

RESTRICTED

NAVAL AVIATION

NEWS



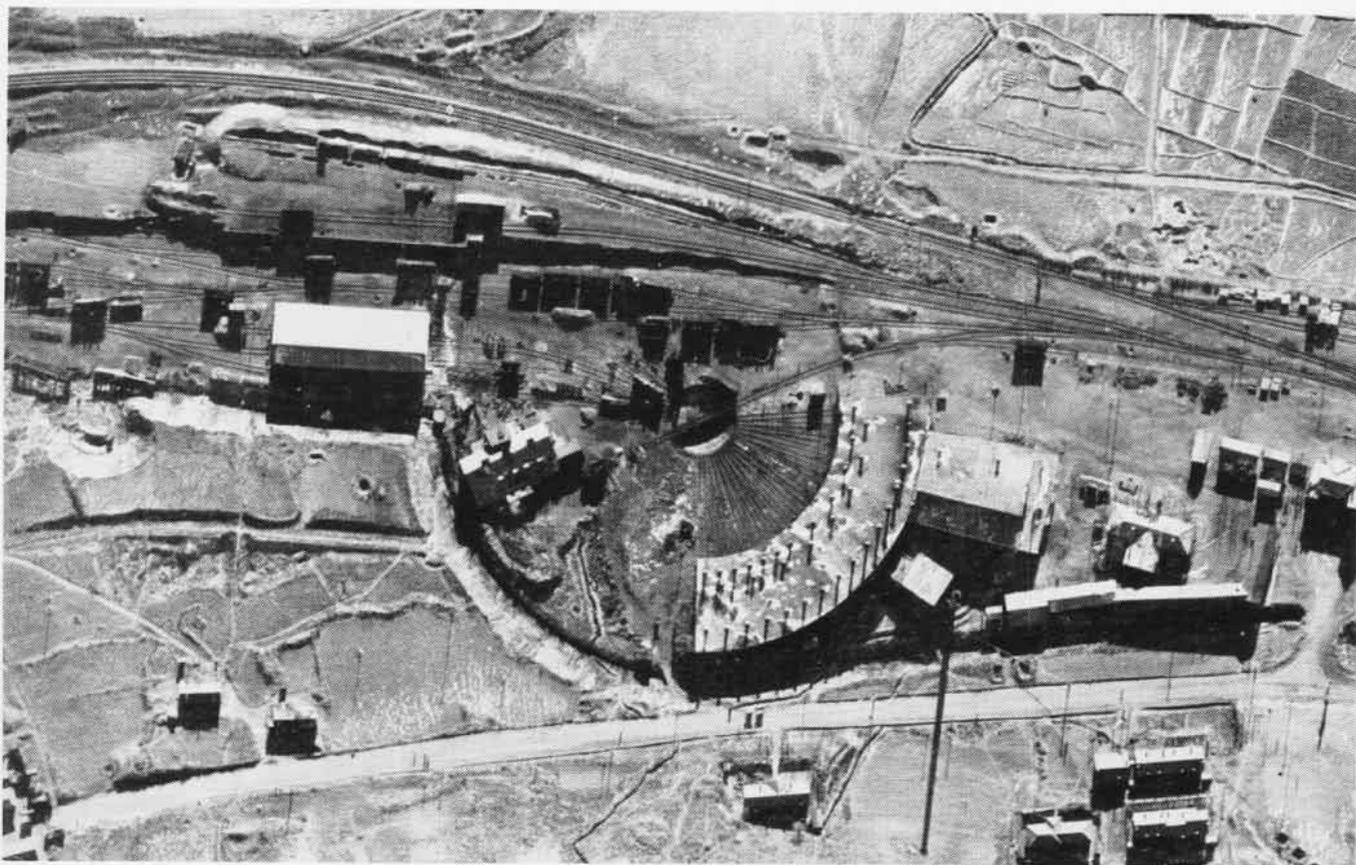
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SECURITY INFORMATION

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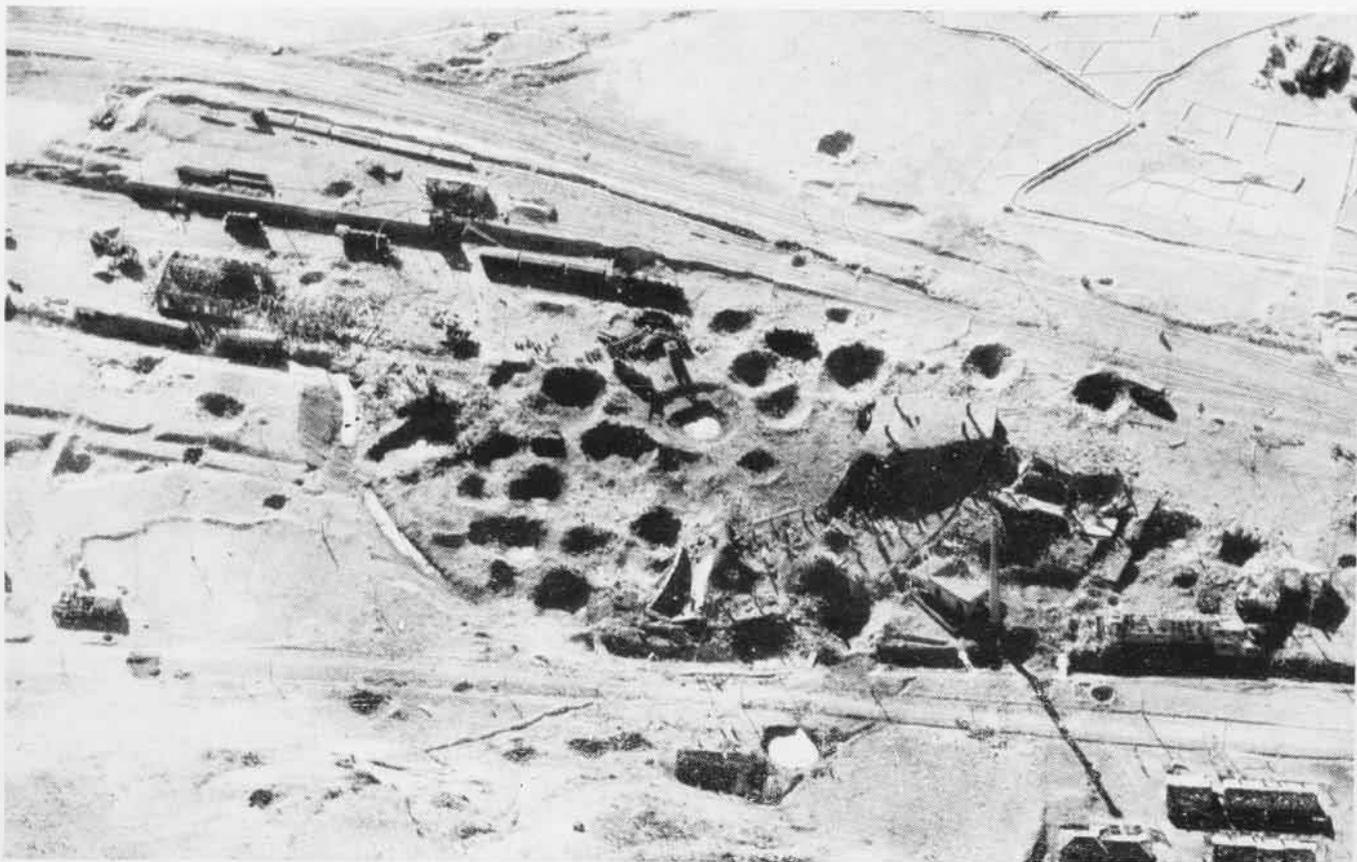




NAVY PINPOINT BOMBING IN KOREA

SKYRAIDERS from Air Group 7 on the Bon Homme Richard showed expert bombing when they wiped out an enemy marshalling yard and railroad turntable at Munsan,

a few miles from Manchuria. The photo above was taken by VC-61 detachment Nan on 8 December. CAG-7 visited on the 9th and on the 11th the lower picture was shot





THE LAST OF THE CORSAIRS

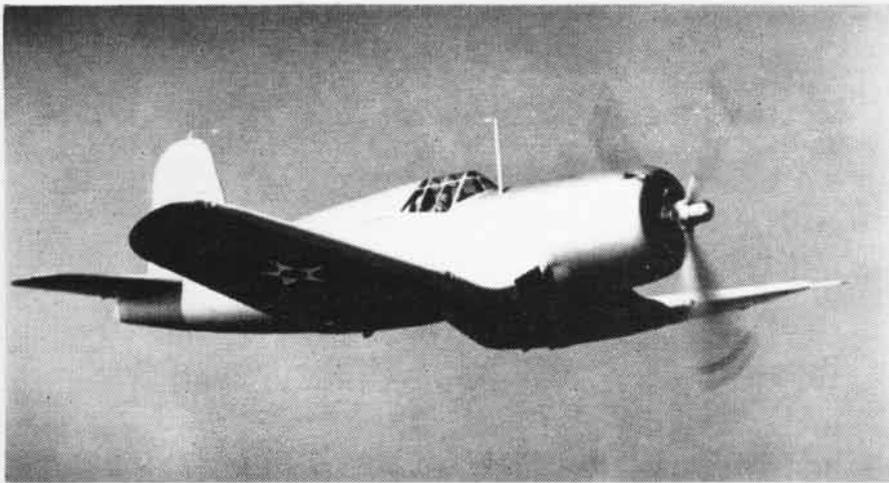
THE YEAR 1938 was marked by crisis in Czechoslovakia and diplomatic defeat at Munich. The hopeful era when it was believed that big disagreements among the nations could be solved by peaceful accords and agreements was reaching an end. As the Germans demonstrated, a show of force was becoming the most persuasive international arbiter. The military airplane, accordingly, moved into new prominence in the arsenals of the strong European nations. Astonished by Colonel Lindbergh's description of the Nazis' great aviation strength, people in the U. S. were experiencing new realization of the destructive potential of air power.

In that year, one of the most formidable Navy-Marine Corps airplanes was the Grumman F3F-2 biplane fighter. Also flying were such planes as the F2F, the SOC, and the TBD. Howard Hughes flew around the world in 91 hours at an average speed of 206 mph, demonstrating for any doubters how the airplane could dominate time and space. The clear inference from his flight was that the feat of a scientific flying expedition

could be duplicated by military aircraft loaded with explosive destruction. The air services of all the big nations were struggling to provide themselves with bigger, faster, more lethal weapons, especially fighters to oppose enemy raiders. The Navy set about procuring an aircraft with performance far in advance of what was then considered the top.

On June 11, 1938, BUAER gave Chance Vought Aircraft the go-ahead to build the fastest fighter in the world—the XF4U-1 *Corsair*. Two years later, the bent-wing *U-Bird* took to the air and zipped over a measured course at 405 miles an hour, faster than the magical 400-mph high mark which, like the four-minute mile in sports, had been persistently reached for but never attained.

After observing the record-making flight—which in some ways paralleled the later cracking of the sonic barrier by turbojet aircraft—RAdm. John H. Towers, then Chief of the Bureau of Aeronautics, told witnesses that they had just seen a demonstration of the fastest, most powerful fighter ever produced in this country.



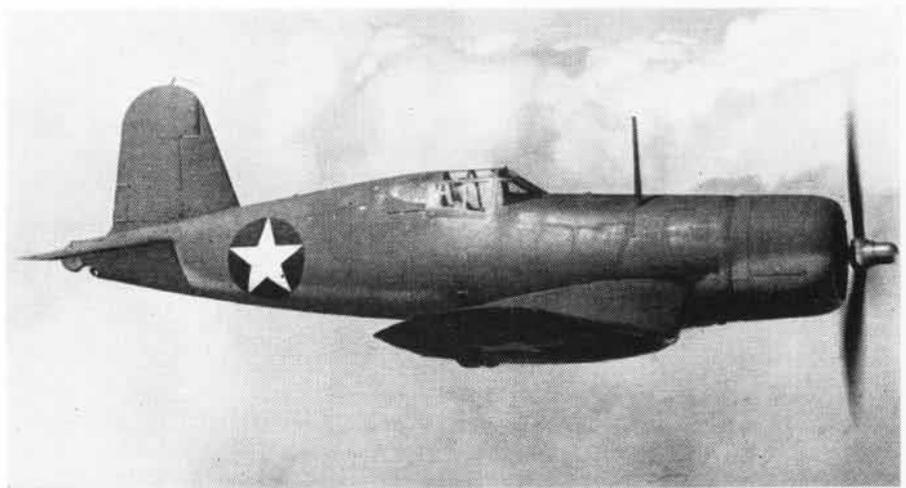
XF4U-1 Milestone in history of fighter development appeared 29 May 1940, when the prototype Corsair topped the 400-mph mark, making it fastest U. S. fighter

THIS WAS the F4U's first superlative. In its lifetime, now drawing to a close, the *Corsair* has tallied many another "first," among them the distinction of remaining in action as a first-line combat aircraft longer than any other fighter ever built. Its "fastest-fighter" record has long since been bested by the newer jets and in its latter days the *Corsair* has relinquished its place as sleek racer to become a hewer of wood and drawer of water in Korea as an attack airplane. But when the last F4U (No. 12,571) is delivered to the Navy early this year—15 years after the first design was drawn—an amazing airplane which has earned distinction for the Navy and for its manufacturer will have gone the way of most old soldiers.

Today, in spite of its impending demise, the *Corsair* is very much alive, for none of the fight has been taken out of the hundreds of them now flying. As the Communists in Korea can testify, F4U's continue to be highly effective combat aircraft. Navy and Marine Corps squadrons in Korea are currently flying seven different *Corsair* models, including the AU-1, the special attack modification. The F4U-7 high-altitude fighter has just started reaching the French Navy.

Down through the years, the *Corsair* has demonstrated its adaptability to various roles and its susceptibility to improvement by surviving 981 major engineering changes and 20,000 production changes. It has served as fighter, interceptor, dive bomber, fighter bomber, escort airplane, attack airplane, and night fighter. In World War II, a number of rare hybrids appeared. Among them were a clipped-wing version, the F4U-1B for the British, the cannon-packing F4U-1C, the bomb-carrying F4U-1D, and the F4U-1P photo plane.

The *Corsair's* distinctive inverted gull wing was designed to serve three good purposes: It raised the fuselage so that



F4U-1 In the production model, the cockpit was shifted three feet aft to make room for fuselage fuel tanks. Low pilot's seat, long nose made for poor visibility

the 2,000-horsepower Pratt & Whitney R-2800 could swing the huge 13-foot Hamilton Standard prop, the largest ever used on a single-engine airplane when the *Corsair* first flew; it permitted use of a short, hence sturdy, landing gear capable of being retracted straight aft; and it cut drag by presenting to the airstream a 90-degree wing-fuselage intersection. These features, familiar to hundreds of pilots who flew the *Corsair* in World War II and in Korea, were brave new departures in 1938, when some of today's Korea *Corsair* pilots were just graduating from knee pants. Most of the *Corsairs* operating in Korea nowadays are late models, with more horsepower and fire power than the World War II versions. But some of them are veterans of the last war. One youngster, a Marine Corps *Corsair* jockey, operating from a Korean advanced base said recently: "The F4U was good enough for my old man, so it's good enough for me."

The *Corsair* has not always had smooth sailing. Its birth, pushed by Navy men with faith in the air-cooled

engine, took place in spite of influential Army Air Corps opinion that the liquid-cooled engines such as those used in the P-38 and the P-40 caused less drag than the big P&W radial proposed for the *Corsair*. Pratt & Whitney, though urged to exert all its energies upon liquid-cooled engines, insisted with the Navy that radials were inherently lighter—a factor believed to offset the drag caused by air cooling. In spite of some opposition, Chance Vought and Pratt & Whitney, with Navy backing, went ahead, and the *Corsair* substantiated—with its great speed—the Navy view. Later, by procuring large numbers of radial-engine P-47's, the Army showed that it had learned a new respect for this type of power plant. In 1943 when Army pilots first flew the *Corsair* in simulated com-

bat with the P-47, the P-51, the P-39, and the P-38, they expressed great enthusiasm for it.

The production F4U-1 which first flew in 1942 showed some marked changes from the prototype. The cockpit had been moved three feet aft to make way for self-sealing fuel tanks in the fuselage replacing integral wing tanks in the "X" model. Four .50-cal. machine guns fitted in the wings replaced a .30 and a .50 firing through the prop and two .50's in the wings which had originally been planned. Fuselage lines of the whole airplane were changed to accommodate the new canopy, and extensive armor plating was installed. The production F4U had a maximum speed rated at 415 miles an hour, a sea-level climb rate of 3,120 feet per minute, and a service ceiling of 37,000 feet. In tests it was found that because of the long nose and big powerplant, the pilot's visibility was poor. So, beginning with the 689th airplane, the cabins were raised and bubble canopies installed, remedying the defect. These craft were designated F4U-1A.

In February 1943, VMF-124, racing into Guadalcanal from Espiritu Santo, took 22 *Corsairs* into a combat zone for the first time, after 25 days of round-the-clock work to get the airplanes ready to fight. At Guadalcanal, fighter pilots such as Capt. Joe Foss, in the tradition of Capt. John Smith and Marion Carl, were tallying high scores against Jap *Zekes* in Grumman F4F *Wildcats*. The Marines' superior tactics accounted for these high scores, because the *Zekes* could out-perform the *Wildcats* in almost every department.

On one of their first combat missions, VMF-124 pilots, who had about 30 hours apiece in *Corsairs*, escorted a flight of PB4Y's all the way from Guadalcanal to Bougainville, an impossible trip for the shorter-legged *Wildcats*. On the way, a *Zeke* hove into sight, tailed along for awhile, and then peeled off without an argument. The enemy pilot was the first to glimpse the fighter which was to fly rings around the nonpareil *Zeke*. The

over the Jap fighters which they never relinquished. In later Solomon Island combat, VMF-124 splashed 68 enemy planes against a loss of only 11 planes and three pilots.

The first *Corsair* ace, Lt. Ken Walsh of VMF-124, made his first kill when 58 *Zekes* swept down upon the Solomons. Walsh splashed three in the mêlée that followed. The next month, flying with a group of Army and Marine Corps fighters over Guadalcanal, Walsh downed three more *Zekes* when his flight was attacked by 25 enemy fighters. In a later encounter, while leading a division of five *Corsairs*, Walsh got into a fight after being jumped by five *Zekes* at 10,000 feet. He chased one ten miles and shot it down. Turning, he ran into nine *Vals*, came up under them and shot down two. Caught between *Vals* below and *Zekes* above, he got two 20-mm holes in his right wing, his hydraulic line was cut, his horizontal stabilizer punctured, and his right tire blown. He

got back safely to Munda, but his *Corsair* was so badly mauled it had to be junked.

Early in the development of the fighter-sweep tactic, by means of which Rabaul was ultimately wrecked, LCol. Gregory ("Pappy") Boyington, C.O. of the famed *Black Sheep Squadron*, led 31 F4U's, 23 P-40's, and 22 F6F's to Rabaul where he plead with the Japs on his radio to come up and fight. The enemy response was disappointing, so Boyington concluded his force was too strong. Next time, he took 48 fighters, mostly *Corsairs*, and the flight shot down 30 Japs, Boyington raising his personal score from 20 to 24. *Whistling Death* was right.

