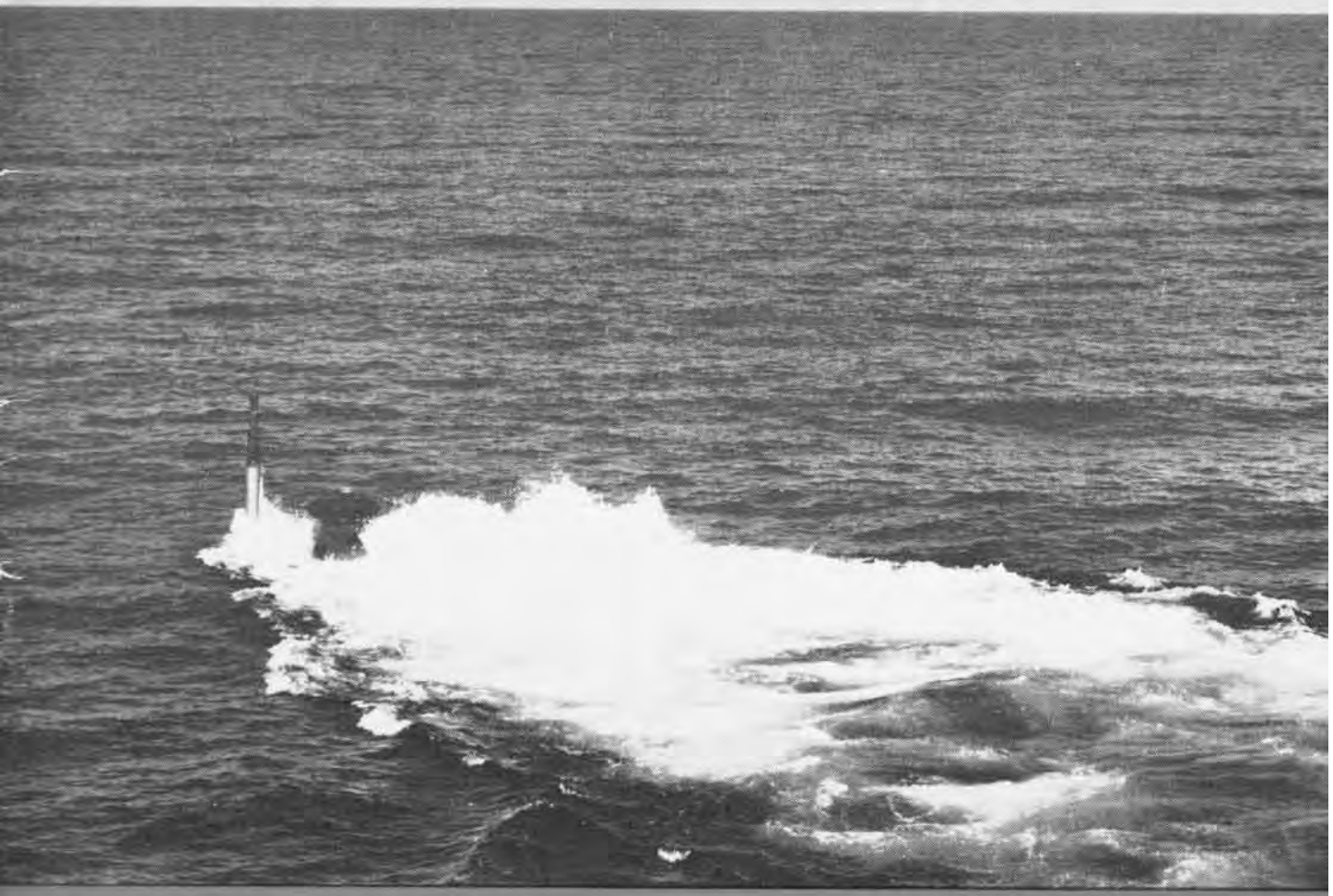
NAVAL AVIATION NEWS



46th Year of Publication

APRIL 1965

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THE GROWING REALIZATION

'The inherent flexibility of our attack carrier forces enables us to provide readily available tactical aircraft capable of participating in either tactical nuclear or conventional war. There is a growing realization that the political invulnerability of attack carrier forces is vital to success in supporting foreign policy in all phases of peace and war. This realization also recognizes the capability of such forces to concentrate enough tactical air power at the right place, at the right time, to deter or win limited wars.'—Secretary of Navy Paul H. Nitze

■ COVERS

On the front cover, one of VS-21's Trackers overflies a "friendly enemy" —a United States sub diving in the West Pacific . . . . Above, an RA-5C Vigilante refuels from an A-3B Skywarrior high above the Seventh Fleet attack carrier, USS Ranger (CVA-61).

NAVAL AVIATION NEWS

FORTY-SIXTH YEAR OF PUBLICATION APRIL 1965

■ IN THIS ISSUE

■ THE STAFF

Issuance of this periodical approved in accordance with Department of the Navy Publications and Printing Regulations, NAVEXOS P-35

Published monthly by Chief of Naval Operations and Bureau of Naval Weapons to disseminate data on aircraft training and operations, space technology, missile, rocket and other aviation ordnance developments, aeronautical safety, aircraft design, power plants, aircraft recognition, technical maintenance and overhaul procedures. Send mail to Naval Aviation News, Op-05A5, Navy Department, Washington, D. C., 20360, located at 3704 Main Navy Bldg.; telephone Oxford 62252 or 61755. Annual subscription rate is $2.50 check or money order ($1.00 additional for foreign mailing) made payable and sent to Superintendent of Documents, Government Printing Office, Washington, D. C., 20402. Single copy is $.25.

NAVAL AVIATION NEWS

Barrier Patrols Will End

Termination Planned Late in 1965

The Department of Defense has announced the commencement of a program to terminate the Atlantic and Pacific seaward extensions of the North American Distant Early Warning (DEW) line. The barrier patrol, which has been maintained by Navy radar picket ships 300 miles off the East and West Coasts of the United States, is also scheduled to be abolished. Completion of the program is planned for late this year.

Twenty-two radar picket ships, 42 Navy C-121 long-range radar aircraft and three C-121 pilot training aircraft are scheduled for inactivation. Four additional C-121 aircraft will be assigned to other units. About 9,000 officers and men will be reassigned.

The decision to disestablish the DEW line seaward extensions and contiguous barriers was made following studies of the contribution the forces provide to the North American defense posture in view of the declining nature of the manned bomber threat and in the light of technological advances.

The Pacific extension of the DEW line, which is maintained by 23 Navy C-121's, operates between Midway Island and Adak, Alaska. Commands and units involved are the Staff, Barrier Force Pacific, home-based in Hawaii; and the Airborne Early Warning Squadron Pacific, also home-based in Hawaii; and the Airborne Early Warning Detachment based on Midway. The Pacific contiguous barrier has been maintained by eight radar picket ships and three radar picket escort ships.

The Atlantic extension of the DEW line is between Greenland, Iceland and the United Kingdom and is maintained by 16 Navy C-121's operating from Argentia, Newfoundland. Commands and units to be disestablished in the Atlantic will be the Staff, Barrier Force, Atlantic, located at Keflavik, Iceland; Airborne Early Warning Wing Atlantic, which includes VW-11 and VW-13 located at Argentia; and an Airborne Early Warning Training Unit, Patuxent River, Md. In addition, eight radar picket ships and three radar picket escort ships, home-ported at Davisville and Newport, R. I., will be included in the reduction.

UTILITY SQUADRON SEVEN, *located at NAS Miramar, received, late in January, the first of 13 Douglas A-4B's and became the first and only squadron in the San Diego area to operate with Skyhawks. When all the new aircraft arrive, the squadron will have a total of 29 planes. It already has 16 F-8 Crusaders. The A-4's will be used to carry and launch devices that cannot be used with the Crusaders, such as aerial refueling equipment and electronics countermeasures packages. With its two types of jet aircraft and approximately 400 officers and men, directed by Cdr. N. E. Heckert, the squadron furnishes a broad spectrum of services.*

Sea-Launched Rocket Made

Measures Intensity of Radiation

Point Mugu reports the successful sea-launching of a *Hydra-Iris* rocket developed at the Naval Missile Center. The rocket was launched in the South Atlantic, carrying a 100-pound payload. It reached an altitude of 184 nautical miles and measured the radiation intensity within the inner Van Allen radiation belt.

According to Captain Carl O. Holmquist, Commander of the Center, the *Hydra-Iris* operation was highly successful and proves the usefulness of the *Hydra* water-launching concept for special space-age tasks.

The operation was sponsored by the Lawrence Radiation Laboratory, Livermore, Calif. According to officials of the Laboratory, good telemetry and tracking data were received on all instrumentation channels.

The data have not yet been analyzed, but promise to provide significan new information about charged particles trapped in the radiation belt.

Management Course Given

Marines Learn Latest in Methods

At MCAS CHERRY POINT, 11 Marines recently completed a two-week course in the 3M (Maintenance and Material Management) system. Under the new procedure, manpower accounting, maintenance data reporting and aircraft statistical information can be assimilated and evaluated by machine within hours. The old system would have taken as much as three to six months to track down the same information.

Billy J. Fifer, CWO2, quality control officer of the H&MS-24, and MSgt. Ernest C. Holly, maintenance chief of VMF-323, tied for top honors in the class.

Lieutenant Colonel Ted R. Boutwell, USMC, is the 3M project officer.

Test Pilots' Reunion May 15

Technical Symposium to be Held

The 17th Annual Reunion and Symposium of the U.S. Naval Test Pilot School will be held this year on May 15 at the Naval Air Test Center, Patuxent River, Maryland.

Formally established in 1948, the school has since graduated approximately 900 students in 39 classes. Among alumni who have completed the intensive eight-month course are pilots from all branches of the Armed Forces. The majority are Naval Aviators ranging from Rear Admiral to Lieutenant. Numbered among the other graduates are pilots from NASA, major airframe contractors, the Royal Canadian Air Force and Navy, RAF, Royal Swedish Air Force and the Royal Navy.

During the day, a seminar of technological and academic interest will be held. The reunion will be hosted by Captain Nicholas J. Smith III, the tenth director of the school.

Parallel Training is Begun

Whiting's VT-2, VT-3 Change

A new chapter in the history of Training Squadron's Two and Three at NAAS WHITING FIELD began in January when the two commands commenced parallel flight training. Now, both squadrons have the same syllabus. The new system is designed to meet the need for training an increasing number of flight students.

When a student checks into Whiting, he no longer takes part of his instruction at one unit and then transfers to the other. During his 22-week stay, the student trains entirely from the basic stages through radio instruments at one squadron.

With this system, instructors are required to expand their flight training knowledge to teach new phases.

Carriers Switching Oceans

Temporary Change Due in May

Two attack carriers will switch oceans during coming deployments, but the change is temporary.

The USS *Independence*, homeported in Norfolk, Va., will head for the Seventh Fleet's operating area in the Western Pacific when she starts her cruise in May. Her normal spot with the Sixth Fleet in the Mediterranean will be filled by the USS *Bon Homme Richard*, due to leave San Diego, Calif., the same month.

The Navy said the change of scenery is being made because *Independence* has more deck space, required for Seventh Fleet operations. Both carriers will return to their regular homeports after the switch gives their crews a chance to see how the "other half" lives.

Memphis Has New Course

Analysis of Maintenance Data

The latest course of instruction introduced to the Naval Air Technical Training Center at Memphis, Tenn., is Maintenance Data Analysis. It is sponsored and directed by the Chief of Naval Operations. The first class convened February 1 with 13 students.

The course is designed to train senior aviation maintenance personnel in the analytical skills necessary to transpose raw data into an effective management tool. A prerequisite of the school is a familiarity with maintenance administration.

The course is divided into three areas of study. The first 40 hours deal with a review of math and familiarization with the calculating machine. The next 120 hours are spent in studying the principles of statistics. Included are frequency distributions, measures of central tendencies, measures of dispersion, linear correlation, work sampling, probability, control charts, and projection of trends.

The final 120 hours deal with the procedures involved in the maintenance data collection system. The students learn to apply the principle of statistics to the man-hour accounting and maintenance data reports and present the data to management in a useful form.

The study of the need for such a course was made at NAS OCEANA. Captain Robert H. Wood, commanding NATTC, told the first class, "This group is the embryo from which knowledge for a new system must spread out to naval air."

GRAND SLAM *in proficiency and battle readiness awards is claimed by squadrons of CVSG-54, based aboard ASW carrier USS Lake Champlain. From left, winners and their prizes include HS-5 Flight Crew 7 with "Dipper" Award; Cdr. Francis Y. Thigpen, C.O. of VS-32, holding Arnold J. Isbell Trophy; and VS-22's Flight Crew 15 with "Bloodhound" Award. Multiple presentations were made by Rear Admiral M. H. Tuttle during ceremonies at Quonset.*

GRAMPAW PETTIBONE

Planning Pays

A flight of three F-8E's departed a Western Pacific air station early one afternoon for a strafing flight on a nearby island target. The flight leader had thoroughly briefed his pilots according to squadron SOP and informed them that anyone encountering an emergency would be immediately escorted back to the base for landing.

Weather in the target area began to deteriorate rapidly while the pilots were making strafing runs so the flight rejoined to return to base. As the three F-8E's proceeded along the coast, the number three pilot started feeling a little warm. His eyes seemed to burn slightly, so he switched the cockpit temperature control to manual to lower the cockpit temperature. When he did this, the engine oil/hydraulic pressure warning light came on and utility pressure gauge went to zero pounds. He immediately informed his flight leader of his indications.

The flight at this time was still about five minutes from home base. In the next minute or so, the utility hydraulic pressure gauge started reading alternately zero and normal with the engine oil/hydraulic warning light coming on and going off accordingly.

Upon reaching the field, the flight leader passed the lead to the pilot with the emergency, so he could go through the utility hydraulic failure procedure with him.

The flight remained well clear of traffic, maintaining approximately

5000 feet over the water while the pilot went through the procedure for utility hydraulic system failure. Just as he was completing the procedure successfully, the generator failed and the pilot noted a muffled thump just behind him and to his right. He immediately dropped the ram air turbine (RAT) and regained radio contact with the flight leader and base radio. While the pilot was informing the flight leader of the generator failure, he noticed that the PC-1 system dropped to less than 1000 pounds and the PC-2 gauge fluctuated.

The flight was now at 4000 feet, approximately 10 miles south of the field, so the pilot requested a straight-in approach and arrested landing. Just after this request, the number two pilot told him to look at the right side of his aircraft. When he looked in the mirror, he saw flames just below the missile stations. The flight leader immediately told him to eject. Without hesitation, he positioned himself and pulled the curtain.

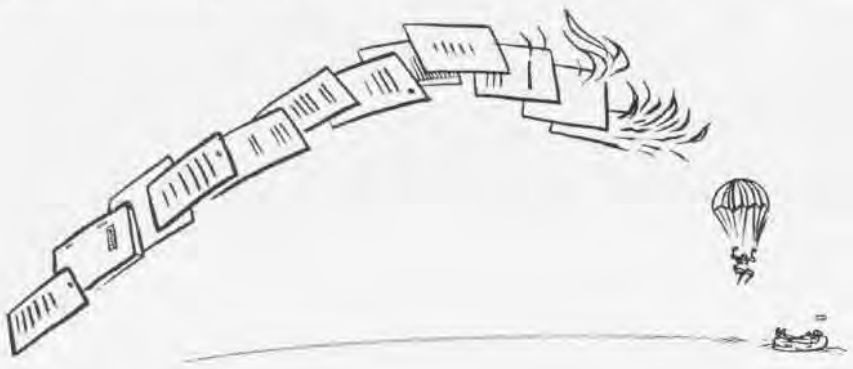
Everything worked exactly as advertised and, as the pilot was descending, he saw the F-8E completely engulfed in flames. On the way down, he reviewed his procedures for separating from the chute and getting into the raft. He unhooked the left lap rocket jet fitting, pulled out the seat pack lanyard and connected it to the torso harness. Then he pulled the "D" ring to the seat pack and partially removed the raft.

Nearing the water, he checked his survival gear and mentally reviewed water survival emergency procedures. While still submerged, he removed his left shoulder rocket jet fitting and, upon coming to the surface, inflated his Mae West and released the right jet fitting. He swam away from the chute, inflated the raft, climbed in and pulled all his gear in with him.

The remainder of the flight was circling overhead. He waved to them that he was in good shape. In a very few minutes, a rescue helo was on the scene so the pilot fired a day flare to indicate his position and let the helo pilot know the wind direction.

The helo approached into the wind, lowered the horse collar harness and the pilot released the seat pack lanyard, left the raft, climbed into the harness properly and was hoisted aboard.

The pilot was taken to the dispensary, given a complete physical and released to full duty.



Grampaw Pettibone says:

Well, bust my britches! Sure makes your ole grey haired friend proud to read about such sharp lads as this.

This young gent takes his flyin'

ILLUSTRATED BY Oban

business seriously by knowin' emergency procedures and how to use his survival gear. Bet his squadron C.O., Flight Surgeon, and Safety Officer see the results of all that good dope and training they've been puttin' out.

The pilot knew exactly what he'd do if something like this ever came up and he went about his business of surviving like a real PRO.

Confucius once said, "In all things success depends upon previous preparation." . . . Ole Gramps says, "Preplanning is the first step to safe flight."

Trust and Confidence . . .

