLN, IS BEING COMMEMORATED, AND

WHEREAS, A NEW STAR OF DETERRENT POWER-FOR-PEACE CALLED POLARIS RISES IN THE NORTH THEREBY GREATLY STRENGTHENING OUR DEFENSIVE POSTURE, AND

WHEREAS, TEAMWORK WITH ALL THE SERVICES HAS LONG BEEN THE KEYNOTE OF THE SUBMARINE FORCE, AND

WHEREAS, MANY NAVAL AIRMEN ARE FOREVER INDEBTED TO THE SUBMARINE SERVICE FOR RESCUE SERVICES PERFORMED, IN FACT, FOR THEIR VERY LIVES, AND

WHEREAS, THE SUBMARINE FORCE HAS OUR ASSURANCE OF UNLIMITED FUTURE YEARS OF ADMIRATION, ASSISTANCE AND COOPERATION - THEN -

LET IT BE PROCLAIMED:

THAT THE OFFICERS AND MEN OF THE NAVAL AIR FORCE, U. S. ATLANTIC FLEET, SALUTE YOU AND OFFER OUR HEARTIEST BEST WISHES ON THIS AUSPICIOUS OCCASION.

TO WHICH I AFFIX
MY SIGNATURE

Frank O'Beirne
VICE ADMIRAL, U. S. NAVY



A TRIBUTE TO AVIATION PERSONNEL OF THE
UNITED STATES NAVY

and in particular
our sister Force in the Atlantic

NAVAL AIR FORCE UNITED STATES ATLANTIC FLEET

from the

Submarine Force, Atlantic Fleet

On this, the fiftieth anniversary of our Naval Air Arm, we in the Submarine Force send our "GREETINGS AND BEST WISHES."

From the beginning, the story of aviation has been, and is today, the story of individuals of vision and courage and the display of valor.

Today as your carrier forces stand deployed on the seas of the world and your patrol units fly countless miles of alert watchfulness, the millions of people are comforted by the fact that you are trained and ready for national defense.

The Submarine Force believes that now Naval Aviation stands on the threshold of its second half-century of glorious achievement in peace and, if need be, in war. We are proud of the opportunity to serve with you as shipmates in the United States Navy.

E. W. Greenfell
E. W. GREENFELL
Vice Admiral, U. S. Navy

VF-111 Receives F8U-2N's Will Replace F11F-1's in Squadron

Fighter Squadron 111, based at NAS MIRAMAR, has received F8U-2N *Crusaders*, to become the first Navy squadron so equipped.

The new fighters will replace F11F *Tigers* which have been phased out of service in VF-111. The squadron, commanded by LCdr. H.A. Winter, returned from the Far East in March.

217th Buckeye Delivered Production of Model is Completed

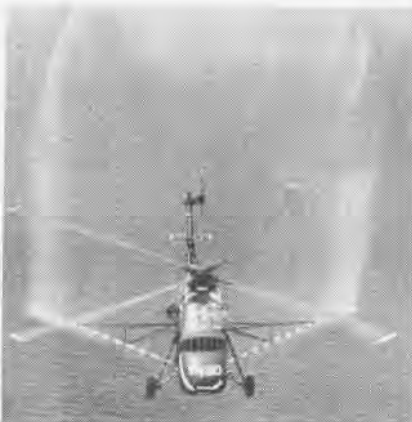
The last of 217 T2J-1 *Buckeye* trainers in the current configuration has left the North American plant at Columbus and been delivered to the Training Command in Pensacola.

In 19 months, instructors and students of VT-4 have logged 50,000 hours in the T2J at Sherman Field.

Weary Helos Get New Role Bug Chasing Added to Other Duties

Helicopters of Marine Aircraft Group 36 have carried cement in hoppers, diesel fuel in tanks, other aircraft on slings, missiles, and old automobiles. They have fought forest fires, flown mercy missions, and plucked mariners from submarines. Also, they have performed routine troop lifts and equipment moves.

Now they are fighting mosquitoes. First tests using a HUS-1 with a



SPRAY BOOMS EXTENDED, HUS-1 MAKES RUN

Helicopter Liquid Insecticide Dispensing Apparatus (HIDAL) were conducted at MCAF SANTA ANA.

The Navy-developed apparatus is attached to a helo and used to combat insects as well as their breeding places.

Aeronautical Charts Ready Used for Intermediate Altitudes

A new series of aeronautical charts, designed to facilitate flight planning and flight operations for pilots operating in the new intermediate airway system, became effective 6 April 1961.

The new charts, prepared by the Coast and Geodetic Survey, U.S. Department of Commerce, in accordance with Federal Aviation Agency specifications, satisfy both civil and military requirements. Previous charts

were designed primarily for civil use.

While the new charts depict information pertinent only to en route instrument navigation at altitudes from 14,500 to 24,000 feet, they include provision for showing a low altitude "sheet-line layout" for pilots transitioning to altitudes below 14,500 feet. The charts do not include high altitude information.

The charts are printed back-to-back on four sheets, 20 x 45 inches. When folded they form eight 5 x 10-inch panels of chart data and one panel of tabulated information.

Seven charts cover the United States, excluding Alaska and Hawaii, at a scale of one inch to 28 nautical miles. An eighth chart, developed at the scale of one inch to 20 nautical miles, spans the New York-Chicago-Washington "Golden Triangle" area.

Chart information includes portrayal of intermediate altitude airways, position, identification and frequencies of radio aids, selected airports, distances, reporting points, VOR change-over points, restricted areas (limited to those whose vertical limits extend into the intermediate structure), and other related data.

The new charts are simple and functional in design and format. The fold of the charts is improved, making them more compact and easy for the pilot or navigator to use in close quarters. Information concerning facilities pertinent to an airway is shown.



SUPER SLEUTHS in the art of submarine detection are these P2V crewmen of Argentinia-based VP-25. Both crews scored 100 per cent in competitive exercises among Atlantic Fleet Squadrons. Nine members of crew 13 have logged 117 cumulative years service, while 11-man crew of plane 6 have 58 years combined service. Above, chiefs are,



from left, Wood, Garland, Blalock, Dingley, Morris and Hayes. Officers are Lt. Evans, Ltjg.'s Nuceri, Noblock. In above picture, standing from left, are Hofmann, Moody, Stair, Brown, Ellis, Kraskowski, Childs, Houck. Officers kneeling are Ltjg. Koehler, Lt. Wyckoff, Ltjg. Brewer. Moral: Experience plus enthusiasm equals success.

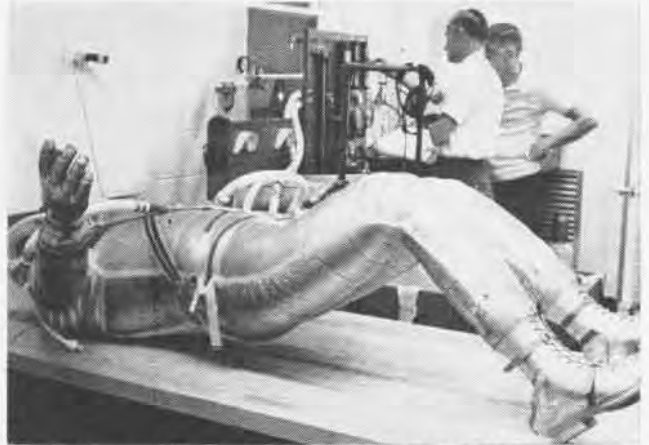


SHEPARD'S SPACE SAGA

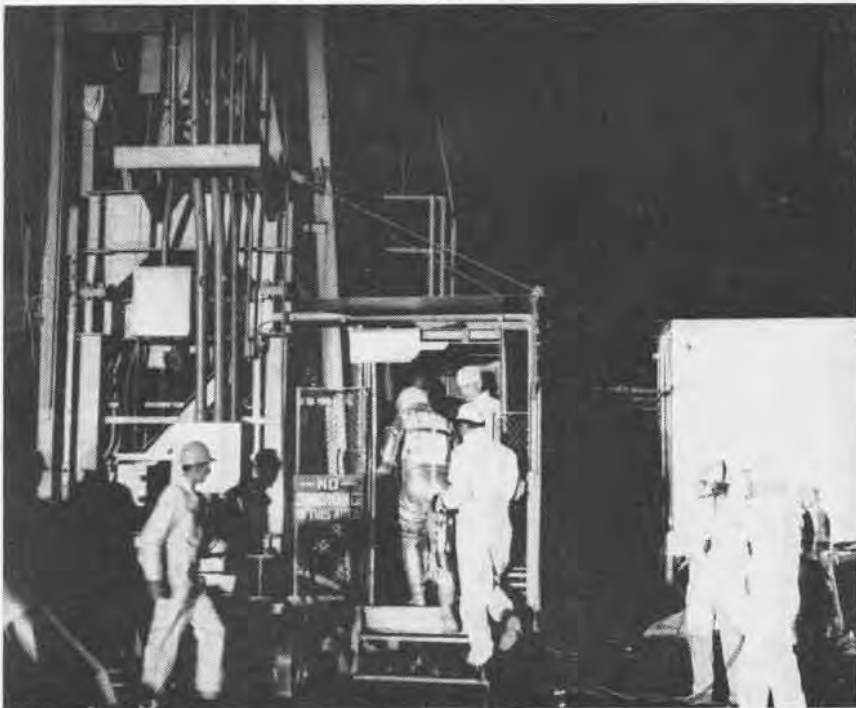
FACING HISTORIC FLIGHT, TEMP: 'A-OKAY'