One of the *Corsair's* toughest battles in World War II was not against the enemy. It was getting aboard carriers. The problem came to a head early in 1944 when the attrition rate among Operational-Training student pilots checking out on carriers in *Corsairs* reached alarming heights. Actually an official letter was written which would have killed the *Corsair* for all time as a carrier fighter had it been mailed, because it stated bluntly that F4U's were not suitable for sea duty. "Program Dog", designed to modify *Corsairs* in the shortest possible time, was instituted and the letter was held. Worked out by Chance Vought engineers, the program was aimed at improving the oleo characteristics of the landing gear. It was rushed to completion in 10 days and it successfully removed the prancing *Corsair's* built-in bounce, which had been giving the trouble. Soon VF-301, equipped with F4U's having modified oleo struts, completed 113 landings aboard the *Gambier Bay* with excellent results. An order went out to modify all West Coast *Cor-*



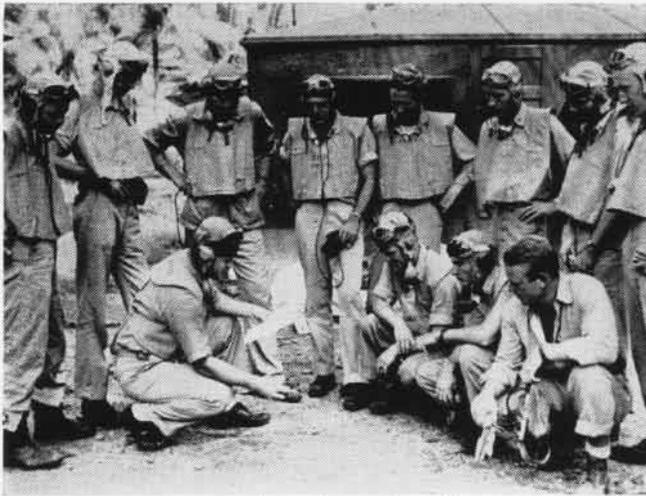
FG-1D Manufactured by Goodyear, this airplane along with F4U-1A and later *Corsairs* had raised pilot's seat and bubble canopy. Marine in picture is over Okinawa

Japs before long began lugubriously referring to the *Corsair* as the *Whistling Death*, and after the war Jap brass admitted they feared F4U's more than any aircraft of any service opposing them.

DURING the course of the war, F4U pilots shot down 2,140 enemy planes against a loss of 189 *Corsairs*—a kill ratio of better than 11 to one. But in the early days VMF-24 pilots, lacking experience in the new airplane, got into trouble. Waiting for a U.S. raid on Bougainville's Kahili Field one day, about 50 *Zekes* jumped the Navy bombers and their escort. They shot down two F4U's, two PB4Y's, two P-40's, and the entire top cover of four P-38's, with a loss of only four *Zekes*. The "Saint Valentine's Day Massacre" was hard to take. That sort of thing never happened again, as the *Corsair* pilots gained a mastery



F4U-7 High-altitude fighter, carrying tricolor markings, is being manufactured by Chance Vought for the French Navy; it's the last of the long-lived *Corsairs*



FAMED WW II Corsair jockeys, the Marine Black Sheep Squadron, is briefed on its next mission by CO, LCol. 'Pappy' Boyington



CORSAIR No. 122 was only airplane to receive official citation from its CO. Plane flew '100 missions without causing trouble'

sairs, and the F4U was finally in business as a shipboard fighter.

At one time, a rash of wing-foldings in midair plagued the Corsair, but the defect too was soon cured.

In 1945, a new Corsair, the F4U-4, started reaching the Pacific. Driven by a monster four-bladed HamStan, this craft had a top speed with water injection of 451 miles an hour and a service ceiling of 40,200 feet.

The water-injection feature added a new dimension to the Corsair's superiority over the Zeke. Lt. Ike Kepford of VF-17, the Skull and Cross Bones Squadron, was one of the first to demonstrate its usefulness. Flying over New Ireland, Kepford's wing man developed engine trouble, forcing him to return to base. Not eager to hit Rabaul without him, Kepford decided to turn back. As he turned, he spotted a Rufe seaplane at 1,000 feet headed north. Kepford dove on him and set him afire. Then he saw 20 Jap fighters of assorted types coming out of a cloud at 16,000 feet. Four of them made a stern run on him. Kepford popped his flaps, and as the first Zeke overran him and pulled up, Kepford got in a squirt and splashed him flaming. He was now at 1,000 feet indicating 200 knots, and three Japs had him boxed. Two new fast Tojos on his right prevented him from turning toward Greed Island. A Zeke on his left forced him to head north. Kepford put his plane into a slight dive with full throttle and water injection. Then he tried a gentle climbing turn and found he was walking away from the Japs with 40 knots' advantage. The emergency power gave out over the western shore of New Ireland, but at more than 400 miles an hour the chase went on. With only 140 gallons of gas left, Kepford desperately made a violent left turn. The Zeke tried to turn inside him, dug his wing into the water, and crashed. Sucked wide, the

two Tojos gave up the chase. Kepford's Corsair checked out perfectly upon his return to base and was flown the next day.

VF-17 and its Corsairs shot down 154 Jap aircraft in 79 days of combat, bagging 60 in one five-day period. Once during a carrier strike (the first) against Rabaul, the land-based VF-17 was assigned the job of flying high cover for the Essex and the Bunker Hill. When 18 Jap torpedo bombers launched an attack on the Bunker Hill, the Corsairs shot down 17 in one pass and got the eighteenth just before it dropped its torpedo.

Proof that the F4U was no longer a beast when it came to landing aboard carriers occurred in operations off Okinawa. On 30,000-foot patrol in Corsairs, three Marines wandered several hundred miles out to sea. They were almost out of gas when the Yorktown heard their distress signals and directed them to land aboard. None of the Marines had ever made a carrier landing. One of

them, after setting down perfectly on the deck, asked: "What was that man doing waving those paddles back there?"

"Brother," they told him, "that was the landing signal officer giving you a waveoff."

By war's end, the Corsair, which had begun its operational career chiefly with the Marine Corps, had joined the Navy in a big way. Produced by Goodyear Aircraft (the FG series) and by Brewster Aeronautical Corporation (the F3A series) as well as by Chance Vought, the U-Bird was one of the top carrier-based fighters, a versatile battle-proven veteran. In 1946, with the war over and jets looming on the horizon as the aircraft type of the future, the Navy nonetheless prudently ordered 300 F4U-5's, on the theory that a top piston fighter was needed to tide the fleet over the uncertain days of jet development. Later, night-fighter and photo-recon versions of this high-altitude fighter were also added.

When the Korean war flared, it was



ON OKINAWA close-support mission, Marine F4U demonstrates ability at low-level work with blast of eight five-inch rockets directed at key Japanese ground installations

good to have these aircraft on hand, for the *Corsair* moved quickly and easily into the role of attack airplane, a type much in demand in almost all of the various phases of the war in Korea.

Flying from carriers and from land bases, F4U's resumed in Korea a type of warfare in which they had pioneered against a different enemy in the Marshall Islands years earlier. They began plastering the Korean landscape with napalm, rockets, bombs, and 20-mm. cannon shells. Winterized versions (F4U-4NL's) operated in the frigid Korean winters, while night fighters (F4U-5N's) struck enemy troops and convoys after dark. One Marine Corps squadron, flying F4U-4B's, an aircraft designed as a high-altitude fighter, last summer set an all-time high combat record by flying more than 1,100 close-support sorties in one month.

In the first 10 months of the war, *Corsairs* accounted for 82 per cent of all close-support sorties flown by Navy and Marine Corps fighters. Last August, an "attack" Marine *Corsair*, piloted by Capt. Jesse G. Folmar of VMA-312 operating off the *Sicily* was forced to act like a fighter when attacked by two MIG-15's. Folmar shot down one *Mig* with a five-second burst of 20 mm., but another *Mig* splashed him. He was picked up in 15 minutes by an AF *Albatross*.

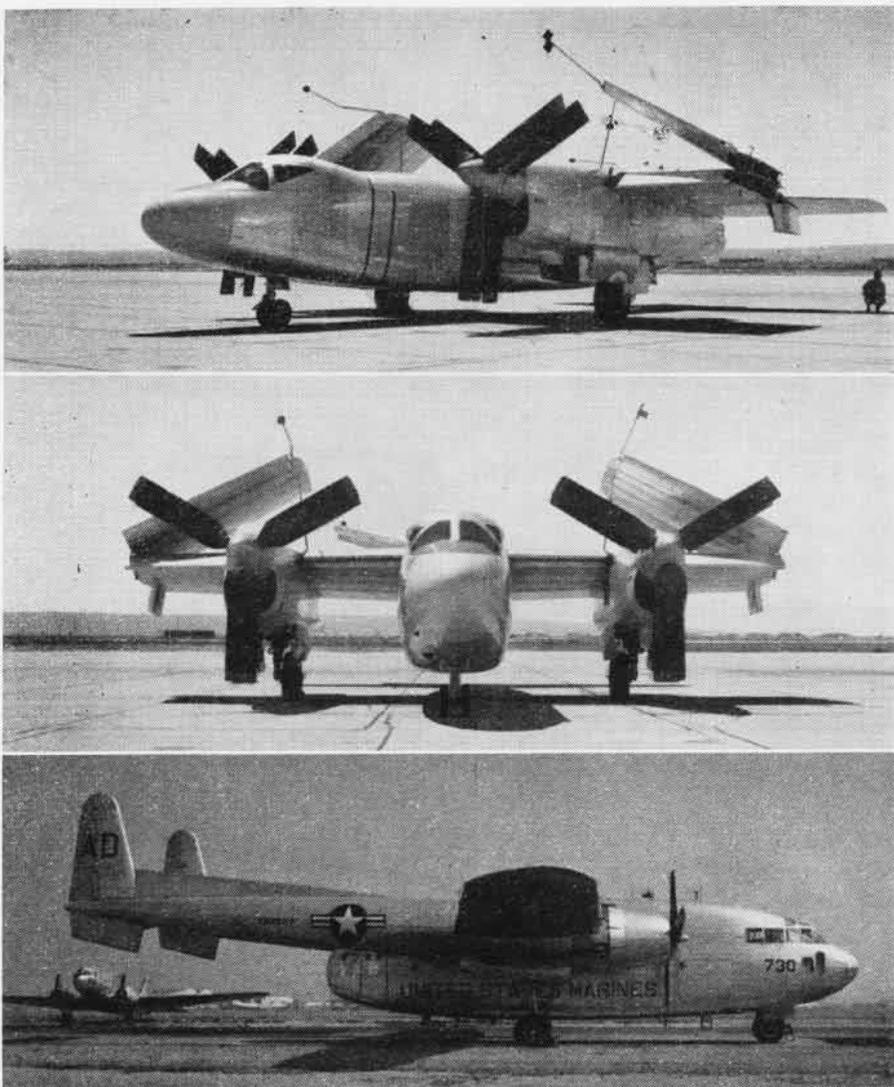
Chance Vought attributes the unprecedented longevity of the *Corsair* to its low cost as compared with the far more complex jets, and to the tactical situation in Korea, for which the F4U is peculiarly adaptable. Perhaps more important, says Chance Vought, is a "remarkably well-designed airplane built around a remarkably fine powerplant."

Leeward Field Helps Gtmo Expansion in Cuba for Jet Operations

NAS GUANTANAMO BAY — Graduates of this wintertime training base in Cuba will be interested in extensive expansion work done to fit Leeward Point field for jet operations.

The *Flying Ubangis* of VF-12 were the first jetsters to use the newly-lengthened 8,000 foot concrete runway, which replaced the 6,000-footer of asphalt. Other improvements at the Point include enlarged parking apron, better lights and drainage, new jet fuel tanks, another hangar, new control tower, quarters for 200 officers and men, and even an officers' club.

Much of the work was done by the Seabees, with a private contractor building the hangar and tower. With the Fleet having extensive maneuvers in the Guantanamo Bay area this winter, McCalla field proved too small and short to handle the heavy traffic and Leeward came in for much use by their planes.



NEW PICTURES of two new Navy and Marine planes, shown here for recognition students, were taken at a recent air show on the West Coast. The top two are the XA2J-1. This big carrier-based plane is powered by two T-40 turboprop engines and counter-rotating propellers. Note the folding tail for hangar deck stowage. The lower plane is the Fairchild R4Q-1 with modified tail, flown by VMR-253. The Packet has elongated fairing on the top of the tail boom and an unusual-shaped projection below the vertical stabilizer. Early models of the R4Q had a semicircular appendage below the boom and later models came out with this eliminated. Tubes on XA2J wings are for scientific measurements in flight.

Aussies, Africans Get P2V Learn to Fly Neptunes with VP-3 Unit

VP-3, ATLANTIC—Eighteen officers and enlisted men of the Royal Australian Air Force and 21 from the South African Air Force have served with this squadron while learning how to fly P2V-5 aircraft.

The men made numerous flights and attended lectures on the *Neptune* and its performance. Two crews of the Australians were tutored by VP-3 pilots, then moved to the west coast and picked up two P2V's purchased by Australia for its naval air arm.

Cdr. George D. Ghesquiere, commanding officer of VP-3, welcomed the South Africans aboard in October when they arrived to start their training course to learn about their new planes.

R6D's Cut Time of TransPac VR-21 Finds New Transport Planes Fast

VR-21, PACIFIC—This FlogWing squadron is the first overseas-based Navy squadron to receive the new R6D *Liftmaster*, getting three of them before the new year.

The new, faster planes were greatly welcomed, especially since they carry nearly three times the payload of an R5D on TransPac flights—16,000 pounds compared to 6,000. It will make the trip in about nine hours instead of 12 or 13. One VR-5 R6D hopped from Atsugi, Japan, to Midway island in seven hours and 20 minutes. It took some F-86 jet fighters five hours and 30 minutes to make the hop recently, which indicates the transports are only a few knots behind the world-record holding jets.



GRAMPAW PETTIBONE

All In A Day's Work!

The story that follows is taken from the statement of a Marine Corps first lieutenant following the successful ditching of an F4U-4.

"After climbing to 5000' with my section leader, I noticed that my oil pressure was 70-75 pounds and oil temperature was 85°. After several minutes, the oil pressure dropped to 65 and the oil temperature read 95°. I checked the trailing edge of my wings for any sign of oil leakage, but there was no oil visible.

"I moved the oil cooler doors to the open position and called Capt. _____ and told him that my oil pressure was below normal and I was returning to base. He 'rogere'd and said that he saw some smoke coming from my engine. I immediately turned north toward Elizabeth City Coast Guard station and called Elizabeth City radio on guard channel.

"After two 'May Day' messages, Elizabeth City radio answered and told me a helicopter was enroute. By this time my oil pressure had dropped to 50 pounds and the temperature was up to 120°. I kept the radio station informed of my position at all times. By the time that I passed the first point of land on my left, my oil pressure had dropped to zero and instruments indicated maximum oil temperature.

"As the engine became rough and started missing, I notified Elizabeth City radio that I was going to ditch. My engine began to smoke excessively and approximately 30 seconds later my engine quit completely. I pulled all the levers aft on the throttle quadrant.

"By the time I had the plane trimmed, I was gliding at 140 knots directly into the wind. I pulled the manual lever to drop my belly tank. I checked my shoulder harness lock, and opened and locked my canopy, kicked the 'dump' valve and then concentrated on my landing. At about 200 feet over the waves, I hit my flaps full down and as my air-speed reached 80 knots, I flared out right over the waves, and braced myself for the impact.

"The initial contact surprised me in that it seemed no harder than a carrier landing. After the first splash of water subsided, I released my safety belt and cleared the plane without further trouble. I inflated my Mae West and para-



raft. As I climbed into the raft, I saw the helicopter approaching. I was hoisted into the helicopter, and the trip to shore was uneventful.

"At no time did I feel panicky. Everything I learned in flight training was used to good advantage, from the initial idea of calling somebody on the first evidence of trouble, to the knowledge learned from the Dilbert Dunker, that the first contact with water will subside, leaving time to clear the cockpit before the plane sinks."

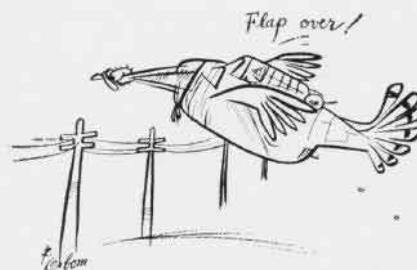


Grandpaw Pettibone Says:

Here's a young lad who had only 700 hours of flight time, but handled his ditching like a veteran. He had learned his emergency procedures, how to use his safety equipment, and was able to put this knowledge to practical use. I wish all pilots could do as well when confronted with an emergency.

Dear Grandpaw Pettibone:

With reference to your article entitled "Flaps Please" in the August issue, I believe that the pilot could have extricated himself from his predicament very simply and safely once he realized that he had started his takeoff roll without lowering his flaps. All he had to do was move the flap control handle to the down position. In less time than it takes to say "emergency brake handle", the F9F would have been airborne.



I speak from experience. On a 4,000 foot runway, after reaching 120 knots with no sign of becoming airborne, I suddenly realized—"NO FLAPS!", put the handle down and popped into the air.

Yours truly,

CDR, USN



Grandpaw Pettibone Says:

I'm inclined to agree with you. Although forgetting to lower the flaps undoubtedly caused the accident, the pilot probably could have avoided the crash had he hit the flap handle.

Some years ago, I landed a TBM in a small civilian field near Phoenix, Arizona. Despite landing in the first 50 feet of runway, I had to use brakes to keep from going off the far end of the short runway.

When I got ready to leave, a few cheerful civilians wanted to give me odds that the plane wouldn't clear the telephone wires at the end of the runway. Having great confidence in the climbing ability of the "Turkey", I took all bets. About three-fourths of the way down the runway, I began to think that maybe the civilians were right. Just then I hit the flaps and the TBM went up just like an elevator, clearing the wires with a few feet to spare.

When my knees quit shaking, I decided that once was enough for that field, and that I wasn't going back to collect.

\$60,000 Blunder

A plane captain was making a routine run-up on a PBM-5 after completion of a 120-hour check, when the port engine suddenly froze.

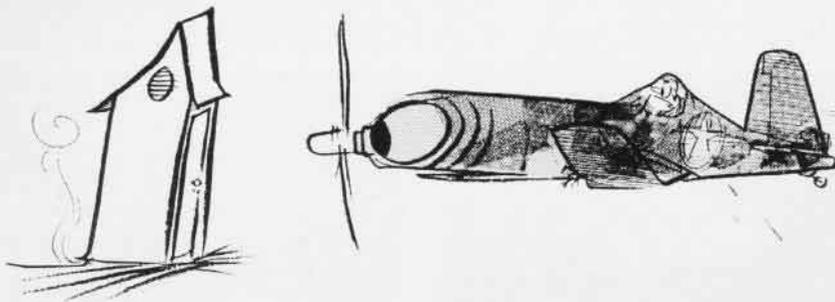
The check sheet, duly signed by the check crew leader, showed that the oil had been drained from the port oil tank and refilled to the proper level. The plane captain did not check the oil quantity before run-up, and it was not until after the engine froze that he discovered that it had no oil.



Grandpaw Pettibone Says:

\$60,000 down the drain—that's what a PBM-5 engine costs these days. Yet if the check crew leader or the plane captain had "been on the ball", this accident would never have happened.

A good way to prevent mistakes of this sort is to require that a placard saying "NO OIL" be placed on the ignition switches or control levers whenever the oil is being drained from either engine. The placard should remain there until the tank has been refilled.



Like a Rose??

Remember the story of the fellow who "came out smelling like a rose"? Well, this guy didn't.

The pilot cleared from Patuxent to NAS MEMPHIS, Tennessee in an F4U-4 with 233 gallons of gasoline. His flight plan called for a true airspeed of 180 knots and an estimated time enroute of three hours and 30 minutes. The distance was stated as 680 nautical miles, and the fuel on board was sufficient for four hours and 15 minutes.

A bit of careful computation shows that this flight plan contained several errors. Had the distance actually been 680 nautical miles, slightly over four hours would have been required to make the flight in a no-wind condition at a TAS of 180.

Actually, the distance to Memphis is less than 680 nautical miles, but this factor was just about balanced out by a steady 10 knot head wind which existed all along the route.

The pilot tried to maintain a ground speed of 180 knots and used power settings of 1750 RPM and 31" Hg. This made for a much higher rate of fuel consumption than he had predicted. About 120 miles from Memphis, he first noticed that his fuel consumption was higher than anticipated. He checked fuel remaining versus distance to go and decided that he could still complete the flight.

Just east of Summerville, Tennessee, on the northeast leg of the Memphis radio range, at an altitude of 6,000 feet, his engine began to cut out. He increased mixture to "rich" and turned the auxiliary fuel pump to "emergency". At about 4,500 feet the engine quit completely. Two quick attempts to contact Memphis Tower and one to contact Memphis Radio failed, and the pilot began his preparations for an emergency landing. He started an approach to a long straight stretch of Highway 64, and put his wheels down, only to discover that crowded conditions on the highway made this plan impracticable. He retracted his wheels and made a crash landing on the shoulder of a railroad right-of-way.