Two young helo pilots submitted a cross-country request that was to take them from their home station in southern California to an Air Force base in northern California with two en route fuel stops. The flight was to depart at 1000 on Friday with an RON that night at the AFB and a three-hour local flight on Saturday, then another RON before returning to home station on Sunday.

The cross-country request was approved and the flight departed. In addition to the pilot, copilot, and crew chief, another pilot went along as a passenger. After the first fuel stop, an unscheduled landing was made at a small town and the crew chief was dropped off to visit relatives. At the second fuel stop, a flight plan was filed to the AFB specified in the cross-country request, but the pilots decided to land at a ranch and close out with the AFB by phone.

The flight was then continued without flight plan to a mountain hunting cabin. The helo was landed in a field near the cabin and secured for the night. The field was not too level and the aircraft was tied down on a slope.

The three pilots (pilot, copilot and passenger pilot) secured to the cabin. Later that evening, the passenger's wife and brother-in-law (civilian) arrived at the cabin by horseback.

After a few hours of sleep, all five arose at 0300 to go hunting. The group hunted all morning, four of them returning to the cabin about noon. The passenger pilot failed to show at the cabin and the others thought he had become lost while tracking a wounded deer. At about 1530, they decided to use the aircraft to search for him.

The two helo pilots preflighted the aircraft and found that most of the fuel had drained from the forward cell into the aft cell as fuel spewed from the filler neck when the cap was removed. As most of the fuel had drained from the forward tank owing to the sloping terrain, the pilots used buckets from the cabin to transfer about 10 gallons of fuel into the forward tank.

The lost pilot's wife and her brother persuaded the pilot to take them along as they knew the area and could help in the search. The lady got in the left cockpit seat to act as an observer and her brother got into the passenger compartment with the copilot.

The aircraft was started and the ground check list completed. After a satisfactory mag check, the aircraft made a normal takeoff. At about 100 feet above the ground and 50 feet above the surrounding trees, the engine began backfiring. Airspeed at this time was 30 knots and the aircraft immediately started to settle. The pilot realized he could not clear the trees, so he slowed his forward speed in order to go straight in with as little forward motion as possible.

The aircraft traveled approximately 240 feet forward, then hit a large tree and hit the ground. Fire broke out around the engine upon impact and quickly spread aft. The pilot pulled the lady from the aircraft and led her clear of the fire. He then returned and found his injured copilot standing by the burning wreckage completely dazed. While he was leading him away from the fire, the aircraft exploded. The civilian passenger did not escape.

The fire was spotted by watch tower personnel of the U. S. Forest Service and help was flown in immediately.

The "lost" pilot returned to the cabin after hearing the crash and seeing the smoke and fire.

Grampaw Pettibone says:

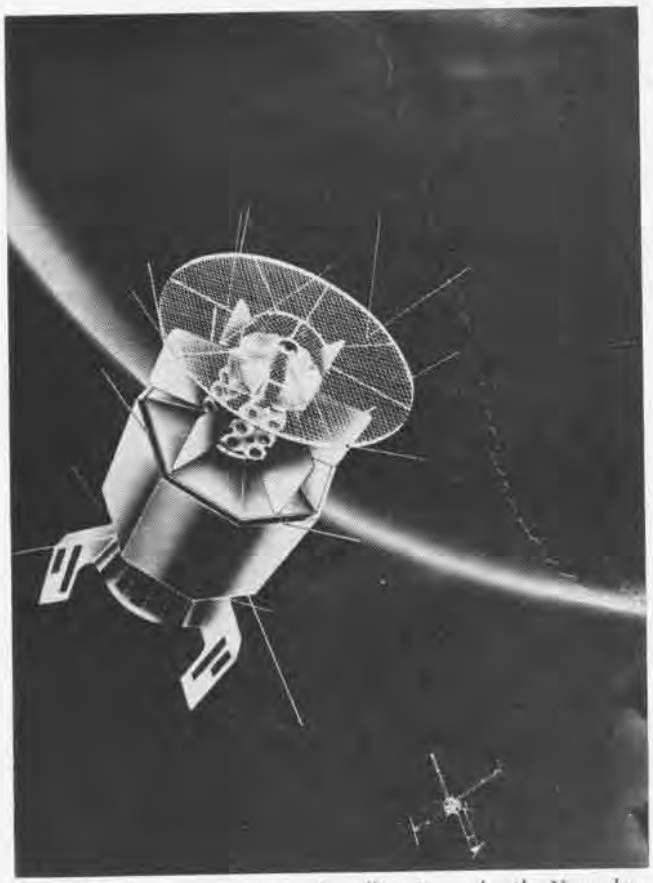
Holy smoke! Fetch me another aspirin tablet. My ulcers are doin' nip-ups. I've read some real hairy tales in my day but this one's about as wild as they come.

It's just darn near impossible to believe that grown people could pull such a stupid trick. All three of these guys must've been behind the door when they passed out the smarts.

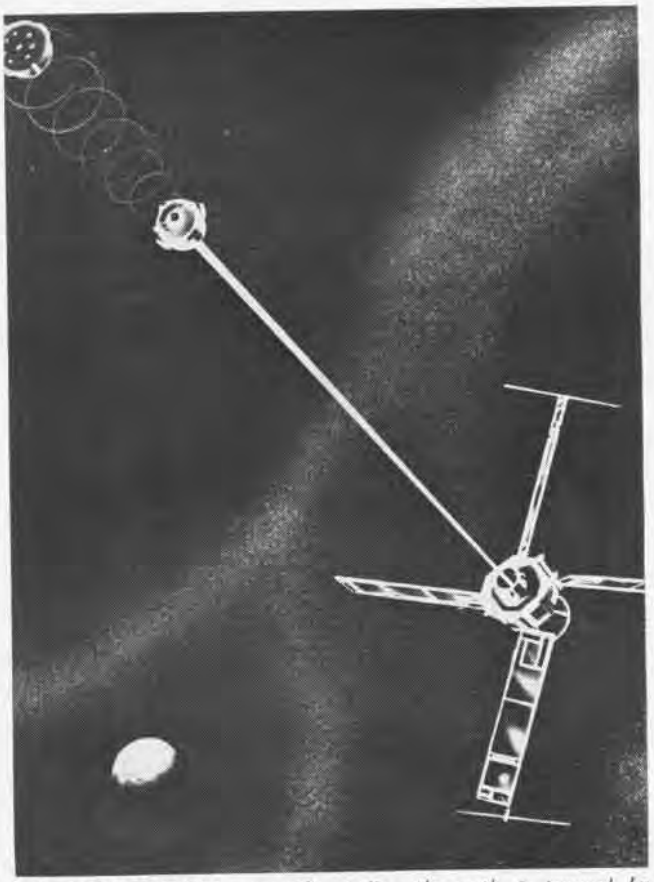
Now these pilots had evidently earned the trust and confidence of their superiors or this cross-country never would have been approved. Instead of proving worthy of this trust, they threw all caution to the winds and came close to violating every rule in the book.

Everyone knows that pilots who pull stunts like this get hacked—but good, so why are they so eager to toss these wings away so lightly? If Ol' Gramps sat on the big board, believe me, the only discussion would be not whether to hang the guy, but how HIGH!

This one came mighty high—the loss of a life, an aircraft and the careers of three aviators. Could any weekend hunting trip be worth that?

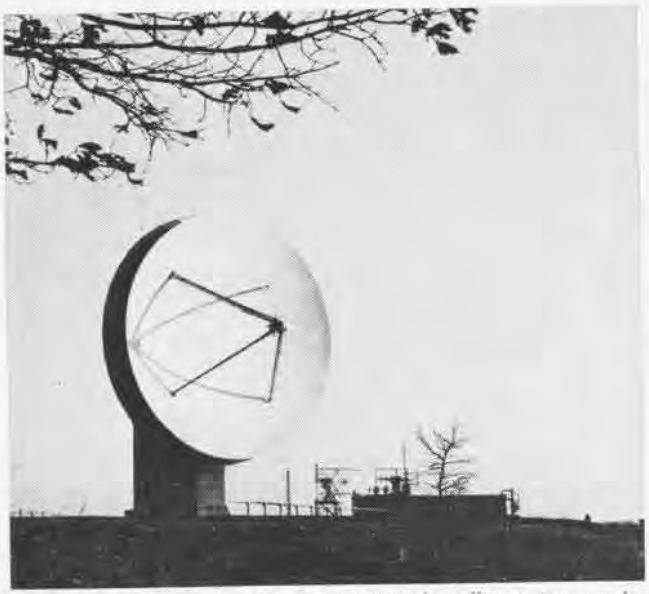


THIS ONE OF THREE *navigational satellites in use by the Navy demonstrates the first and only use of nuclear power for a satellite.*



THIS NAVY SATELLITE, *currently circling the earth, is powered by solar cells. This navigational device became operational in July 1964.*

NAVIGATIONAL SATELLITES SERVE FLEET



THE FIRST ANTENNA *for Navy's navigational satellite system was installed at Johns Hopkins' Applied Physics Laboratory near Baltimore.*

AN ACCURATE, all-weather, world-wide, 24-hour-a-day satellite navigational system is now in full force. It enables Fleet units to pinpoint their positions anywhere on earth. The current system, composed of three satellites, the latest launched in December, has been in operation since July 1964. It is the first continuous use of space technology in direct support of the Fleet.

The satellite system was used extensively by the all-nuclear-powered Task Force One on its *Sea Orbit* sail around the world last August and September. Installed in the USS *Long Beach*, the system was described by Captain F. H. Price, Jr., the ship's Commanding Officer as, "at present the most reliable means of providing updated navigational information available on a world-wide basis."

The satellites supply signals to units equipped with receiving and computing systems, which convert them into precise navigational fixes. The shipboard system is completely automatic.

One of the satellites utilizes a nuclear power source and is the only space system to date to be powered by the atom. The other satellites are powered by solar cells.

Developed by the Applied Physics Laboratory of Johns Hopkins for BuWeps, the system provides needed data for the Navy Astronautics Group, Point Mugu, Calif.

THE MAKING OF A FLIGHT SURGEON

Although the average Naval Aviator places great faith in his doctor, he often knows very little about his background, medical education and flight training. This humorous article, written by a Flight Surgeon, sheds some light on the complex business of flight surgeon training. The program, begun in 1922, has to date graduated over 3000 Naval Flight Surgeons.

By LCdr. Joseph Pursch, USN
Flight Surgeon

Illustrated by
Lt. Neil F. O'Connor, USN

THE NAVAL FLIGHT SURGEON, like the witch doctor of olden times, is seen in a different light at different times by each of his clients:

"A brilliant scientist—knows more about ejection seats than the factory representative."

"The ideal family doctor. I know my family is in good hands and that helps me keep my mind on my flying."

"Terrific doctor — seldom grounds anybody" or "Grounds you for a hangnail" (depending on whether or not the pilot hoped to be grounded that day).

"Ethical physician—calls a spade a spade—I see 20/10."

"A mature doctor who really 'understands' pilots—I see 20/30.5."

"I hate all skinny Flight Surgeons," says another type of aviator at least once a year.

And according to the Ltjg. who just lost his wings, "That doctor is in it for the money. With flight pay and medical seducement pay, he makes more than the Admiral."

Professionally speaking, the Naval Flight Surgeon is a very specialized Doctor of Medicine, trained to minister to the multiple needs of the largest group of VIP's in our Navy (training costs per aviator run over $200,000 prior to designation), the Naval Aviators. To transform the neighborhood practitioner into the scientific, philosophic, humane, areonautically-knowledgeable, mature, teetotalling, frolicking tiger of a medical panacea for all fliers is the complicated task of the Naval Air Training Command and the School of Aviation Medicine at Pensacola, Florida.

But the making of the Flight Surgeon begins long before Pensacola. While one knobby-kneed farm boy lifts a clear eye toward contrails over Nebraska, another stares near-sightedly after the country doctor trudging up the farm house steps to attend a sick child. Every boy has his heroes. And since Daedalus, Hippocrates, Doolittle and Salk can all inspire similar emotions, it is often mundane chance, like a myopic squint, that points a young man's fork on the road of life.

'DON'T YOU DO THAT TO MY BABY AGAIN!'

While the rah-rah tiger of the skies takes pride in the Blue and Gold and lofts pennies at Tecumseh's coppery nose at Annapolis, the future healer is one of a drove of "pre-meds" at some state university. And in "June Week," when one is called Ensign and sets his sights on Wings of Gold, the other takes a wistful look at his engineering colleagues who are headed for the money corporations, then battles 5-to-1 odds to get into a medical school. And while the one sweats through pre-flight and fights nausea at Saufley, the other peers through microscopes and smiles bravely in the presence of cadavers.

"Happy Hours," "skeleton hops," the long awaited carrier landings and the first laboratory dog that survives surgery are some of the milestones they pass. While one has become a Ltjg., able to fly alone through a black night across America, the other, now a sophomore medical student, has learned the earmarks of 2500 diseases, and graduates from dogs to people.

By now the average future "Doc" lives in a Quonset hut with his working wife and their 2.3 children. And if she catches him pinning their eight-months-old to the kitchen table to review landmarks of the left ear drum, she will be terrified and snatch up the squirming child and scream: "Don't you dare do that to MY baby again—you go practice on some patients." They'll both have a good laugh (hopefully) and prop the baby up on four inches of "Gray's Anatomy" for some payola baby food, while the haggard medico goes to his paying night-time job as an extern in some small private hospital. (An extern is somebody in a white coat with a stethoscope who knows even less than an intern and sews up little boys' split foreheads for $10.00 a night.)

As his children grow loud on sample vitamins, he delivers babies, sets broken bones, learns to swallow stomach tubes and analyzes his own body fluids. He also practices giving shots on his colleagues (who pay him back in kind—or unkind), treat diabetics, cardiacs, nephrotics and psycho-

HE LEARNS TO 'DISPASSIONATELY SURVEY'

paths. After four years of medical school (he started college eight years ago) he must remember, among other things, that "microfilarias, in all areas except the South Pacific Islands, are present in the blood only at night, usually between 10 P.M. and 2 A.M.," so that he can pass his State Board examinations. He swears "Whatsoever house I shall enter, there will I go for the benefit of the sick, refraining from all wrongdoing and corruption," and, although he is now licensed to practice medicine, he almost invariably takes an internship.

For 12 months he does more of the same. By then it dawns on him, if he hasn't learned it before, that some of man's actions are the promptings of an eternally heaving sea of contradictory emotions, often unknown to himself and never confided to others, and that a patient's announced complaint may be a very distorted image of his real grievance. On hectic Saturday nights, he learns how to dispassionately survey a crowded city hospital emergency room and quickly perceive whose chances for life are best, so that he might make a similar decision someday when a snapped arresting cable snake-whips through 18 stunned men on a screaming flight deck.

At this point the road divides again. If he goes Pensacola way, he must volunteer, add six months to his military obligation and, except for visual acuity, pass a Service Group I physical. "Overnight" he becomes a Lieutenant, USN, with the same date of rank as the aviator who entered the Academy nine years ago when the Doc started college. He begins to draw medical inducement pay which he will later defend (often in vain) against thoughtless sea lawyers who fail to see that it takes 14 years of inducement pay to equal the $32,000 they were paid by the Navy during the doctor's five years of civilian medical school and internship.

When the doctor arrives in Pensacola, he is at home like a temporarily abandoned immigrant on Manhattan Island. If he panics in the uniform shop, the kind saleslady who can spot a SFS (Student Flight Surgeon) will show him how straps, buttons, fabric and visor combine to make a hat, and where all the insignia go. The next morning the SFS will "fall in" with all the other greenhorns. The sharpest-looking of the lot wearing a white cover hat, service dress blue jacket, white class "C" summer pants and matching white shoes with blue socks will be unobtrusively sent home to change while the others learn how to salute and state their name, rank and serial number.

AT LAST, DOCTOR ARRIVES IN PENSACOLA

When he comes home from his first duty day, his wife will be ecstatic over his uniform and euphoric with good news: "Honey, this Navy is wonderful! We've hardly arrived and already we are meeting some Navy VIP'S. Imagine"—the sweet thing is breathless—"our neighbor has gold all up his left sleeve, and his wife says he is one of the Chiefs of your station."

FOR 4 MONTHS, IT'S AVIATION MEDICINE

For three weeks, the SFS learns how to march, how to be a leader, who gets in the boat first, etc. (This is a recent, well thought-out innovation designed to groom the "Doc" who might otherwise saunter down gangways with stethoscope dangling from his back pocket and open shirt sleeves pushed back from his plaster-of-Paris-caked forearms.)

Then for the next four months he studies aviation medicine: High Altitude Physiology, AAR'S, Ophthalmology, Aviation Psychiatry and the "Post Departum Syndrome." (This occurs in the aviator's wife about one month after the Air Group has departed for deployment and is caused by the washing machine breaking down and all the kids catching measles with diarrhea.) Also he will study the wiggles that make your electrocardiogram, what happens to sinuses in flight, how to throw darts on a spinning centrifuge, SAR, tower observation and many other things. He will get a dim view of all this from the top of the ejection seat trainer. And on Dilbert Dunker Day, when he finds himself upside down, wearing tennis shoes and a parachute,

TRAPPED AT THE BOTTOM OF THE POOL

trapped at the bottom of the swimming pool, he might wonder if it wouldn't have been wiser to go into private practice after all.