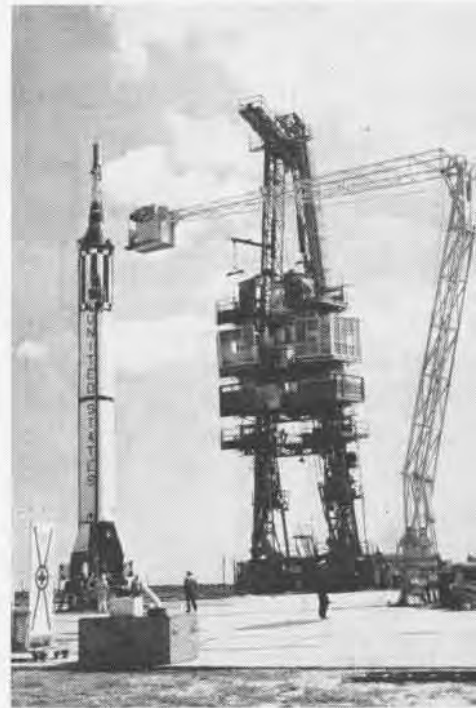
ASTRONAUTS, SHEPARD (R) BRIEF CNO, COMMANDANT, IN 1959



ASTRONAUT'S SUIT IS FULLY TESTED BEFORE 5100-MPH RIDE



ASSISTED BY TECHNICIANS, SHEPARD MOUNTS ELEVATOR IN PRE-DAWN DARKNESS, 5 MAY

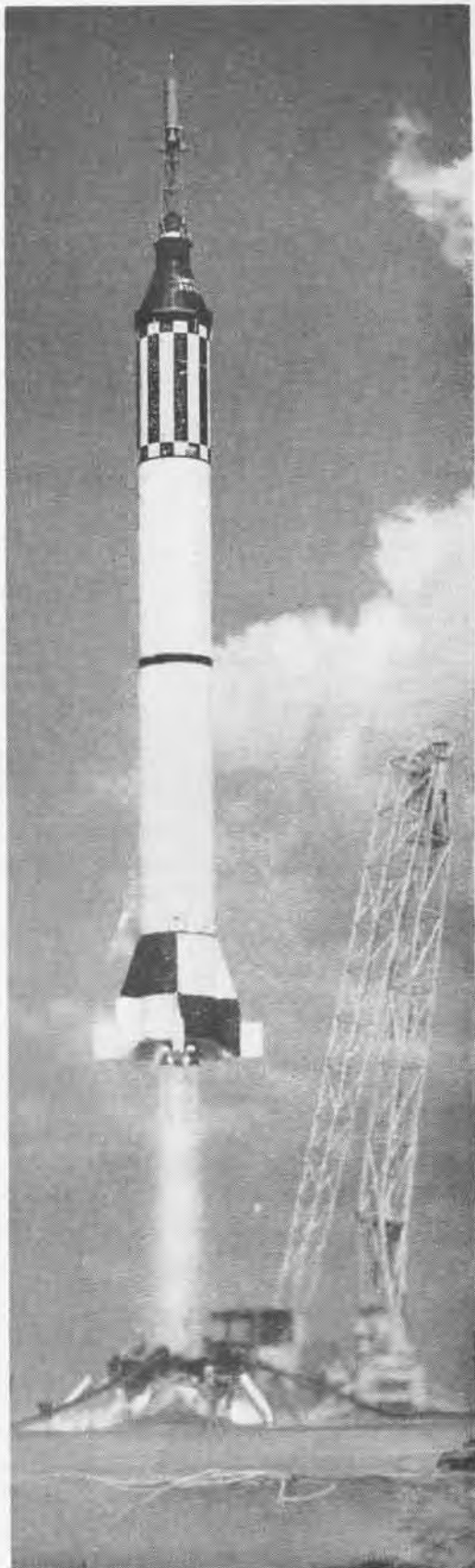


MILLIONS SAW THIS PRE-LAUNCH SCENE ON TV



FELLOW ASTRONAUT, MARINE LCOL. J. GLENN, BEARS HAND AS SHEPARD MANS CAPSULE

On 9 April 1959, the National Aeronautics and Space Administration introduced its Project Mercury Astronauts, four of whom were Naval Aviators. A little more than two years later, one of these, Cdr. Alan B. Shepard, Jr., became the first U.S. Astronaut to attempt and to accomplish a suborbital flight in space. Shepard, 37, a Naval Academy graduate, received his Navy wings in 1947. A former test pilot at Patuxent River, he has served with VF-42, VF-193, attended the Naval War College and was on the staff of CinCLantFlt. At the time of his selection, Cdr. Shepard had logged 3600 hours of Navy flight time, 1700 of which were in jet aircraft.





COMPLEX CONTROL CENTER MONITORED 115-MILE HIGH JOURNEY



DR. VON BRAUN, ASTRONAUT COOPER WATCH IN-FLIGHT REPORTS



FOUR MINUTES AFTER SPLASH, SHEPARD LEAVES CAPSULE, IS HOISTED ABOARD MAG-26 HELICOPTER FLOWN BY LT. WAYNE KOONS, USMC



DRAMA OF DESCENT REFLECTS IN FACES, GESTURES OF CVS CREW



SHEPARD ABOARD, CAPSULE SECURED, #44 HEADS FOR 'THE CHAMP'



SPACE EPIC NEARS END 26 MINUTES, 302 MILES FROM LAUNCH



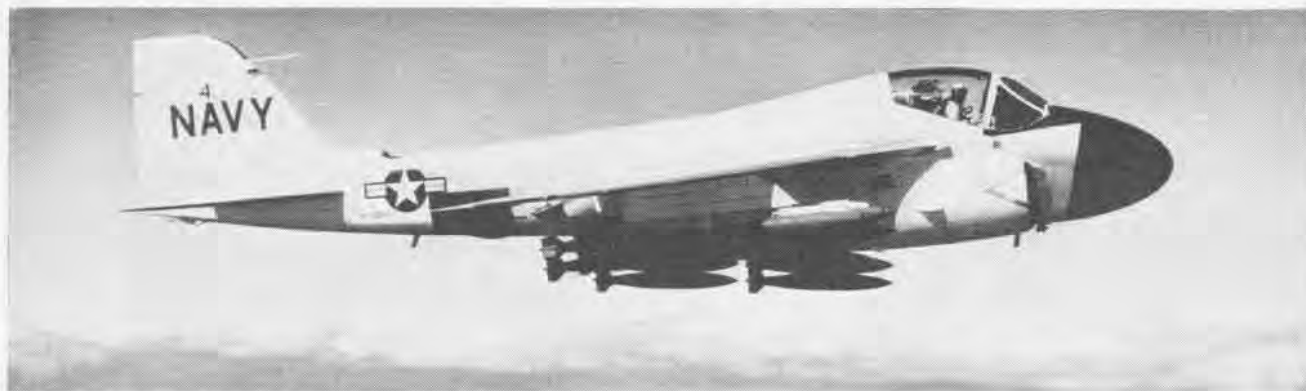
AN EX-CARRIER PILOT AFTER MOST UNUSUAL CARRIER LANDING



NASA'S SLAYTON (L), DR. LYNDALL GREET ONE HAPPY PIONEER



AT WHITE HOUSE, CNO TRIBUTE FOLLOWED PRESIDENT'S AWARD



50 Years of Naval Aircraft

DIVE BOMBERS—ATTACK

THE GRUMMAN A2F-1 *Intruder* will add a great deal to the offensive power of our carrier attack squadrons with its ability to deliver as many as 30 500-pound bombs, or equivalent loads. Much more significant is its ability to perform strike missions entirely under instrument conditions. These can be flown even at very low altitudes. New concepts in pilot display and navigation equipment, and a two-man crew, make possible this new effectiveness.

Back in the early Thirties, the first built-for-the-purpose dive bombers similarly represented a new effectiveness for carrier aircraft. Prior to this time, fighter and observation types were used by Navy and Marine squad-

rons as light bombers for ground attack purposes. While dive bombing had been shown to be effective, it was limited to small bombs. The larger carrier attack types, the torpedo planes, were not built with sufficient strength for dive bombing attacks. For anti-ship attacks, larger bombs were required.

To provide this new capability, BUAEK developed a design for dive bombers capable of delivering a 1000-pound bomb. Two prototypes were ordered in 1928; curiously, these were designated as VT class aircraft. They were similar two-place biplanes, with all metal fuselages, the XT2N-1 was built by the Naval Aircraft Factory, while Martin turned out the XT5M-1.

Following testing, Martin's design was placed in production, entering service in 1932 as the BM-1; later production aircraft were improved BM-2's.

A somewhat unusual prototype bomber was also purchased during this period, the Consolidated XBY-1, a carrier-based horizontal bomber. This was a high-wing, all-metal cantilever monoplane. An internal bomb bay took the place of the passenger compartment in the commercial *Fleetster* from which it was developed. Its streamlined design was a marked contrast to its contemporaries which had a purely military heritage. It was not placed in production, and the other horizontal bomber design project, the NAF XBN-1, was dropped.

With the Martins ready for service, a competition was held around a new BUAEK design, using the twin-row engines whose development was sponsored by the Navy. Consolidated and Great Lakes built prototypes as the XB2Y-1 and XBG-1 respectively. Both were conventional, tapered wing biplanes, largely fabric-covered. Open cockpits in the initial versions were replaced by enclosed canopies in the Great Lakes BG-1's which were produced for Navy and Marine Corps dive bomber squadrons in 1934-35.

Contemporary with these dive bombers was a pair of similar two-place fighters, the Vought XF3U-1 and the Douglas XF2D-1. The XF3U-1 was redesigned into a dual purpose scout-



MARTIN dive bombers, including this BM-2, were capable of delivering a 1000-pound bomb. Entering service in 1932 they had metal fuselages, reached 145 mph with 600-hp P&W Hornet.



NAF XT2N-1 dive bomber was tested together with similar Martin XT5M-1, prototype of BM series. Both were based on BuAer design.



CONSOLIDATED Fleetster commercial design was adapted into XBY-1 carrier based horizontal bomber; was powered by a 600-hp Cyclone.



CURTISS BF2C-1 was final Navy model of famed Hawk series. Metal wing structure and retractable gear were improvements over BFC-2.



MOST FIGHTERS doubled in attack role. Curtiss F11C-2's were redesignated BFC-2's for bombing squadrons; used 600 hp Wright Cyclone.



MARINES still flew Great Lakes BG-1's in 1940. Entering squadron service in 1934, they were powered by 700-hp P3W Twin Wasp Jr.'s.