At 90 knots, the right wing tip dug

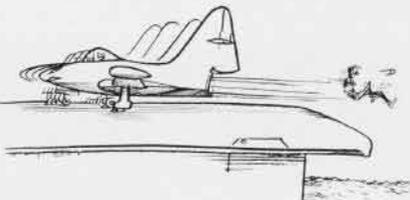
into the side of the railroad embankment. About 10 feet further on, the left wing tip sheared off the upper third of a telephone pole. About 60 feet from the point of initial impact, the fuselage struck the ground and the Corsair slid along in a fairly straight line until the left wing hit another telephone pole, chopping it off at ground level.

The impact with the second telephone pole turned the Corsair into the backyard of a rural dwelling. A privy loomed ahead, and the plane plowed into it. Fortunately it was unoccupied, for the F4U came to rest on top of it. Both the privy and the plane suffered strike damage.



Grandpaw Pettibone Says:

A fitting end to an unplanned flight,
I have no tears for this lad's plight.
But after they hoisted the damaged plane,
They should have made this guy remain.
They should have made him stick around
For certain duties on the ground.



Watch Your Step

Not all aviation accidents occur in airplanes. Every year a good many Navy men are killed in connection with flight operations, even though their work doesn't require them to set foot in a plane.

For example, a few months ago a plane handler was walking forward on the flight deck with an arm load of chocks. Flight operations were in progress and the safety stanchions were down. The man walked right off the bow of the ship and was never seen again.

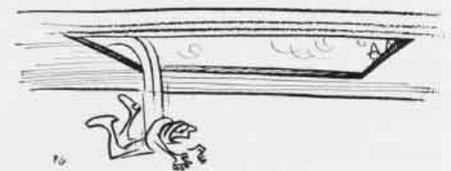
There have been other cases where flight deck personnel have gotten in the prop wash of planes turning up and have been blown back into a moving propeller . . . or stepped into a jet exhaust and been blown overboard.

The rush to get on the elevator before it starts down has resulted in several casualties . . . the more severe variety occurring when the elevator has a real head start.



Grandpaw Pettibone Says:

For some reason these accidents don't seem to happen to fellows who have just reported aboard or to old-timers. The first group are probably protected by their own natural caution in an unfamiliar environment, and the old-timers have seen a



few shipmates get hurt and therefore pay more attention to what they're doing. For the most part, boys who get hurt are the ones who have been around just long enough to get the idea that they can do their jobs and think about something else at the same time. That's mighty risky business when you are working around airplanes.



It will be
all right by the
time I get there.

RESERVE LSO GOES ON A TRAINING CRUISE



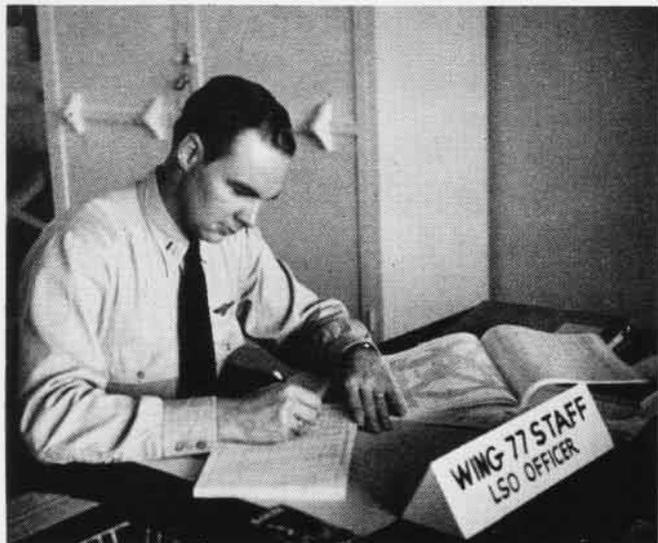
AFTER bidding his wife goodbye, Lt. Strick reports to medical office for his physical



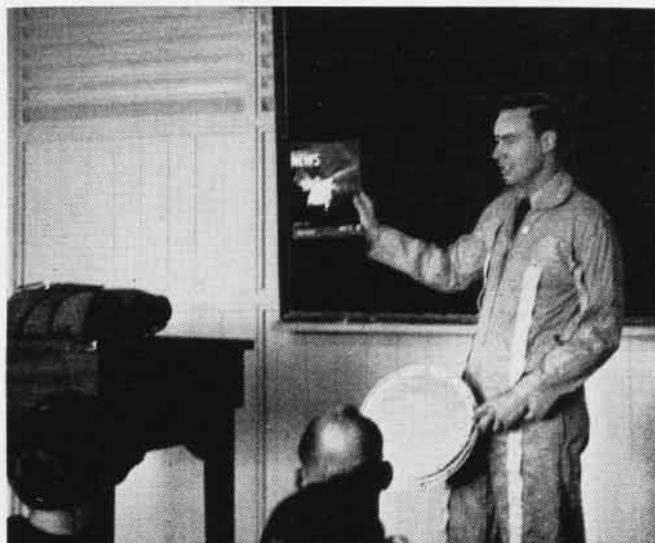
GOOD eyesight is essential for a pilot, so Lt. Strick's eyes are carefully checked on



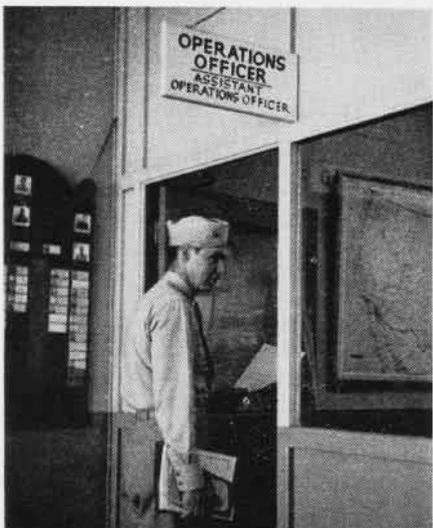
EXCITEMENT often shoots blood pressure up, but Lt. Strick passes with flying colors



TRAINING really begins in earnest now for the LSO. Here Lt. Strick completes some paper work at his desk in Wing Staff 77



DRESSED in his LSO suit, Lt. Strick conducts a class in LSO instruction. Note NANNEWS which the LSO uses for illustration



TIRED of the paper work that has kept him at his desk, the pilot decides to go aloft



CHECKING out in Operations Office, Lt. Strick and enlisted man review flight plan



LATEST word on what kind of weather he may encounter is given by station aerographer



NOT STRICTLY a one-plane pilot, he prepares to board an F6F for another flight on cruise

LAST APRIL a Reserve Training Photographic School was organized at NAS LOS ALAMITOS. Neophyte photographers received their training during their regular monthly drill periods.

As a climax for the ground training phase of basic photography at Los Alamitos, one of the students of AWS-77 was given a picture assignment during his annual 14-day training cruise. He was limited to a "picture magazine" type of story, following the current trend in the use of natural light only.

On these pages, NANews follows an individual Naval Air Reservist through the various activities in which he participates during an annual training cruise. The subject of the story is Lt. Philip C. Strick, Landing Signal Officer of AWS-77, Section D.

The majority of the photographs show Lt. Strick in his duties and at play during his first week aboard NAS LOS ALAMITOS. During the second week, Lt. Strick reported aboard the USS Valley Forge in a refresher-observer status. The photographer went along.



THIS IS really the life! Lt. Strick likes to fly, particularly on his training cruises, when he can get away from his desk. He checks controls of his Beechcraft



RECREATIONAL facilities at Los Alamitos are excellent. Even during annual training cruise, when there's plenty of work to do, LSO finds time for swim and sunning



ABOARD the USS Valley Forge, the LSO and photographer observe carrier operations as LSO signals plane coming in for the landing



CRUISE almost over, Lt. Strick decides to take some pictures aboard the carrier. He waits for jet to touch down on deck

KOREAN AIR WAR

Just One More Chance

Professional Japanese jiu-jitsu artists were given a lesson in the western art of wrestling by a non-professional Marine Lieutenant Colonel.

Lt. Col. Donald D. Blue, a member of the *Wolf Raiders* squadron of MAG-12, was watching a 12-man team of jiu-jitsu artists who were providing entertainment for a group of Japanese dignitaries and Marine officers. They were guests of a company of Air Force officers at a Japanese hotel. Most of the onlookers were impressed with the exhibition of Oriental art displayed with split-second timing and bone-crushing blows.

Asked what he thought of the artists, Lt. Col. Blue said, "They're all right, but I think any good collegiate wrestler could pin their best man."

The harmless comment was quickly passed on, and Blue found it was being interpreted as a challenge. He won wrestling honors at the U. S. Naval Academy, but it had been more than 10 years since he had trained for the sport.

With the strong moral support of his Marine buddies, the 34-year old colonel found himself facing the young, 175-pound team champion. While the Marines cheered, an agreement was made that there would be three minutes of action or one fall.

At the timer's signal, the jiu-jitsuist and the Marine moved together for grip. In a split-second maneuver by the champion, Blue found himself in midair with the floor coming up fast. He reached for the Japanese and seized him by his head and shoulders. The two hit the floor with a thud. Changing from a half-nelson to a cradle hold, the amateur pinned the professional in less than 20 seconds.

The bewildered champion regained his feet and informed Col. Blue that he wanted to go two falls out of three, to which the *Leatherneck* agreed.

Again the wrestlers closed and crashed to the floor. Once again the *Gyrene* pinned his adversary. The champion hauled himself to his feet again and demanded a three out of five match. About that time, the Marine figured it was time he quit, so Col. Blue was declared the wrestling hero.

Valley Forge Returns

The USS *Valley Forge* is back in action with TF-77 in Korean waters. She is the first carrier to return to the Korean conflict for the fourth time.

The carrier is under command of



SILHOUETTED against the setting sun, a Skyraider from VA-923 lands safely aboard *Oriskany* as deck crews begin preparations for the night and early morning strikes

Capt. Robert E. Dixon with Cdr. F. E. Bakutis as exec. RAdm. Apollo Soucek, COMCARDIV 3, is also embarked for his second tour in the Korean area. Operating aboard is CAG-5 using *Corsairs*, *Skyraiders* and *Panther* jets.

Nearly 100 men who have served aboard the carrier are beginning their fourth tour of Korean combat duty with the ship. Of these, 12 are "Plankowners," having served on the ship since she was commissioned on 3 November 1946.

Sore Tails

Three fighter pilots of VF-193 aboard the *Princeton* think the Navy should issue thick soft cushions on certain flights in the future. The pilots made the suggestion after returning "foresore" and weary from a five-hour-and-17-minute target combat air patrol.

The pilots took off the *Princeton* at 1100 to fly protective cover over Navy ships whose operations were being hampered by Communist shore battery shelling. After hours of circling, the pilots finally landed their F4U's back aboard at 1617. The pilots were Lts. (jg) Red Riedl and Mac McCullough and Ens. Dick Walters. McCullough flew four and a half hours during the recent rescue of Riedl from 125 miles behind the Communist lines.

When the planes got back to the *Princeton* after the five-hour hop, they were down to 25 gallons of gas.

Real Hospitality

If the Army Tenth Corps had known they were going to have visitors, they might have baked a cake for the three Marines who were their guests.

Lt. Col. Walter F. Gregory, Capt. William D. Fritz and Capt. Donald C. Potter of the *Devilcats* squadron were forced down by bad weather and a low gas supply at a tiny Army airfield of the Tenth Corps lines. They were returning from a close-air-support mission.

They were given clean Army clothes and some shaving gear and invited to dine as guests of Lt. Gen. I. D. White, corps commander. They were further honored by being placed near the head of the general's table with most of the top officers of the corps surrounding them. The Marines surmised it was the Army's way of showing their appreciation for every airman in Korea.

Architectural Expert

Travelling over North Korea at 500 miles per hour doesn't give a man much of a chance to study Oriental architecture, but Lt. (jg) Jerry Barkalow is considered an authority on the subject.

Barkalow, a *Panther* jet pilot aboard the USS *Essex*, was headed for the Punchbowl area on the eastern front when he noticed some unusual activity around a "temple" which appeared more military than religious.

Barkalow decided to take a good look

at the suspicious edifice. Closer examination revealed that a large warehouse had been converted by camouflage into a pseudo-temple. He dropped two small bombs at low altitude and hit the bulls-eye. The building disappeared in a cloud of debris. Barkalow had touched off the biggest ammunition dump destroyed in many weeks.



IT LOOKED bigger in the air! Capt. W. J. Berg stands in flak hole he got from "Papa"

It Looked Mammoth

Marine Capt. W. J. Berg has learned to approach the "old man of the mountains" with extra caution. The "old man" still has teeth.

Capt. Berg, a pilot with the *Devilcats* squadron of the 1st Marine Aircraft Wing in Korea was blasting enemy artillery positions near "Papa-san Mountain" with napalm when a 37 mm. shell ripped through the right wing.

The pilot managed to bring his *Corsair* home safely and surveyed the damage the shell had done. He admitted it looked big from the ground, but in the air that flak hole looked absolutely mammoth.

Singed His Whiskers

A member of the *Wolfraiders* squadron in the *Heavy Hawler* group is thumbing his nose at North Korean sharpshooters after a close shave.

Capt. M. E. Olinger was bombing front line Communists. He headed his plane straight down at the target while a 50-caliber bullet was headed straight up. The bullet passed right through Olinger's windshield into the cockpit. Except for the momentary surprise that the near brush with death gave him, he was uninjured and continued with the attack.

Just a Bump

While flying an armed reconnaissance mission near Tanchon, Lt. (jg) Bill Egan of VF-783 spotted a large building with an unusual amount of activity



"MISSED me," Capt. M. E. Olinger declares after bullet passed through his windshield

around it. On his way down to strafe the building in his F9F-5 *Panther* jet, his wingman remarked that they were being shot at by the Reds.

Seconds later, Egan felt a small bump shake his plane but passed it off as normal air turbulence. He didn't know it, but his tip tank had been riddled by anti-aircraft fire. He had also sustained shrapnel hits in the fuselage.



TATTERED tip tank is what's left on Lt. (jg) Bill Egan's jet after he felt small bump

On his way back to the *Oriskany*, he spotted several small boats and rocked up on a wing to take a look at them. That's when he noticed his tip tank had been battered by ack-ack. Back aboard the *Oriskany*, highly-trained maintenance personnel went to work on the



PAYING off his Rose Bowl bet, Marine Sgt. J. Holmes totes Sgt. R. Gamble on A-frame

plane and the following afternoon his jet was back in the air, harassing Communist supply routes.

Long, Long Trail

The trail home for a pilot after dumping a load of high explosives on the Reds looks mighty long, but it seems to stretch into eternity when there's a



IT WAS just another day for Capt. R. Petersen as he brought flak-riddled Corsair home

three-foot hole in the right wing.

Marine Capt. Robert W. Petersen, a fighter-bomber pilot with the *Devilcats* squadron of MAG-12, has had the harrowing experience three times in the past four months. He's getting to be an expert on nursing his crippled *Corsair* home.

The third time was the most rugged. Capt. Petersen was attacking a Red supply dump near Kongnamjwa-ri and was pulling out of a dive when his plane was hit by enemy anti-aircraft fire. One shell ripped away part of the wing and flipped the *Corsair* on its back, but Petersen quickly regained control and managed to fly the flak-riddled plane back to the airbase.

On his second hop with the *Devilcats*, he lost a large part of the plane's tail section. On another occasion his plane was badly damaged by a secondary explosion set off by another attacking fighter-bomber. He landed both safely.

Safe Stowage

In the intelligence hut of MAG-33 in Korea, an officer carefully turned the combination lock by the bleak glare of a naked electric bulb over the safe. Three of his staff stood in the shadows and watched eagerly. The tumblers clicked into place and the safe swung open.

The officer flipped past the folders and papers marked "Top Secret" until he reached a tin box in the rear corner of the safe. He brought the box out and carefully lifted the lid.

"Fruit cake, anyone?" he asked.



BLASTED generator building and demolished penstocks near Kyosen, North Korea left this area useless. Strike was made by CAG-7 pilots flying from Bon Homme Richard

One-Legged Stand

Returning from a combat mission over North Korea, Marine 1st Lt. Paul A. Manning of the famous *Checkerboard* squadron, approached the field and attempted to lower his landing gear. Only one wheel came down. All his efforts to lower the other wheel failed.

Lt. Manning didn't relish the idea of making a one-wheel landing, so he tried to retract the lone gear to permit a belly landing. It was "no soap," because the extended wheel was "frozen" and wouldn't come up. There was no choice but to make a one-wheel landing and pray for the best.

Manning set the plane down, rolled about 100 yards on the single wheel and gently settled the plane on its left wing tip. It skidded to a stop. Manning escaped injury and his *Corsair* was only slightly damaged.

The Modest Type

To hear Cpl. Jack E. Shaune, ordnance man with the *Wolfraiders* tell it, there's nothing eventful in de-fusing bombs. It's all just in a day's work.

Three live bombs accidentally fell from a MAG-12 plane taking off on a strike against the Communists. One bomb exploded as it hit the ground, digging a crater 35 feet in diameter and almost 15 feet deep. The other two lay nearby, threatening further explosions.

The Marine corporal was standing about 400 yards away. He ran to the unexploded bombs without hesitation and



HE'D MUCH rather have made belly landing, but Lt. Paul Manning came in on one wheel

immediately de-fused them. Despite the personal risk he took, Shaune said, "Just about anyone would have done the same thing. I removed the fuses and that was it."

Night Attack

Capt. Joseph E. Burns of the Marines' *Flying Nightmares* squadron was escorting an Air Force B-26 near the northeast coast of Korea when SSgt. Marion S. Haviland, radar operator of his F7F *Tigercat*, spotted an enemy 37 mm gun emplacement. The Marines dove in on the gun flashes, knocking out the gun position and setting off a holocaust of secondary explosions all around it.

"We must have hit their stock pile of shells," Capt. Burns said. "The whole area seemed to be exploding."

On the same flight, Burns and Haviland strafed two enemy trains, destroying several boxcars, as other pilots of the *Flying Nightmares* bombed and strafed a troop concentration massed for a surprise attack east of Kaesong.

Where'd It Go, George?

MAW-1's VMO-6 is turning out to be the most versatile squadron in Korea.

It might be called a dirty trick because, while the pilots fly light unarmed observation planes, controlling air strikes and artillery strikes over enemy territory during the daylight hours, the landing strip at their home base is often moved to a new location.

The pilot and observers on the first flight in the morning take off from their home base and land at their new strip. The planes are refueled, new pilots and observers take over without ever dropping a stitch.

Lots of Ammunition

Naval air operations in the Korean conflict have been accurate and effective, plaguing the Communists all along their supply routes. Through October 1952 over 700,000 runs-on-target have been made in Korea.

Navy and Marine Corps aircraft have dropped over 116,000 tons of bombs, fired over 58 million rounds of machine gun ammunition through October. That month set a mark for tons of bombs dropped by naval aviation units with over 8,400 tons expended.

His Lucky Number

It would take a lot of doing to convince Lt. J. J. LePage, Reserve pilot from Detroit, Michigan, that a certain number doesn't exert a certain amount of influence in his life.

Lt. LePage flies a *Corsair*, plane number 45, in the Korean area. Returning from a mission, he touched down on the deck of an aircraft carrier, marking the 45,000th landing aboard that ship. The coincidences didn't end there. The carrier on which he landed was the USS *Valley Forge* and her number is CVA-45.



NUMBER 45 is his lucky number. Lt. J. J. LePage has just completed 45,000th landing

Never a Dull Moment

If there were more than 24 hours in the day, Marine Capt. Robert W. Hohl of MAG-12 could manage to pile up his flight time. In a 24-hour day, he managed to lead three separate flights against Communist troops and military installations.

The most satisfying of his three missions came when word was flashed to the pilot's ready room that a patrol of South Korean Marines had been cut off by the Reds at a point south of Kaesong. Within 35 minutes, Capt. Hohl and his four-plane flight reported to a forward air controller. The South Koreans were pinned down by enemy fire and unable to rejoin their unit. The fliers spotted their targets and went to work, dropping their bomb loads, then strafing the enemy-held positions for another 15 minutes.