But it's all worth it for, during the final six weeks, he gets to be a fly-boy. He starts with a jet-propelled course in aerodynamics, engineering, safety and emergency procedures. After his indoctrination hop in the T-34, he has learned that "Emotion Sickness" (that's when a healthy man throws up in an airplane) is usually not cured by pills. He grows fond of the "FSS-34" (Flight Surgeon's Special, T-34 trainer). On bad weather days in the crowded skies over the practice area, he learns that Providence may punish with Icarian failure the man who flies with his head in the cockpit. In an amazingly short time (my class went from indoctrination to solo hop in seven flying days), his instructor decides whether he is qualified to solo.

On Kamikaze Day (that's the day the SFS's solo and no self-respecting aviator would be caught outside the O Club), he finally gets to flap his own wings. Chances are he will hear a less fortunate SFS come on the air with a blood-curdling "Mayday! Mayday! I am over the paper mill and I can't get my canopy closed!" The tower will calmly answer, "You're cleared to continue with your canopy open"—with an air of "take two of these every four hours—you'll live." Finding Saufley again after 1.3 and landing the bird without a scratch will stir in him some long dormant fantasies of the barefoot boy in Nebraska.

The following day he flies a T-2A from the back seat and at last gets up high enough to see that the world really can look like a bowl. A few days later, with his confidence still high, he finds himself at the controls of a helicopter at Ellyson, a maneuver which invariably shrivels the flying tiger to a vibrating embryo. He can't really fly at all. Formation flying and gunnery hops in the more powerful T-28 make it apparent that togetherness can be a source of anxiety and flying under the bag makes him revise those beautiful lecture notes on

HE NOW REVISES HIS NOTES ON VERTIGO

vertigo. After four carrier landings from the back seat, the S suddenly drops out of the SFS and he finally gets his wings.

After some of the best six months of his life, with memories of happy hours, sweaty flight suits and bewildering instructors, he leaves the Cradle of Naval Aviation. The civilian has become a Navy Doctor who wears his uniform sharply and salutes without embarrassment. His head

'WHAT WAS THAT PROBLEM WE SAVED?'

EVERY KIND OF CASE COMES HIS WAY

crammed with the latest technical knowledge, his briefcase bulging with impressive lecture notes, and the new wings shining on his breast he reports into an Air Group of his own. And if a certain kind of luck is with him, the reception by his first CAG might be something like this.

"Doc, you don't know how glad we are to see you. Your predecessor went into practice a week ago, and we sure need you. Oh, X.O., what was that special problem we were saving for the new Doc here?"

While they are prodding each other's memories the Flight Surgeon, although he seems clinically detached, has some exciting visions of his own: Could it be an F-4B crash with hypoxia due to the complex full-pressure suit? Or maybe the Admiral has come down with "sub-latent" fear of flying, or maybe the CAG's wife is expecting quintuplets, the first such case in Naval history?

"Oh, yeah," the CAG finally breaks the spell. "I remember now, Doc, those stewards cut the flight lunches to one can of juice again, and the cockroaches are rampant in barracks 32. Now, Doctor, it takes a man of your education and know-how to get these sanitation people off their spray cans. Yes, sir, Doc, we're sure glad you're here. . . ."

And as the Flight Surgeon sneaks one of the pills he was taking home for his wife's "watch the movers unpack" blues, it suddenly occurs to him that it might be symbolic rather than accidental that of the many flight insignias in existence, only the wings of the Naval Flight Surgeon have a nut in the center (see page 20).

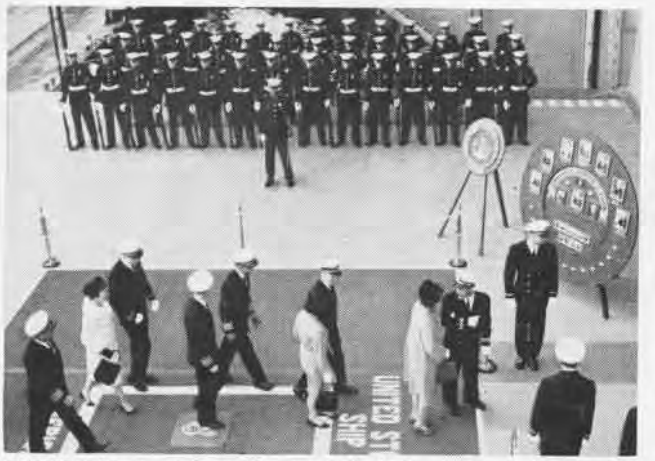
CVA-66 IS COMMISSIONED

THE NATION'S first warship to bear the name USS *America* was commissioned January 23rd in ceremonies attended by more than 6000 guests at the Norfolk Naval Shipyard in Portsmouth, Virginia. The *America*, CVA-66, is a *Kitty Hawk* class carrier, equipped with the *Terrier missile*, and is the second largest warship in the world, ranking next to the USS *Enterprise*.

Attending were the officers and men who composed a 2500-man commissioning crew for the ship. First Commanding officer is Captain Lawrence Heyworth, Jr., one of a small number of Naval officers qualified in both aviation and submarines.

The Chief of Naval Operations, Admiral David L. McDonald, attended the commissioning with his wife who acted as sponsor of the ship. Virginia's Governor, the Honorable Albertis S. Harrison, presented the ship's silver. Secretary of the Navy Paul H. Nitze made brief remarks to the audience and Secretary of State Dean Rusk gave the principal address.

The *America* is conventionally powered, 1047 feet long and has a full-load displacement of 77,600 tons with a four-and-a-half-acre flight deck. The keel was laid in January 1961 by the Newport News Shipbuilding and Dry Dock Company. CVA-66 is assigned to the Atlantic Fleet.



GUESTS ARE *escorted on the quarterdeck by America officers while Marine unit stands at parade rest. Over 6000 guests attended ceremony.*

FINAL ADJUSTMENTS *are made on state flags which lined hangar bay for ceremony. Commissioning crew of CVA-66 consisted of 2500 men.*

MR. W. H. YAHN, *North American Aviation, presents coat of arms to Captain Heyworth.*

PRINCIPAL *speaker, Secretary of State Dean Rusk, addresses crowd aboard the new carrier.*

CAPTAIN HEYWORTH *escorts Admiral McDonald from carrier after the ceremonies.*

MOCK-UP REVIEW OF MULTI-SERVICE OV-10A IS COMPLETE

TWIN-TURBOPROPS, *twin booms, horizontal tail high between vertical tails mark OV-10A. Under-wing fuselage gives pilot and observer in tandem, ahead of props, an unobstructed view.*

At Columbus, Ohio, February 4, all four military services participated in the OV-10A Mock-up Review Board which completed its study of the counter-insurgency aircraft. The aircraft is being built under a U.S. Navy contract for the Department of Defense by North American Aviation's Columbus Division.

In August 1964, North American Aviation won the industry-wide competition to design, build and flight-test seven prototype aircraft specifically tailored for counter-insurgency and limited war operations.

The composition of the review board, which included officers from the Navy, Air Force, Army and Marine Corps, highlights the aircraft's potential as a multi-service airplane. Captain J. G. Hedrick, BuWeps, was the chairman.

The OV-10A, scheduled for first flight this summer, will have multi-mission capabilities, such as visual reconnaissance, light armed reconnaissance, helicopter escort and attack,

SIDE VIEW *of the OV-10A illustrates the unobstructed visibility available to crewmen.*

support of ground troops, logistics support, paradrop of paratroopers and transporting of infantry.

The OV-10A can be utilized as a trainer with insertion of a special flight control package and seat in the rear cockpit. It can also be used for such peacetime emergency functions as disaster relief and riot control.

A 111-cubic-foot cargo compartment in the fuselage has a capacity for carrying either cargo or personnel, while external stores are carried on five store stations mounted on sponsons beneath the fuselage. Sponsons also contain four fixed 7.62 mm machine guns.

For troop carrying and paradrop capability, the cargo compartment, back seat removed, accommodates five fully-equipped paratroopers or six combat-equipped infantrymen.

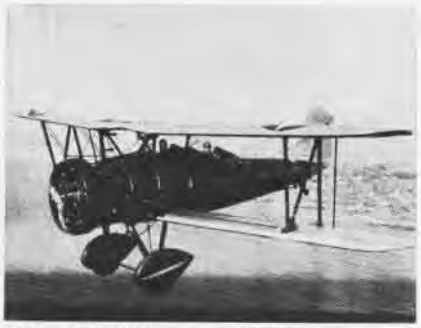
Also demonstrated during the review was the amphibious application of the OV-10A, entailing the attachment of twin floats.

Short take-off capabilities of the OV-10A permit operation from clearings, primitive roads and waterways.

Rear Seat *removed, OV-10A can accommodate a medical attendant and two litter cases.*

LOCATION *of store stations permits loadin of weapons without special hoist equipmen*

FIRST VOUGHT *Corsair was 1926 O2U-1 with P&W Wasp engine, floats or wheel gear.*



FLEET AVIATION *mainstays of early '30's were O3U/SU's. This SU-2 was command plane.*

VOUGHT F4U *Corsair fighter/bombers played major role in WW II and Korean conflict.*

NEW LIFE FOR A FAMOUS NAME

CORSAIRS WILL again be operating from carriers and advanced bases when the A-7A's join the Fleet. The *Corsair II* continues a tradition dating back to the '20's. The first O2U-1 *Corsairs* set several world records and established an enviable combat score with the Marines. Later *Corsairs*, the larger O3U/SU series, served with capital ships, carriers and Marine forces in the '30's. The *Corsair* name was renewed in early WW II for the F4U fighter. F4U's, and later AU's were the principal fighter-bomber types in WW II and the Korean conflict.

CORSAIR II *is the name for the A-7 now being developed by LTV-Vought for the Navy. Powered by a Pratt & Whitney TF-30 turbofan engine, A-7A's will replace A-4's as carrier attack aircraft, providing greater range and/or payloads for limited warfare missions.*

TRAINING GROUP CELEBRATES ANNIVERSARY

INSTRUCTOR POINTS *out workings of J-57 engine to University of Wisconsin midshipman.*

WITH EACH TYPE *of aircraft, maintenance of the Martin-Baker Ejection Seat is taught.*

PILOT IS *checked out in an aircraft by means of a Cockpit Orientation Trainer (COT).*

By M. S. Welch, JO2

NAVAL AIR Maintenance Training Group, NAS MEMPHIS, has recently celebrated its fifth anniversary as a separate command. As one of the largest aviation training activities in the Navy, it serves as a direct link between the Chief of Naval Air Technical Training and the Fleet, bringing aviation weapons systems training to air groups, squadrons and ship and station personnel.

Its antecedent organization was the Naval Air Mobile Training Department under the Commanding Officer, Naval Air Technical Training Center, Memphis. The success of this Department was attested by increasing demands for detachments. Finally, with the growing complexity of aircraft weapons systems, it became necessary to have available more highly trained personnel to maintain and operate the systems. To meet this demand, the Department began to increase the number of detachments.

In January 1960, the Naval Air Mobile Training Group was officially commissioned as an independent command. The word "Mobile" was dropped because of the increased permanence of the detachments and replaced by the word "Maintenance."

Though proud of its productive past, NAMTraGru does not rest on its laurels. By the middle of this year, the group expects to provide maintenance courses on the A-7A light attack aircraft. Plans are also being developed for instruction on the F-111 and the CH-53, the big helicopter.

Captain Clyde A. Williams, Commanding Officer of NAMTraGru, has his 195-man headquarters staff located at Memphis. The remainder of the 1270 personnel and the training equipment are assigned throughout the United States in 27 areas, from Quonset Point, R.I., to Barber's Point, Hawaii. The command occupies over 65 training buildings, utilizing 750,000 square feet of floor space.

More than 1050 instructors are performing on-site training by taking the school to the students. Maintenance of all types of aviation weapons systems used by the Navy and Marines is taught by these detachments, along with related special equipment.

In the first year as a command, the Naval Air Maintenance Training Group taught more than 51,000 students, utilizing 70 active detachments; in the second year, more than 64,000. This was accomplished with only 760 instructors and 112 headquarters personnel. By fiscal year 1963, the figure increased to 79,000 and the number of detachments rose to ninety.

Mobile trainers have been a regular part of the Naval Aviation program since 1942. Under the impact of WW II, aviation programs began to outstrip the training facilities. For example, a squadron which had the task of keeping its airplanes flying could not send maintenance personnel to a centrally located school without crippling operations. The solution was to send the school to the man, rather than bring the man to the school.

Thus mobile trainers were a part of the Advanced Base Aviation Training Units until they were transferred to Chief of Naval Air Technical Training in August 1945.

As jet aircraft became operational, the training requirements increased and the Korean conflict emphasized the needs for field training.

In 1951, the Mobile Operational Flight Trainers (more than 40 were designed in the ensuing five years) were developed. The operation and upkeep of these devices were the responsibility of the Naval Air Mobile Training Department.

In 1956, instruction was needed in the area of Atomic, Biological and Chemical Warfare Defense. One detachment was formed that year. In 1958, two additional detachments were added, and today there are seven detachments for what has now been designated Nuclear, Biological and Chemical Warfare Defense.

Still another area has opened up: NAMTraGru will soon be instructing in the Standard Navy Maintenance Material Management System, a data collection system designed to provide fingertip information on manpower, money, parts and equipment.

THE COMBAT INFORMATION *Center is one of the most important areas in the Operations Department aboard a modern aircraft carrier. This partial view of USS Intrepid's CIC shows her CIC Officer, Cdr. Carl D. Neidhold, OI Division Officer, Lt. William G. Huston, and crew.*

The Modern Aircraft Carrier

LIFE AMONG THE 'OPERATORS'

'The Operations Department is organized and functions to support the over-all mission assigned to the Commander, ship, and embarked units. Specifically, the departmental mission is to collect, evaluate, amplify and disseminate combat and operational information to the ship and the Commander's command and control agencies. To support the mission, the specific tasks to be accomplished are the planning, scheduling and coordination of the ship and her assigned aircraft. The mission assigned, tasks accomplished, and services provided by the CVS Operations Department do not materially differ from those performed by the equivalent department on an attack carrier.'

—Commander Charles G. Hamilton, Operations Officer, USS *Kearsarge* (CVS-33)

By Scot MacDonald

THE MISSION environment that can be expected in ASW, as compared to strike warefare or air-to-air warfare, provides the difference between the Operations Department in a CVS and the Operations Department in a CVA, according to *Kearsarge's* Cdr. C. G. Hamilton. It is only at this level and below, however, that any significant difference is apparent, affecting departmental hierarchy and specialization.

The range of responsibilities shouldered by the Operations Officer in an aircraft carrier is indicated by the divisions comprising his department. The divisions are identified by double letters, the first letter always being "O." Alphabetically, they are:

OA Division—Weather Service.
OC Division—Aircraft Control.
OE Division—Electronics Material.
OI Division—Combat Information Center.
OL Division—Lookout and Recognition.
OP Division—Air Intelligence (Photography).
OR Division—Radio Communications.
OS Division—Visual Communications.

Justified or not, the Meteorological Officer is frequently the butt of good-natured ribbing in the wardroom. Like John Burroughs, he "was born with a chronic anxiety about the weather." And it is well he was, for the success or failure of operations at sea depend on an intimate, accurate foreknowledge of weather conditions.

In the *Oriskany*, the OA Division spaces are located on the O1, O2, and

METEOROLOGISTS *in the Bonnie Dick, as in other aircraft carriers, form the OA Division of the Operations Department. OA Divisions compete with each other in accurate observations.*

A WEATHER *balloon with radio transmitter is launched from the deck of the Coral Sea.*

O7 levels, with berthing spaces on the second deck. The division is manned by one officer and 12 enlisted men, with round-the-clock watches in port as well as at sea.

The scope of work in the OA division touches on the health and welfare of all those aboard. The meteorologist is the liberty-hound's friend, forecasting surf, swell and harbor conditions for the safe operation of liberty boats. He prepares refractive index profiles for radar propagation, radioactive fallout patterns, ballistic winds and density conditions. His information will prompt a commanding officer to re-route his ship around specially bad sea areas. He also provides various climatological surveys for advanced operational planning purposes.

The AG must commit some 40 forms to memory as well as 60 to 70 code tables, enabling him to encode or decode weather data at a glance, to plot and analyze charts. His work calls on him to be a geographer, topographer, and oceanographer. Radio teletype and radio facsimile equipment are important tools of his trade. Many advances in forecasting techniques in the past ten years, the *Oriskany* weathermen point out, have been a direct result of meteorologists applying their ingenuity in the field of upper air to obtain weather data from higher and higher altitudes.

The *Bennington* employs three forecasters and three upper air specialists. The latter operate the tracking equipment in the weather office that follows the progress of weather balloons released aboard. An SMQ receiver picks up a signal from a radiosonde transmitter dangling from the balloon. The signal is interpreted into data that is placed on a weather map in terms of upper temperatures, humidity and pressure.

The weather office in the modern aircraft carrier can be considered a miniature seagoing weather central. Competition among carrier weather service units is keen. Reports on observations are sent by each of the carriers to the National Weather Record Center, Ashville, N.C., where the observations are reviewed and computed for errors. Lt. Charles Seelen in the *Lake Champlain*, leading an eight-man division, put in a perfect month last June, recording 84 weather observations without a single error. There are a possible 120 errors associated with each observation.