CONSOLIDATED XB2Y-1 prototype competed with XBG-1. Both were based on BuAer design, were capable of delivering 1000-lb bombs.

bomber configuration which went into service as the SBU-1. Curtiss' monoplane two-place fighter, the XF12C-1, also became a vsb, the XSBC-1, but it was replaced by a biplane design before entering production as the SBC-3.

Two single-place dive bomber/fighters, both production versions of fighter prototypes, also saw service in carrier bomber squadrons; the Curtiss BFC-2 with fixed landing gear, and the similar BF2C-1 with metal wing structure and retractable gear.

Other prototypes of both vn and vsb class aircraft were built during the mid-Thirties, including monoplanes. All had retractable landing gears.

Vought's XSB2U-1 introduced the

low-wing monoplane configuration to that company's carrier-based designs. Brewster, a newcomer to the ranks of aircraft manufacturers for the Navy, produced the XSBA-1. A mid-wing monoplane, it was of all-metal construction, as compared to the XSB2U-1 which was largely fabric-covered. Brewster had manufactured floats for the Navy for some years.

The XSBF-1, XSB3U-1 and XSBC-2 were all biplanes. The XSBF-1 applied Grumman's typical design configuration as a vsb type, while the XSB3U-1 was a retractable landing gear version of the fixed gear SBU-1. The XSBC-2 was the biplane replacement for Curtiss' XSBC-1 monoplane design.

In the vb class, capable of delivering 1000-pound bombs as opposed to the 500-pounders carried by the vsb's, two competing prototypes were ordered. The Great Lakes XBG-1 was based on the BG, but included new features such as retractable gear and an internal bomb bay. Northrop's XBT-1 applied the company's years of design experience in all-metal, low-wing monoplanes to this class of aircraft. Its landing gear retracted into a housing under the wing.

Following trials, SB2U-1's and SBC-3's were ordered for carrier scout or bomber squadrons, and BT-1's were purchased for the latter service.

Production versions of the XSBA-1



IMPROVED Great Lakes design of 1935 was XB2G-1, which competed with XBT-1. Retractable gear and internal bomb bay were features.



FIRST SCOUT-BOMBER in service was Vought SBU-1. Capable of delivering 500-pound bomb, its speed was 205 mph with a 750-hp P3W.



NORTHROP BT-1 entered service in 1938, hit 225 mph with 825-hp P3W. Perforated split-flap dive brakes typify WW II dive bombers.



1000-HP CYCLONE in place of 825-hp P3W and fully retractable landing gear were improvements in XBT-2, prototype of SBD Dauntless.



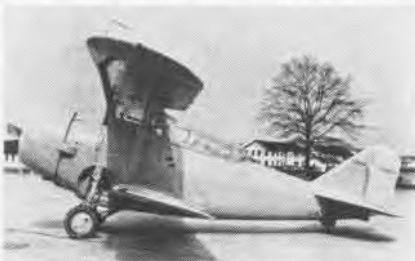
FIRST AIRPLANE designed and built by Brewster, previously a float manufacturer for Navy, was the XSBA-1 powered by an 850-hp Cyclone.



VOUGHT VINDICATORS fought in early WW II; first entered service as SB2U-1 in late 1937. With 825-hp P3W, their speed was 250 mph.



RETRACTABLE landing gear version of the SBU was the XSB3U-1 prototype built in 1936.



GRUMMAN XSBF-1 was dive bomber of typical Grumman design; it used a 650-hp P3W.



PROTOTYPE of the initial production SBC series was the XSB3U-1, which was tested in 1936.

were eventually built by the Naval Aircraft Factory as SBN-1's. A prototype of an advanced version of the BT-1 was also built by the El Segundo Division of Douglas, which had succeeded Douglas' subsidiary Northrop Corp. This was the XBT-2 with increased power which was further developed as the SBD series, the famous WW II *Dauntless*. The build-up that preceded our entry into WW II brought consecutive orders for SBD's, and production continued into 1944. SBD's served through most of the war.

Returning to the late thirties, larger air-cooled radial engines brought about



DOUGLAS SBD-4 was production version of *Dauntless* series at the outset of WW II. It is shown with early WW II markings. Powered by a 1000-hp Wright Cyclone, its top speed was 250 mph.



SB2A-4 BUCCANEERS were originally export version of the Brewster SB2A series, taken over by the Navy. SB2A's did not see combat.



DESTROYER was name given early WW II Douglas XSB2D-1, a heavy attack plane prototype with remotely controlled aft power turrets.



CURTISS SB2C Helldiver series underwent many changes before entering combat in late 1943. SB2C-1C and later versions replaced almost all SBD's in dive bomber squadrons by war's end.

the next big step in vsB aircraft design. A competition for a new design resulted in construction of the Brewster XSB2A-1 and Curtiss XSB2C-1. Both were mid-wing, all metal monoplanes with internal bomb bays and were equipped with power-operated turrets for the rear gunners. Flight test began on the XSB2C-1 in late 1940 and on the XSB2A-1 in mid-1941. In response to the need for greatly increased production of improved dive bombers, large quantities of both were ordered prior to their first flights.

In addition, two new prototypes,

the XSB2D-1 and XSB3C-1, were ordered from Douglas and Curtiss respectively. A large, tricycle gear, inverted gull wing monoplane, the XSB2D-1 was powered with an R-3350 engine and featured top and bottom mounted aft remotely controlled turrets. The Curtiss design represented similar advancement, but this project was terminated before completion.

Neither the SB2A nor SB2C programs went smoothly. Both airplane and production problems plagued them and eventually production of the SB2A *Buccaneer* was terminated in favor of

Brewster production of *Corsairs*. With all emphasis on the SB2C, production of the *Helldiver* was also ordered from Canadian Car and Foundry and Fairchild of Canada as the SBW and SBF series respectively. After many problems were overcome, the SB2C's added to the capability of dive bomber squadrons in the last two years of the war.

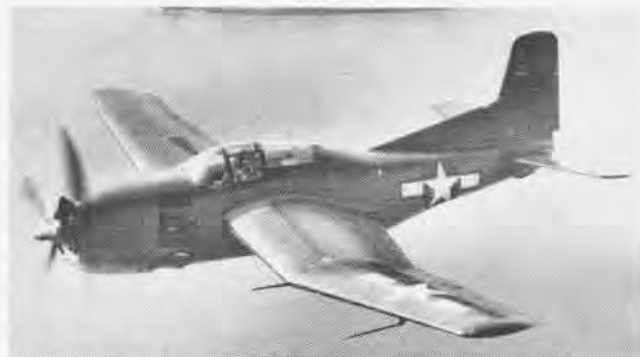
A sidelight of the period was the development of water-based versions of the SB2U and SB2C. XSB2U-3 and XSB2C-2 prototypes, using twin floats, were built and tested. However, production plans were dropped.

At the time of our entry into WW II, BUAEER had advanced the concept of single place dive-bombing/torpedo aircraft. Both dive bombing and torpedo attacks needed fighter cover in any case and deletion of the defensive armament and second crewman would result in increased performance. The VBTC class was established, and prototypes of the XBTC-1 and -2 were ordered from Curtiss, differing in the engine installed.

For various reasons the BTC program lagged, and the XBTC-2's which were completed did not reach flight test until 1944. Meanwhile the XSB2D-1 had proved disappointing, primarily



CONTRAPROPS were feature of the Curtiss XBTC-2, first single place attack design. It was powered by a 3000-hp P&W Wash Major.



DOUGLAS BTD-1 was converted from SB2D by eliminating second crewman, aft turrets. It retained R-3350 engine, tricycle landing gear.



MOST STREAMLINED appearing and smallest of the late WW II VBT prototypes were Kaiser-Fleetwings XBTK-1's with P&W Double Wasps.



PROTOTYPES of the Martin AM-1 Maulers were the XBTM-1's, largest of the VBT designs, powered by the Pratt & Whitney Wash Major.



MOST SUCCESSFUL of the late WW II designs was the Douglas XBT2D-1. With Wright R-3350's, 25 XBT2D-1's preceded the AD Skyraiders.



CURTISS XBT2C-1 was based on SB2C design modified to use R-3350. Unlike other late WW II VBT's, it retained an internal bomb bay.

because of its weight, and it was re-designated to fit into the new category as the BTD-1. Both designs featured internal bomb bays.

After these projects were underway, it was evident that they would not fully meet the envisioned requirements. To improve BTD performance, prototypes of the XBTD-2 with Westinghouse jets in the aft fuselage were built. New programs were begun, using a novel approach: a minimum weight aircraft capable of carrying a maximum load of stores, all externally.

Contracts were signed for four different designs, providing a range of aircraft with different powerplants. Douglas designed the XBT2D-1 with the Wright R-3350, while Curtiss pro-

posed an extensively redesigned version of the SB2C which was ordered as the XBT2C-1. It had an internal bomb bay and, like the XBT2D-1, used the R-3350. The Martin XBTM-1 was designed around the larger P&W R-4360 engine; while Kaiser-Fleetwings built a smaller P&W R-2800-powered design. This was designated the XBK-1, later XBTK-1. The various sized aircraft would be suitable for operation from different classes of carriers.

All of these airplanes used the advancements in the many phases of aircraft design which had evolved during the war years. Aerodynamically very clean, all had "bubble" canopies. Particular attention was paid to design of the engine installations to provide

adequate cooling with minimum drag. This had become a major problem for the compact, high-powered radial engines.

To expedite service introduction of new designs, a program to procure a large number of "X" airplanes had been established by BUAER. Instead of one or two prototypes for use in all flight testing, demonstration and trials, a particular airplane would be available for each of the many phases, reducing the time for the development cycle. This plan was applied in different measure to most of the new VBT programs; for example, 25 XBT2D-1's were ordered.

With the end of the war, the VBT and VSB programs were re-evaluated,

along with all others. Production of *Helldivers* was terminated. Flight testing of the VBT designs continued. The XBT2C-1 were dropped, while production of the Douglas and Martin designs was ordered. These were re-designated as the AD-1 and AM-1.

These aircraft were basically designed as single-place attack types, but the requirement for additional electronics equipment for special missions and for carrying an operator for this equipment led to versions with a crewman in the fuselage compartment. Versions of the XBT2D and AD for all-weather attack, electronics countermeasures, and anti-submarine operations evolved. An XBT2D-1 was converted into the XAD-1W prototype for the later "early warning" AD's carrying two crewman in addition to the pilot.