Earlier that same day the captain led another four-plane flight on a reconnaissance mission near Haeju. They sighted a string of boxcars loaded with food and supplies at a rail siding. The Marines managed to destroy three, but seven were left unmarked.

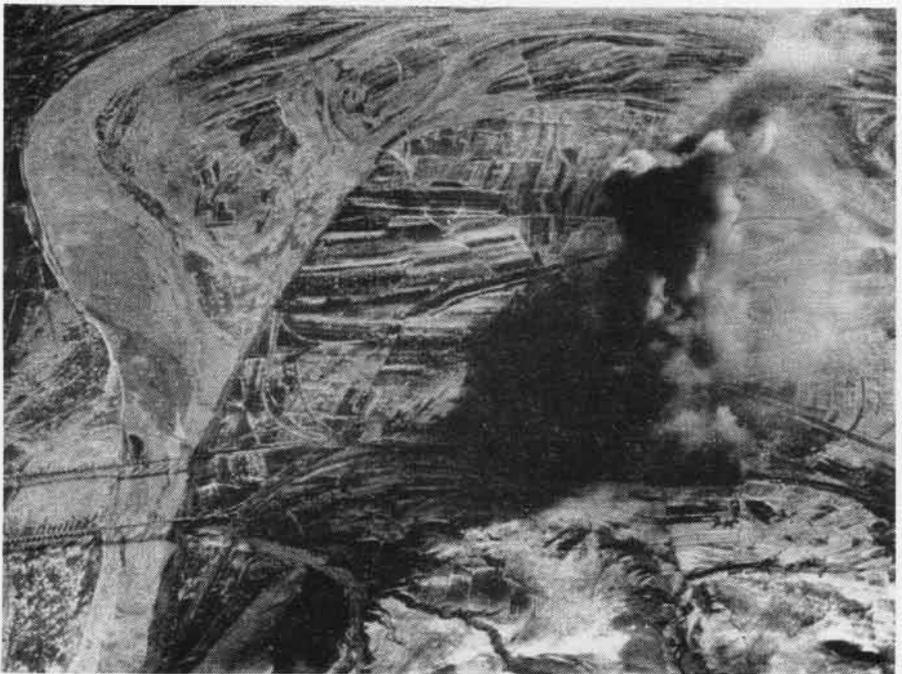
Capt. Hohl was granted permission to lead another flight to finish off the train. Ordnance men hung a new load of bombs on the *Corsairs* and the energetic *Leatherneck* returned to the target with three fresh pilots. This time they destroyed six more cars, leaving only one standing and that was badly damaged.

Holiday Greetings

The Marines gave the Reds a punch in the Punchbowl area as a token of their gripe at not being home on Christmas eve. They blasted them in 25 of their personnel shelters. The MAG-12 strike left a Yule fire bellowing smoke



CATCHING forty winks before re-arming planes *Oriskany* sailors rest on "greeting card"



RANGING farther north than ever before, planes from the *Essex* blast the railroad marshalling yards at Hunyung. The *Tumen* River at the left marks Manchurian border



PLANE captain Chiles gets ready for strike as he removes tie-down lines on *Skyraider*

and flame 200 feet in the air. The Marine pilots made sure the Reds would never celebrate New Year's eve in those shelters.

At the same time, MAG-33 pilots reported that British controllers flooded the radio with holiday wishes. The *Leatherneck* pilots returned the greetings individually before going in on their targets.

Pilots from the *Oriskany* carried greetings for the Reds as they took off on their combat missions. Sailors aboard the carrier painted New Year's messages on the bombs for personal delivery to the North Koreans.

He Didn't Get Away With It

One Marine corporal at a forward Marine airbase of MAW-1 seemed to be outdoing all the rest of his buddies when it came time for mail call. He was getting mail from women by the bag full.

The boys in the *Wolfraiders* squadron of MAG-12 were baffled at his popularity with women at home until someone

let the secret out of a mailbag. The corporal was caught in the act of mimeographing the same letter to more than 50 girls.

The Lid Really Blew

The Marine *Checkerboard* squadron, VMA-312, flying from the *Badoeng Strait* has been harassing the enemy every chance it gets. That's why the pilots thought that the Communists were throwing the works over Chinnampo.

Maj. James Baker was leading a flight north of Chinnampo when he spotted an ammunition dump. He got the "big one" for the day by direct hits with rockets and napalm. The resulting explosions were of tremendous force. Other aircraft flying several thousand feet above were rocked so severely that, at first, the pilots thought they had been hit by AA fire.

Into the Enemy's Heart

One of the few enlisted pilots flying combat missions in Korea today has been recommended for the Distinguished Flying Cross. He is Master Sgt. Richard R. Vottero of the Marines *Deathrattlers* squadron.

He was one of two *Corsair* pilots who escorted a helicopter into the heart of Communist-held North Korea to effect the rescue of Congressional Medal of Honor winner, Colonel Robert E. Galer, former CO of MAG-12. Col. Galer had been forced to parachute from his flaming plane 50 miles behind enemy lines.

The sergeant has flown close air-support missions for every friendly division on the battle front during his five months with the *Deathrattlers*.



DRONE PRIVATEER WITH CAMERA PODS ON WINGTIPS FLIES UNDER F7F MOTHER PLANE CONTROL; NAVY WILL USE DRONE TO CHECK GUIDED MISSILES

PRIVATEER NAVY'S NEWEST DRONE

THE NAVY today has the world's largest target drone aircraft, a P4Y-2 converted at NADC Johnsville and sent to Pt. Mugu for use as a guided missile target.

The Navy actually is converting three of the big patrol planes so they can be flown without crew and will use these to determine if they are satisfactory as surface-to-air and air-to-air guided missile targets. San Diego O&R shop will convert other P4Y's as drones later.

Less than 12 months ago Naval Air Development Center, Johnsville, was given the job of transforming the three *Privateers* into target drones—the first four-engine "true drones" required by the Navy.

Work of this sort was undertaken as far back as 1943 when the Navy produced a type of drone for use from bases in England. These early PB4Y-1 planes had a very basic control system and could never be returned and landed. Since they were designed to carry a big bomb load and be dived into their targets—concrete submarine pens—they were not built to be returned.

Pilots took the *Liberators* off, raised the gear, climbed to altitude and set up the required power conditions. This eliminated need for the pilots, who bailed out and passed control of the drone to the airborne control plane.

The first "king-sized" P4Y drone was delivered to the Air Missile Test Center at Pt. Mugu during December. It was a refined "bird" compared to the '43 model described above. The requirements for the P4Y-2K drone were a set of controls that would enable the plane to maneuver as necessary, assure reliabil-

ity of control, simplicity and low cost. The last two requisites are essential to production of an expendable drone.

The operational specification stipulated remote-controlled takeoffs and landings from runways 200' wide by 5000' long, with a 50' obstacle at the end. Takeoff had to be accomplished with crosswinds up to 20 knots from either bow.

For simulated Nolo or actual Nolo flights (no live operator) only a single ground operator is necessary for takeoff or landing. The pilot of the F7F or F8F "mother" plane can fly his own and the big four-engine drone at the same time without any difficulty.

When flown with a safety pilot but under remote control, the installation is designed so the pilot can "overpower" any of the controls or throw out the remote control system and fly it himself. The big drone can be controlled remotely from a ground station, an airborne mother plane or by a shipboard control station.

OPERATIONS can be conducted visually or by out-of-sight control, using radar and GCA to tell the operator the altitude and position of the drone. Unusual aerial maneuvers are not required. However, the P4Y-2K drone is able to execute standard rate turns under remote control. The autopilot, a P-1K, is adjusted so the angle of bank can be as steep as 45°, angle of climb 30° and the angle of dive to 45°.

The *Privateer* is equipped with two camera pods on its wingtips. Cameras inside them will photograph guided missiles fired at the drone so that the miss distance and other flight data can

be calculated.

A system for retaining any desired altitude has been incorporated in the plane. Once it has reached any altitude, a button on the control box on the ground or mother plane is pushed, and the drone will retain that altitude until the controller pushes another button.

It is possible, by remote control, to apply differential braking on the landing gear. When the brakes are keyed on, deflection of the rudder to the right increases applied pressure on the right wheel, while the pressure on the left brake is held constant. This feature enables a drone operator to attain precision performance on takeoffs and landings.

The presence of four power plants in place of the single engine required the development of a coordinated power plant control system. Several complex synchronization systems were tried and abandoned in favor of the one adopted. The propeller control limits have been set carefully at 2400 rpm for the lowest limit of the prop control range. This is uncommonly high for long engine life, but this is not a factor with a target drone where any flight may be its last. This setting also assures that the BMEP is not exceeded for most operations. Mixture controls remained in auto-rich for all operations.

In the event of engine failure, the automatic feature of the rudder trim tab will hold the plane on course. The prop of the inoperative engine can not be remotely secured or feathered. It is possible for the P4Y-2K to receive substantial damage and still be controllable and brought back to base for landing.

THE RELATIVELY high cost of a four-engine drone system requires that every precaution be taken in system design to prevent accidental loss. Landing gear and flap systems are considered fool-proof and exhaustive cycling of both was part of the acceptance test.

An interlock system on the flaps insures they will not come up through a stray or inadvertent signal until the landing gear is cycled. This prevents mashing on takeoff and the critical part of the landing approach. In the event a waveoff is necessary, there is sufficient power available for additional passes with the gear and flaps down.

The radio receivers in the drone are essentially the same that have been used successfully in innumerable F6F-5K drones. No signals are transmitted from the drone to the controller.

A feature of the P4Y-2K is that it can be controlled effectively by radio signals at a distance of 30 miles. The plane carries enough gasoline in its main tanks for 10 hours of flight. Thus it is possible to take the drone off by remote control, climb to altitude under control of the mother plane, proceed to the firing area, make a minimum of 10 passes of 15 miles each and return to base.

The ability of a ground controller to fly the drone from a distance by radar when he cannot see it will enable the pilot in the mother plane overhead to escape an eventuality where a guided missile's guidance system might lock on his plane instead of the drone and shoot it down.

The basic *Privateer* airplane weighs about five tons more than the Air Force's B-17 drones which were used at the Bikini atom bomb tests and other places, making it the largest drone in operation today.

—by LCdr. B. F. Emge,
NADC Johnsville.

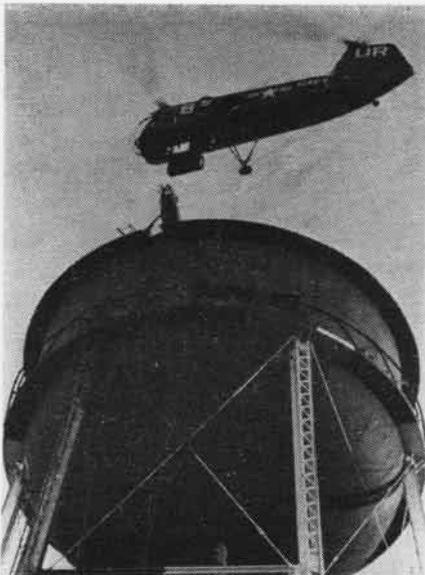
From Fighter to Transport Marines Convert Pilots in New School

2ND MAW, CHERRY POINT—Marine Air Group 35 is taking fighter pilots fresh from Korea and making transport co-pilots out of them, in line with the Marines' policy of having pilots who can fly anything.

A new co-pilot school was opened by the group. New arrivals, many of them ex-fighter pilots from Korea, get eight or nine weeks of training in the R4Q *Flying Boxcar* and the R5C transports.

Eighty hours are spent in ground school and 60 hours in the air. Because maneuvers were taking so many transport planes away from training, Col. Ben Z. Redfield, group commanding officer, set aside six planes for sole use of trainees until schooling was finished.

'COPTER RESCUE ATOP WATER TANK



HUP HOVERS, HOISTING INJURED IN STRETCHER

ADD ANOTHER first to the long list of jobs that the versatile helicopter can perform. Lt. Suker and Chief Dunning of HU-2 at NAS LAKEHURST discovered the chopper's latest capability when they made a rescue from an empty water tank at Point Pleasant, New Jersey, using a helicopter.

J. A. Breece, 20, one of six men repairing and repainting an empty water tank, fell 30 feet into the tank. When he recovered consciousness a few minutes later, Breece appeared to be in great pain. Fellow workmen informed Dr. D. Pyle, who had been summoned with the emergency squad from Point

Pleasant, of the extent of injuries.

A speaking tube was rigged from the ground to the tank. Symptoms were given the doctor via the speaking tube, and he determined that Breece was suffering from a broken neck. While a Stokes litter was being obtained from the Manasquan Inlet Coast Guard Station, Dr. Pyle instructed the workmen atop the tank how to administer morphine to the patient to ease his suffering.

The morphine was administered and shortly thereafter the litter arrived. Breece was brought to the top of the tank. There were very strong winds blowing, and with Breece in critical condition, there didn't appear to be any safe way to lower him to the ground without the litter spinning and banging into the tank structure.

At this point someone made a happy suggestion that a helicopter be called to the rescue. Police Chief Pearce of Point Pleasant called NAS LAKEHURST, and within 15 minutes, a helicopter from HU-2 was at the scene.

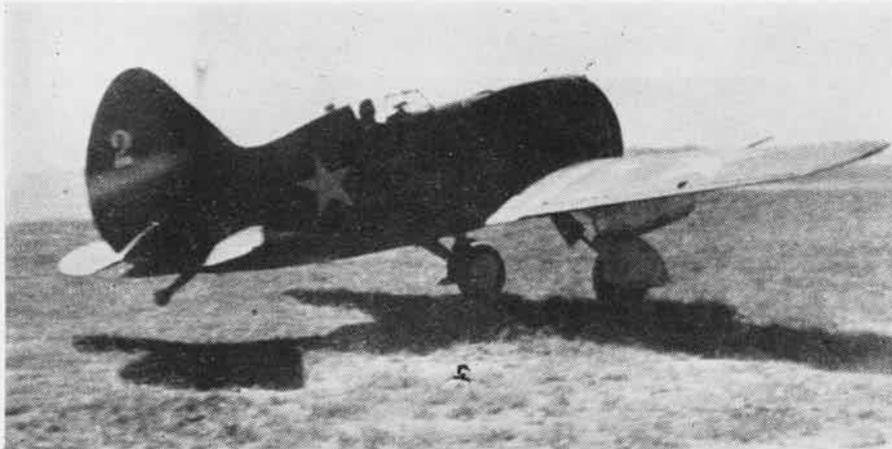
Lt. Suker landed beside the tank to instruct the workmen atop the tank in the use of the helicopter sling which would be lowered to them. He also warned them of the helicopter's powerful downwash, then took off and hovered while the litter was gently lifted and made snug under the helicopter.

The chopper rose up from the tank and settled to the ground, depositing the litter beside an ambulance waiting to rush him to the hospital.



HOW MANY different types of aircraft can you spot on the deck of the HMS Eagle, one of the British Navy's newest flattops? The jets in the foreground are Vickers Armstrong Attackers. The pod beneath the fuselage is the British-type belly tank, which resembles our radar guppy dome. The in-line engined fighter in the middle background is the Fairey Firefly and behind that are radial-engined Blackburn Firebrands. The Attacker is powered by Nene engines and is rated at slightly more than 500 mph. A newer swept-wing version, the Swift, has tricycle landing gear. Note far-outboard wing fold on the plane.

X SPANISH AIR POWER X



STUBBY-looking Soviet I-16 Rata fighter was used during civil war by Republican forces which lost the fight; flight data from these were used to develop better, faster aircraft

AIR INTELLIGENCE

break of the second World War. Since Spain had just concluded an exhausting war, Franco quite wisely chose to avoid aligning his country with either side and thus was able to steer a course of neutrality for the duration. Because the Allies needed all the aircraft they could build to enlarge their own squadrons, Franco had no qualms in going to his old ally, Germany, for modern aircraft. At that time plans called for a first-line air force of around 1500 aircraft.

SINCE the German Luftwaffe at that time was generally accepted as the most formidable and best organized air force in the world, it was selected as a model for the reorganization of the Spanish Air Force (*Ejército del Aire*). In addition to the aircraft obtained from Germany, license rights were procured for the manufacture of German military aircraft in Spain. The Germans augmented this aid with aircraft jigs, tools, technicians, and production advisors.

In 1941, the Instituto Nacional de Industria (INI) was created to act as a development and investment corporation for Spanish industry. This agency runs one-third of CASA, which is the largest airframe and aircraft assembly organization in Spain. CASA, the only aircraft concern considered capable of producing modern aircraft in quantity, has four factories which build various types of aircraft of national and foreign design for the Spanish Air Force. A number of Heinkel-111 twin-engined light bombers, with the Spanish designation CASA-2111, have been turned out at the Sevilla factory.

Another CASA plant outside of Madrid has been engaged in the production of obsolescent Junkers-52 tri-motor

SPAIN is a controversial subject in the North Atlantic Treaty Organization and thus far has remained outside of European military pacts and alliances. One reason for the continuing interest shown Spain is the country's important strategic position with reference to both naval and air bases. Of primary importance is the country's geographic position in relation to the rest of Europe. Geographically, Spain is far enough removed from Communist air bases in Eastern Europe to afford some security to aircraft based on the Iberian Peninsula.

This favorable strategic position, however, is offset by Spain's impoverished economic difficulties brought about by a devastating civil war and a form of government that has resulted in the isolation of the country. One effect of this isolation with respect to the Spanish Air Force has been to stabilize the Spanish aircraft industry at about the 1936 level of design.

Spain's entry into the field of aviation was marked by the establishment of an airmail and passenger service in 1921.

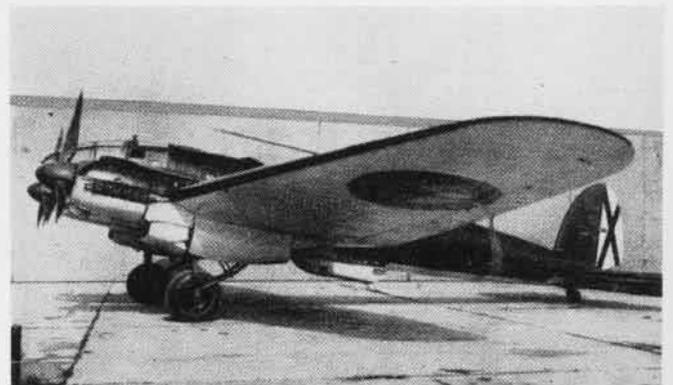
An aircraft industry was set up two years later, but continual shortage of raw materials served to impede the growth of the young industry. Added to these difficulties was the political and economic unrest which led eventually to the civil war in 1936.

During the turbulent years of the civil war, military aid including aircraft, was dispatched to Franco by the Germans and Italians, while on the other hand, the Republican forces received aid from the Russians. The thorough testing received by these aircraft resulted in valuable combat data being incorporated into new and improved models. Two Soviet planes employed in Spain were the I-16 *Rota* fighter and the SB-2 twin-engined bomber. The German ME-109 fighter, the HE-111 twin-engined bomber, and the JU-52 transport proved later to be the most famous aircraft to come out of the Spanish testing ground.