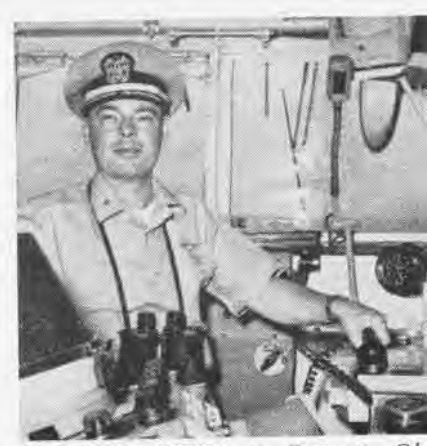
But one area of possible error will be obviated, according to a BuShips designer, by the installation of a porthole in the aerology spaces. "They'll be able to look out and see if it's raining," he said.

On the CVA, Cdr. Hamilton states that the primary concern is distant target weather and attendant long range operations; the CVS meteorologist is more concerned with local weather and water conditions that affect ASW operations.

BT (bathythermographic) information must be collected to ascertain optimum water areas for the detection and evasion of submarines. "Additional variance at the execution level," says Hamilton, "will be found where there are significant equipage differences; for example, the requirements of sonar and audio-visual analysis equipment of the Antisubmarine Classification and Analysis Center (ASCAC)."

The ASCAC provides a significant operational tool that is available on a CVS. The requirement for analyzing underwater sound signals by audio and visual methods is peculiar to the CVS. It calls for specialists and equipment related to sonar that would not be found on a CVA. Organizationally, this requirement's only effect is in the lower management structure in the officer billets of ASCAC Officer and Sonar Officer.

The aircontrolmen are assigned to the OC Division, composed of two major subdivisions: Air Operations and Carrier Controlled Approach (CCA).



OPERATIONS OFFICER *in Kearsarge, Cdr Charles G. Hamilton, poses on ship's bridge*

CONTROLS *of the PLAT system are operated in the Forrestal by man in OC Division.*

In the *Oriskany*, there are four officers and 24 enlisted personnel assigned to the division.

From officials in the *Intrepid*: "The Air Operations branch is responsible for the coordination of the ship's flight operations and the furnishing of pertinent information to pilots concerned. Air Operations composes a daily air plan, keeps half-hourly positions of the ship, and computes ranges and bearings to diversionary fields required if an aircraft has to bingo (land at a field ashore). A log is kept of all arrival and departure times of aircraft."

From Cdr. L.N. Smith in the *Enterprise*: "The Air Operations of CATCC (Carrier Air Traffic Control Center) is the controlling agency responsible to know the whereabouts of all embarked aircraft. Weather, ship's position, distance and bearing to the nearest diversionary field, and NOTAMS (notices to airmen) are examples of some of the information compiled and disseminated to the various pilots ready rooms by the Air Operations branch."

And from Cdr. C.C. Buck in the *Shangri La*: "Air Operations on a CVA is the nerve center of the carrier's daily operations. Forethought and timeliness are mandatory when one considers the fast pace required to sustain the launch and recovery of large groups of jet and prop aircraft every 90 minutes throughout the day and far into the night."

The CCA is in reality a radar air traffic control unit. It is smartly organized. A departure controller governs the departure of aircraft by means of radar. When the aircraft is ready to return, an approach controller assigns an altitude and bearing from which the aircraft will commence an approach. When the approach begins, the pilot is turned over to "letdown control" which provides sufficient separation between aircraft for a proper and safe arrested landing interval. Final control takes over when the aircraft is well astern of the ship. It provides accurate turns and spacing so that the aircraft will be "on the meatball" and lined up with the centerline of the deck for a landing. Vastly improved systems for final control are being incorporated in all carriers.

Statements from the *Forrestal* and the *Intrepid* describe what happens next. "The final part of the carrier approach is covered by the Pilot Landing Aid Television (PLAT) system. PLAT is now installed on all CVA's and is being retrofitted on the CVS's. Two centerline modified TV cameras (one in reverse) record approaches to the ship from an 'eye' located on the centerline stripe of the angled deck.

"Another camera, situated beneath the Air Boss' control tower, operated manually, picks up planes turning off the abeam position, and follows them into the final approach, where the deck cameras take over. A camera installed in the PLAT control room projects wind velocity, time, date and the approaching plane's airspeed.

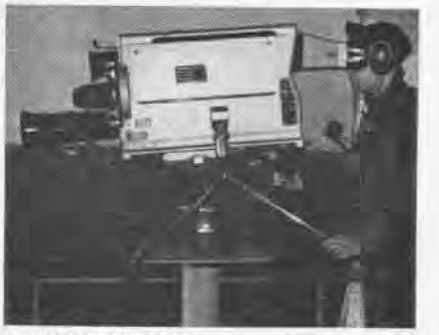
"All this is mixed into a video tape. A monitor scope mounted near the Landing Signal Officer's platform permits the LSO to check his 'judgment' in aligning the approaching aircraft for a safe landing.

"The video tapes are played back for the pilots during post-flight debriefings so that they can observe and improve their own landing techniques if required. The tapes also provide necessary information to investigating officers in the event of a landing accident."

The Electronics Material Division in the *Shangri La*, the OE Division, is composed of two commissioned officers, a warrant officer, and 26 men. *Oriskany* personnel describe her OE Division as follows:

"The division consists of electronics technicians and data system technicians (ETR's, ETN's and DS's).

"The ET's maintain and repair approximately 125 pieces of major equipment and associated test equipment as well as most of the ship's entertainment system. Included in their equipment are all radar, except the fire control radars, all communications equipment, radar indicators, and electronic countermeasure equipment. This is found throughout the ship, from the keel to the very top of the mast, and from the bow to the stern.



A STANDARD *TV camera, one of three in PLAT system is mounted on carrier's bridge.*

"The DS's maintain and repair approximately 50 major Naval Tactical Data System (NTDS) components and their communication equipment. This equipment is located mostly in and around the CIC, although some of the equipment is on the 02 and 09 levels. It differs from the conventional electronic equipment in that it is mostly solid state (transistor)."

The Combat Information Center (CIC) is the OI Division. *Intrepid's* Cdr. L.H. Sette gives a general description of it: "The mission of the CIC is to keep command, higher echelon embarked, and control stations informed of the tactical situation. The officers and men of CIC work in close harmony to provide timely information and recommendations pertaining to the location, movements, and identity of friendly and enemy aircraft, surface vessels, submarines, and to the status of related ground and logistic elements.

"Combat information is collected by many means, including radar, radios, lookouts, and electronic intercept. The aircraft of the task group are controlled on tactical missions by air controllers in CIC who coordinate these movements with other air and surface units."

The *Oriskany* was the first aircraft carrier to have NTDS installed within modular CIC, during her yard period in 1961. This system consists of high-speed solid-state digital computers with the ability to complete an instruction in 20 millionths of a second. When manned for AAW, *Oriskany's* CIC is staffed by 15 officers and about 100 enlisted men.

In peacetime, the OI Division assumes the wartime-activated OL Division, lookout and recognition.

The *Intrepid's* OP Division is de-

scribed as being "responsible for obtaining motion picture and still picture coverage of all combat action, all carrier aircraft launches and recoveries, and aircraft evaluation exercises." The *Oriskany* spokesman enters into more detail:

"It is comprised of some 30 officers and men and is unique in that it incorporates three different organizations: the photographic laboratory, the air intelligence office, and the operations office.

"The photo lab is headed by a chief warrant officer and has 18 photographer's mates assigned. They have the herculean task of taking, processing, editing, and distributing all photographic work aboard *Oriskany*. Included in this is the coverage of air operations beginning with the call to flight quarters and continuing through the day until the last recovery.

"Another integral part of the OP Division is the seldom-heard-from air intelligence office. This group is under the supervision of a Lieutenant Commander, assisted by a Lieutenant. Five enlisted men round out the Division. Most of their work is of a classified nature. Among the less sensitive duties are the upkeep of a dozen cabinets and seldom-used and often-changed publications, the shuffling of two storerooms containing 150,000 charts and maps, and the maintenance of many target folders and associated material in support of pilot mission planning.

"The third part of OP Division is the operations office itself, run by a junior officer who has four yeoman assisting. Through this office is funnelled all departmental paper work, including, but not limited to, the ship's training schedule, and all operational orders, schedules, and competitive exercises."

Cdr. Joseph J. Kanzen of *Kitty Hawk* describes the OP Division as "the eyes and nerve system of command.

"The OP Division consists of the revolutionary Integrated Operational Intelligence Center (IOIC), the photographic laboratory, and the Operations Office.

"The IOIC and the RA-5C reconnaissance/attack aircraft comprise the Integrated Operational Intelligence System (IOIS).

"This system is designed to provide a tactical commander with a full background of intelligence information on a target area. An exclusive feature of the IOIS is the speed with which newly gathered data can be returned to the Intelligence Center, processed, and presented for the commander's utilization. Another important feature of the system is the capability of gathering reconnaissance data day or night and in all kinds of weather.

"The IOIC will also handle intelligence data collected by other reconnaissance aircraft. In addition, the IOIC is designed to store and retrieve intelligence data as it has done in the past, except that now two major innovations have been incorporated into the basic design: miniaturization and automation.

"Through miniaturization stowage space has been considerably reduced and through automation retrieval time has been greatly reduced."

USS *Bennington* has placed both OR and OS Divisions in the Communications Department, as has *Kitty Hawk* and others, and redesignated them CR and CS respectively. A new OS Division (Sonar) has been formed in the Operations Department because of the presence of a sonar installation within the ship. This new OS Division consists of one officer and ten men who man a port and starboard watch in Sonar and ASCAC.

Both the OR (external communications, including routing or incoming and outgoing radio-teletype messages) and the OS (visual communications, flaghoist, etc.) are usually included in a Communications Department, although organizational room for them is made in the Operations Department in the AirLant/AirPac CV Standard Organizational Manual.

"There are no fundamental differences between the Operations Department of a CVS or a CVA," Cdr. Hamilton sums up in the *Kearsarge*. "The functions and tasks are essentially the same, with different emphasis.

"However, the execution of these functions and tasks varies as the missions assigned the respective classes of carriers vary. In addition, the operational tools that are provided the respective ships have their impact on the day-by-day execution of assigned missions.

"A well organized and trained departmental team is capable of performing either mission with a high degree of success. This has been demonstrated by the incorporation in the CVS Air Group of an A-4B detachment in an Air Defense role."

THE CARRIER *Air Control Center in the Independence is a busy area, supervised by Cdr. Robert McCall (L), CATCO Officer OA Division.*

IN KEARSARGE'S *CATCC Gary L. Minor, AN, and Bill Farnham, AN (R), operate radar repeaters, coordinated with the LSO and Pri Fly.*

VA-112 and VA-115 Win
CAW-11 Takes Ready Strike IV

ComNavAirPac's Exercise *Ready Strike IV* was won by two Lemoore-based squadrons as Carrier Air Wing 11's VA-112 was named winner among the jet squadrons and VA-115, among the prop squadrons. VA-113 ran a close second to VA-115.

Ready Strike IV, which included a precision coastal penetration and avoidance of simulated anti-aircraft gun locations, was designed to allow the squadrons an opportunity to demonstrate their ability to plan quickly and successfully execute an attack on an unfamiliar target area.

Commander Walter Laws, CAW-11, was on hand for the exercise and congratulated the Lemoore-based skippers, Commander Paul Russell, VA-112; Commander Donald Smith, VA-115, and Commander George Zimmerman, VA-113, for their squadrons' performance.

Wave Becomes an Engineer
1st Woman Grad under NESEP

The first Navy woman to graduate under the Navy Enlisted Scientific Education Program (NESEP) received her degree in electrical engineering from Cornell University on Feb. 3.

Wave Aviation Electronics Technician Jean Alice Szymanski entered the Navy in 1958 and was selected for the NESEP program in 1960 after competitive examinations.

Miss Szymanski is now at the U.S. Naval Women Officers School, Newport, R.I., for officer training prior to receiving a commission as Ensign.

AS THE LAST T-39D *touched down at NAS Glynco in February, a year and one half transition was completed for NATTC. The Sabreliner replaced the TF-10B Skynight, previously used to train RIO's. The T-39D enables three students to train simultaneously with an increased time in the air. The last of a scheduled 36 Sabreliners was flown to Glynco by LCdr. L. J. Eller, VRF-32. On hand were Capt. M. C. Norton, Jr., NAS C.O., and Cdr. W. H. Love.*

The 24-year-old-Wave, a recipient of the Navy Good Conduct Medal and 1962 winner of the *Mademoiselle* Magazine "Merit Award," decided on a Navy career while still in high school. Before entering Cornell, she served at NAS Pensacola after completing AT school at Memphis.

Morest Lands its 30,000th
'Catch' Mark Set at NAS Atsugi

Flying an F-8 *Crusader*, Capt. E. J. Ertlmeier, USMC, of VMF(AW)-312, has logged in NAS Atsugi's 30,000th safe Morest landing since the arresting gear was installed in 1958.

Manned by personnel assigned to MABS-11, the Morest gear has trapped every kind of aircraft equipped for arrested landings. MABS-11 men are ready to "catch" any aircraft that sets down at Atsugi. Their work has ranged from stopping a plane flying at excessive speeds to on-field emergencies.

CVA-64 Aviator Honored
Posthumously Presented the DFC

Ltjg. Richard C. Sather, USN, has been posthumously awarded the Distinguished Flying Cross for his action in the retaliatory air strike against North Vietnam on August 5, 1964. An A-1H pilot in VA-145 based aboard the USS *Constellation*, he was shot down during the attack. Mrs. Christian O. Sather, Jr., accepted the award for her son.

A citation, signed by Secretary of the Navy Paul H. Nitze, read in part: ". . . By his outstanding skill, courage, and devotion to duty in the face of intense, hostile anti-aircraft fire, [Sather] contributed materially to the success of his flight in inflicting severe damage upon the [North Vietnamese] motor gunboats."

Ltjg. Sather was also awarded the Armed Forces Expeditionary Medal and the Navy Unit Citation

NICKNAMED *the "Humanitarian Dragonfly" this HC-130H Hercules and many others will operate on a global basis in mid-1965. The USAF's Air Rescue Service will use the new version for distress missions. Probes on nose extend in flight to snare balloon-lifted lines for personnel and material pickup. Radome houses tracking gear.*

STARS IN 'MR. ROBERTS', *Hugh O'Brian and Pat O'Brien, honored LCdr. Frank Achille at a curtain call for his service with MATS, Pacific, in transporting supplies to South Vietnam. Achille became the first Naval Aviator to accumulate 2000 flight hours in the C-130. Capt. A. H. Bowker presented a 2000-hour certificate and a model.*

NAVY WINGS

1919: ORIGINAL DIE FOR METAL WINGS

1920-30's: HIGHLY DETAILED DESIGN

1930-40's: CURVED SHIELD DESIGN

1940's: DETAILED WING, HEAVIER

1952: STANDARD IN A BRONZE FINISH

1952: STANDARD IN A GOLD FINISH

PARACHUTIST

AIRCREWMAN

COMBAT AIRCREWMAN

FLIGHT SURGEON (ORIGINAL STYLE)

FLIGHT SURGEON

ASTRONAUT

AVIATOR

BALLOON PILOT

AVIATION CADET, SECO

From his collections of aviation wings, Lieutenant Commander Keith D. Boyer, USN, Commander Attack Carrier Air Wing Two Staff, has provided photographs of those wings used by Naval Aviators (left), by other aviation personnel (above), and by astronauts (right). While U.S. Navy wings have undergone some changes and adaptations, the emblems show consistency of pattern and vary chiefly to accommodate designations for special assignments.

U.S. NAVY ASTRONAUT

NASA PATCH

USAF SENIOR ASTR

AVIATION PILOT, FIRST CLASS
Emergency War Rating

OBSERVER, 1922
OBSERVER, 1927
BALLOON OBSERVER, 1927
OBSERVER, 1929

TACTICAL OBSERVER, WW II
NAVIGATOR, WORLD WAR II
RADAR OBSERVER, WORLD WAR II

ASS BAR

STUDENT AVIATION PILOT PATCH

AVIATION CADET, 1ST CLASS BAR

NAVSPASUR SYSTEM ADDS STATIONS

THREE NEW STATIONS will be added to the U.S. Naval Space Surveillance System within a year, according to the North American Air Defense Command.

Two additional receiver stations designed to improve both high and low altitude coverage of the satellite-watching system are under construction at Red River, Ark., and Hawkinsville, Ga. They are joining the network this year.

A new transmitter station is being built at Olney, Tex., with completion scheduled for January 1, 1966.

The Naval Space Surveillance System (NavSpaSur), located at the Naval Weapons Laboratory at Dahlgren, Va., also reports that its operating frequency is being changed from 108.015 to 215 megacycles. That conversion also is due for completion by January 1, 1966.

The announcement of the major facilities expansion program was made on the fourth anniversary of NavSpaSur as an operational command. Functioning since early 1959, it was commissioned as an operational command February 1, 1961. The network is part of the North American Air Defense Command's Space Detection and Tracking System, (SpaDaTS), which has the mission of keeping track of all man-made objects in space.

SpaDaTS is a multi-service system of U.S. Army, Navy and Air Force and Royal Canadian Air Force sensors, with many civilian scientific agencies also contributing data. Information on satellite movements is funneled to the SpaDaTS operations center at NORAD headquarters where a computerized catalogue is maintained.

The Navy's Space Surveillance net and the Air Force's Spacetrack system, the two major components of SpaDaTS, were both assigned to operational control of the U.S.-Canadian North American Air Defense Command in 1960.