The AM-1 *Mauler* was found to be somewhat heavy, and it did not offer enough advantages over the AD's in combat capability to justify production of both types. Therefore, the AD *Skyraiders* became the standard attack airplanes, replacing the various types in use. As had always been true in Navy and Marine service, fighters were also used by attack squadrons, particularly the *Corsairs*.

While VF developments turned entirely to the jet in the late Forties, the

early jets did not fit into the VA picture since maximum speed was not a primary requirement. The lack of load-carrying ability, and the poor endurance at low altitude severely limited the jets in the attack role.

However, the turboprop did appear to offer an advancement in attack plane design, and BUAER-sponsored design studies by Douglas resulted in the XA2D-1. Based on the AD-1, the XA2D-1 was designed around the Allison T-40, which consisted of a pair of turbo-shaft engines coupled together, driving contraprops. Problems, mainly with the powerplant, delayed its development, and the program was dropped after a few A2D-1's had been made.

In the Korean action, ground-attack became the primary mission of Navy and Marine squadrons. *Corsairs* and *Skyraiders* delivered the majority of the load. The *Corsair* was modified into the AU-1 with increased external store capability and a low-altitude rated engine for improved capability in this role.

Based on Korean experience with jet fighters in the ground attack mission, and on the trends of jet fighter design, a new jet attack design was proposed by Douglas. This minimum size, simple, jet attack plane was eagerly accepted by the Navy and development

of the XA4D-1/A4D-1 was initiated.

Production of AD's, including the AD-5 series which were designed for multi-mission capability, continued. These served with various fighter models in Navy and Marine units.

The A4D's entered service in 1956 and gradually replaced many of the jet fighters as well as many AD's. The FJ-4 was also re-engineered into the FJ-4B, an attack aircraft with greater store delivery capability than the A4D's. This re-design involved additional dive brakes, and increased strength and modified flight controls and equipment for operation as a dive bomber and at low altitude.

The capability of the A4D's and FJ-4B's did not include all-weather attack, nor could they perform all of the missions which the basic AD's could perform. Carrier Air Groups still include an AD squadron and detachments capable of special missions.

The A4D-2N, now in service, adds all-weather capability—its improved successor, the A4D-5, will use the new P&W J-52 engine.

The new *Intruder*, with its ability to deliver conventional or special weapons in low or high altitude strikes under all weather conditions, will round out the effectiveness of our carrier and Marine attack squadrons.



TURBOPROP POWERPLANT, 5000-hp Allison T-40, was feature of Douglas A2D-1 Skyhawk. Program was terminated in favor of AD's, jets.



VOUGHT CORSAIRS that were used for ground attack in Korea led to production of the AU-1 version with increased wing store stations.



JET FIGHTERS were regularly assigned to VA squadrons. FJ-4 was specially modified for this role as FJ-4B with increased strength.



DOUGLAS A4D-2N is current production version of Skyhawk series with radar, autopilot; shown on first shipboard trials last year.

Weekend Warrior NEWS



VIRGINIA'S GOVERNOR J. Lindsay Almond, a guest at the Air National Guard's salute to the 50th Anniversary of Naval Aviation in Richmond, holds an anniversary edition of NANEWS which he inscribed: "Thank God for Our Naval Aviation." More than 12,000 spectators attended



the show and watched the Blue Angels, also holding NANEWS magazines at right, perform. Angels team left to right: Lt. Dan MacIntyre, Capt. Doug McCaughey, Cdr. Zeb Knott, Lt. Bill Rennie, LCdr. Ken Wallace, Lt. Lou Chatham. An F11F Tiger shows behind convertible.

VMA-213 Wins Ross Trophy

By flying 2175.5 hours without an accident in fiscal 1960, Minneapolis based VMA-213 earned the Pete Ross safety trophy. BGen. Louis B. Robertshaw presented the trophy to Maj. James O'Neill, squadron commander, at the annual military inspection.

The sterling trophy is awarded to two organized reserve Marine Aviation squadrons (jet and propeller) which compile the best aviation safety record during a year. VMA-213 flies AD-5 Skyraiders.

The trophy is a tribute to 1st Lt. Pete Ross, a Marine veteran who was killed 4 February 1950 in an air accident while attending a flight drill with VMF-121 at NAS GLENVIEW.

Snow Use—We Have To

Because our good friends in the Paul Bunyan country can't quite make the background mesh with our lead time and so forth, we're at it again—showing snow in the June issue.

Chilling as it is, the willing hands and hearts in the cut (top left, on facing page) belong to Dr. Francis Gamelin, Assistant Superintendent of the Robbinsdale, Minn., school system, Mr. Robert Tharp, Principal of Lin-

coln School, Capt. R.T. Kieling, C.O., NAS MINNEAPOLIS, and Cdr. H.S. Perry, Executive Officer of NARTU NORFOLK.

School children gathered 38 cartons of used clothing, books, magazines and other items to further friendly relations with other school children in Rabat, Morocco.

The cartons were shipped to Norfolk in a Navy transport plane which was flying personnel to Willow Grove, Pa., for annual training duty. When the plane returned to Norfolk, the load was scheduled for further transportation to Commander Naval Activities at Port Lyautey, near Rabat.



PETE ROSS flight safety trophy is accepted by Maj. J. O'Neill of VMA-213 at Minneapolis.

Heroism Earns Commendation

A letter of commendation has been awarded LCdr. Alvan C. Hirshberg for "heroic and unselfish action, without regard to his own personal safety," in rescuing crewmembers from the burning cockpit of a crashed American Airlines *Electra* at La Guardia airport last September.

The letter, from ComOne, was presented by Capt. Vincent L. Hathorn, C.O. of NAS SOUTH WYLYMOUTH.

Reservists Quit NAS Oakland

The flight line at NAS OAKLAND is empty. The concrete ramps are bare of planes. More than 30 airplanes have been flown by the Weekend Warriors to their new home aboard NAS ALAMEDA.

With the March move, NARTU ALAMEDA retained its position as an important component of the Naval Air Reserve Training Command—now comprised of 13 air stations and six NARTU's.

Reserve Attracts Phone Employees

Five members of jet Fighter Squadron 873 at NAS OAKLAND are employed by the Pacific Telephone Company. On page 31, they are Dean La-



COLLECTIONS by school children are loaded on plane for Moroccan World Peace project.



ALL FIVE of these Oakland Weekend Warriors are employees of The Pacific Telephone Co.



CAPT. V. L. HATHORN of South Weymouth cites LCDr. A. C. Hirsberg for civil rescue.

France, ATR2, Bert Fullingin, ADJ2, Manuel Capella, AEM3 and Ronald Ebert, AO3.

Cdr. Steve Biggart is wearer of white helmet and commander of the squadron.

Jim Van Belt, also a squadron member and phone company employee, was not aboard when the photo was taken.

Alameda in Joint ASW Exercise

NARTU ALAMEDA P2V's, S2F's and HSS-1's worked with Twelfth Naval District destroyers and a submarine in a joint ASW exercise. The sub acted as enemy to air and surface searchers.

The *Ronquill's* crew was thirsty for news, having been at sea for the

preceding week, and one of the helicopter crews was hungry — having been airborne for hours in the search. A remedy for each came during a lull in the exercise as the submarine skipper exchanged places with the skipper of the helicopter squadron and the helo officer was lowered to the submarine.

As in early Task Group Alfa exercises, each got the feel of the other's problems as the search wore on. This increased the effectiveness of the exercise, which was graded successful.

Highest Super Chief Count?

NARTU LAKEHURST wonders if any other reserve unit can top its percentage of advanced pay grades on

board. As of the latest Senior Chief list, NARTU LAKEHURST has more than 30 percent "star" chiefs.

Five of 16 chiefs have made E-8.

Intelligence Techniques Shared

The 224th Army Intelligence Detachment visited the Air Intelligence Unit at NAS WILLOW GROVE for a joint Army-Navy (Reserve) Intelligence training session. The Navy group included members of AIRTU's 931 and 932.

The program included lectures on anti-submarine briefings, surveillance flights, and various future projects.

A high point was Cdr. John Thornton's lecture on Evasion and Escape.



RECRUITING VEHICLE carrying Miss Oakland and J. Von Stein, YN1, sets pace for first of 20 truckloads of gear in move to Alameda.



USS RONQUIL skipper is hoisted aloft to observe Bay Area joint ASW exercise from vantage point of a NARTU Alameda helicopter.

JUPITER, HELICOPTER CARRIER (SMALL)



FIRST LIEUTENANT, ALSO GUN BOSS AND LSO, DIRECTS COPTER

NAVY'S ONLY AVIATION SUPPLY SHIP SERVES SEVENTH FLEET

TO "WHIRLYBIRD" operators not recently with the Seventh Fleet the *Jupiter's* small-size deck may be an unfamiliar and alarming sight. Safe operations by numerous HUP and HSS pilots during the past two years, however, have proved it a completely feasible landing area and an important link in the delivery chain for carrier aircraft parts. For he who lands aboard the first time, another "first" is accomplished, namely his first visit to the Navy's one and only aviation supply ship, USS *Jupiter* (AVS-8).

After initial service in the Merchant Marine as the *SS Flying Cloud*, *Jupiter* integrated in 1942 as an AKS, mothball duty followed in 1946.

In the Korean conflict, *Jupiter* was reactivated and converted to aviation supply, redesignated AVS-8, assigned to the Pacific Fleet and on rotation to the Far East. Continuing international tension after the 1953 armistice meant the now widely recognized need for fast carrier task groups on constant patrol from Japan to the Philippines.

As more complex, high-performance aircraft made their appearance on Seventh Fleet carriers, the need for mobile supply support became continuous. In consequence, *Jupiter*, in 1955, became the first major size U.S. Navy ship to be homeported at Yokosuka, Japan, under the administration of Commander Fleet Air Western Pacific, and operationally controlled in the Seventh Fleet by Commander Service Squadron Three. *Jupiter's* Commanding Officer is Capt. L.E. DeCamp.