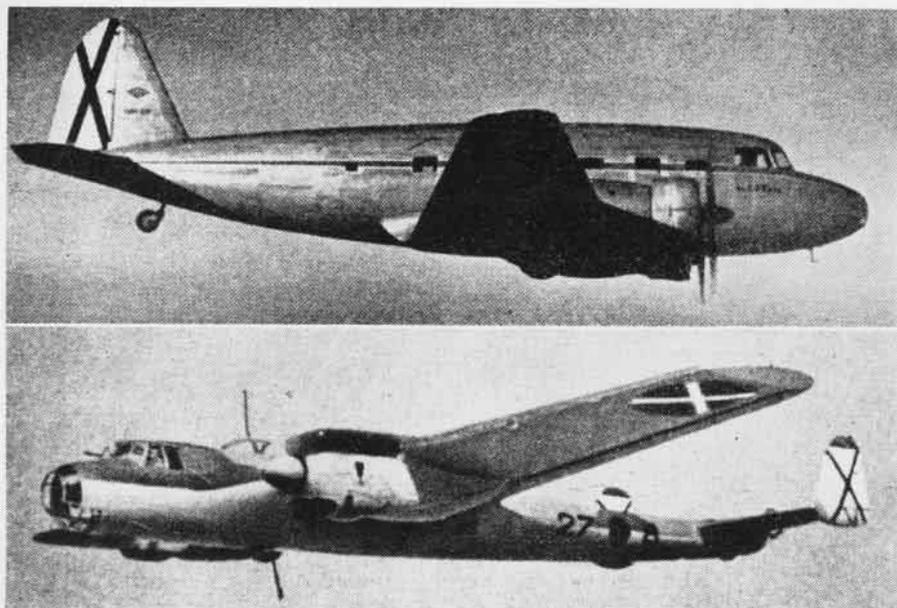
Following Franco's victory in 1939, reconstruction of the war-torn aircraft industry was ordered and aircraft construction was given priority. This revival was interrupted, however, by the out-



THREE-engined JU-52 transport, borrowed from Germans, got its combat tests during Spanish civil war, flying with Franco units



CASA-2111, Spanish version of the feared Heinkel-111 light bomber, was another German fighting plane used by the Francoites



TRIM twin-engine transport, the CASA-201, is 1949 Spanish design with British engines for power; below is Dornier DO-17, twin-tailed light German bomber relic of civil wars

transports for the Air Force. More recently, however, work has been in progress on twin-engine aircraft of Spanish design. In 1949, CASA completed the first of these transports, the 201, and has subsequently put the aircraft into production. This aircraft designated the *Alcotan*, carries a crew of two and 10 passengers. Power is provided by two radial engines rated at more than 400 h.p. each at take-off.

Flight tests are being carried out on another native design, the CASA-202 *Halocan*. It is similar to the R4D and is designed to carry fourteen passengers. Still another native design yet to be built is the CASA-207. This aircraft resembles the U. S. Martin 202.

The oldest of CASA's plants is located at Cadiz. It was originally founded for seaplane production, but in recent years a series of Buchner BU-131 *Jungmann* two-seat biplane trainers have been turned out.

LA HISPANO AVIACION, located in Sevilla, has in production, the HA-43 and the HA-1109J. The HA-43 is a two-seat monoplane trainer, while the HA-1109J is a development of the ME-109, with a different engine. Instead of the German DB-605 engine, the HA-1109J was equipped with an upright Vee Hispano-Suiza. Armament consisted of three 20 mm cannons. Maximum speed was around 355 knots.

INTA, an agency under the Spanish Air Ministry, produced a series of primary trainers. These include the operational HM-1 and experimental HM-3,

HM-5, and HM-9.

The Iberavia firm noted for its gliders, also produces light planes, I-11 and IP-2. These aircraft are intended for training and flying clubs.

Engines for the JU-52 transport were produced by the ENASA company located in Barcelona. Production of this engine, the Wright-Cyclone 1820, was discontinued following completion of the order for JU-52's.

Since the Spanish Air Force has had to rely solely on the production of domestic plants, the status of the Air Force is reflected in the number and type of obsolete aircraft delivered by the industry. Technical guidance previously derived from Germany and Italy, is no longer available. Spain does not possess the know-how or the research facilities necessary for independent development, therefore, the industry has maintained an anachronistic position of containment.

Willy Messerschmidt, German engineer, has been assisting the aero firm ENASA in the completion of some of

their projects. This firm recently completed assembly of a number of standard German ME-109 fighters.

The Spanish aircraft marking consists of an outer red roundel, an inner yellow roundel, and a red center. The horizontal tail section is marked by a black x.

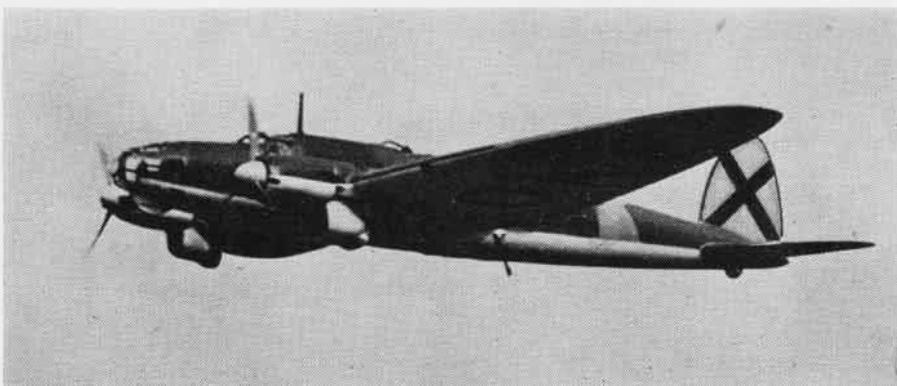
Tactical aircraft are camouflaged.

ESTABLISHED as an autonomous service in 1939, the Air Force since that time has continued to operate a miscellaneous collection of German, Italian, Russian, British and American aircraft. As replacement parts for these aircraft were needed and could not be secured, large numbers of them have been grounded.

Of these aircraft, the most modern are the ME-109 fighter type and the HE-111 light bomber. Because of the scarcity of replacement parts, less than 50% of these aircraft are in condition to be assigned to tactical units.

Naval aviation in Spain is nonexistent, since little attention has been given to maintenance of seaplanes or facilities. In spite of limitations imposed by shortages of aircraft and gasoline, which limit flying time, Spanish airmen continue to retain their enthusiasm for aviation. This deficiency has been modified somewhat by government-subsidized gliding clubs which have served to spread interest in flying. Gliding is popular in Spain and competition for membership in these clubs is keen. Furthermore, from a military point of view, the clubs offer a constant supply of potential pilots for the service.

In finding a solution to these problems, it is apparent that Spain is hopeful that arrangements will eventually be worked out which will clear the way for foreign use of bases and facilities in exchange for outside aid including military assistance. The well-organized air force is anxious to re-equip its squadrons with the latest jet aircraft, while at the same time, the aviation industry desires to establish a modern and self-sufficient industry.



GERMAN-built Heinkel-111 light bomber flew for Franco in civil war; a few of these still are around, although lack of spare parts keeps most old aircraft from being flown today

AIR INTELLIGENCE

VP-24 FLIES FROM ARCTIC TO TROPICS



VP-24'S 'BLUE BLOODS'—FROM COLD, THAT IS—IN THULE DETACHMENT



ARGENTIA'S HORIZONTAL SNOW MAKES HANDLING, MAINTENANCE HARD

THE CRY, "Crews, man your planes!" is likened to the Revolutionary War phrase, "The shot heard round the world", in that it echoes from the Florida Everglades to the Arctic ice caps—if you happen to be with VP-24.

Pilots drawing assignment with *Shelton's Batmen* are likely to muster with the Air Force at Eglin AFB, Fla., at the NATC PATUXENT RIVER or the Naval Station, Argentia, Newfoundland.

Those places with far-off sounding names, such as Goose Bay, Labrador, or Thule, Greenland, have heard the surge of power as VP-24's P4Y-2's and crews "take it rolling" in their varied assignments from ice reconnaissance to survival research.

The missions are as varied as the locations. Personal equipment in this outfit varies from bikini-type bathing suits to fur-lined parkas. The supply department's "non-itch" union suits—or as the squadron calls them—Confederate suits. Most of the time the squadron is in a climate that calls for a fur cover for the calendar picture of Marilyn Monroe—and that is mighty cold.

Pilots assigned to the VP-24 detachment at Thule where social life includes a woman behind every tree—but no trees—have three-fold duties. Number one is to keep warm. Numbers two and three are international ice reconnaissance and ASW patrols. On these missions the crews are instructed to report any underwater movement as a submarine contact. As Lt. Bernard Batchelder, officer in charge of the detachment, puts it: "It has to be a submarine because not even a demoralized seal would be seen in these waters."

Planes HA-9 and HA-6 had the unique experience of RONing at Bluie West 8, Sondrestrom Fiord, Greenland, because

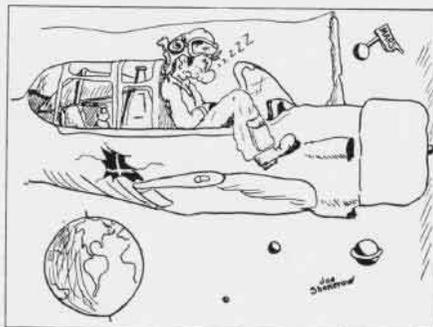
of lack of daylight before proceeding to Thule. At the fabulous Thule Air Base, Air Force "hotels" were furnished the detachment and were shared with Canadian and RAF pilots, and members of the Navy Hydrographic Office. Briefings and lectures on northern Canada, the formation of Arctic ice, its flows and shifts were furnished by Henry Kaminsky, Hydrographic Office ice expert.

Patrols offered "Cook's Tours" of Perry's Monument on Cape York and his cache and jumping-off spot, Conical Rock, ending with views of Greenland's glacier coast—a trip Navy recruiters should publicize.

Squadron Pilots Fly Wrong Way

Unlike the birds, VP-24's sailors fly north in winter and south in summer. The detachment at Eglin AFB, Fla., is proof of that statement. Their tour of duty began in humid June only to end late in October. It was rumored BUMED was evaluating the human anatomy to see if it gained or lost tension from hot to cold weather, as control cables do.

Confusion was an orderly thing at Auxiliary #2, Pierce field, when the Navy and Air Force got together. At the mention of latrine, the Batmen of 24 assumed it was the French word for



DILBERT HAD A SLIGHT HANGOVER

"tureen", a container for food, and immediately sat down at the chow table.

Lt. Walter Honour, officer in charge, tried to explain rank difference to an Air Force airman. "Now son, in the Navy the word 'captain' is confined to addressing the commanding officer and a two-striper in the Navy is a lieutenant not a captain. Savvy?"

The airman is now awaiting a firing squad for addressing a visiting Marine captain as lieutenant. His only explanation: "Isn't the Marine Corps part of the Navy?" The unit left Eglin when it was learned Air Force personnel thought the sailors in dungarees were part of the Air Force boat squadron.

Up in Argentia, Newfoundland, the cold and fog make ground controlled approaches almost a constant requirement. Maintenance problems and work load increased 40%. Electricians and power plant mechs heard in their sleep, "Number One is falling off on the left mag. Wring it out!"

Capt. F. B. Schaede, commanding officer of the Naval Station, and Cdr. E. J. Murphy, skipper of FASRON-106, cooperated to make the invasion of VP-24 easier. Secondary to normal patrols and ice recon, the squadron acts as stand-by for the Coast Guard's air/sea rescue unit, headed by Cdr. O. D. Weed.

To the squadron's credit, along with the Royal Canadian Air Force maritime group—Squadrons 404 and 405 under Air Commodore A. D. Ross—is the part both groups played in the ASW coverage for *Operations Noramex II* and *Main Brace*.

The squadron got its nickname "Batmen" because of its former mission of operating with the guided missile by that name which used radar to lock onto targets to track in for the kill.

BUAER YEAR SPARKS AIR PROGRESS

"The time has come," the Walrus said,
"To talk of many things;
Of shoes—and ships—and sealing wax—
Of cabbages—and kings—"

THE OLD *odebenus rosmarus*, walrus to you, of Lewis Carroll's *Alice in Wonderland* had a very good idea. It's an especially good idea when one forgets about cabbages, kings, 'n stuff, and confines the talking to the many things that have come forth in the last 12 months from the well-worn halls of the Bureau of Aeronautic's "W" and "N" buildings.

Frank Knox, the late SecNav, once said that modern warfare is an intricate business about which no one knows everything and few know very much. He was right, but BUAER, from its desk-jammed offices on Constitution Ave. to its remotest field activity and smallest contractor, has filled in many of the gaps. During 1952, BUAER has announced advancements in the science of air/sea warfare ranging from the hydro-ski principle which enables naval aircraft to land on water, mud, sand, ice, snow or runways to the perfection of methods of manufacturing nuts, bolts, screws and rivets from titanium to reduce dead weight in aircraft.

The past year saw two new attack planes, the XA3D and the XA2J, make their first flights; a new ASW plane, the XS2F, appeared on the scene, as did the XF2Y, XF10F, and production FJ-2 and F9F-6 jet fighters. New items such as the electronic fuel gage, yaw dampers, composite approach lighting system, honeycomb core sandwich aircraft construction, ceramic coating and the J40-WE-8 turbojet engine are just a few of the results sparked by the BUAER team to keep our control of the sea within the realm of possibility.

Alaskan and Canadian bush pilots have used the hydro-ski principle for many years as an emergency measure in landing snow ski equipped planes on lakes. Adaptation to naval aircraft has been the result of five years of development involving design studies, wind tunnel and towing tank tests, as well as

experimental installations on existing planes. Hydro-skis improve aerodynamic performance and hydrodynamic characteristics of planes so equipped, and permit them to land on water, mud, sand, ice and a variety of other surfaces.

FIRST application of them to an American combat type aircraft is on the XF2Y *Sea Dart* which was taxi-tested in December. This delta wing plane is powered by two Westinghouse turbojets, and has elevons which combine the action of ailerons and elevators.

Another new aircraft, the XS2F, incorporates a new concept in anti-submarine warfare by tying into one package the work formerly done by two planes. The twin-engine XS2F carries both radar for locating submarines and the weapons to attack them when found.

The XA3D, powered by two J-40 turbo-



FIRST canted deck configurated carrier, *Antietam*, steams out of New York harbor for extensive operational tests of the new deck

jets, is the first all-jet Navy attack bomber. When teamed with the XA2J, which also made its first flight in 1952, the striking power of carrier task forces will be increased extensively. Both are among the largest aircraft designed for carrier operations and are capable of delivering large payloads at long range, high altitudes and speeds.

Production models of the swept-wing FJ-2 and F9F-6 came off the assembly lines in 1952, and successfully completed carrier qualifications during August along with the F7U-3 and the F2H-3. '52 also saw one of the last of a long line of *Corsairs*, the AU-1, go into action with the Marines in Korea.

The first flight of the P2V-6, a new model *Neptune*, was in October. This aircraft is designed for mine laying and ASW chores in addition to its other offensive and patrol missions. It is powered with two Wright turbo-compound engines, and has a pressure fueling system for fast-feeding fuel in shifting tanks or emptying wing tanks.

ATTACK, fighter and patrol planes weren't the only types receiving BUAER's attention. The first production R7V *Super Connie* took to the air in November, and the K-5 gas-turbine, single-rotor helicopter made its debut in January '52. The K-5 is already in action in Korea with VMO-6.

Guided missiles zoomed forward in 1952 with the commissioning at NAMTC Pt. MUGU of a supersonic wind tunnel providing continuous high-speed air stream. Expected performance of missile models can now be tested and



FURY jet is stopped by camera on tip of *Coral Sea's* flight deck near climax of catapult shot. The FJ-2 completed carquals in 1952, and is in production for fleet squadron use

evaluated. PT. MUGU is also using the NACA technique of using free-flight, rocket-powered missile models to determine aerodynamic characteristics which cannot be obtained in the wind tunnel. This is at a fraction of the cost of firing actual missiles.

Just before Christmas the Navy Martin *Viking* #9 reached an altitude of 135 miles at the White Sands Proving Ground. This *Viking* was somewhat shorter and fatter than earlier models. It used liquid oxygen and alcohol propellants to boost it aloft.

New Navy airborne equipment included an electronic-type fuel quantity gage. Because the energy available in liquid fuel is proportional to its weight, the new gage is calibrated in weight of remaining fuel aboard. A counter-type indicator totalizes and presents the fuel-weight picture. The gage system is designed to use fuel quantity signals to operate pumps, switch valves, and provide high and low level signals.

The jet age has brought many new terms into use, not the least of which is "mach number". For proper control of his aircraft at high speeds a pilot must know mach, just as at slower speeds he needs to know airspeed. At one glance he can now see both with BUAER's simultaneously indicating mach-air speed indicator.

"Dutch roll" and "snaking" are more words in the jetman's dialect that are strange to middle-ageing propmen of pre-Pearl Harbor vintage. Fundamentally, these terms concern oscillations at high speeds which must be controlled and stabilized. Dutch roll and snaking oscillations can happen faster than a pilot can think, so BUAER has come up with a yaw damper which thinks ahead of Dutch, the snake, and the pilot. Sensing the dutch roll or snaking, the device actuates the rudder surface to damp out the oscillation.

Droppable gas tanks have always been a source of headaches to those trying "to get there firstest with the mostest." Among other difficulties, they take up too much storage space aboard ship. Ask any man who has cracked his skull on one during "darkened ship." Things are looking up, the Navy has a standard nestable tank which can be easily assembled under combat conditions, and 170 of them can be stowed in the same space formerly occupied by a mere 100.

In peacetime it's a nuisance to remove ice formation on aircraft parked outside. In wartime it could be disastrous. To remedy the situation, BUAER came up with a lightweight and sectionalized anti-icing protector. They are currently undergoing service test on P2V-5's and F9F-5's. Also to combat ice, an alcohol-glycol based non-inflammable de-icing



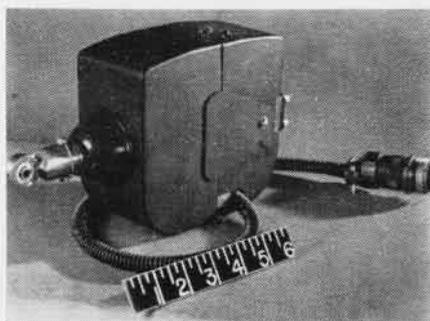
CDR Alley and Mr. Wilcox of BuAer examine new CAX-12, 70-mm high speed aerial camera



ACCELERATION camera used for tracking first 300 ft. of guided missile flights at Mugu



TRODI in use aboard carrier for accurate determination of aircraft rates of descent



DUTCH roll and snaking in jets eliminated by small size yaw damper servo actuators

fluid has been developed to replace the old alcohol types. It is efficient down to a chilly -65°F , and can be applied over wings to keep off frost.

The new Mk 4 anti-exposure suit will enable dunked pilots to survive two hours in 28°F water. As a companion piece to the new suit, BUAER has a thermal boot in the mill which will protect down to -40°F . Not only will this boot keep feet toasty, but it offers ankle protection in parachute jumps too.

AIRCRAFT construction methods and techniques have kept pace with aviation's growth since the Wright brothers frequented Kittyhawk 50 years ago. During 1952 BUAER, the USAF, material suppliers and the aircraft industry made pronounced improvements in materials and fabrication techniques. As a result, applications of aluminum honeycomb core sandwich construction have substantially increased. The "sandwich" offers less weight, more rigidity, improved aerodynamic efficiency and potentially lower manufacturing costs.

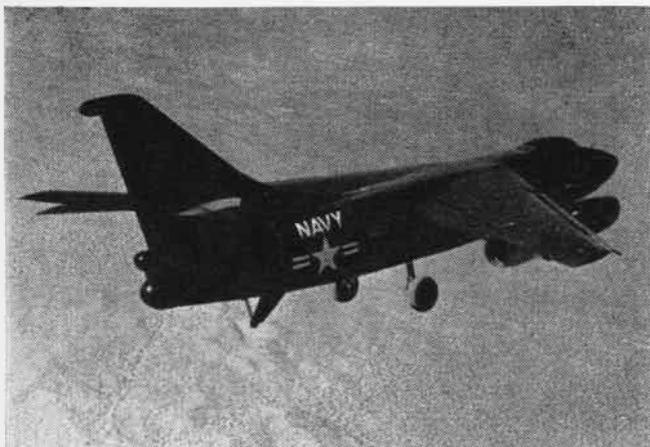
Another 1952 structural development is low temperature curing adhesive for structural metal bonding. With the new method, aluminum structures and metal rotor blades can be repaired without the present cumbersome and expensive heating facilities for curing.

Some jet engine parts subject to oxidation and erosion at high temperatures have been given a ceramic coating. Service testing has demonstrated that the life expectancy of coated parts has been materially increased. Longer life for future fleet aircraft should result from a low cost method of coating small aircraft parts with aluminum and titanium. New processes of chromium plating and for nitriding titanium will also improve wear resistance of airplane parts.