Under the command of Captain E. F. van Lier Ribbink, the U. S. Naval Space Surveillance System is operated to meet both Navy and NORAD requirements. Its tasks include maintaining constant surveillance of space to identify and determine orbits of all satellites—of inclinations within its capability—circling the earth, with particular emphasis being placed on non-radiating objects.

The system consists of seven field stations stretched across the southern United States from Georgia to California. Three of them are transmitter installations at Gila River, Ariz.; Kickapoo Lake, Tex., and Wetumpka, Ala. The Kickapoo Lake site—only a mile from the new 216-megacycle station being constructed at Olney, Texas—has the largest transmitter of its type in the world.

A continuous wave of radio energy sent spaceward from the transmitters constitutes the SpaSur "electronic fence." As a satellite passes through the fan-shaped pattern, a small portion of the energy of the fence is reflected back to earth and is detected by one or more of the four receiver stations—San Diego, Calif.; Elephant Butte, N.M.; Silver Lake, Miss.; and Fort Stewart, Ga.

Satellite observations are transmitted to SpaSur headquarters where the information is filtered, correlated and processed, and then is passed to various customer agencies in the defense establishment, including NORAD.

The Navy network consistently exceeds an operational reliability of better than 99 per cent and has the capability of identifying and predicting paths of satellites ranging in size from a piece of one-sixteenth-inch wire about 14 feet long to the huge astronaut capsules weighing several thousand pounds.

With its fully digitalized automatic system, NavSpaSur operates in near real time. This means that within seconds of the time a satellite is detected, an analysis of observational data is available at the headquarters at Dahlgren. The data is then sent to NORAD where it contributes to the computing of orbital elements on the satellite.

In February 1961, the first month of the command's operation, there was an earth satellite population of 45 payloads, rocket bodies and miscellaneous debris. That population has now topped 500.

In the same span of four years, the number of NavSpaSur identified observations of the ever-increasing space traffic jumped from 2000 to a phenomenal 76,000 **per month.**

SMOKE AND PIECES OF PLASTIC *from a shattered canopy fill the air as a dummy rides a rocket-propelled seat in a successful test of the X-22A vertical/short takeoff and landing (V/STOL) aircraft's emergency ejection system. Two dummies of varying weight were separately ejected up through the aircraft's plastic canopy by a 1230-pound thrust rocket attached to the seat. They reached altitudes of 200 and 300 feet before their parachutes opened up.*

ASW SCHOOL KEEPS PACE WITH FLEET

SHORTLY AFTER *takeoff, this S-2D Tracker will be under the skilled control of an experienced Anti-Submarine Air Controller (ASAC).*

THE ULTIMATE *in aerial maneuverability belongs to the SH-3A Sea King as its crew pinpoints "enemy submarine" with dipping sonar.*

IN THE LATE 1930's, the effects of sound in water and their idiosyncrasies were analyzed in a study ordered by Commander Carrier Division 19. From a strategic viewpoint, the Navy realized the need for advanced study and the avenues of research it opened. The U. S. Fleet Anti-Submarine Warfare School at San Diego, with its beginnings as the "sound school," has today grown to include 84 fields of related study.

Studying the effects of thermal gradients on sound beams in ocean water, the prediction of detection ranges became possible. The school then provided sonar training for signalmen and quartermasters before the sonarman rating was actually established.

The first sound school was established in June 1939. The seven-week course consisted of two weeks of classroom study and five weeks of at-sea training. In January 1940, a radio and sound maintenance course was established to provide training for shipboard radiomen.

In 1941 the Chief of Naval Operations placed the Sound School under the direction of the Commandant, Eleventh Naval District, and directed the Sound School to prepare suitable courses for prospective commanding and executive officers of destroyers in the then rapidly expanding Navy.

After the United States entered WW II, the Sound School became officially known as the West Coast Sound School. At new quarters in San Diego the school was designated as the Fleet Sonar School. In four and a half years of operation, the school had graduated 4,000 officers and nearly 11,000 enlisted men.

DASH, *Navy's weapon-carrying drone helicopter, is controlled by ASAC in exercise.*

THE OBJECT *of it all is caught on the surface as it returns from a Fleet exercise.*

In 1944, a course for submarine sonar operators was instituted. Owing to the increased number of collisions resulting from high-speed maneuvering and hurried training of deck officers, a course in emergency ship handling opened in March 1945.

Today, the ASW School also plays an active part in the Military Assistance Program. In 1957 the school began training selected foreign officers.

In 1960 the school was redesignated as the U. S. Fleet Anti-Submarine Warfare School, San Diego. It now trains personnel in the tactical aspects of ASW, particularly sonar and all ASW weapons. Courses also instruct personnel in the use and maintenance of equipment and weapons.

Of the 84 courses taught at the school, one of the most important is "ASW Air Control and Operations," Following the school's motto, "Seek, find, and destroy," the graduate air controller (ASAC) has a thorough understanding of both fixed and rotary wing aircraft and their tactics and employment in coordinated ASW operations. Since the first ASAC course convened in August 1962, the school has graduated nearly 500 ASAC qualified officers and men. Captain Marion H. Buaas is the school's C.O.

IN-FLIGHT FEEDING *of the young penguins is done by Carl Lindewall, AT2, in the C-130.*

UNCONCERNED *in flight that took them 11,000 miles from Antarctica are the penguins.*

DIRECTOR *of Milwaukee County Zoo holds Adelie offered by Jos. Iding, from Antarctica.*

ZOOLOGICAL WONDER: PENGUINS AND SEALS FLY

By Lee Quinn, JO1

THERE WAS considerable speculation on the possible success or probable failure of the mission at the outset. Attempts in the past met with mixed results. But the project was worthwhile and the men in VX-6 felt sure they could pull it off. They did; the caper was capped with success.

As this year's summer support season for Operation *Deep Freeze* drew to a close, the squadron was asked by zoos in St. Louis, Milwaukee, Baltimore, and New York, to provide a number of penguins and seals, both indigenous to the Antarctic.

That was the challenge. Previous transfers of this kind resulted in a high mortality rate. The aquatic animals are comfortable only in cold climates. A trip to the U.S. from McMurdo Station in the Antarctic is an 11,000-mile flight that requires fuel stops in such warm areas of the world at the Fiji Islands.

At McMurdo, 58 Adelie penguins and four crabeater seals were loaded in a squadron C-130 *Hercules* to Christchurch, New Zealand, and on to the U.S. A mishap occurred at Fiji when the plane landed for what was planned as a speedy refuel stop. The plane developed engine trouble.

The engine difficulty caused some anxious moments for the 15-man crew and the scientists aboard. At Fiji, the temperature soared to near the 100° mark. An air conditioning unit was immediately put on, but not before three of the penguins succumbed to heat exhaustion.

The aircraft returned to Christchurch where another C-130 was standing by. The animals were swiftly transferred and the second *Hercules* completed the trip without further mishap.

Six U.S. Antarctic Research Program (USARP) scientists accompanied the birds and seals to the U.S. Among them was Dr. Richard L. Penney of Johns Hopkins University, who has studied penguins in the Antarctic since 1958 and who has several times wintered over on the continent.

How will the animals react to Stateside living? "Just fine," said Dr. Penney. "In fact, they probably will become spoiled. They're used to a rugged life on the white continent and things will be too easy for them in a zoo."

Several of the smaller penguins were hand-fed during the long flight. This was not necessary for the older penguins, who can go weeks without eating, with no serious threat to their well-being. They survive on stored adipose (fat) tissue in their bodies.

Science has been interested in the natural habits of penguins and seals for a long time. Penguins have a unique ability to find their way back to the same nesting place on the Antarctic wastelands year after year, covering distances of thousands of miles. Seals have a built-in metabolism that enables them to swim in water well below the freezing mark. The Antarctic proved an excellent laboratory for studying them.

"It was a most unusual flight," remarked Plane Commander LCdr. Layton Robison. "We had to maintain below freezing temperatures in the aircraft throughout the entire flight. The penguins frolicked, but the crew, all *Deep Freeze* veterans, shivered from beginning to end. Our Antarctic long-johns came in mighty handy."

In the U.S., 19 of the penguins were delivered to the Milwaukee Zoo; the remainder went to the St. Louis Zoo and Johns Hopkins University at Baltimore. All four crabeaters went to the Bronx Zoo in New York.

When the three penguins died in Fiji, a gloomy atmosphere prevailed among the crewmembers. But later, their spirits soared. Officials at the New York Aquarium notified the squadron the plane crew would soon be godparents. Two of the seals "are expecting" sometime in spring.

NAS North Island Honored
Given Eight Presidential Citations

NAS NORTH ISLAND recently received eight Presidential Citations "in special recognition of an outstanding contribution to greater economy and improvement in government operations during the tenth anniversary year of the Federal incentive awards program."

One of the citations was awarded to the station proper. The awards were based on savings at North Island during the DOD Cost Reduction Program. Validated savings in 16 months totalled $6,916,372.00.

Captain R. M. Kercheval, C.O., accepted the award on behalf of the station. Citations were also given to the O&R Department, headed by Captain J. F. Daniels, Jr., and to the Management Controls Group, O&R, commanded by LCdr. A.T. Balogh, for its leadership in the program.

The Shops Group, O&R, was cited for outstanding participation in the Value Analysis Program. Mr. Charles Omelina, Shops Superintendent, accepted the citation.

Individual citations were given a team of four O&R employees who value-analyzed a problem involving rejection of canopy glass in F-4 aircraft. They developed a measure which will save an estimated $154,590 annually. Recipients were R. L. Rose, V. R. Beeler, R. T. Brugman and R. H. Bohrer.

The Presidential Citations were signed by the President and by the Secretary of the Navy, Paul H. Nitze.

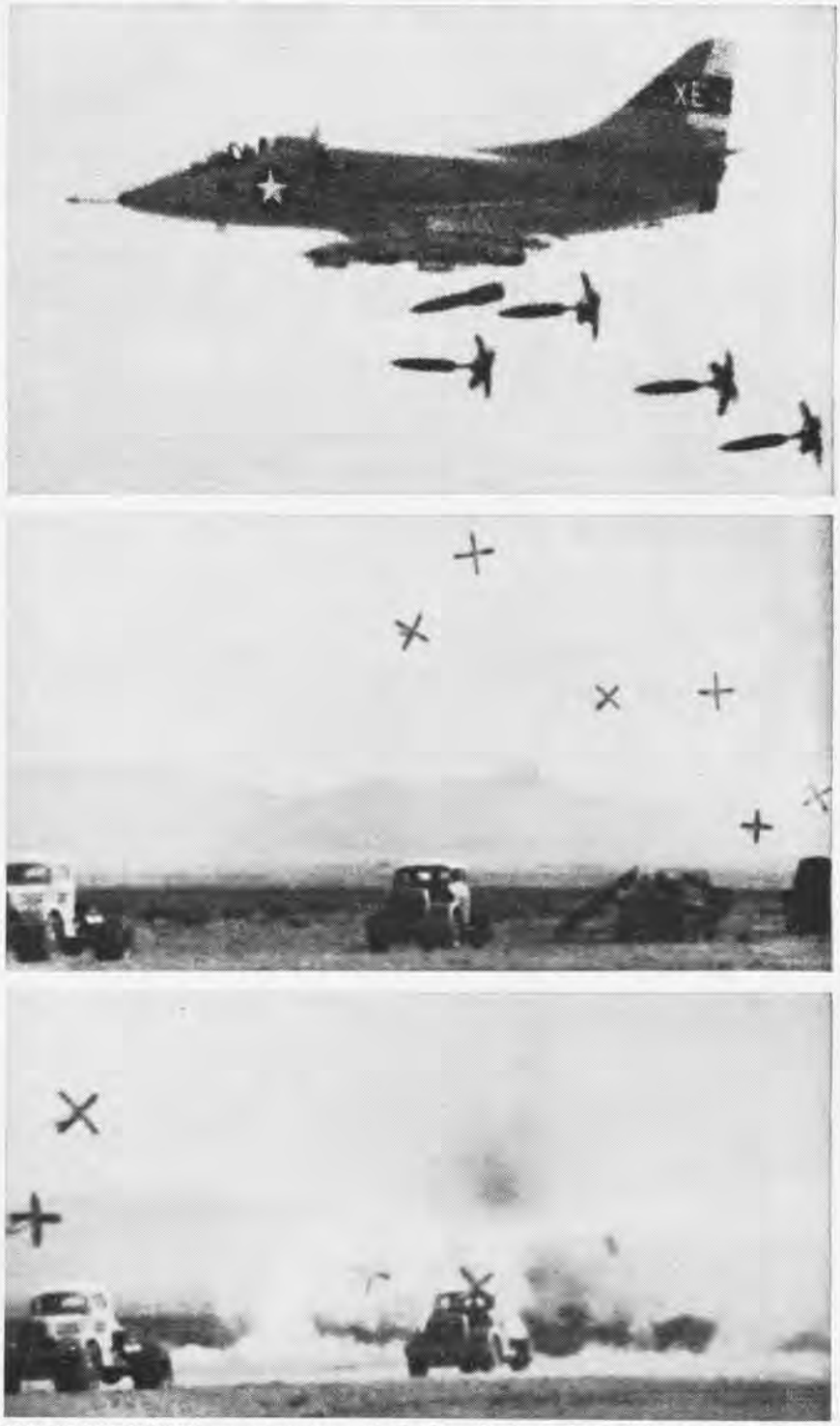
Pax River Wins Award
Station Best in Fire Prevention

NAS PATUXENT RIVER has won the grand award in the National Fire Prevention Association's 1964 annual fire prevention competition, topping 84 naval facilities throughout the world.

The NFPA fire prevention contest is the international competition that provides recognition for excellence in fire safety education and performance. It aims to stimulate universal fire safety consciousness and to encourage a wider use of modern techniques.

Announcement of the station's "victory" was made by C.O. Captain Roland W. Schumann, Jr., after he was notified of the honor by Percy Bugbee, general manager of the NFPA.

SNAKEYE BOMBS PROVIDE NEW PUNCH



ONE OF THE NAVY'S *newest weapons, the Snakeye bomb, is designed for conventional low level attack. Above, a load of Snakeyes is being released from an A-4 Skyhawk during tests at Naval Ordnance Test Station, China Lake, where Snakeye was designed and developed. Folding tail fins deploy when the weapon is dropped to produce drag to slow the bomb's descent. This allows delivery plane time to clear impact area and avoid fragmentation damage.*

ON PATROL WITH PACIFIC AIR WINGS

HEADING PAST *Diamond Head, famed Hawaiian landmark, and Waikiki are six P-3's of Patrol Squadron 22, the first Hawaii-based unit to be equipped with the Lockheed Orions. VP-22 operates out of NAS Barber's Point and can be on patrol over the Pacific Ocean for 17 hours.*

FLEET AIR WING TWO has been in commission since October 1, 1937, when it was formed as Patrol Wing Two at NAS FORD ISLAND, Oahu, Hawaii. The wing whose units served and fought in World War II throughout the Pacific was stationed at Kaneohe from 1942 to 1949. The Wing today has under its operational control Patrol Squadrons 4, 6, 22 and 28. First Wing Commander was Captain Kenneth Whiting, who was the U.S. Navy's 16th Naval Aviator. Others who have held the job include Vice Admiral Marc Mitscher, Vice Admiral Harold Martin, Vice Admiral John Dale Price and Vice Admiral Patrick N. L. Bellinger. Now located at NAS BARBER'S POINT, the Wing is commanded by Captain Jack L. Grayson.

* * *

On January 8, a barracks used by VP-1 enlisted men burned at MCAS IWAKUNI, Japan. While no personnel were hurt in the wind-fed fire, all personal belongings of the men were lost. To help replace lost clothing, two Japanese representatives of the Oyabu District presented the squadron with a "generous cash gift" and offered other assistance. It was turnabout. After a fire in the Oyabu District in November, for which a VP-1 man was cited, the squadron had donated a cash gift to Japanese fire victims (NANEWS, February, 1965).

VP-1's relations with the people of Japan took on a new twist on January 15, the date set aside for 20-year-olds of the country to celebrate their birthdays. As a means of "livening up" the ceremonies, the mayor of Tsuda, a small town 50 miles from Iwakuni, asked VP-1's James Hayes, ADRC, for assistance. The chief brought a small jazz combo from the Marine station and a contingent of squadron men taught the celebrating young men and women how to dance the twist.

After a slow start, the dancers began to catch the beat and, according to a report from Iwakuni, "for the next three hours they wouldn't sit down and the town hall began to rock. The mayor is looking forward to a quieter celebration next year."

* * *

Late in January, VP-2 arrived in Japan for a six-month deployment. The new C.O. of the squadron, Commander Dwight Lane, was greeted by the C.O. of VP-6, Commander Horace Potter, whose unit was being relieved. It is VP-2's first Iwakuni visit. VP-6 returned to NAS BARBER'S POINT.

* * *

Before leaving Iwakuni, VP-6 installed 200 new windowpanes in an

VP-6 CREWMEN *load liferafts aboard before beginning a patrol over the Sea of Japan.*

orphanage at Bofu and bought sports equipment and jackets for the orphans. When VP-6 steward's mates lost their clothing in the Iwakuni barracks fire (see above item, VP-1) Japanese workers in the BOQ raised enough to give each steward a 1,000 yen note, more than a day's wages from each of the "mama-sans."