Jupiter, configured as an alongside

carrier underway replenishment ship, was fitted with her flight deck in 1958 as an "experiment to determine the feasibility of helicopter operations from a supply ship," otherwise known as vertical replenishment. One advantage is, of course, the possibility for replenishment under dispersed dispositions. Still another is that vertical replenishment may take place from the *Jupiter* while the carrier being serviced is alongside the AO or AKS.

While the maximum weight so transferred to date in a single operation, less than 8000 pounds, required several shuttle trips by the carrier's helos, transfer speed is really only limited by present lack of helicopters in the Western Pacific capable of carrying large loads. With the extremely light canvas and aluminum cargo nets now on board *Jupiter*, a helicopter like the HUS could carry up to 2000 pounds externally in one load.

The question is often asked: "How can one ship furnish effective supply support to three or four fast attack carriers which range over great distances in the Western Pacific and are usually widely scattered?" *Jupiter*, even though 21 years old, with a top speed of 15 knots, can and does support these carriers!

Here is how she does it: Since it would be impossible for *Jupiter* to carry enough of all the spare parts needed by WestPac carriers, *Jupiter* has, for the benefit of her customers, a "Sears & Roebuck" type catalog which lists the items carried. All demands for these cataloged items are

sent directly to *Jupiter*. *Jupiter* uses one of the following delivery methods: in port replenishment, air parcel post, delivery by COD aircraft, or underway replenishment.

The criterion for effectiveness is how the *Jupiter* fills demands for items involving aircraft and how efficiently she gets the material to the customer. In 12 months, *Jupiter* ranged from Yokosuka to Hong Kong, visiting such ports as Naha, Buckner, Keelung, Iwakuni, Sasebo, Nagasaki, Kobe and Nagoya. The fall of 1959 found her operating from Subic Bay during extended southern operations by Seventh Fleet carriers, indicative of the value received from a mobile source for aircraft spares. On the average, approximately two-thirds of the underway replenishment customers have chosen to avail themselves of *Jupiter's* vertical, rather than her alongside, capability. For either or both ways of doing it, *Jupiter* offers "dealer's choice."

Jupiter provides her customers with approximately 50 AOCP's or similar high priority parts per month, thus keeping 50 "would be" grounded aircraft in the air. This is accomplished by carrying 16,000 different items of supply, worth approximately eight million dollars, compared to the one half million items in the entire Navy aviation supply system worth many times that.

Jupiter's insignia is a "dynamic" eight-ball and a cargo hook surmounted by "Bravo November." *Jupiter* works hard to earn that signal's meaning—mission accomplished.

Airship as Research Tool 'Flying Wind Tunnel' at Lakehurst

A new use for the Navy airship as a "flying wind tunnel" has solved the frustrating problem of testing models of vertical rising and short take-off and landing (VTOL-STOL) aircraft.

As part of a long-range study of low speed flight, Professor D.C. Hazen of Princeton University has established that Navy ASW airships can be readily converted to accomplish cheaply and efficiently what would otherwise require large expensive wind tunnels. A program for operating the large ZPG-2 airship as a flying wind tunnel is now underway under the joint sponsorship of the Office of Naval Research and the Bureau of Weapons. The first flight is scheduled shortly.

Basic problem in developing VTOL-STOL machines is that there is a negligible amount of data available on low-speed aerodynamics owing to the difficulty in using standard wind tunnels for this purpose. Large, powered models need to be used to test these types of aircraft, and there are few wind tunnels large enough to accommodate them. Those that exist are not generally designed to simulate low speeds, and attempts to modify them have proved unsatisfactory.

With the cooperation of the Airship Test and Development Department at NAS LAKEHURST, an exploratory program using the 285-foot ZS2G-1 airship provided the feasibility of testing VTOL-STOL models for control and stability by hanging them beneath the gondola on a retractable strut.

The airship can maintain zero speed or travel more than 60 knots. Other advantages of the airship as a flying

wind tunnel are its smooth steady flight at all speeds, heavy load-carrying capacity, lack of vibration, large space available for instrumentation and test personnel and ability to make long test runs.

The larger ZPG-2, which is 343 feet long and has a considerably larger car and a ceiling of 5000 feet, was recently assigned to the program. This airship can remain stable in flight at zero air-speed in an equilibrium condition with no perceptible pitching, rolling or yawing. Velocities from zero to 15 knots can be held for about a half-hour.

Models with wing spans up to ten feet and fuselages up to 14 feet in length have already been tested in the program, and it is anticipated that models twice as large can be handled. Since weather seldom hampers operation, wind tunnel flights can be scheduled all year round. In four months of continuous testing with the ZS2G-1 flying wind tunnel, no flights had to be delayed or postponed because of weather.

WV Simulator Record Set Training Unit Claims Top Usage

Airborne Early Warning Training Unit, Atlantic, has established what the unit believes to be an availability record for the WV-2 Operational Flight Simulator (Device 2-F-58). AEWTLant, based at NAS PATUXENT RIVER, trains flight and maintenance personnel prior to their assignment to AEW squadrons.

One Operational Flight Simulator, received in Sept. 1958, has piled up

10,518 hours and an availability record of 97.4%. This rate of OFT trainer utilization is among the highest in the Navy. "Only by the unstinting maintenance efforts of the TD divisions and Technical Representatives has this high utilization been made possible," according to the unit.

P2V, P3V Gear Ordered Magnavox to Produce Radar Units

The Navy has awarded a \$10.5-million contract to the Magnavox Company, Fort Wayne, Ind., for the production of anti-submarine warfare radar units. They are for use in Navy P2V and P3V aircraft.

The P3V is the Navy's first turbo-prop anti-submarine patrol aircraft.

Savings Plan Inaugurated Sixth Fleet Sells Savings Bonds

An experiment in saving the dollars of 30,000 Navymen and Marines is being tried on board the 30 ships of the U.S. Sixth Fleet.

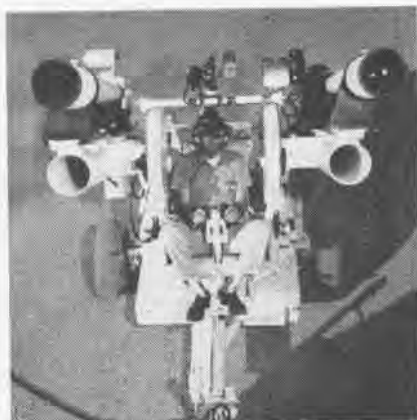
For the first time, Navymen at sea can make cash purchases of U.S. Savings Bonds on board ships. The new cash system is intended to further Presidential directives for voluntary reduction of overseas expenditures. It also affords a convenient and constructive outlet for dollars of Sixth Fleet personnel.

The Sixth Fleet is now the only place where Navymen afloat can make such purchases. The cash program is intended to be a flexible supplement to the regular Bond Payroll Savings Plan. The plan is especially convenient for personnel who find themselves at irregular times with extra money during a Mediterranean cruise.

If the plan succeeds, it may be put into practice on all U.S. Navy ships.



CHEMIST Rufus A. Whitmire tests a liquid oxygen sample using an infra-red photospectrometer at O&R Pensacola Materials Testing Laboratory. All continental U.S. O₂ supplies are monitored by a test lab.



THIS M-45 mobile camera unit photographs missiles and satellites launched into the Pacific Missile Range. Using a 100-inch lens, it can track a vehicle in excess of 100,000 feet. The operator shown here is Don Houchin.



AN AWARD for instilling loyalty, pride and teamwork in his NATO command is given to Adm. Charles R. Brown, CinC, Allied forces in Southern Europe, by Mr. Stuart Long, President, European Council, Navy League.



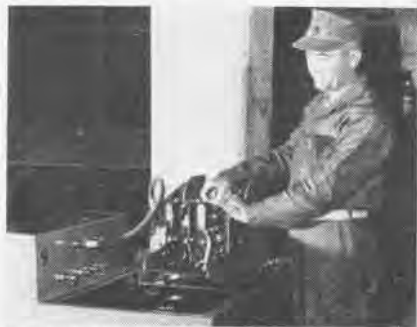
NELLIS AFB C.O., BrigGen. J. N. Eubank (R) presents award to Navy Lt. C. E. Southwick (C) of VF-124. Southwick was rated "first" academically and also in all other phases of the USAF Fighter Weapons Course.

New Typhon Contract Let WEC to Build Direction Equipment

Long and Medium range *Typhon* air defense weapons moved a step closer to reality with the award of a \$7.3-million contract to Westinghouse Electric Corporation for development and production of the weapon direction equipment.

Typhon is a completely automated missile firing system for use wherever ships can sail. It is designed in two varieties (Long Range *Typhon* is the name formerly given *Super Talos* and Medium Range *Typhon* was once called *Super Tartar*) to provide the fleet with a defensive system with greatly extended range, accuracy and target handling capacity. It is capable of intercepting and knocking down both enemy aircraft and missiles, and for long-range surface bombardment.

Typhon is named after a fierce, 100-headed legendary Greek monster.



A BETTER AND CHEAPER hydraulic test bench was built in his spare time by GySgt. E. T. Heath, Marine Aircraft Group 16, in Okinawa. Lightweight and cheap, it saves a trip to the Naval Air Base 20 miles away.

SPACE CRAFT PLANS ARE MADE

THE NATIONAL AERONAUTICS and Space Administration has selected Hughes Aircraft Co. for contract negotiations on plans to build a soft-landing lunar spacecraft called after its mission, *Surveyor*.

The spacecraft will be designed to land gently on the moon, perform chemical analysis of the lunar surface and subsurface and relay back to Earth TV pictures of lunar features.

Plans call for seven *Surveyors* to be launched to the moon in the period of 1963-66. The California Institute of Technology's Jet Propulsion Laboratory—NASA's center for lunar and planetary exploration—will provide technical direction for the program, which is expected to cost upwards of \$50 million.

Surveyor will soft-land 850 pounds on the lunar surface. The landing will be accomplished by a solid propellant retro-rocket which will fire in a direction opposite to the flight of the spacecraft to slow it down to about ten miles an hour. This is slightly slower than a manned parachute landing on Earth.