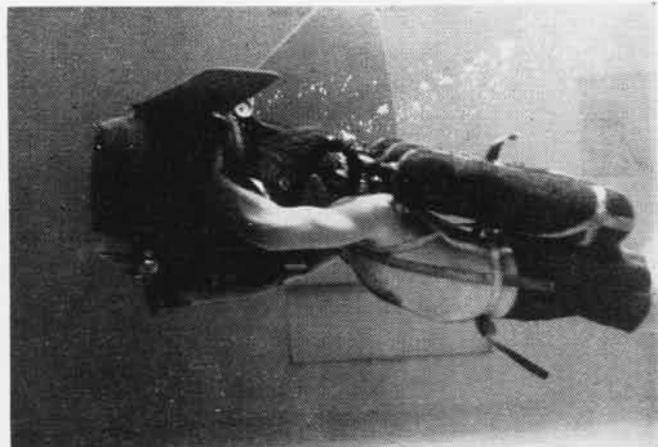
An electronic device announced by BUAER last year is the TRODI, touch-down rate of descent indicator. While holding little interest to football coaches, the North American electro-optical TRODI provides instantaneous measurement of aircraft rate of descent at touch-down time to aid aircraft designers. It can measure to within 0.4 feet per second at any rate of descent between 3.5 and 35 feet per second.

A TYPHOON analogue computer developed by RCA and a Hurricane digital computer by Raytheon are two more of BUAER's electronic gadgets built for the advancement of naval aeronautical science. Both solve complicated mathematical problems formerly requiring the work of hundreds of men.

For the past year, Navy primary short range aircraft communication equipment has been in the process of conversion to a different and wider frequency band.



NAVY swept-wing jet attack bomber, the XA3D, is one of latest and largest carrier aircraft. It carries a three man crew



UNDERWATER Navy photography was advanced by BuAer in past year by development of new portable underwater lighting system.

The AN/ARC-27 is being used for conversion, and it will provide more communication channels. Over 150 aircraft installations operating from 12 to 14 hours daily were used for the in-service shake down tests.

A standardized system for electrical starting and servicing jet aircraft developed by BUAER has been adopted for joint use of the Navy and the USAF. Because of the equipment's simplicity tremendous savings have resulted.

Navy photography made forward strides in 1952 with the announcement of the 70-mm aerial reconnaissance and mapping camera, a 70-mm underwater camera, a 70-mm combat camera and the X-CQY-1 television recording camera. Other new photographic developments included a portable underwater lighting system for underwater picture taking, modification of the K-25 camera to use 15-inch lenses for bomb damage assessment, and the adaptation of a paper processor to speed up the rate of print production five times.

The new 70-mm reconnaissance camera has reduced film size by an 18 to one ratio from old types. Not only will money be saved, but faster speed photography at lower altitudes is possible. The advantage of the combat camera can be summed up in two words—it's rugged. The underwater camera is being tested at depths down to 200 feet.

For "outstanding achievement in photography" the Navy received *U. S. Camera* magazine's achievement award in 1952. The Navy-produced 26 week television epic *Victory at Sea* was also released last year by NBC.

Navy training films received awards in international competitions at Venice and Edinburgh, and *Small Boat Disaster Prevention* got an "Award of Merit" from the National Safety Council. With a total of 17 awards, the Navy now leads all other Service and Government film agencies in international recognition.

Facilities at 27 air stations have been

improved during '52. NAS SAN DIEGO is getting the first of the redesigned control towers for testing purposes. Fueling systems have been improved to speed up aircraft refueling, and for the same purpose, 400 gallon per minute capacity refueling trucks are being delivered to the Navy in several different sizes.

THE NEW 1000 gallon MB-1 crash fire fighting truck has previously unequaled pickup for this type vehicle. Thirty of them have been ordered. Other emergency equipment in BUAER's mill are new communications trucks built around a standard Willys panel delivery truck and carrying quick-shift HF, VHF and UHF multi-channel transceivers as well as an FM transceiver. These will be capable of operating independent of outside power in almost all terrain.

Six major naval aviation activities were commissioned or reactivated during 1952. Sailormen are once again seen at NATTC NORMAN, NAS HUTCHINSON and NAAS BARIN FIELD, while the

Marines have landed at MCAS MIAMI, MCAF NEW RIVER and MCAS KANE-OHE. Other major airfield projects were the continued development of SHERMAN FIELD at Pensacola and the master jet field at NAS MIRAMAR.

In October, overhaul and repair officers from field activities put their heads together at a conference in BUAER to figure out ways to reduce operating costs by improving their industrial operating efficiency. Manpower and shop scheduling methods, materials scheduling and production control, production engineering functions and an engineered performance standards program were planned, analyzed and considered.

Commanding officers of the larger naval aviation shore establishments conferred at the Bureau with the same objective in mind—saving money. Prior to the conference, station functions and activities had been explored with economy in mind. During the meeting, requirements for support funds were carefully reviewed to effect economy in management and administration.

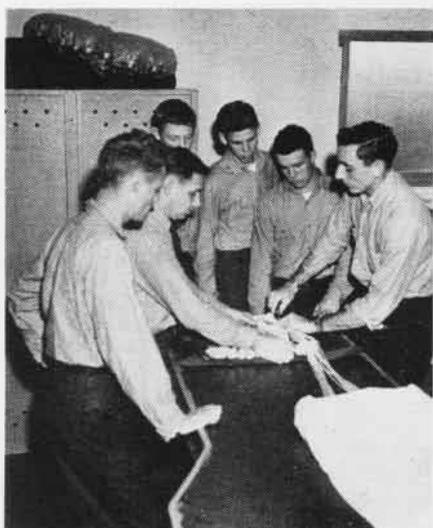
An additional economy effected by BUAER was the saving of money and time by having operating personnel "fleeted up" on new aircraft before the new planes arrived in the squadrons by the use of mobile trainer units. The first F2H-3 NAMT(M) was delivered to the fleet in May, four months prior to the delivery of the first operational aircraft of that type.

The year just past has seen tremendous strides in the progress of aviation; work on the *Forrestal* and *Saratoga* is progressing, the *Antietam* was fitted with a canted deck, and the Westinghouse J40-WE-8 turbojet engine and the British steam catapult have "joined the Navy." This brief report can't begin to cover all new developments in naval aviation, but we can be certain that more people who should know, know more about the intricate business of modern warfare to keep America strong at sea.



NAVY'S Martin Viking 9 reached 135 mile altitude and 3900 mph in late 1952 tests

NATTC GEARED FOR BIG TRAINING YEAR



INSTRUCTORS C. S. Johns and R. D. Norris teach proper parachute packing procedure



PEHOSH, ATC, helps WAVE Newby search for calibration on frequency indicator circuit



L. E. FRITZ (white shirt) inspects student welding at Structural Mechanics School

SCHOOL DAYS begin again for thousands of Navy men each year. Plans for 1953-54 call for the training of some 30,000 with emphasis upon advanced training for men from the Fleet.

The quotas have been established in OpNav Instruction 1510.1B under date of 15 January 1953. Quotas are set for all aviation ratings for all schools. Convening dates are furnished by the Naval Aviation Technical Training Command.

The training set-up for aviation specialties is far flung. NATTC MEMPHIS administers three big training centers at Memphis, Tenn., Jacksonville, Fla., and Norman, Okla. In addition there are six technical training units scattered throughout the country and 52 mobile training detachments.

Hanson Baldwin recently described

the modern carrier as a floating city of 3,000 specialists. He went on to say, "The old tars of yesterday may yearn for 'iron men' and the weather gauge, for the simple life of coal-burning ships, towing spars and navigation 'by guess and by God,' but all this belongs to the limbo of the past; gadgets and gimmicks rule the modern Navy."

Even in the past 10 years, the Navy has progressed from the day of bomb-sights, ring gun sights and cable pull bomb releases into the dream (or nightmare) of scientists where electronic gadgets take over. Thousands of enlisted men are called upon today to face the mysteries of the cantankerous electron, and for this kind of assignment, there must be training, training and more training or there is no know-how.

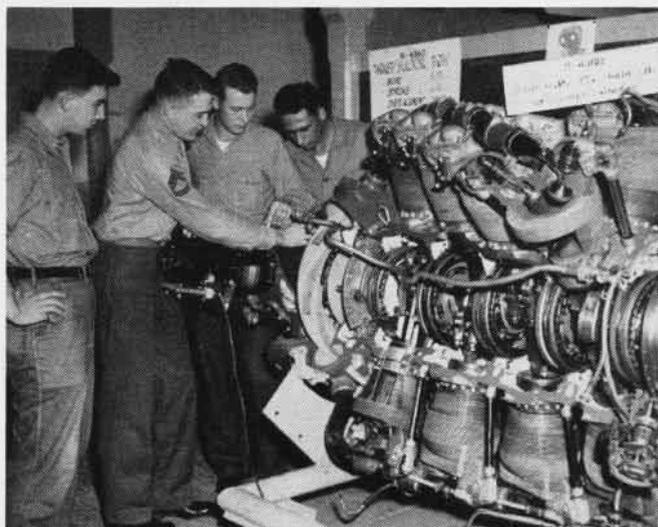
Training is conducted at four levels:

► Airmen recruits are indoctrinated in the Airman Class P School. Here they are selected for specific ratings as well as given introductory matter which is common to all schools. Eight weeks are required for this course.

► Basic or Class A training is conducted in schools for each of the thirteen aviation ratings: machinist's mates, structural mechanics, electrician's mates, ordnancemen, electronics technicians, storekeepers, training devices men, photographer's mates, air controlmen, aerographer's mates, parachute riggers, boatswain's mates and electronics men. Courses cover the technical educational requirements for a third class petty officer. The graduates are designated as



AT NORMAN, D. R. Parker, AA, sits at controls, as instructor looks on, and turns up an FG. W. E. Hagar and J. H. Casteel stand by



AVIATION Machinist's Mate students—Sitch, Whitehead and Yomes—watch as J. G. Robers explains operation of accessory section

airmen with a further designation as strikers in the skills and rates for which they have been schooled. Courses vary in length from 14 to 28 weeks.

At this point, school days are over and the graduates are sent to the Fleet or a Fleet base. After that tour of duty, they may be returned to the third level of training.

► Advanced or Class B training is given in eight schools for selected ratings: machinist's mates, structural mechanics, electrician's mates, ordnance men, and aerographer's mates. These schools provide technical knowledge to meet the requirements for first class petty officer and above. Time spent in this school varies from 14 to 40 weeks.

► Still a fourth level is available. Quite often a new technique or piece of equipment is developed which requires operating and maintenance personnel before the equipment is introduced into the basic or advanced schools. To meet this problem, specialized or Class C schools and courses are provided. At the present time, there are nine such schools attended by both officers and enlisted men.

Technical training is also available to officers in eight schools.

THERE ARE definite advantages to the course training as opposed to on-the-job learning:

1. Full time instructors combine teaching ability and the technical know-how which enable them to improve constantly the quality of the courses.

2. Uniformity of instruction yields thoroughly trained technicians.

3. Training aids can be used widely and cut down the cost of training. Instead of having a student practicing on a \$750,000 operational jet airplane, mockups or parts of the aircraft can be used over and over again. Diagrams, cutaways, and films can also be used.

4. Formal training saves time as it speeds learning. For the least difficult course, the aviation storekeeper, 38% of the rating requirements could quite possibly be accomplished by in-service methods, but these require only 14% of the school time.

The follow-up in the Technical Training Command is impressive. As each graduate leaves a school, he carries with him an evaluation card to be returned in six months by the unit to which he reports. That unit is to mark down what it thinks of him. They think highly on the whole, for reports received show a very high percentage of the graduates in the 3.5-4.0 bracket.

Evaluation cards have been changed to give fuller statements of proficiency. Returns of this new card indicate high approval of technical training graduates.

PLASTICS AID ROCKET PROGRESS



LT. S. D. BRUMBLE EXPLAINS ROCKET ENGINE OF 'LARK' TO PLASTICS SCIENTISTS AT LAKE

USE OF plastics as a weight and money-saver in rockets has been realized by the Navy, but to give engineers and scientists an idea of what the Navy needs in that line, 170 of them were invited to a symposium at the Air Rocket Test Station, Lake Denmark, N. J.

Capt. H. L. Leon, commanding officer of the station, called the conference to show the industry men what the Navy's requirements were in plastics. The station has a project assigned by BUAE Ship's Installations division to get data on suitable materials of construction for handling, storing, transporting and tankage of the highly-volatile liquid fuels which power rockets and guided missiles.

Plastics are a natural for the job since they have several advantages over heavy metals like stainless steel. The big hitch is to find plastics that are always chemically compatible or meet other requirements. More than a hundred inquiries to research and development activities, test and evaluation groups, and manufacturers of plastics, plus many visits by NARTS personnel, indicated:

1. The plastics industry was not acquainted with the many differing and often unique requirements in use of plastics for liquid propellants.

2. Many commercial plastics could be modified to make proper tankage for rocket fuels.

3. Methods of testing plastics for industry do not always indicate their adaptability to use in rockets.

Capt. Leon called the symposium to Lake Denmark to show industry what the Navy was doing in rockets and why it needed plastics that would have this or that property. The Navy, in turn, would learn from them new developments, techniques and future trends in plastics. Three times as many scientists

showed up as were originally expected.

Paul M. Terlizzi, head of the propellants division of NARTS, was general chairman. Indicating the technical nature of the discussions are the titles of papers presented on such subjects as "Effect of Spherulites on Physical Properties of Fluorothene", "Properties of Quenches Fluorothene Film", and "Test of Kel-F Bladders".

Since many of the visitors had little or no familiarity with rockets, Thomas F. Reinhardt, head engineer at NARTS, and Arthur E. Lenehan of the propellant division, gave talks on basic problems of the armed services in applying plastics to liquid propellants.

To make the problem clearer an exhibit area was set up which showed:

1. Test methods at NARTS to get data on diffusion rate of various propellants through plastic films, pinhole detection and compatibility studies.

2. New plastic and plastic-to-metal fabrications such as flexible hole for propellant transfer, liquid propellant expellant bags, plastic liners and drawn plastic-to-metal containers.

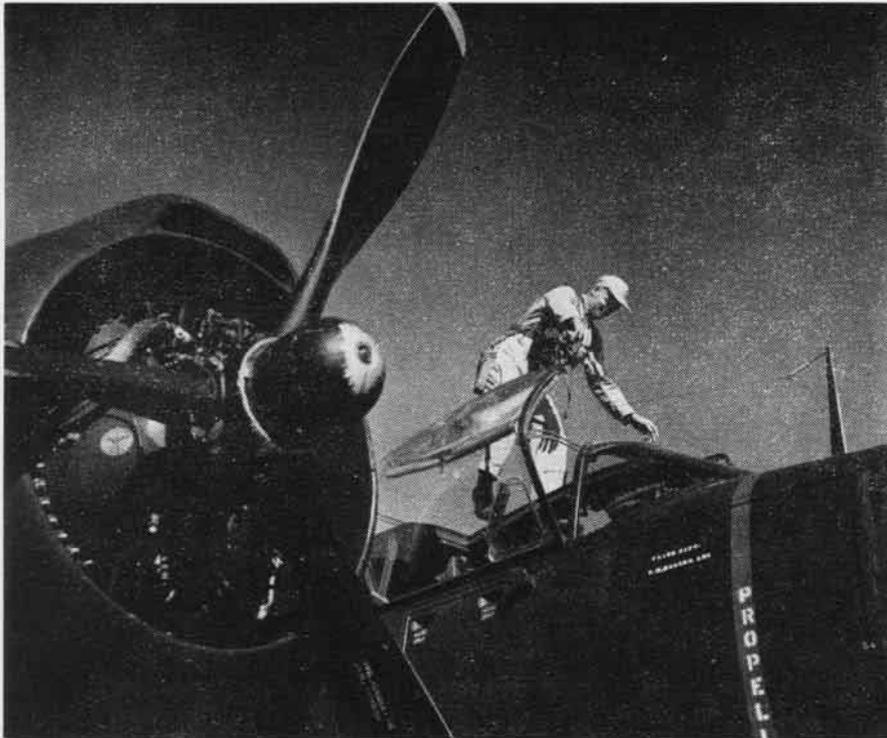
3. An exhibit of protective hoods, gloves, outer garments and shoes used when handling the volatile fuels.

4. An exhibit of liquid rocket engines showing various cutaway models of parts where plastics are used. A complete guided missile, the *Lark*, and liquid JATO unit also were shown.

The visitors also saw firings of three different rocket engines and toured the station to see how rockets were tested.

Capt. Leon pointed out that results of such meetings soon are forgotten unless decided effort is made to keep the vast amount of data presented continually before interested people. Technical papers presented at the symposium will be issued in a report to those attending.

'JIG DOG' SHARPENS FLEET CIC RADAR



LT. BUSH CLIMBS INTO COCKPIT OF JD PREPARATORY TO FLYING CIC, LOST PLANE TEST HOPS

Editor's Note: Naval aviators perform many jobs not so dangerous as combat missions over Korea, but important in preparing the fleet for aerial warfare. This month Naval Aviation News accompanies two pilots on a CIC training hop.

NAVY FIGHTING ships, from destroyers on up to carriers, need trained electronics men to operate their combat information centers. To provide some of this training, two red-and-yellow tailed planes, a JD and an F6F, took off the 4800-foot runway at Guantanamo, Cuba.

Past Leeward point, out into the blue Caribbean, they flew toward a rendezvous with two destroyers, the *Conway* and *Roberts*.

Pilot of the twin-engined *Jig Dog* was Lt. Mel R. Bush, with Lt. (jg) John Bell at the stick of the *Hellicat*. They had two training exercises to run with the CIC radar controlmen on the two destroyers—to locate and bring in lost aircraft and to vector a fighter to kill an enemy attacker.

Only in this exercise the World War II ace fighter, the F6F, was the slow man and the faster utility plane was to be the interceptor. A few scattered clouds were no handicap as the planes bore south to catch the destroyers.

As they neared the ships, Bush contacted the radar control man in his tiny cubicle down in the destroyer's "in-nards" and requested the ship to "find" him. He theoretically had no compass

and could navigate only by sun position or standard rate time turns.

The CIC room asked his heading and altitude. "Sun at four o'clock, altitude 5,000 feet," Bush advised.

"53 Mallard, put the sun at one o'clock," the ship requested. "Make a standard turn to port for 30 seconds. . . . Where do you hold the sun?" Finally, after several minutes flying, Bush was directed to vector to starboard and put the sun at 12 o'clock.

"Your Freddie 12 o'clock 5," the ship advised, meaning it was dead ahead five miles.

"This guy's pretty sharp," commented the "lost" Bush. "He brought us right on." In the mike he said, "I'll come down for a check." While he was buzz-

ing the ship, Bell in the F6F was running a "lost plane" exercise with the other destroyer.

Bush then shifted the exercise to plane interceptions, using the *Hellicat* for a bogie. The ship placed Bell's F6F at 4,000 feet and vectored it away at an angle. The JD was sent up to 5,000 feet in another direction.

Watching the blips on his radar screen, the CIC controller on *Beehive Nan* told one plane then the other to make turns to certain compass headings. The JD figuratively was the destroyer's combat air patrol and the F6F attacking.

CIC controller wanted to know the weather. Bush reported: "15, $\frac{2}{10}$ ths, 5,000, 4,000," which translated meant visibility 15 miles, clouds $\frac{2}{10}$ th, top of clouds 5,000 feet and bottom of clouds, 4,000 feet."

Out one vector went the JD and off at an angle the F6F. After a few minutes, CIC told each to fly headings which would bring them together. Neither theoretically knew where the other was, CIC quarterbacking the whole show since the exercise was entirely to train him on intercepting enemy air attackers.

After several turns, CIC advised the CAP: "Vector port 080, Buster, Angels five for bogie. When steady your bogie 12 o'clock 16." The "Buster" meant to boost the plane speed to close for an attack on the F6F dead ahead 16 miles.

As Bush sighted the *Hellicat's* yellow wings he shouted in the mike, "Tallyho. This is 53 Mallard, 2 o'clock 3, down one. One rat 4,000. Over."