* * *

A 2700-pound rock from Okinawa has been "transplanted" in Hawaii as a remembrance of the four-year tour of VP-4 in Okinawa. The rock was given by the people of Okutake Village, Okinawa, to commemorate the 1960-64 tour of VP-4, now Hawaii-based. It was presented to the Jikoen Temple in Honolulu by the squadron.

* * *

Several Pacific patrol squadrons were given the Armed Forces Expeditionary medal for their participation in Southeast Asia operations with the Seventh Fleet last year. Included were VP-6, VP-17, VP-28 and VP-42.

* * *

Between October 1964 and January 25, 1965, VP-19 and its P-3 *Orion* crews took part in six medical air evacuations in the Alaska/Aleutian Islands area. The latest one involved a 2000-mile flight to the westernmost tip of the Aleutian chain from Adak. The squadron's Lt. Don Foery piloted the rescue mission, delivering an Air Force medical officer, who was ill, from Shemya AF Station to the Elmendorf Hospital near Anchorage.

* * *

VP-22, home based at NAS BARBER'S POINT, celebrated two major milestones. It completed transition from the SP-2E *Neptune* to the P-3A *Orion*, and finished its 11th year of accident-free flying—85,730 hours since 1953. Commander Paul Hartley, C.O., attributes the safety record to "an acute awareness of safety requirements by all hands." The unit has four "safety procedures committees" which meet monthly and which submit recommendations to the commanding officer in areas affecting aviation safety, operations, human factors and enlisted training.

* * *

Latest to receive the *Orions* among Pacific squadrons is VP-28, which brought its first two P-3's to NAS BARBER'S POINT in December. LCdr. Gail Sharp and LCdr. Carl Hinger ferried the new aircraft for the "Hawaiian Warriors."

* * *

Commander Austin Young took command of VP-42 at NAS WHIDBEY ISLAND, Wash., early in February, relieving Commander Arthur Bennett who had led the squadron since November 1964. Commander Young had been executive officer of VP-31 at San Diego.

A VP-42 plane commander, LCdr. George Barker, received a "Well Done" from his C.O. for helping a distressed light plane make a safe landing. While airborne on a training flight, LCdr. Barker and his crew were asked to rendezvous above a cloud layer with a light plane which had an iced windshield. The SP-2E led the distressed airplane pilot down through a break in the overcast to a landing at Olympia Airport.

* * *

WHEN FORWARD ECHELON *of VP-2 arrived, Commander H. S. Potter (L), VP-6 C.O., and Captain R. L Dahllof, Fleet Air Wing Six commander, greeted Cdr. D. A. Lane, VP-2 C.O. (C). VP-2 relieved VP-6 at Iwakuni.*

LT. PARSHALL *and SP-5B he flew 500 miles to North Island with No. 1 fan feathered.*

VP-50 changed its home port to NAS NORTH ISLAND, San Diego, after having operated from MCAS IWAKUNI, Japan, for several years. The squadron, led by Commander W. A. Van Train, Jr., flys the SP-5B *Marlin* seaplane.

While on a routine night patrol, 500 miles southwest of San Diego, a VP-50 crew commanded by Lt. Robert Parshall experienced an engine malfunction and was forced to feather one of two engines on the *Marlin*. After jettisoning internal stores and fuel, the aircraft settled down to single engine flight at 300 feet and made an unaided "routine" landing at North Island.

* * *

VP-47 commenced a series of life-changing moves upon returning from a deployment period late in February. The squadron was slated for a home port move (March 1) from NAS WHIDBEY ISLAND, Washington, to NAS MOFFETT FIELD, Calif. At the same time, the squadron was to start transitioning from its SP-5B *Marlins* into P-3A *Orions*. The shift from landing on water to landing on pavement will be made over several months, and the seaplanes are expected to be around at Whidbey through this summer. The home port move will affect some 53 officers, 289 enlisted men and more than 600 dependents.

Note to patrol squadron Information Officers: Please include, whenever possible, pictures of squadron activities with the stories you are sending us.

DISPLAYS RIGGED *for NAS Corpus' annual Navy Relief Festival fill one of the station's hangars. Events during the affair prove popular.*

RESIDENTS *from Corpus Christi and Southwest Texas get plenty of opportunity to see the Navy at work during annual festival at NAS.*

NAS CORPUS' FANCY FESTIVAL ON AGAIN

By Sam McCrum, JO1

EVEN THE NAVY does things up big in Texas, especially when the sailor-showmen at NAS CORPUS CHRISTI put on their annual Navy Relief Festival.

Last year, the three-day event drew more than 200,000 persons to the air station, almost doubling the 1963 attendance of 107,000. More than $31,000 was turned over to the Navy Relief Society after the 1964 event.

This year, festival officials expect an even larger crowd and greater proceeds during the weekend of June 4-6.

The festival has become almost as much of a tradition with South Texas civilians as it has with the Navy. It has been held almost every summer since 1951. Since Texas is covered with Air Force and Army installations throughout, Corpus Christi is one of few places where people who wear Stetsons and boots can go see people who wear whitehats and bellbottom trousers.

NAS CORPUS' event grows each year. It has come a long way since 1951 when the station decided to raise money with a carnival to help cushion the heavy financial demands the Korean conflict made on the Navy Relief Society. That first effort netted about $18,000. Officials estimate that close to $400,000 has been turned over to the Society in the last 14 years.

The continued success of this festival is even more impressive when you consider that it follows the local area's biggest annual celebration, Buccaneer Days, held in Corpus Christi each May.

Besides giving the Navy and the civilian population a chance to get together for a weekend of fun and to raise money for Navy Relief, the event also provides an opportunity to give a big boost to Naval Aviation.

One of the favorite features of the event—as with most festivals—is the beauty pageant. NAS CORPUS' version selects Miss Navy Corpus Christi (for beauty and poise) and Miss Navy Relief (the contestant whose sponsor sells the most votes).

Some of the girls who have won the NAS CORPUS pageant have made names for themselves in the entertainment field. One also claimed the "Miss Texas" title and became an actress after she changed her name to Carol Douglas. Another former winner from nearby Robstown went into films under the name Kathy Grant. She's now Mrs. Bing Crosby.

Even the U.S. Army gets into the act. The Army Maintenance Center at the station is normally in the business of overhauling and repairing helicopters, but the soldiers and civilians usually set up a booth and exhibits as part of the festival.

Local and South Texas merchants also get a chance to exhibit their wares. Federal agencies, such as the National Aeronautics and Space Administration's Manned Space Flight Center in Houston, count on the festival as a showplace to let taxpayers know how their money is being spent.

YOUNG MAN *attending festival is a bit reluctant to make a clown's acquaintance.*

NAVY STARFLIGHTS *provide audience bouncing good time during NAS Corpus festival.*

NEW TACTICAL RADAR AT MCAS BEAUFORT

OPERATIONS SHELTER *is equipped with the eyes of the new AN/TPS-34 tactical radar system while 150 feet away, the 47-foot radome conceals the ears. The radome, exposed to winds of 75 knots and gusts up to 90 knots, withstood them perfectly with no ill effects.*

THE MARINE CORPS' newest, modern, tactical radar equipment, the AN/TPS-34, will shortly be operational at MCAS BEAUFORT, S. C. Marine Air Control Squadron Six (MACS-6), nearing the countdown stage prior to energizing the new system, should be the first unit on the East Coast to be ready with the new equipment.

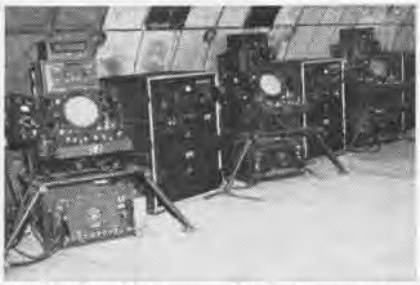
The AN/TPS-34, a transportable radar for air defense gives air control squadrons a sophisticated radar to team with the Corps' newest aircraft. It also provides continuous information to more advanced data systems.

Squadron C.O., Maj. F. L. Delaney, has arranged a concentrated training program to perfect the squadron's capabilities. He is assisted by Maj. J.G. Baker, Communications-Electronics Officer; Capt. J.T. Gallagher, Operations Officer; and Mr. C.W. Watkins, technical representative from Sperry Gyroscope Company, developers and builders of the AN/TPS-34.

General capabilities of the AN/TPS-34 include (1) construction to withstand battlefield environments, (2) tactical mobility and (3) multi-mission capability.

Three-dimensional performance is obtained through the use of a single V-beam antenna energized by two separately controlled transmitters. If one of these radars fails, the other can be used for the search function. The signal returns obtained from these two beams are processed in separate receivers. Video outputs are integrated separately for display purposes.

Non-integrated video is applied to the computer, along with radar range and azimuth data. From this video, range and azimuth data, the altitude of the target is computed and displayed.



INSIDE SHELTER, *manned by 13-man team, radar indicators flank the power supply unit.*

KEY FIGURES *in perfecting squadron capability: Delaney, Baker, Watkins and Gallagher.*

The AN/TPS-34 consists of lightweight components that can be subdivided into transportable units averaging less than 400 pounds each. Electronics equipment is packaged in boxes which serve for both operation and transport. These can be transported by any means available, including helicopters, cargo aircraft, trucks and trailers. Equipment can be arranged on pallets, located in operating shelters, or shipped separately depending upon emplacement time and mission requirements.

An AN/TPS-34 site consists of three groups of equipment: primary power source, radome and operations shelter. Cabling permits a 500-foot separation between each of the locations.

The double-walled, sectionalized, air-supported radome houses the antenna, transmitting equipment and receiver pre-amplifiers. The equipment is protected by the radome from environmental extremes, such as snow, ice and high winds. Eight individually inflated sections increase reliability, as several sections can be severely damaged without collapse of the structure. Low inflation pressure, 0.71 pounds per square inch, guarantees that the punctured sections can retain firmness and permits later repair by a simple patch. Two independently controlled air inflation units, using separate power supplies, inflate the dual wall which needs no air locks.

Information received by the antenna is electrically sent from the radome to the bubble-shaped operations shelter which houses the receivers, video processors, height computer and optional data processors.

Combined characteristics of the new radar provide a multi-mission capability which allows it to be adapted to a variety of military applications. It is also suitable for use at missile test ranges to provide 3-D air-corridor surveillance for range safety.

By SSgt. Dan R. Morris, USMC

SELECTED AIR RESERVE

LCDR. PAUL T. DIETZ *climbs into a Crusader for first check-out flight by a Washington Reservist in F-8's assigned to NARTU Andrews.*

AT NAS SEATTLE, *two Navy A-1 Skyraiders and a Marine Corps Flying Boxcar mark the anniversary of station's 2-year safety record.*

Trained to Fly Crusaders

Now that the Naval Air Reserve Training Unit at Andrews AFB, Md., has received F-8 *Crusaders*, Fighter Squadrons 661, 662 and Marine Air Reserve Squadron VMF-321 are busy taking familiarization training in the newly acquired aircraft. Three years ago when the NARTU moved from NAS ANACOSTIA, Reserve attack squadrons were flying the A-1E *Skyraider*. After the move, the pilots transitioned to the AF-1E *Fury* jets. Now it is to be *Crusaders* for the flying Reserves.

A Milestone in Safety

On February 2, Navy and Marine Corps Air Reservists and active duty personnel at NAS SEATTLE celebrated the station's second anniversary without an aircraft accident. More than 40,000 flight hours were logged during that period.

At a ceremony in the station's Operations Terminal, Captain R. F. Peterson, Commanding Officer, credited the record in large part to the skill of pilots and maintenance personnel. LCdr. H. W. Walker, station aviation safety officer, emphasized the Reservists' Supplemental Training and Readiness Periods and the NATOPS program as major factors in increased aircraft safety.

Navy Pilot Captures Audience

In his stocking feet and wearing his Mk. 4 exposure suit interliner, LCdr. J. S. Johnson, of NAS WILLOW GROVE, charmed the entire student body of Mannington Township School near Salem, New Jersey, one afternoon.

WILLIAM CANTWELL, *Aviation Administration Man, Third Class, "turns to" on a snowdrift blocking entrance to NARTU Lakehurst. Despite crippling storm, Reserve Squadrons drilled during snowy weekend as usual.*

LCdr. Johnson had no choice but to wear this unorthodox uniform at the school assembly. When he left Willow Grove some five hours earlier, he planned only to conduct a routine helicopter training flight to demonstrate sonar dunking techniques and to track surface targets moving through the Delaware River turning basin.

While hovering the helicopter over the turning basin, LCdr. Johnson lost his auxiliary flight control system and decided to look for high solid ground. He picked a spot directly across from the Mannington School.

After determining that the helicopter could be temporarily repaired, he gained permission from the school principal to have a repair crew's helicopter from Willow Grove land on the school playground.

Before long he was surrounded by inquisitive students and faculty members who wanted to see the helicopter, examine the gear and ask questions.

The school principal, Mr. John Fielding, immediately scheduled an

LCDR. JOHNSON *from NAS Willow Grove and his three-man crew made an emergency landing in the SH-34J not far from a school, so the principal invited them to tell about their work.*

assembly and LCdr. Johnson and his crew checked their Mk. 4 exposure suits (with boots attached) and held the youthful audience spellbound with a lecture on helicopter history, survival, ASW and Naval Aviation in general.

A short time later, repairs completed, both helicopters were off for Willow Grove.

Glenview Given Painting

Captain Albert W. Newhall, Commanding Officer of NAS GLENVIEW reports that the station is now the owner of a large water color painting of the USS *Hancock*.

The painting is a gift from Charles T. Rothermel, a General Agent for the John Hancock Mutual Life Insurance Co., and Frank W. Langham, another official of the same company.

C-118's for Alameda Reservists

A sleek, silver Douglas C-118 transport taxied to a stop in front of Operations at NARTU ALAMEDA late in January after a cross-country flight from Dothan, Alabama. It was the first of three C-118's delivered to NARTU for training utilization by Weekend Warriors. The C-118 replaces the Douglas C-54's formerly used by the Reservists.

Marine Claims Copter Speed Mark

Marine Air Reserve, Major Donald R. Segner, X.O. of HMM-764, MARTD Los ALAMITOS, lays claim to the title of the fastest helicopter pilot in the world.

Maj. Segner, an engineering test pilot for Lockheed-California, earned the title when he flew Lockheed's XH-51A compound helicopter (has rotary blades and wings) to a speed of 242 miles per hour.

Previously, Maj. Segner flew a pure helicopter version of the XH-51A at 201 mph, setting a record for its class.

Refurbishing in Dallas

Enlisted personnel at NAS DALLAS need not dread the hot summer months ahead. Completion of a half-million-dollar barracks improvement program means central heating and air-conditioning, outside and inside painting and construction work, private rooms for CPO's and four-man rooms for lower rated personnel. A new fire protection system, new plumbing, off-street parking and recreation rooms are also included.

Reservist Cited for Bravery

The courageous act of a Naval Reserve aviator in guiding his burning jet fighter away from a heavily populated city, thereby averting certain disaster, earned the grateful thanks of the city of Ecless, Texas, a heavily concentrated area of factories and homes between Fort Worth and Dallas.

Lt. David J. Thigpen, attached to Naval Reserve Fighter Squadron 701, had engine difficulty shortly after taking off in his F-8 *Crusader*. He elected to guide it to an isolated area outside the city and was successful in reaching open country where he ejected at approximately 300 feet.

A city council resolution, citing Lt. Thigpen for "great personal bravery and high regard for the safety of the city" was presented to the young pilot at the annual Dallas inspection.

CAPTAIN NEWHALL, *C.O. of NAS Glenview (R), accepts painting from two officials of John Hancock Mutual Life Insurance Company.*

ON BECOMING *CPO's, NARTU Alameda stationkeepers, A. E. Lee, N. L. Nessel, E. A. Brooks are congratulated by Capt. J. B. Bock.*

AT SEA WITH THE CARRIERS

NEWEST LPH *in the Fleet is USS Guam, recently commissioned at the Philadelphia Naval Shipyard. Ship is named for the WW II battle.*

MARINE 'BULLDOGS' *of Attack Squadron 223, Det. Tango, scored a "first" when all six pilots became Centurions aboard USS Yorktown.*

PACIFIC FLEET

YORKTOWN (CVS-10)

An S-2E *Tracker* piloted by Ltjg. T. S. Todd has logged in the "Fighting Lady's" 100,000th arrested landing 22 years and 37 days after the *Yorktown* was launched.

Captain R. S. Osterhoudt, *Yorktown C.O.* and one of the pilots who flew from the carrier in WW II, dedicated a 304-pound cake replica of the ship to present and former crewmembers who contributed to the event.

The "Fighting Lady's" Operation *Handclasp* program moved into high gear during a visit to Honk Kong when *Yorktown* sailors delivered 20,000 pounds of material to local agencies. Included were several thousand pounds of medical supplies given to the Catholic Relief Service.

KITTY HAWK (CVA-63)

With dock trials completed, *Kitty Hawk* was scheduled for a five-day at-sea period last month for equipment tests as she neared the end of an overhaul period at Puget Sound Naval Shipyard.

The carrier's departure from the Puget Sound area is scheduled for the middle of April, according to latest information published in CVA-63's news-magazine.

Kitty Hawk and the mayor of Bremerton, Wash., combined forces to display $30,000 worth of silver service presented the carrier by the residents of Toledo, Ohio.