The spacecraft will land on three legs. Standing on this tripod, the spacecraft will be approximately 11 feet high, including the directional antenna on top.

Surveyor is a follow-on program to NASA's *Ranger* series, which will rough-land small instrument packages containing seismometers on the moon in the next few years. Where the *Ranger* instrument packages will rough land at something under 300 miles an hour, *Surveyor* will land at between five and ten miles an hour.

All seven *Surveyors* will be launched by the *Atlas-Centaur* system from Cape Canaveral, Fla. Flight time from launch pad to lunar landing will be on the order of 66 hours.

Surveyor will weigh approximately 2500 pounds when it is injected on its lunar trajectory by the *Atlas-Centaur*. When it lands on the moon, after the retro-rocket has fired, it will weigh 750 pounds, of which 500 pounds will be communication equipment, structure and temperature control instrumentation to protect it from the heat of the lunar day and the cold of the lunar night.

The remaining 250 pounds will be

scientific instruments, including several television cameras, a sensitive seismometer to record moon quakes or meteoritic impacts, a sensitive magnetometer to determine if the moon has a magnetic field, instruments to measure the gravity of the moon's surface and subsurface, as well as the instrumentation to measure radiation and the lunar atmosphere.



MGEN. C.A. ROBERTS PINS ON MEDAL

Marine's Medal Up-graded Movie Subject Awarded Navy Cross

Former Marine Guy L. Gabaldon, who was awarded the Silver Star for heroism at Saipan and Tinian in World War II, has had his medal up-graded to the Navy Cross by the Board for Correction of Naval Records.

Gabaldon is featured in the movie "Hell to Eternity."

He is reported to have captured, single-handedly, some 1000 troops and civilians in two WW II campaigns.



COMCARDIV ONE, RAdm. F.D. Foley, and his staff bought a television set and presented it to the Children's Ward at the U.S. Navy Hospital, Yokosuka, Japan. LCDy. H.L. Eckert, Chief of Pediatrics, thanks Adm. Foley.

VP-46 Trains in Neptunes P2V's to Replace Marlin Seaplanes

Patrol Squadron 46 pilots, based at NAS NORTH ISLAND, received their first P2V Neptune January 31 and began a five-month transition period from the P5M Marlin seaplane to the land-based Neptune.

When VP-46 completes its change-over, the Pacific Fleet will have five seaplane squadrons: VP-50 at Iwakuni, Japan; VP-40 at Sangley Point, Republic of the Philippines; VP-47 at Whidbey Island, Washington; and VP-42 and VP-48 at NAS NORTH ISLAND.

VP-46 pilots are undergoing stiff training exercises under the direction of North Island's P2V replacement air group squadron, VP-31.

The P2V's assigned to VP-46 will be equipped with a Julie-Jezebel detection device. The Julie system uses floating buoys employing an explosive sound source for echo ranging, while the Jezebel buoys locate the submarine by triangulating on the noises it produces. The two systems are linked in the plane's electronic equipment.

VP-46, commanded by Cdr. Newell N. Langford, engages in patrols off the Southern California Coast.

DK3 Cops Carrier Trophy Holds Degree, Reserve Commission

First man to be chosen "Sailor of the Month" aboard the anti-submarine aircraft carrier Yorktown is Antolin V. Matsuda, DK3.

Rewards accompanying the selection include two tickets to the Ice Capades, entertainment of his choice,



FIVE OF SEVEN Clean Sweepers of VS-32 pose for photographer after becoming Centurions aboard USS Lake Champlain. Their 100 landings each, aboard the same ship, took place over a 14-months period. Pictured: LCdr. Red Klitz, Lt. Jim Buckley, Lt. Dan Culhane, Ltjgs. Jay Gardella and Pete Purvis. Not shown: Lt. Ron Scarafone and Lt. Roger Meyers. In earning membership in the Centurion club, they landed in all types of weather during ASW maneuvers.

expense money to include dinner at one of Seattle's finest restaurants, with all necessary transportation, a special pass granting him "head-of-the-line" privileges for a month, and extra liberty benefits.

Matsuda reported aboard the Yorktown three years ago as a steward. He devoted most of his off-duty time to the study of disbursing matters and because of his perseverance, he has been able to qualify for disbursing clerk.

Matsuda holds a B.S. degree in Aeronautical Engineering from Faeti University in Manila and a reserve commission in the Philippine Air Force.

VAP-62 Sailor Decorated Rescued Child from Burning House

Donald L. Reynolds, AM2 of VAP-62, has been awarded the Navy Commendation Medal for heroism in rescuing a nine-month-old baby from a burning house at Jacksonville, Fla.

Reynolds heard that a baby was still inside the blazing structure. He raced through dense smoke and intense heat, through the flaming kitchen to the bedroom, and rescued the child without injury to the baby or himself.

After the rescue, he and a shipmate used a garden hose to keep the fire in check until fire-fighters arrived.

\$3-million Contract is Let New Computer System for S2F-3

The Navy has awarded a \$3,000,000 contract for a tactical anti-submarine warfare display and computer system to the Huyek System Corporation, Huntington, Long Island, N.Y.

The contract is for pilot production of equipment to be used aboard the Navy's anti-submarine plane, the S2F-3.

The system displays data from anti-submarine detection equipment, pinpoints target location, and automatically keeps track of the plane's position.



MIRAMAR MESS HALL has new look, thanks to Brian E. Tucker, AN, who is signing his name to the mural he painted at the request of W. F. Pate, CSCM, galley head. Tucker studied art at The Maryland Art Institute.



TWO TECHNICAL Representative, George Greytak and Dick Burgess, were honored at MCAS El Toro for their 20 years service with Chance Vaughn. Both men served in Korea and came to El Toro just three years ago.



NUMBER THIRTEEN was not unlucky for Edward J. Marciniak, ADGA, of NAS Willow Grove. He copped top honors in Naval Air Training Command Leadership School's 13th class, won praise from Capt. T. H. Bookout.



GYRO TECHNICIAN MUST WEAR MICROSCOPE

Gnat's Eye Accuracy Seen Tiny Missile Gyro Called Best Yet

A missile gyroscope, said to be accurate enough to place a vehicle within one mile of its destination on a shot from earth to the moon, has been developed by Sperry.

It weighs less than a pound and is less than three inches long.

In demonstrations, its performance has been at least three times better than similar vest-pocket sized gyroscopes currently in use, says Sperry.

VAP-62 Uses Tent Lab Portable Unit in Packaged Kit

A portable darkroom in a packaged kit weighing 900 pounds gives Heavy Photographic Squadron 62 an efficient



CDR. DALLAS E. RUNION (r) is congratulated by Capt. Schwartz Nelson, USAF, after first flight in Northrop T-38 supersonic two-seated AF trainer. Cdr. Runion flew the T-38 as part of the informal evaluation for BuWept-

way to handle photographic requirements in areas where neither carrier nor shore facilities are available. VAP-62 spends a great deal of time in remote areas.

The entire unit of five pieces requires 47 cubic feet of transportable space. Included in the kit are two separate darkrooms, each with a large warp-resistant plywood deepsink. Also included are ventilation requirements with necessary water piping, electrical wiring, fan box with air filters, electrical switches and a sufficient supply of garden hose to deliver water from its 1500-gallon tank.

Used in multiple, these kits provide necessary darkroom space for large base-type operations and have proved their value to Navy units deployed in undeveloped areas.

VAP-62, commanded by Cdr. John E. Cousins, flies the versatile A3D-2P.



FT MUGU'S "Big Blow," a wind tunnel capable of speeds six times the speed of sound, is powered by power plant of USS Independence (C-122). Atom-bombed at Bikini, she "steams on," her large funnel in use at right.

Student Teaches Teacher Cdr. Kays Gets VP-30 ASW Course

It was bound to happen sooner or later. The student became the instructor, and the instructor became the student.

More than six years ago, Lt. P.O. Cutchen was struggling through "A" stage at South Whiting Field. The man who guided him through the neophyte stage was Cdr. R.L. Kays, then attached to Basic Training in Pensacola.

When Cdr. Kays checked into the replacement training squadron for ASW training, it seemed natural that he should be assigned to Lt. Cutchen.

Cdr. Kays, an experienced pilot, will be brought up to date on the latest ASW techniques employed by fleet squadrons. Upon completion of his training, he will join VP-44.



"WELL DONE," says VAH-2's C.O., Cdr. W. B. Barron, Jr., to Jason N. Haveman, AM1, on completion of his 1000th hour in Heavy Attack. Haveman went up from plane captain to top Bombardier/Navigator with 7 bulls-eyes.

Chief's Idea Lowers Costs Cabaday Wrenches Save Hours

Before the Cabaday wrenches were perfected, torquing the pylon shear bolts on an A3D engine cost 80 man-hours. The torquing itself took only a few minutes, but to do the job, the engine had to be removed, then re-installed, inspected and tested. It was a slow business.

C. J. Cabaday, ADJC of VAH-3, NAS SANFORD, thought it wasteful to go to so much work for such a short job, so he fabricated some oddly shaped hand wrenches. Now it is possible to do the job in minutes with the engine in place.

According to VAH-3, Cabaday's crooked wrenches are now in use in all Atlantic Fleet A3D squadrons and soon will be used by squadrons in the Pacific.

In recognition of his time, effort and initiative in designing the wrenches, Chief Cabaday's skipper Cdr. K.F. Rowell, has named him VAH-3's "Professional of the Month."

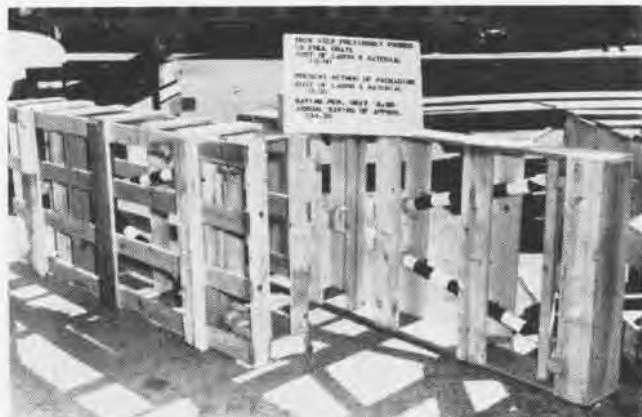


MEETING HIMSELF coming or vice versa is plight of AMC Alvin Godfrey, HS-872, NARTU Alameda. A civilian planner in aircraft maintenance, he returns to same place on drill weekends as this double exposure shows.