"Go get 'im!" CIC ordered.

Bush barreled the swift JD under the *Hellicat's* belly and theoretically shot it down. In the mike he reported, "Splash one rat! Over."

That attack was typical of eight practice interceptions the JD and F6F put on for the *Conway* and *Roberts*. Sometimes the CIC controllers were not so sharp



FAR BELOW, CIC ROOM IN DESTROYER CONTROLS DEFENDING JD AND BOGIE F6F FLOWN BY BELL



CAUGHT IN 'SIGHTS' OF CAP 'JIG DOG', THE DOOMED HELLCAT IS 'SHOT DOWN' BY DEFENDER

as in the first intercept, as could be expected in a training exercise. On one intercept, CIC vectored the JD right across the guns of Bell's F6F, which "shot it down".

At another time, Bush, not having had any flight instructions from CIC for some time, radioed in, "I am famished." Since it was nearing noon, CIC naively came back, "So am I." Later CIC admitted he was a "little rusty" on his terminology.

As soon as one ship finished its four intercepts, the other CIC controller took over and maneuvered the two planes overhead in simulated interceptions. When a run brought the JD in from a poor attacking angle, Bush coached the controller on a better way to make the pass. Since the pilots are more experienced in intercepts than the destroyer men, they advise the latter on how to improve their technique.

On one run CIC wanted the JD to work from 6,000 feet. Not knowing too much about planes, he did not know that the cockpit visibility from that altitude would be poor with the F6F at 4,000 feet, so the direction was countermanded. On another occasion CIC wanted to shift the F6F into the attacking role but was advised its cruising speed was below the JD's 200 knots and it had better remain the bogie.

As the planes finished the exercise and headed back to McCalla field, the CIC controller radioed up, "I enjoyed working with you. I'm a little rusty at this." The pilots admitted privately he was correct, but ship CIC's frequently are manned by inexperienced men who must be trained. That is why VU-10 flies

two to four dozen hops a day to help the fleet sharpen its battle techniques.

On the same day Bush and Bell were doing their CIC intercept problems, other VU-10 pilots were making 26 flights. Some towed sleeves for the *Iowa* and *New Jersey's* antiaircraft gunners to fire at from various angles, others for the *Lake Champlain* and the *Gilbert Islands*, both flattops. Their missions also went out to help AKA's, APA's, DDE's, with a handful of night flights thrown in to train VU-10's own pilots. Several drone F6F's also went out to furnish targets for fleet gunners.

Up north the papers were full of stories about ice and snowstorms crippling communications and travel. But down at Guantanamo the days were sunny and ships could train instead of being tied up at snowbound docks. With some 40 ships engaged in *Operation Springboard*, Cdr. T. B. Wolfe's VU-10 pilots put in a busy winter.

Ship Movies Cheer Homefolk

Oriental Patrol Unit Films Actions

FAIRWING 2, HAWAII—A new twist to the idea of filming homefolks and sending the movies out to Korea for the fighting men to see was given this year by the seaplane tender *Salisbury Sound*.

A 1700-foot movie of the officers and men on the Wing staff and VP-22 was taken off the China coast. The completed film was flown to Hawaii for showing there at Christmas to wives and children and men serving in the Formosa Strait patrol force.

The film showed what the patrol did

and how each man and officer fitted into the overall picture. An accompanying narrative by tape recording explained the operation. Film shots included an actual Formosa Straits patrol in a P2V on down through the wing to one man who was staff baker. Scenes of Okinawa, Formosa and Hong Kong where the tender operated also were included.

Dateline Scrambles Xmases

VR-21 Has Trouble Flying TransPacs

VR-21, PACIFIC — How would you like to have three Christmases in one year? Or go two years without any Christmas eve?

VR-21 crewmen who fly across the international dateline between Hawaii and Japan run into some confusing things. George S. Harney, ADC(AP), was plane commander of an R5D who had dinner at Atsugi, Japan, at 1200, December 25. They took off at 1800 and landed at 1200, December 25, on Midway island.

After refueling and another Christmas feast, Harney's crew left Midway and arrived at Barber's Point, Hawaii, at 2100 Christmas day. Their third Christmas celebration was with their home folks, most of whom had delayed Yule festivities until the flight arrived.

On the debit side, Lt. Robert Ringler's crew lost Christmas Eve somewhere in the Pacific. They left Hawaii on December 23 and arrived at Guam the next day, December 25. Somewhere along the line they lost December 24.

Navy Continues Old Custom

Iron Lung Patient Flown By Jax R4D

In keeping with the long-established custom of performing humanitarian service to the public, a Navy R4D-8 carried out a mission of mercy when Mrs. W. Taylor Sams of Jacksonville was flown in an iron lung to Nashville, Tennessee.

Arrangements had been made to admit Mrs. Sams, a victim of a bulbar-type polio, for special treatment in the new polio wing at Vanderbilt University Hospital. The Duval County Chapter of the National Polio Foundation contacted the naval air station on the possibility of performing the delicate transfer operation by Navy transport.

In less than 24 hours after the request, permission had been granted by CNO. An iron lung had been installed in the R4D, assuring a minimum period when Mrs. Sams would be out of the life-giving device. Lacking electrical operating power, the iron lung was hand-pumped from the time the plane took off from NAS JACKSONVILLE until it landed in Nashville three hours later. The pumping was done by three Navy hospital corpsmen who worked in shifts.

POPE GREETS VISITING VP-5 MEN

VP-5, ATLANTIC—Two flight crews of VP-5 held an audience with Pope Pius XII on the occasion of their recent tour of the Vatican in Rome. The audience was held at the Pope's summer home in Rome's suburbs.

Seventeen officers and men were taken by U.S.O. out to the peaceful summer villa located on a serene Italian crater lake. At formal Vatican gatherings, a muffled tinkling of a bell and Palatine guards wearing plumed helmets announce the arrival of the Holy Father.

When he held the audience at the lake, however, there was less formality. The Pope addressed each man individually and gave him a religious medal featuring the Holy Family and a likeness of the Pope himself.

His Holiness greeted the men in perfect English, and correctly recognized all rating badges on the men's uniforms and the rank insignia of Lt. Frank D. Quiggle, who was wearing aviation greens at the time. After the meeting, Cdr. James C. Houghton, commanding officer of VP-5, requested that a group photo be taken with the Pope. Each man received a copy.

VP-5 is based at the Royal Air Force Station, Luqa, Malta. Besides visiting Rome, squadron aircraft have visited such cities as Paris and Nice in France, Madrid and Barcelona, Spain, Munich, Frankfurt and Stuttgart in Germany,



VISITING VP-5 MEMBERS POSE WITH THE POPE

and Athens, Greece. Besides the Pope, squadron members have made the acquaintance of such personages as ex-King Farouk, Great Britain's Duke of Edinburgh and many U. S. and Italian film stars.

Men in the accompanying photo are, left to right: John C. Burchett, AD3; George H. Stephens, AE3; Huey Hebert, AN; Joseph F. Burkland, ADC; Theodore B. Santy, AD3; Peter J. Philips, AL2; John L. Griffith, AM3; Thomas E. Brydon, AO3; Gene Dunn Gray, PNSN; William G. Ziegler, AL3; Gerald E. Metko, AT3; Lt. Quiggle; Gordon D. Prestel, AT3; Lt. Perry F. Hunter; Hoyt R. Brodersen, AO3; Cdr. Houghton and Steve R. Rodney, AT3.

COMFAIR, JACKSONVILLE—One of the biggest difficulties with serving on the British island of Malta in the Medi-

terranean is getting used to the ha' crowns, florins and ruppence used for money, members of VP-5 reported on their return from six months' duty there.

The first P2V-5 returned to Jacksonville on 13 January, piloted by Lt. Edward Lozier via Africa, Azores, Argentina, and Quonset Point. VP-741 from Jacksonville relieved VP-5, which is commanded by Cdr. James C. Houghton.

The squadron's base at Luqa airfield, one of several RAF airdromes on Malta. While in the Med, VP-5 participated in Sixth fleet exercises and made numerous familiarization hops to European cities including Naples, Pompeii, Amsterdam, Oran, London and Copenhagen.

While at Malta, VP-5's enlisted men quartered in large hotel-style barracks, while officer personnel lived in quonset huts, two to a room. Unable to be home last Christmas, VP-5 collected donations and gave 200 Malta orphans the biggest party of their young lives.

A giant Christmas tree was flown in from Naples, and a plane load of toys from Munich. After a turkey dinner they saw a show of American cartoon movies, which had them howling with laughter although many didn't understand the dialogue.

They're Teaching Girls Now Winged Scouts Visit NAAS Monterey

A newly organized Senior Girl Scout Troop at Carmel, Cal., chose Wing Scouting as their special interest. It wasn't long before they learned that aviation covered such an extensive field there didn't seem to be anywhere to begin. The obvious answer was a visit to NAAS MONTEREY.

The girls visited the control tower, inspected the weather facilities, visited the work shops, saw several types of planes, visited the photo lab and flew in link trainers. Eager to learn, they didn't hesitate to ask such questions as, "How does a TBM fly with its wings folded?" and "What if the wings folded in mid-air?" Each scout was given the chance to climb into the cockpit of an SNB aircraft while the motors were going.

Typical "Eeks, ohs and ahs" of excitement were heard when the girls were permitted to climb into the link trainers and allowed to fly on instruments. They got a big thrill out of handling the trainer's controls and wearing the radio head set. The link trainer operators tried to give the girls instructions on flying the link but all eyes were focused on the movement of the trainer.

It was a big day in the girls' lives. No doubt their parents listened many times to their tales of their trip around the station and all the sailors they saw and talked to during their brief "course".



HERE'S WHAT the well-dressed naval and Marine aviator in Korea was wearing this winter. Starting from the left is his long-handled underwear, wool sox, pistol, anti-G suit, parka helmet, wool gloves, Mae West, anti-buffet helmet, inner liner for his exposure suit and finally the exposure suit itself, the new Mk 4, with gloves and shoes. Above the suit are his goggles and knee pad. VF-781 took the picture of the gear to show what its jet fighters were using in case their planes ditched in the icy Sea of Japan.

SNB's Sport Bright Colors Corpus Tries Out Visibility Schemes

NAS CORPUS CHRISTI—SNB's of the Naval All Weather Flight School draw many curious stares with their new paint jobs.

The trainers were painted white, blue



SNB HAS GREEN BELLYBAND, BLUE WINGS, TAIL

and green as a part of a safety research program to see if a more discernible color for air work can be found. With the number of aircraft in the air growing steadily, it is important that pilots in each one see the others more readily.

This is especially true at the All Weather Flight School where a student is "flying blind" in each plane, and much of the instructor's attention is focused on teaching him the procedures of instrument flying.

Several other SNB's are painted yellow and green and several international orange. Planes with the white paint are also in demand by the pilots for another reason—they are several degrees cooler inside and that is quite a selling point in hot Texas weather. The white paint reflects a great deal of the heat.

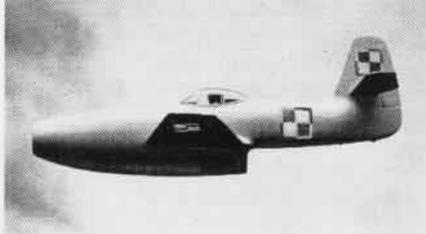
'Copter Goes to New Heights Unofficial New Altitude Record Is Set

A new unofficial altitude record was recently claimed by two pilots of HU-1, ALF REAM, SAN DIEGO. LCdr. W. C. Dixon and Lt. C. H. Barfield ascended to 16,150 feet in a Piasecki HUP-2 to reach the highest known height ever attained by a rotary-wing aircraft of this type.

The feat was accomplished in less than an hour, but both pilots felt a greater height could have been reached if time had permitted. They were on a routine training hop at the time. Autorotation brought the helicopter down in 12 minutes, almost 1,350 feet per minute.

"A B-29 came wandering by," stated Lt. Barfield, "and he was so confused to see a helicopter at that altitude he radioed in to check his altimeter."

"Floating heliports haven't been authorized yet or we might have tried to land on one of those," said Dixon.



OFFICIAL designations have been listed for jet fighters used by the Soviet Air Force and satellite countries of the Iron Curtain. Top photo shows the YAK-15, one of which was shot down in Korea by an F3D. Next is the YAK-17, a modification with a protruding nose wheel and changed tail silhouette. Next comes a UYAK-17, a two-man fighter-trainer version and the lower picture is the latest of Yak family, YAK-23. A fatter nose section may indicate larger jet engine for more speed.



BECAUSE he guessed correctly the "mystery man" in a contest aboard the Coral Sea, William J. Smith, seaman apprentice, as a prize had a steak dinner with Capt. Robert B. Pirie, the skipper, got two tickets to the Navy-Army football game, a one-day free pass to the ship's ice cream fountain, breakfast in bed and a reserved seat at the ship's movies for a week. Some prizes!

Cruiser 'Copter Accident Los Angeles' Pinwheel in Takeoff Woe

USS LOS ANGELES—Relief showed on the faces of HU-1's Detachment #18 when no injuries were reported after their helicopter crashed during takeoff from the fantail of this heavy cruiser.



HU-1 MEN CLUSTER AROUND CAPSIZED PINWHEEL

Piloted by Lt. Washburn W. Wear, the chopper was preparing to deliver the ship's operations officer and a Marine captain to a ROK army post on Korea's east coast for gunnery conferences and spotting mission data.

Men shown in the picture preparing to right the capsized helicopter are Rex E. Beach, ADC; Theral J. Woodall, AD3; Ronald K. Frickey, AD3; Gordon C. Purser, AMAN; Michael J. Grant, AE3; and Marshall J. Chisum.

29 Marines Study 'Bailout' Crippled Transport in Bounce Landing

MCAS CHERRY POINT—Few persons realized the full story behind a drama that was enacted in the skies over this air station on Christmas eve.

An R5C with 29 passengers bound for holiday leaves was circling over the station with wheels down. Inside the cockpit, Maj. R. J. W. Leonberger, operations officer of Hedron-2, could not be sure since his instruments failed to show the gear down and locked.

After conferring by radio with Maj. Grant W. Jeffries, assistant operations officer of the 2nd Marine Air Wing squadron, and MSgt. Buford H. Stover, R5C expert, he decided to try bounce landings to test the gear.

Before attempting the maneuver, the pilot pumped fuel from the front and center tanks into the rear tanks so that the highly-inflammable gasoline could be jettisoned through overflow valves.

Maj. Leonberger then bounced the plane on each wheel safely, then came in "on tiptoe", to the relief of all concerned. Examination showed the wheels were properly locked in place but a microswitch had been broken in the electrical system, which prevented indication of the "locked" position.

At one time, the hatch of the plane was opened, leading passengers to believe they would be told to bail out.



DOUBLE success comes to D. T. Tracey upon completing the 90-day school. Capt. H. Sartoris congratulates him on making AT3



A NEW JOB in the electronics field was another reward for his training. Here he checks a circuit at Tracer Lab in Boston

SQUANTUM RESERVISTS GAIN BY TRAINING

NEW OPPORTUNITIES for Naval Air Reservists, whether in the pursuit of a civilian occupation or a Navy career, have appeared on the horizon in the field of electronics.

It all began during the summer of 1952 when activities of the Naval Air Reserve Training Command received a newly-developed training course in Aviation Electronics for use on weekend drills or when conducting an intensive 90-day advancement-in-rate training program. AT strikers in the 90-day program served as "guinea pigs," testing the effectiveness of the course and its training aid, the 26-K-1 radio receiver.

NAS SQUANTUM was one of the Reserve stations which conducted the summer training. Its Aviation Technical Training Department was surprised and pleased to discover that many of the trainees were so enthusiastic about the course that they carried their interest in electronics back into civilian life and set about to find employment in a field which was more or less related to their Navy training. The students also turned out to be a good walking advertisement. Word soon spread about the course and more personnel are requesting this training than for any other rating.

While the 26-K-1 Aviation Electronics Technicians course is designed to prepare a man for advancement to third class, it also contains the theory required of a second class AT. It came into being as the result of a thorough study seeking the answer to the many difficulties encountered in training Naval Air Reservists. Whereas regular Navy personnel are sent to technical schools after "boot camp," the Reservist must be

trained for the same rates during weekend drills. In all, he is available for training for a total of only 38 days per year.

With this severe limitation on time, the problem of training is difficult. The solution seemed to be to develop a training program that not only simplifies the trainee's learning but also is interesting enough to make him want to do a considerable amount of studying on his own time at home.

THE 26-K-1 is a package course which is divided into units consisting of a home study manual, a workshop manual and a project kit. One of the most desirable features of the course is that minimum supervision by an instructor is required. The home study course consists of 23 units of basic electronics theory. It furnishes the Reservist the theory required of his counterpart in the regular Navy and permits him to utilize more of his drill periods in accomplishing the practical factor requirements of his rate.

The workshop manual includes laboratory experiments, furnishing practical studies of the theoretical subjects covered in the home study course. With the radio receiver test set kit, the trainee conducts experiments on power supplies, amplifiers, detectors, oscillators and testing techniques.

During the 90-day training period at NAS SQUANTUM, the home study and workshop units were combined in daily classwork. Step by step the students studied the theories and laws of electronics and electricity. Then the theory was applied as each man assembled his own 26-K-1 radio receiver.

Prior to the development of the new

course, Aviation Electronics Technicians had been one of the most difficult groups to train in the Naval Air Reserve program. However, Squantum personnel found that as the students studied and analyzed the theory of each component part, the confusion disappeared and the men's interest increased.

Starting off with simple language about simple ideas, the course developed steadily into the more complicated matter. Kirchoff's law, which is one of the more difficult formulae of the course, gives the student a better understanding of the meter circuit and complex electronics circuitry. The men were able to see and understand the practical application of this intricate theory through the simplified explanation outlined in the course and the step by step analysis of the project kit. As each section of the radio receiver was completed, the men checked over all connections and tested the receiver completely before moving on to the next unit.

Inevitably in constructing the receivers, some of the men were bound to do something wrong, but they could see their mistakes and profit by them. They soon learned the do's and don't's of radio.

AT THE END of the course, every enrollee indicated that his knowledge and understanding of radio had been increased considerably. For many, completion of the training marked a turning point in life. As far as their weekend drills with their squadron were concerned, they now felt that they had become an integral part of the organization and not just an extra hand hanging around trying to pick up a little knowledge here and there, willy nilly.

Some of the boys graduated from the school with the hope that they could find a place in the regular Navy for themselves. Others, like Robert Welch, AT3, found that their training had put them way out in front in their civilian jobs. Welch is an apprentice electrician at the Boston Naval Shipyard. Before attending Squantum's school, he was spending one week out of every month in the shipyard's school. His greatest fear during the 90-day period was that he would slip way behind his fellow classmates. Instead, when he returned to the school, he found that his knowledge of electricity and electronics theory was more advanced than the rest of his class.

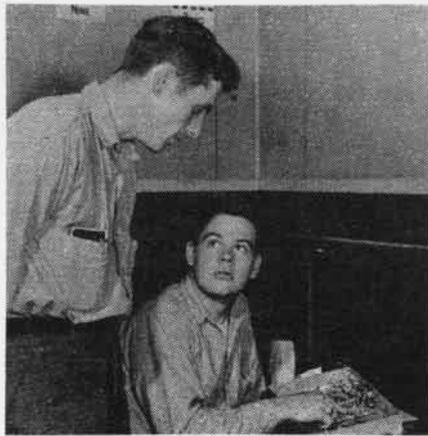
THERE COULD be no doubt but that Navy training paid off for many of the boys who graduated from the school. For instance, Robert Kyle, ATAN, operated the Digital Computer at Massachusetts Institute of Technology before he enrolled for the 90-day training. With the Navy's course as his ace in hand, he convinced the Personnel Department at his laboratory to give him a try as a technician and was sent to a six-week training school.

Donald Tracey, AT3, was doing stock work and drafting before his 90 days at NAS SQUANTUM. He found that his Navy schooling gave him entry to jobs for which he might never have been considered. He is now a physics technician, running a highly complex electronic computer at Tracer Lab in Boston.