The silver was originally given to the USS *Toledo* when the cruiser was commissioned in 1946. After the city's namesake was decommissioned in 1960, Toledo residents decided to turn the silver over to CVA-63 in memory of the Wright brothers, Wilbur and Orville, who lived in Ohio

ON DISPLAY *at the city hall of Bremerton, Wash., is the Toledo silver, presented by the citizens of Toledo, Ohio, to USS Kitty Hawk. The silver was given to CVA-63 in memory of the distinguished sons of Ohio, the Wright Brothers, who made the famed Kitty Hawk flight.*

all their lives and are remembered for their flight at Kitty Hawk, N. C.

Mayor Glenn Jarstad of Bremerton joined *Kitty Hawk's* C.O., Captain J. L. Butts, for the opening of the display to the public.

MIDWAY (CVA-41)

Memorial services were held aboard *Midway* for Cdr. Henry T. Stanley, whose parachute failed to open after he ejected from his crippled T-33 jet trainer. Cdr. Stanley was killed after he diverted the aircraft clear of Fremont, Calif., when the T-33's engine flamed out.

RANGER (CVA-61)

A reunion between foster fathers and their "daughters" and three changes of command are events that have taken place aboard *Ranger* in the Seventh Fleet.

Men of CVA-61's CR Division and Marine Detachment were reunited with their adopted daughters, Li Lai Seung and her sister, Li Lai Ha, while the carrier was in Hong Kong. Along with 80 of their classmates, the two girls spent the day aboard *Ranger*.

In the command changes, Cdr. F. T. Brown is the new skipper of CAW-9, Cdr. A. J. Monger commands VA-93, and Cdr. W. T. Russell heads RVAH-5.

Ranger entered the record-setting business with a flair, as the carrier's No. 1 catapult crew logged their 30,000th "shot"—all of them successful—as Ltjg. D. H. Moran was launched in an E1-B *Tracer*.

Not to be topped, VAH-2's Detachment *Mike* has established marks that are thought to be new records for the A-3B. They include a pilot-hour average of 82.4, 13 average pilot-day landings and 14 average pilot-night landings, and a 93 per cent boarding rate. The records were set by Commander D. E. Brandenburg, OinC; and LCdrs. C.D. Ball III, Max H. Watson, and W. E. Foster.

More than three-quarter million gallons of fuel were transferred to *Ranger* in an hour by the Navy's newest supply ship, the USS *Sacramento* (AOE-1), for what the carrier claims is a new record. In addition to the 533,000 gallons of black oil and 240,000 gallons of aviation fuel she transferred to CVA-61, *Sacramento* sent over dry and refrigerated stores.

VERSATILE HELICOPTER, *carrying a Marine jeep, demonstrates vertical delivery in the South China Sea by the USS Princeton (LPH-5) in a delivery operation to the amphibious flagship, the USS Mount McKinley (AGC-7).*

VA-95's *Green Lizards* topped off a 49-day at-sea period aboard *Ranger* in the South China Sea by flying 1,224.8 hours in a 28-day period. VA-95 claims this as a record for total hours flown in one month by a 12-aircraft carrier-based squadron.

Carrier pilots normally dislike missing the arresting wires the first time they try to land, but when two records are broken by an unsuccessful first try, it may be a bit easier to take. Take the case of LCdr. William E. Foster. He missed the wires in his first attempt, but logged in the ship's 50,000th carrier control approach. When he landed successfully the second time around, he chalked up his 500th carrier landing.

TICONDEROGA (CVA-14)

With approximately 65,000 man-days of work ahead of her, *Tico* has entered the San Francisco Naval Shipyard for overhaul. Work scheduled includes installation of aluminum flight deck planking and new radars.

CONSTELLATION (CVA-64)

Friends and relatives of *Constellation* crewmembers who awaited the carrier's return from her second West-Pac deployment must have taken a quick second look when the CVA neared the pier at NAS NORTH ISLAND, San Diego.

Trailing behind the ship was a 1,048-foot homeward-bound pennant, held aloft by 10 gas-filled balloons. Rating such a pennant is a reasonably rare occurrence for regularly rotated ships.

While *Constellation* actually missed by four days the required nine-months-deployment time for the pennant, she was granted special permission by CNO to fly it.

CVA-64's Far East cruise lasted 272 days, 192 of them at sea. Aircraft of embarked Air Wing 14 flew strike missions against targets in North Vietnam during the Gulf of Tonkin crisis in August. For her part in the action, *Constellation* received the Navy Unit Commendation and the Armed Forces Expeditionary Medal.

Commander Herbert L. Ogier, former C.O. of the destroyer USS *Maddox*, received the Bronze Star Medal

from Rear Admiral W. S. Guest, ComCarDiv Nine aboard *Constellation*, for heroism during the Tonkin Gulf crisis.

Now assigned to CarDiv Five, Commander Ogier was skipper of the *Maddox* when the destroyer was attacked by North Vietnamese patrol boats. Rear Admiral Guest commanded CarDiv Nine when *Constellation* aircraft made retaliatory strikes.

HANCOCK (CVA-19)

The 72,000th arrested landing aboard *Hancock* was made by Ltjg. R. E. Tallent when his A-4 *Skyhawk* caught the wire during flight operations in the Western Pacific. Ltjg. Tallent is assigned to VA-216.

IWO JIMA (LPH-2)

The first ship built expressly for using embarked helicopters to land Marines and equipment behind enemy lines paused, during an at-sea period recently, to hold a memorial service for men killed during the WW II battle that gave *Iwo Jima* her name.

ORISKANY (CVA-34)

Commander J. B. Stockdale has assumed command of CAW-16, scheduled to embark aboard *Oriskany* for the carrier's Far East cruise this spring. The change of command ceremony was held while *Oriskany* was in port at NAS NORTH ISLAND.

ATLANTIC FLEET

GUAM (LPH-9)

The Navy's newest amphibious assault ship has been commissioned at the Philadelphia Naval Shipyard, Philadelphia, Pa. While LPH-9 is the third ship to bear the name of the Pacific island, she is the first named for the battle that liberated the island during WW II.

The 18,000-ton ship is designed to embark, transport, and land troops and equipment using assault transport helicopters. With Captain Norman E. Thurmon as commanding officer, *Guam* will be assigned to the Atlantic Fleet Amphibious Force.

THE ATLANTIC FLEET'S *USS Forrestal, in a two-sided operation, is simultaneously rearmed by the USS Nitro (AE-23), on the left, and replenished by the USS Altair (AKS-32), at right.*

FORRESTAL (CVA-59)

Lt. William R. Logue, VF-74 pilot, made his 300th carrier landing aboard *Forrestal* during Sixth Fleet operations, two days after he logged his 1,000th flight hour in the F-4 *Phantom*.

INTREPID (CVS-11)

Visitors from different walks of life, but with the common interest in Naval Aviation, were guests of *Intrepid* crewmembers during two different tours of the anti-submarine carrier.

Officials from the Canadian National Defense College at Kingston, Ontario—including the commandant, Major General C. B. Ware—boarded CVS-11 as part of a tour of military ships and installations in the Norfolk area.

Some days later, young Civil Air Patrol cadets from Andrews AFB, Md., boarded *Intrepid* to see how the Navy flies its aircraft. The CAP is basically a recruiting activity of the Air Force, probably the only such organization that includes girls.

In truth, the *Intrepid* tour may have caused dissension in the CAP ranks. During the tour, one young lady confided that she was so impressed with *Intrepid* she might leave the "Junior Air Force" to become a Navy WAVE. She said she found the carrier's highly-polished brass an excellent mirror for applying lipstick.

Crewmembers of the "Fighting I" bade a hearty *bon voyage* to their counterparts in France's newest and largest carrier, *Foch*, after the 31,000-ton carrier visited the Norfolk naval station with *Intrepid* as host ship.

The 845-foot *Foch* arrived in Norfolk for a scheduled five-day operational visit to pick up 28 F-8E *Crusaders*. The planes were the second part of an order of 42 F-8E's bought by France under the U.S. Military Assistance Program.

Intrepid's version of the "welcome wagon" for the Frenchmen included official and unofficial visits, receptions, dinner parties, and other social events.

FRANKLIN D. ROOSEVELT (CVA-42)

Officers and enlisted men assigned to CVA-42 took time out from workday routine to pay homage to their namesake, the 32nd President of the United States, in ceremonies while the ship was at sea.

Eighty-three years have passed since Roosevelt's birth, and almost 20 years have passed since his death. The carrier's observance is a tradition started when the ship first put to sea in 1945.

The ceremonies were held while *FDR* was operating about 100 miles off the Florida coast. Commanding Officer Captain Malcolm W. Cagle presided.

After the ceremonies, *Roosevelt* continued carrier qualification exercises. The carrier was at sea for the first time since she returned to the U.S. after an eight-month deployment in the Mediterranean.

The U.S. Air Force went to sea with the *FDR* when some 350 students of the USAF Air War College at Maxwell AFB, Ala., got a first-hand look at carrier capabilities during a one-day cruise. All lieutenant colonels or above, the students witnessed an air power demonstration by planes of Carrier Air Wing One.

ESSEX (CVS-9)

Ltjg. O. D. Smith, attached to VS-34 aboard *Essex*, landed an S-2D *Tracker* aboard the carrier to mark the ship's 121,000th landing. *Essex* was conducting antisubmarine operations in the Atlantic when the landing was made.

Earlier, the 40,000-ton aircraft carrier departed homeport, Quonset Point, R.I., for Norfolk, Va., where members of the crew attended the Navy's antisubmarine warfare school. CVS-9 left Norfolk to join other Second Fleet ships for the exercise.

Essex, recently 22 years old, is commanded by Captain Donald K. Issitt and serves as flagship for Rear Admiral John J. Lynch, ComCar Div 18.

OKINAWA (LPH-3)

Pilots from HU-1's Detachment 1, based in Norfolk, Va., have carqualed aboard *Okinawa*. The qualifications were designed to introduce new pilots to shipboard conditions and to prepare them for deployment aboard the new combat stores ship, USS *Sylvania*.

RANDOLPH (CVS-15)

CVS-15 has completed a five-month overhaul and repair period at the Norfolk Naval Shipyard in Portsmouth, Va. Yard work completed since the carrier began the overhaul included structural modifications, a more effective communications system, sonar modernization, new radars, a new CIC, replacement of the ship's No. 3 elevator, and overhaul and repair of the ship's main engines.

After a period of underway training and equipment familiarization, *Randolph* was scheduled to leave Norfolk for a six-week cruise to Guantanamo Bay, Cuba.

SHANGRI LA (CVA-38)

How do you explain carrier aviation to land-locked engineers? Easy—you take them to sea. That's exactly what *Shangri La* did with 10 civilian and government employees now working on the new F-111B, the Navy's version of the TFX.

The engineers, all located at General Dynamics' Fort Worth plant, rode CVA-38 for two days to learn about carrier aviation from every angle, but with emphasis on their particular work areas.

Navy Commendation Medals have been presented to two *Shangri La* crewmembers who rushed to help a pilot when his aircraft crashed on the carrier's flight deck.

Lt. R. J. Scent, flight deck boatswain, and Paul Arzig, AB1, were presented the awards by Rear Admiral Robert Townsend, Commander, Carrier Division Six, on behalf of the Secretary of the Navy.

A portion of the citations accompanying the medals read: "When an aircraft crashed and burst into flames while attempting a daylight landing . . . Lt. Scent and Arzig rushed immediately to the scene of the accident and climbed onto the fiercely burning plane, which was in danger of falling over the side of the ship, and assisted the pilot in disengaging from the cockpit and in reaching safety. . . ."

Shangri La was host to Florida's Governor Hayden Burns and his wife for change of command ceremonies at Mayport Naval Station. Captain Ralph L. Werner, the governor's brother-in-law, is the carrier's new C.O.

Teamwork is probably the best word to describe the rescue of an Air Force pilot after he was forced to eject over the Atlantic while he was flying off *Shangri La*.

After Captain James C. Doggette, Jr., an exchange officer with VF-13, ejected from his crippled F-8E *Crusader*, his wingman radioed his position to *Shangri La* and other Navy facilities. An HU-2A *Seasprite* was vectored to the scene by CVA-38's CIC. While the helo was closing on the pilot, a patrol plane from VW-4 spotted him and kept him in sight with its searchlight. He was rescued by the helo 45 minutes after ejection.

USS RANDOLPH *steams down the Elizabeth River after leaving the Norfolk, Va., Naval Shipyard where she underwent major overhaul.*

WITH TWO *of her crewmembers recent medal-winners for heroism, USS Shangri La operates under her new skipper, Capt. R. L. Werner.*

NASA SEA-GOING EXPEDITION UNDERWAY

THE NATIONAL Aeronautics and Space Administration began a three-month Mobile Launch Expedition for conducting upper atmosphere experiments from the deck of a ship in mid-February.

A series of 50 or more scientific experiments have been launched from a converted aircraft carrier at locations off the west coast of South America from 5° north to 60° south of the equator.

The project is part of the NASA sounding rocket program being conducted during the International Quiet Sun Year (IQSY) 1964-65, a period of minimum solar flare and sunspot activity. Experiments are being conducted by scientists throughout the world to study IQSY phenomena. Expedition data will be correlated with their findings.

Experiments in the sea-going expedition are being carried out aboard solid-fueled *Nike-Apache* and *Nike-Cajun* sounding rockets capable of lifting 50-pound payloads to altitudes exceeding 100 miles. In addition, some 40 or 50 *Arcas* and *Hasp* weather rockets will be fired to obtain meteorological data. Payloads will impact in the ocean.

About 10 teams of researchers, representing universities, NASA field centers and other federal agencies, are flying experiments on an almost daily basis. These teams include scientists from the universities of Michigan, Illinois and New Hampshire; Illinois Institute of Technology; Goddard Space Flight Center and Langley Research Center of the NASA; Cambridge Research Laboratory of the Air Force; Sandia Corp.; Naval Ordnance Test Station, China Lake; U.S. Weather Bureau; National Bureau of Standards. Scientists of the Institute Geofisico, Lima, have been invited to participate in experiments off the coast of Peru.

The sea-going launch platform will be the USNS *Croatan*, one of a class of WW II CVE's 500 feet long and 80 feet wide. Under contract with NASA the Military Sea Transportation Service (MSTS) is furnishing the ship and mans it with Civil Service personnel.

Ports of call include Balboa, Canal Zone; Callao (Lima), Peru; and Valdivia, Chile. Scientific personnel and equipment are to be loaded or unloaded at each port. The number of scientists on board varies from 18 to 32.

The launch and tracking equipment on board is operated by a complement of 30 Wallops Station engineers and technicians headed by Robert T. Long as director of launch operations and James W. Gray as engineer in charge of instrumentation. Rocket launchers are mounted on the ship's stern.

The project is directed by NASA's Office of Space Science and Applications. Project manager is Germain S. Brown, Assistant Chief, Wallops Range Engineering Division.

Farewell to a Helicopter

Last West Coast SH-34J Retired

A chapter in antisubmarine warfare ended on the West Coast when the last SH-34J attached to a Pacific Coast helicopter ASW squadron was transferred to a Naval Reserve squadron in Dallas, Texas. The last of the SH-34J's (HSS-1N's) was attached to HS-2, based at NAAS REAM FIELD, Imperial Beach, Calif. The "1N's" were the first copters to provide all-weather ASW capability.

Mr. E. E. Gustavson, a Sikorsky Aircraft representative, witnessed the "piping over the side" of the veteran. He was accompanied by Commander William G. Jenson, C.O. of HS-2, and Commander Donald J. Hayes, X.O.

The SH-34J, on active duty with the Fleet since July 1958, has amassed over 260,000 flight hours. A total of 122 SH-34J's were delivered to the Navy. Records indicate that 51 SH-34G's also were modified to the "J" configuration. The last SH-34J was delivered to the Navy in August 1961.

New Repair Unit Opens

E-2A Reworked at North Island

A new aircraft maintenance program began at North Island in March with the beginning of rework on the first E-2A *Hawkeye*. The Overhaul and Repair Department has been designated as the Navy's sole rework point for the Grumman E-2A. Planning and preparation for processing the E-2A began over a year ago.

During the initial rework period, O&R personnel will evaluate the plant capabilities in terms of skills, facilities, space, tooling, engineering data and other requirements. Then full production of the aircraft will get underway.

The C-2A is also to have its rework point at North Island. The first C-2A is expected to arrive in August 1966.

O&R NORTH ISLAND, under the direction of Captain J. F. Daniels, Jr., also performs depot level maintenance on *Phantom II's* and *Crusaders*.

PRE-FLIGHT ADDED *a new student category when the first group of Coast Guard aviation cadets entered training at NAS Pensacola with Cadet Class 3-65. The group was extended a warm welcome by Captain J. H. Caldwell, Commanding Officer, U. S. Naval School of Pre-Flight. Shown are: Cadets L. J. Albany, Jr., H. W. Knack, Jr., P. A. Luistro, A. Massey, D. R. Robbins, F. J. Aube, T. N. Carsten, T. J. Hall, W. E. Wade, Jr., and Captain Caldwell.*

SIGONELLA UNIT MANUFACTURES LOX

SIGONELLA'S LOX PLANT *is manned 24 hours a day as men monitor production phase of LOX called "on steam." Here, man checks one of 500-gallon portable tanks used to carry LOX.*

LOX IN JETS *changes to gas, goes through 14 feet of tubing, is then warmed for pilot.*

THE MANUFACTURE of liquid oxygen (LOX) can be a dangerous operation. If a person were to immerse his finger in it for just a moment and then rap the finger smartly against something solid, the finger would shatter like an icicle. Eight Navy men at NAS SIGONELLA, Sicily, are attached to the aircraft maintenance department and assigned the responsibility of producing LOX. The six machinist mates and two firemen are well trained in this crucial operation and work in shifts 'round-the-clock to keep the essential supply of LOX ready for Fleet use.