PACKAGE PROJECT PAYS\$ PLENTY



COST-CUTTING TEAM inspects drop tank packaging exhibit; old type packaging in full crate as against sensible picture frame type.



A LARGE SAVING is to be made by packing F3H tail hooks in much lighter crates without the chocks that were once regularly required.

MANY A DOLLAR is to be saved in packaging at North Island. Something like \$80,000 is the conservative estimate!

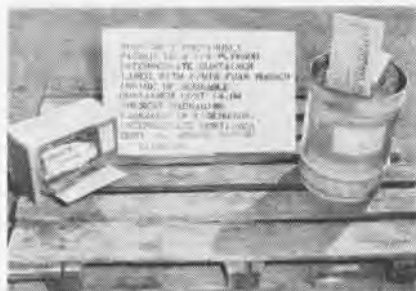
Overhaul and Repair joined the Supply Department at NAS NORTH ISLAND to find ways of saving costs in the preservation and packaging operations.

O&R reworks some 130,000 aeronautical spare accessories and components each year. These are put into the local Supply Department stock, and thus are packed for handling rather than for shipping. The program at North Island is part of the program instituted by BuWeps. A closer look is being taken at requirements, so that as nearly as possible all packing in the future will be suited to the situation.

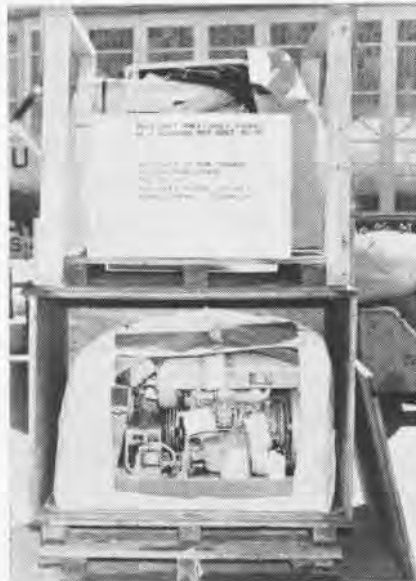
The cost-cutting team, appointed by Capt. R. C. Dexter, Jr., Supply Officer, and Capt. P. W. Gill, O&R Officer, went into action in November 1960. Representatives of both departments started out by asking why items were packaged as they were. They soon discovered that some components were being packaged beyond the degree actually required. For example, auxiliary power units (APU's), although stored inside, were wrapped in preservation paper, then enclosed in plywood boxes. Each packaging unit cost \$40.89.

At that point, Fleet activities drawing the material were questioned. They reported that APU units were removed from the wooden boxes before they were loaded aboard the ships. Obvious-

*By Eretta Sudsbury,
O&R NAS North Island*



ELECTRONIC UNIT in plywood box and a can needs only fiberboard box and hair packing.



APU'S, once packed in plywood boxes, are now protected by dust covers and put in frames.

ly the crates were not needed locally.

The APU's are now enclosed in dust covers and packaged for storage in reusable picture frame crates. Fleet activities can easily remove them from the "picture frames" and leave the frames on the quay wall to be recovered. The cost of the new type crating is only \$12.40 each, an annual saving of \$5299.14.

Another example of cost cutting is the crating of F3H tail hooks. These strong, heavy hooks were formerly mounted in full crates, firmly chocked. The hooks are now placed in much lighter crates without chocks. The new type is fully acceptable to Supply and preferred by fleet units. Estimated annual savings on the hooks are \$734.50.

Cost cutting included small items as well. Small electronic units which were formerly packed in 1/2-inch plywood containers lined with foam rubber and then wrapped in hair and sealed inside metal cans, cost \$4.04 each. Now wrapped in preservation paper and packaged in fiberboard boxes with a small amount of wadding to hold them in place, they cost only \$1.00. Not only is there an estimated annual savings of \$2128, but vital shelf space is also saved.

When a "before" and "after" exhibition of the packaged items was staged near the O&R Preservation and Packaging Shop, BuWeps' Fleet Readiness Representative, Pacific, RAdm. R. M. Reynolds, gave the O&R-Supply team a "Well done" on its success.

FOR UNDERSEA EMERGENCY DIAL 333



THESE SKIN DIVERS, civilian and military attached to the Naval Air Station at Lakehurst, N. J., use their volunteer role frequently in behalf of missions that could not otherwise be accomplished.

AT NAS LAKEHURST, dial 333 for underwater emergency!

This may sound like a strange instruction for an air station, but it is often used at NAS LAKEHURST.

With nine very capable skin divers specially trained for rescue and salvage work, the air station's fire department often receives requests like a recent one from NAS ATLANTIC CITY. A Navy RAY out of Anacostia scooted off the end of the runway into the

By Bob Bliss, JOC

water, floated for about 20 minutes, and sank.

Skin-divers from the NAS LAKEHURST fire department were called on to reclaim highly classified papers and valuable personal items left aboard the hapless plane by survivors.

Fire Captain Bert Fleming, along with Firemen Jim Caldwell, Ray Lecuyer and Charles Greenlow, were dis-

patched to the southern Jersey Naval Air Station at noon on Thursday. The next Tuesday they not only had recovered the papers and valuables, but had completed the task of attaching pontoons and floating the wreckage.

On other occasions the local community has found the divers' services capable of coping with emergency situations. Nearby Jackson Mills called on the diving crew to search icy waters for the body of a missing three-year-old girl last November. The crew worked with an underwater search party until the child's body was recovered by a co-diver from a civilian first aid station.

When the ill-fated ZPG-3W airship crashed at sea off Barnegat Light, N. J., in July last year, fireman Jim Caldwell joined divers from Navy salvage vessels in recovering dead crewmen and later reclaiming the wreckage for the board of investigators. Caldwell recovered seven bodies.

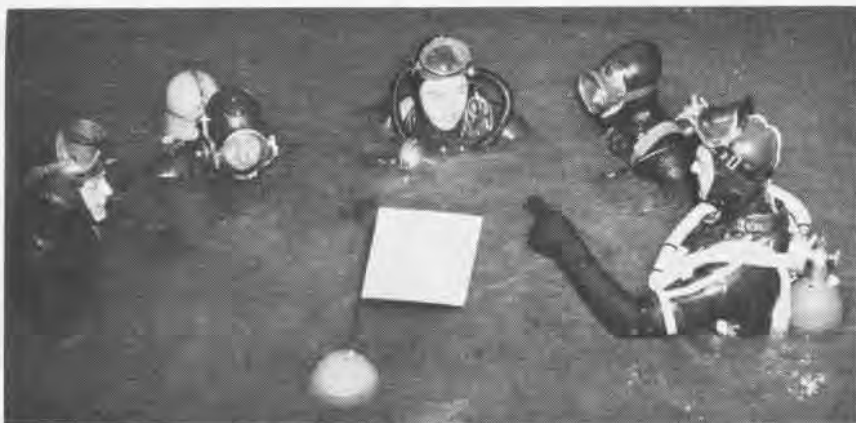
Though the equipment used by the divers is provided by the Navy, the training and assignment are voluntary. No special compensation is made even though extreme discomfort and danger exist in almost all instances.

Caldwell, who was trained as a Navy diver in Pearl Harbor in 1944, began skin diving about eight years ago. In 1958, he interested Fire Captains Fleming, Ryan and Kenney, and fireman Lecuyer in learning the art. Almost immediately the unique service that has become routine in the Lakehurst fire department was born.

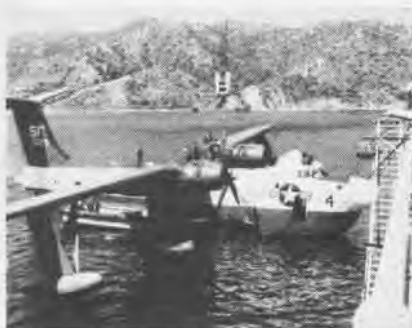
Since its inception, Caldwell has trained all eight members of the department who now are qualified. Caldwell, as well as being a capable diving instructor, is blessed with the ability to instill willingness in each student to volunteer for hazardous duty assignments.

Caldwell credits Fire Chief A. L. Hermanni for much of this enthusiasm, for the fire chief is responsible for all members of the unique force in that some work on the station crash crew as well as at fire headquarters.

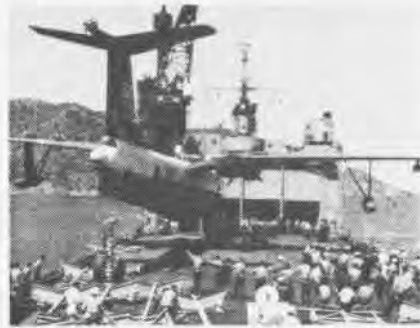
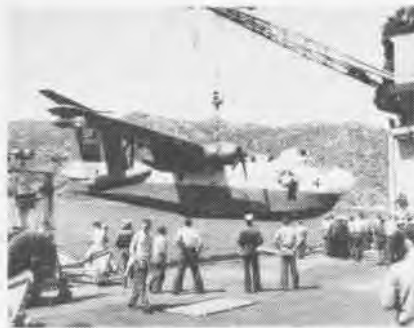
The majority of the calls for underwater service are made to Chief Hermanni on his extension, 333, and he quite often accompanies the crew and stops to direct the overall operation.



TIM CALDWELL, diving instructor at right, gives directions to Tim Kenyon, Bert Fleming, Jim Holloway and Ray Lecuyer in salvage operations. Fire Chief Hermanni often accompanies crew.