The men are outfitted with safety clothing which includes plastic face shields, asbestos gloves, rubber aprons, and special coveralls and shoes. This protective garb is necessary since a miscue might bring a man into contact with the LOX which, at normal atmospheric pressure, exists at a minus 297 degrees Fahrenheit.

Before WW II, oxygen requirements were usually met by shipping it in cylinders as a gas. Since then, because of demands for oxygen and the problem of space-saving while shipping it, the LOX form has been used more frequently.

One gallon of LOX converts to 115 cubic feet of gas and a 500-gallon tank will fill 287 cylinders of 200-cubic foot capacity under 1800

By W.C. Eckes, JO2

pounds per square inch (psi) of pressure.

Making LOX is an involved process and though air has been liquefied in laboratories as early as 1877, this process has changed little. Air, which consists of 21 per cent oxygen, 78 per cent nitrogen and one per cent rare gases and carbon dioxide, is compressed to a very high pressure, then cooled to absolute zero or minus 459.6 degrees F. Oxygen and nitrogen liquefy at this temperature, carbon dioxide solidifies and is filtered out while the other gases are vented away. Nitrogen is boiled off as a gas, leaving the LOX at a purity of 99.5 per cent.

Largest unit in the process is an air compressor which charges air through five compression stages to a pressure of 3000 psi after which it is pumped into an oxygen generator. The generator, which is box-shaped with seven-by-four-foot dimensions, consists of pressure control valves, and pairs of air driers, carbon dioxide filters and heaters. Four heat exchangers and high and low pressure columns are also incorporated into this unit.

Here, through a heat transfer process, the air is precooled to minus 180

Photos by Roy L. Gay, AN

degrees and, as it flows into the high pressure column, reduced in pressure to 80 psi. This sudden reduction in psi lowers the temperature further to minus 280 degrees with a resultant partial liquefaction of the air and solidification of carbon dioxide which is filtered out. The air then is released into the low pressure column where pressure drops to 10 psi and nearly complete liquefaction occurs.

Nitrogen is then boiled off and the finished product is pumped into portable tanks which are constructed on the same principle as the thermos bottle. The tank walls are separated by granular insulation in a near-perfect vacuum. The innermost wall is made of copper since steel or ferrous metal freezes and shatters when contacted by LOX.

The evaporation rate of LOX, stored at ordinary temperatures in a properly designed 500-gal. container, is about 1.4 per cent.

The principal users of LOX produced at the Sigonella plant are Sixth Fleet jet pilots who need oxygen at high altitudes. The plant also changes the liquid form of oxygen back to a gaseous state for use in other aircraft, usually props like the P-2 *Neptunes* based at Sigonella. The public works department uses oxygen for welding while local medical units need it for oxygen tents and other purposes.

VT-28 Reports Good Year

Safety Programs Prove Successful

Training Squadron 28, NAS Corpus Christi, Texas, reports that its instructors and students flew a total of slightly over 38,000 hours in 1964. The TS-2A *Trackers* were bounced (sometimes hard) for 89,809 landings. Of this total, some 30,000 landings were conducted in the carrier qualification program, both on the field and aboard the ship.

A total of 256 new young Naval Aviators completed successfully the academic and flight training syllabus.

Five instructors were presented certificates on behalf of CNAVanTra for having achieved 1200 accident-free hours: Lieutenants Bob Kniveston, Warren Hood, Marion Gesling, Bill Culhane and Joe Penders.

An active industrial and automotive safety program has been emphasized during the year. Industrial accidents with resulting loss of men on the job have sharply declined. The automotive safety program has achieved an accident rate far below that of Texas or of the nation.

Commander Donald A. Gilles, C.O. of VT-28, assumed command in June 1964, relieving Cdr. N. H. McDade.

Marines Offer Assistance

MABS-27 Ready to Give Service

Marine Air Base Squadron 27 (MABS-27) is ready to help any 2d Marine Aircraft Wing unit at Cherry Point, N.C., which has no service support of its own.

MABS-27 provides air base facilities and services, except airfield construction, for advanced air bases. The squadron's utility section can offer power, water supply, plumbing, refrigeration, and laundry facilities for air bases used by 2d Wing groups when they deploy. Construction of new buildings and maintenance and repair of old structures are also continuing tasks for MABS-27 Marines.

Motor transport is the squadron's largest section. Another MABS-27 unit, the 2d Wing refueler pool, pumped more than three million gallons of aviation fuel into aircraft in 1964.

The squadron's offer of assistance was summed up by its C.O., Lieutenant Colonel Robert L. Wildey: "Whatever challenges MABS-27 may face in the future, the unit will continue to have an 'iron in every fire' of the 2d Marine Aircraft Wing."

Presidential Citation Given

Alameda Cost Reduction Succeeds

Cost reduction in the Navy receives top-level attention. A group of civilian and military personnel from NAS Alameda can attest to this. The group, which collectively accounted for savings to the government of $1,697,925 in Fiscal 1964, received a Cost Reduction Citation from President Lyndon B. Johnson.

Captain Kenneth Sanger, Commander Fleet Air Alameda, presented the citation to Captain T. E. L. McCabe, Commanding Officer of NAS Alameda. Captain W. B. Kirkland, Jr., acting Overhaul and Repair Officer, served as master-of-ceremonies.

Donald Brusseau, a Materials Lab employee, was presented with a $1000 award for annual savings of $92,195 resulting from his design for a special metal casting holding fixture. Other award winners were: Pat Guzmen, Donald Titeca, and Anthony Benedick, Overhaul and Repair; Joseph Bertillo, Public Works; Mrs. Juanita Halliday, Supply Dept.; and Lillian Fairchild of the Administration Department.

PERSONAL GLIMPSES

Editor's Corner

Man on the Spot. SSgt. Gus Koch, of VMF(AW)-122, NAS Atsugi, Japan, is equally at home in a fire or in the water. The two elements figured in two separate incidents that led to commendations for Sgt. Koch recently. Last August, after the crash of an American F-105 near Atsugi, Koch joined skindivers of a local club in a three-day effort that brought about salvage of the aircraft. In October, he received a letter of appreciation and a medallion from the Air Force. More recently Koch was nearby when a Japanese apartment building caught fire. He made three trips into the building to retrieve personal belongings and search for victims. On the first trip, he was relatively unprotected. On the second trip, he wore asbestos suit bottoms and, on the third, he wore the entire asbestos suit. He was recommended for a Meritorious Mast.

THE FLIGHTY ALBATROSS. On May 7, 1962, an HU-16C *Albatross* seaplane crashed on landing in the water at NAS Whidbey Island, Wash. After that incident, the station recorded 11,500 landings and 10,000 accident-free flight hours. An HU-16C *Albatross* made the final landing on February 3, 1965, to complete the milestone. Pilot of the *Albatross* on both landings (1962 and 1965) was the same man, Commander Robert E. Hunter.

NOTAM: "Watch Out for Deer." Lt. Robert Kay of VMA-224, MCAS Cherry Point, felt a slight jolt as his A-4 *Skyhawk* rolled down the runway on a night touch-and-go landing. After his final landing, he discovered that he had hit two ("maybe three") deer during the landing. Lt. Kay's "bag" brought to 11 the number of deer hit by Cherry Point airplanes and cars during the year. Hunters armed with guns and bows and arrows bagged only 14 on the station during the past deer season. (Those run down by aircraft and cars were donated to state institutions.)

REVEILLE WITH A BLEAT BEAT. For three weeks while temporarily based at NS Roosevelt Roads, Puerto Rico, Canadian Army Private Richard O'Dell, of the Blackwatch Royal Highland Regiment, played a bagpipe for meal calls, duty calls, flag-raising ceremonies and other special events. A station release also reported, "Word is out that O'Dell will roam about the station in the small hours of the morning to serenade residents."

WAKE UP, MON!

The Cold Facts. Officers and men of the USS *Midway* pack away 325 gallons of ice cream every week.

FAST PROMOTIONS. William Bright, of the USS *Midway's* engineering department, took promotion examinations early in February and put on his new Yeoman Third Class stripe the same day. It happened because an error in Bright's August 1964 test had been corrected belatedly by the Naval Examining Center. By coincidence he had taken the exam again, just hours before the authorization for advancement reached the ship.

What's Ground Resonance, Grampaw? A helo detachment correspondent, writing to his parent squadron, HU-4, at Lakehurst, called the ground resonance maneuver "one that should be avoided like the plague. For those not familiar with ground resonance, it is performed by placing one wheel of the helo on the flight deck and bringing the opposite wheel down with a good solid 'thud.' This causes the blades to flop, which causes the helo to rock, which causes the wheels to bounce, which causes the blades to flop, which causes the helo to rock."

BREAKING THE BARRIER. At MCAS Iwakuni, Japan, a Spanish-speaking Marine, Lance Corporal Ricardo Lopez, has been engaged in an unusual teaching situation. Although he speaks no Japanese, Cpl. Lopez is teaching Spanish to a young Japanese student, Takeshi Doi, who speaks very little English. Doi is scheduled to go to work in Mexico City, Lopez' home town, and is learning the new language. When the teacher and student reach a point of impossible explanation, they use sign language or a Spanish-English dictionary.

Two for the Merry-Go-Round. Two other MCAS Iwakuni Lance Corporals, R. L. Morgan and Charles Vigil, of MABS-17, are constructing merry-go-rounds out of used or damaged equipment, such as wheel rims, spindles, old axles, lengths of pipe and assorted nuts and bolts. They built one for the Hara Sanitarium. It was received so well that the two men decided to continue the project during off-duty hours.

SHORT SAFETY SERMON. (From the Second Marine Aircraft Wing's Hot Dope Sheet): It takes—

One minute to write a safety rule.
One hour to hold a safety meeting.
One week to plan a safety program.
One month to place a safety program into operation.
One year to win a safety award.
One second to destroy it all.

Sea Orbit Medical Note: The Supply Corps' *Newsletter* included in a recapitulation of Operation *Sea Orbit* (the world cruise of three nuclear ships, the USS *Enterprise*, the USS *Bainbridge*, the USS *Long Beach*) the following interesting medical note:

"One of the conclusions reached was that one of the most predominant phenomenon experienced was insomnia. This condition was attributed to the great speed with which the force was changing climate and passing time zones. Since the 'stomach timers' of the force were out of phase, as it were, this presented an abnormal demand on the General Mess because the popular idea developed that, 'I'll probably sleep better if I get something to eat.'"

CAPSULE COMMENT. From the USS *Saratoga's* special edition on Mediterranean Liberty: "Europe after dark is all and less than it is cracked up to be. A lot depends on your personal tastes and your wallet."

LETTERS

Reunion for Tailhookers

SIR: Captain Jack Stetson, LCdr. Robin McGlohn, Captain Paul Gray, Captain Dick Phillips, Captain George Duncan and Captain Ed Holley have set May 21, 22 and 23 as the date for the 9th annual "Tailhook Reunion." It will be held this year at the Stardust Hotel in Las Vegas. A senior Naval Aviator will be the guest speaker. Many other tailhooker activities are planned.

Reservation order blanks will be available to activities in early April. If you have ever "grabbed a wire" on an aircraft carrier, your presence is a "must." Further information can be obtained by writing: "Tailhook Treasurer," NAS MIRAMAR, Calif., 92145.

TAILHOOK COMMITTEE

Float, Anyone?

SIR: Through untiring efforts, the dedicated USS *Alabama* Battleship Commission has located an OS2U *Kingfisher*, the type that once flew from BB-60. It is complete except for the main float.

Somewhere a suitable float must exist—if not from an OS2U—a float from a contemporary type adaptable to the plane. Any information that can be provided will be appreciated. Replies should be directed to Rear Admiral E. M. Eller, USN, Director of Naval History and Curator for the Department of the Navy, Office of the Chief of Naval Operations, Washington, D. C., 20350.

F. KENT LOOMIS, CAPTAIN, USN (RET.)
Assistant Director, Naval History

No Mistakes in 'Supply'

Cherry Point Department Honored

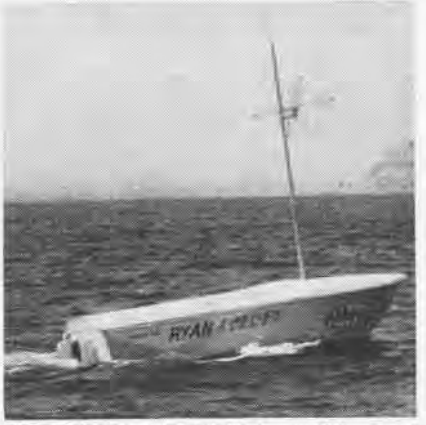
A zero-error rating in the High Value Transaction Report (HIVAC) has won for the Supply Department, MCAS CHERRY POINT, an "outstanding performance" award. It was the first aviation activity in the Navy/Marine Corps establishment to achieve this distinction in the HIVAC program.

The citation, signed by Rear Admiral H. F. Kuehl, Aviation Supply Office (ASO), Philadelphia, was presented to the Cherry Point Supply Department by Brigadier General Norman J. Anderson, Station Commander.

HIVAC reports, sent to ASO PHILADELPHIA, provide immediate inventory management data on all issues, receipts or changes in custodial status of items. Since July 1964, Cherry Point's Supply Department has maintained a lower percentage of errors than all other major reporting activities. December was the first month of the last six during which any activity attained a zero rating.

ADMIRAL THOMAS H. MOORER, *CinCPacFlt, presents Lt. Hugh Brainard of VAH-4, the ComFAir Whidbey Top Bombardier of 1964 award. Lt. Brainard consistently out-performed other Whidbey contenders to win the honor.*

RADM. REDFIELD MASON, *Commandant 3ND, presents the Navy Meritorious Public Service Citation to Mr. A. J. Douglas, a former Navy Reservist. Mr. Douglas pulled two servicemen from a Navy plane crash Feb. 6, 1964.*



THE REMOTE-CONTROLLED *Firefish target boat, capable of changing speeds and evasive maneuvers, cruises off the coast of San Diego. The Ryan drone can cruise at over 30 knots for four to six hours. Remote control range and radar acquisition capability is six miles.*

NAVAL AVIATION FILMS

Among the latest motion picture films released by Head, Film Distribution Division, U.S. Naval Photographic Center, of particular interest to officers and enlisted men in Naval Aviation are:

FN-9836F—Confidential—Electronic Warfare Recognition—Program VI—Air Defense—Height Finder (U-). 20 min.

MN—9895—Unclassified—Pilot-LSO Landing Aid Television (PLAT) System. 20 min.

MN-9996A—Confidential—Air Intercept Missiles—AIM 9C, AIM 9D (*Sidewinder* 1-C)—Equipment and Operational Techniques (U). 30 min.

MN-9996B—Confidential—Air Intercept Missiles—AIM 9C, AIM 9D (*Sidewinder* 1-C)—Equipment and Handling (U). Deeanning, storing, assembly, launcher testing, and aircraft loading. 30 min.

MN-9996C—Confidental—Air Intercept Missile—AIM 9C, AIM 9D (*Sidewinder* 1-C) Equipment and Handling. Testing with the MK 401 and MK 409 Test Sets. 23 min.

MN-9664D—Confidential—A-6A *Intruder* Familiarization—Integrated Attack Navigation System (U). Back-up components and systems employed in actual mission shows total integrated attack system capability. 23 min.

Instructions for obtaining prints are contained in OPNAV Instruction 1551.1C.

Makes 200th Barrier Flight

VW-11 Chief Passes a Milestone

The 200th Barrier Force flight, representing a total of 2400 hours flying time over the North Atlantic, was completed in February by R. H. Henderson, AMEC, of VW-11.

A veteran of 17 years Naval service, Chief Henderson is a flight engineer. He flew all but seven of the 200 flights with his present crew—Crew 11.

Commendation for an Idea

Invention will Save Money, Time

At NAS GLYNCO, Ga., a letter of commendation was awarded to Lyle C. Covey, AQ1, of the Aircraft Maintenance Department, Avionics Division, for his ingenuity in developing a portable test unit to detect deficiency in the transmitter tubes of the training radar in T-39 type aircraft. Captain M. C. Norton, Jr., Commanding Officer of the station, made the award.

Covey developed a portable test unit capable of thoroughly testing the transmitter components of the APQ-94-T1 radar. The use of this unit will save money by allowing the re-use of components that would otherwise have been rejected. It will further save many man-hours required to install and remove these components.

SQUADRON INSIGNIA

Attack Squadron 115 was commissioned in 1942 and fought in WW II and Korea. Now assigned to the USS Kitty Hawk, CVA-63, the 'Arabs' fly A-1 Skyraiders and help compose the striking arm of CAW-11. Home-based at NAS Lemoore, VA-115 has received the ComNavAirPac 'E' three times in the last four scoring periods. Commanding Officer is Cdr. D.D. Smith.

VA-115

INSTANT AVIATION SAFETY POSTERS

Superimpose a memo from Gramps over any NavAirNews cover. Shoot a photo of the montage and blow it up to 11x14 inches. Sprinkle copies over the operations and readyroom areas. That's what the Second Marine Aircraft Wing did. Darned clever, those Marines.

NAVAL AVIATION NEWS