STAND BY TO HOIST is command aboard USS *Pine Island* as seaplane tender proves its ability to hoist a P5M-2S seaplane aboard for repairs under adverse conditions. The VP-48 plane is prepared at left for a simulated emergency hoist. Center, it is raised by the multiple cranes which ordinarily is used only for loading supplies



and small boats (seaplanes usually are hoisted by the stern crane). At right, the P5M is lowered gently to the deck. P5M weighs 55,000 pounds. VP-48 worked with the *Pine Island* for three days, practicing tender controlled approaches, open sea landing and fueling, hoisting problems, and weapons loading off Santa Catalina Island.

Exercise 'Green Light' Held Canadian Navy Forces Participate

A squadron of patrol aircraft and eight ships from the Royal Canadian Navy joined forces with units of the Pacific Fleet for Exercise *Green Light*, a series of fleet exercises conducted by Commander First Fleet.

In Phase II, Royal Canadian Units participated in ASW exercises with U.S. hunter-killer groups. In Phase III, held in May, Canadian minesweeper units joined in amphibious operations in the Pendleton, Calif., area.

Sergeants are Commended Convert R5D to Command Post

Five Marine sergeants of the First Aircraft Wing, Iwakuni, Japan, have been commended for their technical abilities in converting an R5D transport plane into a flying command post.

They are Gunnery Sergeants James F. Macha, Gerald A. Mass; Staff Sergeants James E. Casti, Thomas B. McMullin, and Harry W. Dayton, all of Marine Aircraft Repair Squadron 17.

The work required planning of a method, then supervising the installation of tables, desks, compartments and other equipment necessary for the mounting of the mass of electronic equipment required.

Work that normally would be done at the factory or at an overhaul facility was completed by the five Marines in their shops in three weeks.

New Formula for Success: Put to Sea Aboard the Coral Sea

Since USS *Coral Sea* put to sea last August for Far East deployment a third of her crewmen have made rates.

Seven hundred thirty-four men

earned new stripes. There were 306 promotions as a result of last year's August exams, and 428 after February exams this year. Thirteen of the promotions were to Chief Petty Officer.

Coral Sea, flagship of RAdm. Alexander S. Heyward, Jr., ComCarDiv-5, is commanded by Capt. J.J. Lynch.

Marine Named Top Student Wins DAR Engraved Watch for '60

Winner of the engraved watch which is given annually by the Texas Society of the Daughters of the American Revolution to the year's outstanding jet student is Marine 1st

Lt. John M. Willmarth of VMA-211.

Lt. Willmarth, a 1958 graduate of the Naval Academy, completed flight training last September and reported to VMA-223. He has been a pilot in Attack Squadron 211 since January.

VU-7 Gets F8U Crusaders They Will Tow High Speed Targets

Eighteen F8U *Crusaders* are being delivered to Utility Squadron Seven at NAS NORTH ISLAND where they will be used to tow *Delmar* air-to-air missile targets.

By the end of the year, *Crusaders* will have replaced the FJ-4 *Furies* now used in high-speed towing work.



SPAD-DRIVING JG'S of VA-152 have chalked up 12,000 accident-free hours in single engine aircraft. Most of those hours were flown from six carriers and during two WestPac cruises under night and all-weather conditions. Front row, Joe Shea, Carl McDonald, Karl Lassery, Larry Folsom and Dave Loomis; rear row seated, Van Hough, Larry Pierce, Will Vrye, Shannon Griggs, J.S. Anderson, and Chris Wharton. Standing are Gerry Zimmer (left) and Ron Waters.

LETTERS

SIRS:

The outstanding photograph on the cover of *Naval Aviation News* for March 1961, erroneously credited to the cameras of VCP-63, is the result of careful planning by Fleet Air Photo Lab personnel. The A/D pilot, LCdr. Paul Duris, was persuaded to make a few taxi passes by the palm trees in front of the Barber's Point tower while cameraman C.L. Roberson, PH2, of the VU-1 Fleet Air Photo Lab, made a series of photographs.

Cdr. E.C. McGOWAN
Commanding Officer

VU-1

! All right, already! We're not blameless but generally we're only as right/wrong as our source. Numerous instances involve error in (1) authorship, (2) caption identity, (3) record claims and (4) unit location, viz., ocean or planet, etc. Our patented, patient plea to all of our wonderful contributors is: WRITE IT—READ IT—REREAD IT—THEN RUN IT IN OUR DIRECTION. And keep it coming!

SIRS:

Being a constant and interested reader of your fine publication, I would like to correct one error that appeared in the April 1961 edition.

In regard to the item concerning Ens. Earl Clark, I believe that one of Ens. Clark's contemporaries, 2nd Lt. R. F. Warren, USMC, was the first all jet-trained Naval Aviator to report to an operations squadron.

Warren received his wings at NAAS KINGSVILLE, Texas, on 29 April 1960 to become the first all jet trained Naval Aviator. On 14 May 1960 Warren reported to the 3d Marine Aircraft Wing at MCAS EL TORO and was assigned to VMF 323 in Marine Aircraft Group 33. Lt Warren has 201 flight hours in the F8U to date.

I look forward to future issues of your excellent professional magazine.

COL. J. K. DILL, USMC
C. O., Marine Aircraft Group 33



COMMODORE BEN H. WYATT, who as a lieutenant in 1926, led first photo-mapping effort in Alaska (p. 6), is shown with his daughter who holds flag with 49 stars, given them by Congressman Ralph J. Rivers, Alaska.

BACK COVER

On or about its Golden Aerial Milestone—the week beginning 8 May 1961—Naval Aviation enjoyed an enthusiastic period of recognizing and recognition.

With President John F. Kennedy on 5 May, the men of Naval Air joined in a hearty "Well done" to an illustrious shipmate and Astronaut, Cdr. Alan B. Shepard, Jr. A few days later, and with these echoes still alive, the presidential tide of tribute was generously turned toward all Naval Aviation in a letter which we very proudly place on our back cover.

Surmounting President Kennedy's letter are views of Naval Aviation's Golden Anniversary medallion which, on 10 May, was presented to the President by Frank Gard Jameson, President of the Navy League of the U.S.

Air Sea Power on Exhibit Museum Celebrates 'Golden Year'

On 2 September, the Naval Historical Foundation opens its celebration of the Golden Anniversary of Naval Aviation at its Truxtun-Decatur Naval Museum, Washington, D. C. The entire museum will be devoted to telling the stirring stories of the United States Navy's integration of air into its total power, emphasizing the far-reaching effect upon the United States destiny.

The Curator for the Department of the Navy seeks to borrow significant photographs, relics, memorabilia and documents relating both to early leaders in the development of Naval Aviation and to its vast achievements.

It would be appreciated if anyone having significant memorabilia would get in touch with the Director of Naval History, Department of the Navy, Washington, D. C.

SCUBA Warning is Given States 'Diving not for Amateurs'

In OPNAV Notice 5100, attention is directed to "the inherent physical and physiological dangers peculiar to the use of Self-Contained Underwater Breathing Apparatus (SCUBA) in order to prevent accidental loss of life caused by inadequate training or carelessness." The notice continues:

"Evaluation of a recent fatality involving use of SCUBA equipment revealed noncompliance with instructions and safety precautions for SCUBA diving contained in part 3 of the U.S. Navy Diving Manual. Of the violations noted, employment of an unqualified Navy diver for routine

underwater work was paramount. In addition, it appeared that the dive was neither properly planned nor properly supervised.

"Navy diving operations are not for amateurs. When underwater, a man's life is absolutely dependent upon proper functioning of his equipment and his ability to use it properly. Because of the special training required to qualify personnel in the proper use of SCUBA, only a limited number of activities (BUWEPs Instruction 1500.15D) have been authorized to train and designate SCUBA divers. It is recognized that SCUBA diving is becoming an increasingly popular form of outdoor recreation. Nevertheless, the recreationally trained diver is no substitute for the individual who has been especially trained in Navy schools to do Navy jobs. Recognition of this fact will do much to prevent recurrence of diving casualties.

"Commanding officers and officers in charge will insure that personnel using Navy SCUBA for work, advanced training and qualifying exercises, or recreational purposes are currently qualified and designated Navy SCUBA divers. Safety precautions contained in Diving Manual shall be observed strictly except in emergencies or simulated combat exercises."

CREDITS

NANews expresses thanks to these collectors for use of photographs indicated in the Dive bomber chapter of Naval aircraft:

BFC-2—V.J. Berinati
BF2C-1—R.C. Seeley
SB2A-4—Ralph Romaine
XBTM-1—P.M. Bowers

Front cover shot was taken by Joseph E. Oglesby, NANews Associate Editor.



LTJG. GATOT SUWARDI of Java, the first Indonesian officer being trained at NAAS Whiting Field is the advance man of an 8-man contingent from the multi-island country, the other seven are just entering Pre-Flight training.



THOMAS J. TAYLOR AND PAUL D. PAXTON OF VX-6 USE A SMOKED PANE OF GLASS AS A FILTER TO STUDY SUNSPOTS IN ANTARCTICA

SUNSPOTS IN ANTARCTICA CAUSE HEADACHES

Sunspots and solar flares cause more grief than the cold weather for Navymen on Operation Deep Freeze. By rupturing the ionosphere, which serves as a sort of reflecting shield for bouncing radio messages from two points on earth, the spots effectively cause communications black-outs. As a result, the flight operations of Navy Air Development Squadron Six must often be restricted for days.



AIR CONTROLMAN W.M. BEAUMONT CHECKS QUAD RADAR ANTENNA STILLED BY SUNSPOTS

NAVAL AVIATION

NEWS



NAVAL AVIATION

NEWS

THE WHITE HOUSE

WASHINGTON

8 May 1961

My dear Mr. Secretary:

I know that the entire nation joins me in extending warmest congratulations to the Navy on the occasion of the Fiftieth Anniversary of Naval Aviation.

The thousands of Naval Aviators who have given their lives in peace and war have written glowing pages in the history of aviation, and those who now wear the Golden Wings carry on the rich traditions which have been passed on through the past fifty years.

On this anniversary, it is most fitting that we honor those whose vision and determination contributed so much to our nation. Please pass to all my very best wishes.

Sincerely,

The Honorable John B. Connally
Secretary of the Navy
Washington 25, D. C.