A promotion and a raise in his civilian job was the reward of Kenneth Green, AT3. He was a detail draftsman on machine parts for power tubes in radar and guided missiles. With his electronics training completed, he was assigned to laying out wiring diagrams to be used in the Navy's maintenance manuals.

Further studies are being made with the 26-K-1 course. Selected aviation fleet units have received a limited number of the kits in order to determine its value in training.

So far, the results of this training in the Reserve program have been encouraging and have demonstrated that courses, comparable to those offered



HE'S NOT going to make any mistakes on his receiver. D. J. Mitchell checks with Miller

regular Navy personnel, can be furnished to Reservists. Undoubtedly, wherever classroom time is limited, this type of arrangement furnishes an excellent approach to training problems.

The 26-K-1 is the first of the packaged training courses. Eventually, a course will be available to Naval Air Reservists in each of the aviation rates, preparing them to carry their share of the load, whether as "Weekend Warriors" or in the event they are called to active duty.

Reserve Roundup

● **NAS LOS ALAMITOS**—Ten top coast teams competed in the Senior National AAU Outdoor Water Polo Championships at this



IT TAKES a lot of parts to make this work. Miller shows check point to Tracey, Green

station. The tournament was under the directorship of meet manager, Cdr. C. W. Smith. The Los Alamitos Air Raiders won the event, water polo's feature highlight of the year, and were crowned champions of the United States.

● **NAS GROSSE ILE**—The International Aviation Exposition for 1953 will be held at Wayne-Major Airport, Detroit, Michigan, on 9-12 July. The Navy's portion of the Exposition will be based on the theme "The History of Naval Aviation."

● **NARTU SEATTLE**—Doing things on a grand scale in the Pacific Northwest, Aviation Technical Training has undertaken a huge training project. Every stationkeeper and "Weekend Warrior" eligible for temporary flight orders is undergoing formal training to qualify or requalify as an Aircrewman. Training is divided into 24 two-hour sessions with stationkeepers attending one of two sessions held each Wednesday. In order to take care of about 200 Reservists each Saturday morning, as many as four classes in the same subject matter are conducted simultaneously.



INSTRUCTOR, W. A. Miller, demonstrates use of soldering gun to Hall, Mitchell and Magnani as he installs the "on-off" switch



PUTTING the right tube in the right spot will make the radio receiver work fine. Miller helps two trainees identify tubes

TRANSPORT PILOTS GO THROUGH THE MILL

SHORTLY after the outbreak of the Korean conflict, a big four-engine transport landed at NAS CORPUS CHRISTI carrying the first load of wounded soldiers from the battlefields of Korea to the Naval Hospital. A long succession of other planes soon fanned out from there to other points in the United States bearing casualties from the foxholes of Korea.

It was "homecoming" at Corpus Christi for that first pilot and for many others who followed him. At the controls of the sleek R5D *Skymasters* were some of the Navy's best airmen, many of whom were trained in the Plane Commanders' School of the Acceptance, Transfer and Training Unit, NAS CORPUS CHRISTI. Both pilots and planes were an integral part of the huge transport set-up which the Navy and Air Force operate.

Officially, they belong to one of two organizations, either Military Air Transport Service or Fleet Logistic Air Wing. MATS, which is an offspring of unification, uses both Navy and Air Force personnel and equipment, while FLOGWING is the Navy's own organization. It functions as a part of the mobile fleet and flies wherever the scheduled planes of MATS don't reach. FLOGWING air routes service the fleet wherever it may be.

ACTRU CORPUS CHRISTI, which is part of FLOGWING, was established in November 1949 when a small detachment of officer and enlisted personnel from VR-44 reported aboard from NAS MOFFETT FIELD. Its primary mission is to provide for the acceptance and transfer of all R5D *Skymasters* to Corpus' overhaul and repair department for their progressive maintenance. The planes are delivered to ACTRU by the various ac-



ONE OF ACTRU'S THREE R5D'S IN FLIGHT DURING INSTRUCTION AT PLANE COMMANDER'S SCHOOL

tive squadrons in FLOGWING and Navy components in MATS.

For the other half of ACTRU's job, the Plane Commanders' School, only three R5D's are assigned to it. With the number of students going through the school, they must have more planes.

ACTRU HAS managed to work out a satisfactory solution to the problem. Between the interval when the R5D's are delivered by the squadrons and called for to be repaired by O&R, the school "borrows" them. Many of the planes are brought to ACTRU with more than 1300 hours flying time on them. As one instructor at ACTRU expresses it, "Just barely holding together."

Once the planes have undergone repair and overhaul, ACTRU gives them a thorough inspection. If the squadron doesn't call for the repaired planes right

away, Plane Commanders' School takes advantage of the delay and once more uses the planes for checking out its students.

ACTRU's famous school is considered one of the best schools for training R5D pilots. It feeds highly-trained pilots to both FLOGWING and MATS. Taking skilled and experienced aviators, the school soon molds them into the type of weather-wise, instrument-conscious fliers so necessary in huge transport operations. The training is rugged, but it pays off.

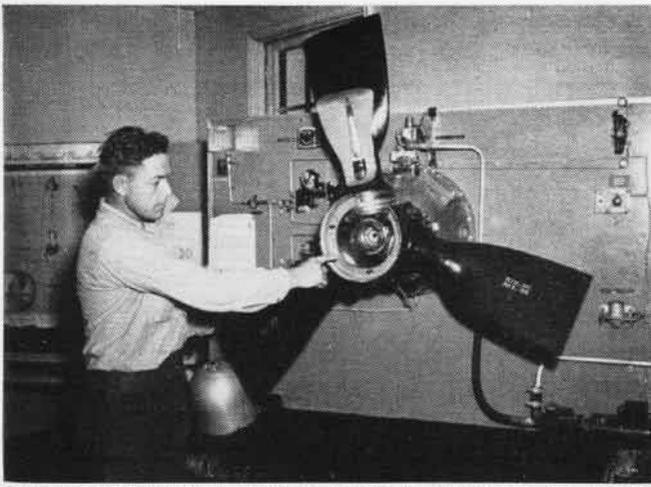
Naval aviators arrive at ACTRU CORPUS CHRISTI from duty stations all around the globe to take the 30-day course. A designated number of men from each squadron are sent to Plane Commanders' School by Commander FLOGWING. They arrive at Corpus a few days before the school convenes



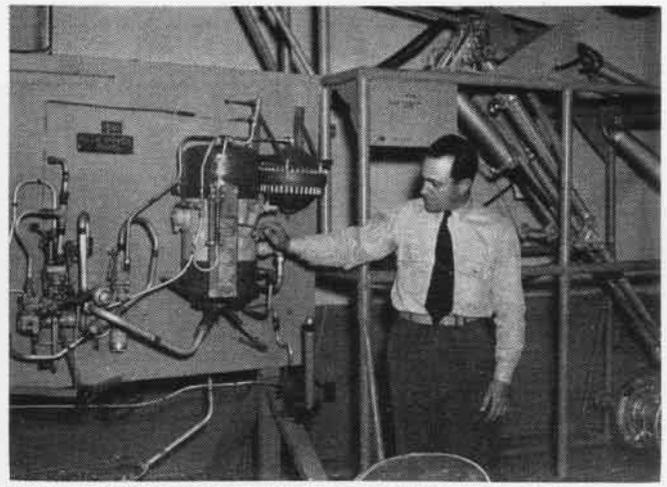
CDR. KITTEL AND CDR. LITTLE DISCUSS PLANS FOR THE NEXT SESSION



CAPT. L. W. PARRISH, NEW CO OF VR-21, TRAINS AT THE SCHOOL



ENLISTED INSTRUCTOR, J. RITCHEY, EXPLAINS WORKINGS OF A PROP



D. W. PINGREY EXPLAINS HYDRAULICS SYSTEM WITH PRIZE MOCK-UP

and are given an indoctrination course. Once the school starts, the class, which averages between 25 and 30 students each month, is divided into an A Wing and a B Wing. While A Wing is attending classes in the morning, B Wing is flying and vice versa.

The school offers a plane commander's course and a co-pilot's course. The plane commanders receive the ground school training plus 10 hops and a final check, while the co-pilots receive one less hop.

Once a man has completed the plane commander's course, he is returned to his own squadron, and it's up to Commander FLOGWING to designate him "plane commander." Once a co-pilot has returned to his squadron, he must put in many more flying hours before he can return to ACTRU and enroll in the plane commander's course.

IN ADDITION to transport pilots from MATS and FLOGWING, ACTRU also teaches men from the Marines and Reserve pilots from NARESTRACOM.

The classroom half of the training at the school offers pilots a streamlined maintenance course designed to fit the pilot's need—what he should know from the cockpit standpoint. The staff consists of four officers, five enlisted instructors and 17 Link trainer operators. All the mock-ups used in teaching the various subjects have been constructed by the instructors out of spare parts and pieces of junk they picked up.

The first day the school bell rings at ACTRU, the men who have never flown an R5D are given a cockpit and radio checkout and a general introduction to the plane. Once the students have been divided into the two wings, the actual classwork and flying begins. The plane commander and co-pilot syllabi are divided into three sections, consisting of aircraft and engines, aerology, and related subjects. The students take these

subjects for a total of more than 80 hours. At the end of the course, they are given a final test.

The flight syllabus for all plane commander candidates is the same, but two separate co-pilot syllabi are presented. All co-pilot students receive the same flight instruction for the first three training periods. At that point, the work done by them is evaluated by their flight instructor. From then on they are assigned to either the "advanced co-pilot training" or the "primary co-pilot training" category.

The advanced co-pilot course is designed to give the individual the training and practice necessary to qualify for a Standard Instrument Rating card, in addition to developing his proficiency as a co-pilot to the level required for designation as a FLOGWING R5D Second Pilot. The primary co-pilot course is designed to accommodate those pilots who have had little or no previous experience in R5D aircraft, airways instrument flight, or both.

The objectives of these courses are to develop the individual's ability as co-pilot to the degree required as a FLOGWING Second Pilot and to produce the proficiency necessary to control the aircraft safely under contact and elementary instrument flight conditions.

AT ANY time during the course of instruction, if it appears advisable or appropriate to shift a student from one course to the other, he may be changed upon examination of his overall record of training.

The skipper of ACTRU, Cdr. I. A. Kittle and his exec, Cdr. J. E. Little, are both qualified plane commanders with a number of years of transport experience. They know the value of highly-trained transport pilots and make sure that every hour in the school adds more to the student's know-how. Naval aviators who complete the course at

Corpus know that they've really been through the mill, but they also return to their squadrons with the conviction they are ready to take their place with the best of them.

The benefits of the training were shown when transport pilots, trained at ACTRU, helped establish one of the outstanding records in the history of aviation during the Berlin Airlift. In this operation, VR-8 continually led the way as the most efficient squadron participating in the lift with VR-6 running a close second.

The unit's instructors are seasoned aviators also. They have compiled an amazing average of more than 6,000 flying hours per man. About one-fourth are veterans of the Berlin Airlift, while 75 percent have participated in the Korean Airlift.

Shortly after the outbreak of the Korean conflict, Lt. W. J. Johnson, one of ACTRU's instructors, was at Kwajalein with VR-21. LCdr. L. W. Marsh and LCdr. J. B. Grotts of VR-5 delivered a cargo of newly-developed 3.5" rockets to VR-21. The rockets had been flown at top speed from NAS MOFFETT FIELD and were being rushed to the Korean front lines. Lt. Johnson and his co-pilot rushed the precious cargo the rest of the way to Itazuke, Japan. Within 54 hours from the time the plane left Moffett, the rockets were being used in Korea.

Once again Navy transport pilots had demonstrated they could take their place with the best of them. Not only was the flight a personal triumph for the men who had transported the cargo, inasmuch as the Navy had the honor of delivering the first cargo of the new 3.5" rockets to Korea, but they had also beaten the Air Force. An Air Force plane had taken off from California at the identical hour on the same mission.

—By John E. Schriefer, JOSN,
NAS Corpus Christi

RUNWAY APPROACH LIGHTS



COMPOSITE picture shows what pilots would see with composite lighting system leading up to runway; lowest line of lights would be red, then white with top line of lights green

BUREAU of Aeronautics has developed a new system of runway approach lights to guide pilots to the touchdown point during poor visibility, day or night.

Called the "Navy Composite Approach Light System", it is a modification of numerous ideas on approach lights which have been tested thoroughly at the NATC PATUXENT RIVER, Md., and the Landing Aids Experiment Station, Arcata, Calif. Desirable features from several other approach light systems which were given tryouts at those stations were incorporated in the composite version. Plans are underway for all new Navy installations to be of this type.

The Navy system conforms fairly well with the international agreement reached at the Montreal meeting of International Civil Aviation Organization (ICAO) for such systems. It incorporates additional elements to provide better visibility for military aircraft having severe cockpit cutoff.

The composite lighting layout is 3,000

feet long. As the pilot approaches the end of the runway, he can tell by the light pattern formed and the color of the lights what his exact position is in regard to the glide path.

Down the center of the system runs a line of red lights 100 feet apart. Along the sides of the approach "channel" are white lights. Set in these sidelines are six-light angled "bars" set at 45° from the ground and perpendicular to the center-line.

When the pilot views the approach system from exactly on the three-degree glide path, he sees a straight line of lights leading to the touchdown point on the runway. If he is a few feet below the glide path, the lines will be broken—the bars will stick up above the line of lights. If he is above the glide path, the bar lights will angle inboard or below the line.

Each 500' along the approach light system a partial or complete crossbar of lights cuts across the lines. One thousand feet from the end of the runway is a solid cross-line of red lights.

Just as the pilot approaches the end of the approach light system, he sees two bars of green lights extending outboard of the lines of approach lights, marking the end of the runway.

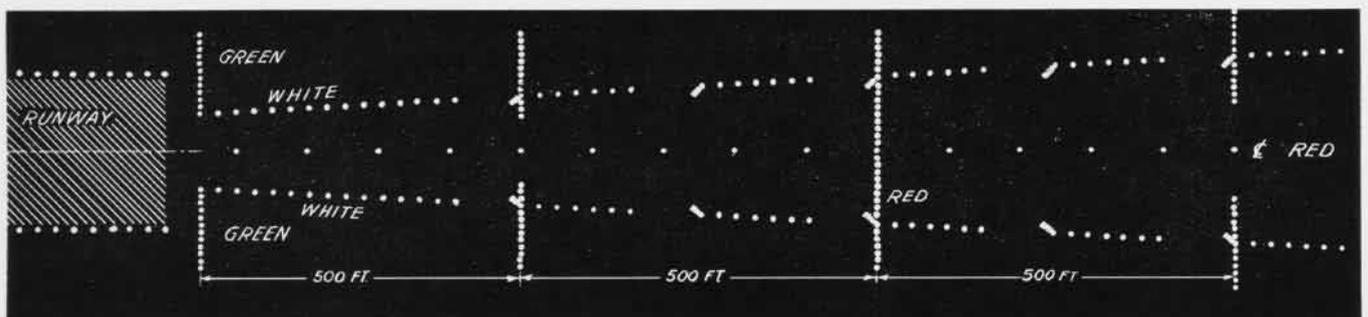
At one time, the Navy experimented with putting 10 white lights on each of the angled "bars," but the composite system consists of six 400-watt sealed beam lights rated at 40,000 candlepower each at 100% intensity. These 14-foot fixtures are mounted in an apparent, or artificial, ground plane regardless of terrain. Each is 250 feet apart. Brightness of the lights can be varied, to conform with visibility conditions and to avoid blinding the pilot.

As approach lights are only one link in a chain of facilities (GCA or other electronic approach aids, threshold, runway and touchdown lights and runway markings) necessary to make landings in poor visibility, it is essential they be both modern and dependable.

For example, if the electronic approach system is not capable of placing the aircraft in the general vicinity of the approach lights, the lights will be of little value. Also, if the runway lighting and marking is poor, it is possible to make a proper touchdown and still not stay on the runway.

If these facilities are satisfactory, the composite approach system will assist greatly in making landings in weather-approaching or below published minimum conditions. The drawing at the bottom of the page shows how the composite approach light system would look if viewed from directly above. Only the 45° angle bars are incorrectly shown, since they actually are at right angles to the sideline lights. The drawing shows only the first 2,000 feet of the system since the outer end has no special features. The composite picture at the top of this article shows how a night approach, right on the glide path, would look with the new light system. The bottom line of horizontal lights would be red.

New training films on use of the



INNER PORTION OF APPROACH LIGHT SYSTEM SHOWS LOCATION OF COLORED CROSSBARS; TINY SLANT LINES AT INTERSECTIONS ARE ANGLE BARS

Navy composite approach light system are being planned. Meanwhile, Part 2 of MN 6613 provides a comparison between the slopline system, predecessor of the composite system, and several other approach light systems which also contributed features to the final version.

Flight tests show that the composite system provides much better directional roll and ground plane guidance than the original slopline system, particularly for single-engine pilots having poor forward visibility.

SOME OF the original research which went into development of the composite approach system was done at the National Bureau of Standards, using an ingenious "kinorama". This device, which resembles an operational flight trainer, permits realistic motion to be introduced so the "pilot" gets the visual impression of actually making an approach on the field. The pilot peers into a telescopic sight and "flies" the device like a Link trainer.

Miniature fluorescent lights on an endless tape are moved continuously toward the observer in the kinorama. Yawing can be simulated by a rotation of the moving track and banking also can be simulated, so the pilot receives a realistic feeling of actual flight.

In the kinorama now being completed, the cockpit, instruments and controls of a Link trainer take the place of those of the airplane. Should the device be developed further, it could be used to give pilots practice in making instrument approaches using the composite light system. The device started out only as a method of checking the lighting system, but it had good training possibilities too.

J-40 Jet Order Increased Lincoln-Mercury New Plant Will Build

An additional multi-million dollar order for J-40 jet engines to power the Douglas F4D *Skyray* and McDonnell F3H *Demon* has been placed by the Navy with Lincoln-Mercury division of Ford Motor Co.

A new plant is being built at Romulus, Michigan, to handle the increased engine business. About 25% of the Lincoln-Mercury plant at Wayne, Mich., already is devoted to work on the J-40. Ford is making the engine under license arrangement with its designer, Westinghouse Electric Co.

The new Ford plant at Romulus, started a year ago, will cost \$50,000,000 and employ 1800 persons. First production engines are expected to be turned out there later this year. The J-40 engine also is installed in the XA3D high speed attack bomber built at Douglas El Segundo but will not be in production models when they come off the line.

PILOTS LIKE CANTED DECK IDEA

TESTS were conducted by the Naval Air Test Center and Atlantic Fleet pilots on the new canted deck of the *Antietam* with XFJ-2, F9F-6, F2H-3, F9F-5, AD-4N and TBM-3R aircraft. Despite the limited experience of the deck crew and the mixture of aircraft and pilots, with no previous training or practice as a group, the landing and deck operations were very successful.

They strongly indicated that improved landing and launching rates with a higher degree of safety could be achieved with the canted deck arrangement. The following highlights of the tests indicated the operational flexibility and potentialities of the deck layout:

1. "Touch and go" and arrested landings were made with jet aircraft turning up on both the port and starboard catapults and with propellered and jet aircraft parked and being taxied in the area abreast the island. Pilots reported that they were completely at ease conducting landings under these conditions.

2. In group landing operations of mixed aircraft types, landing intervals as low as 12 seconds were achieved. It was clearly evident that when new aircraft spotting procedures had been worked out specifically for the canted deck arrangement, average landing intervals below 20 seconds could be achieved regularly with corresponding reductions in required loiter times.

3. With the "power-on" technique pilots appeared to be able to flare the aircraft with much greater precision so as to reduce landing loads on the aircraft. The pilots (test and fleet pilots) expressed a unanimous opinion that the clear deck in the projected flight path of the landing aircraft, with no barriers or parked aircraft hazards, "made them very relieved and feel very relaxed." This should greatly improve the quality of landings with a resultant reduction in

landing loads in the aircraft which will in turn permit reductions of structural weight of future carrier aircraft. Average aircraft vertical descent velocities were approximately halved in this short test period.

4. Simultaneous take-off operations were demonstrated with jets being launched from the bow catapults and propeller-type aircraft making free deck take-offs on the canted deck.

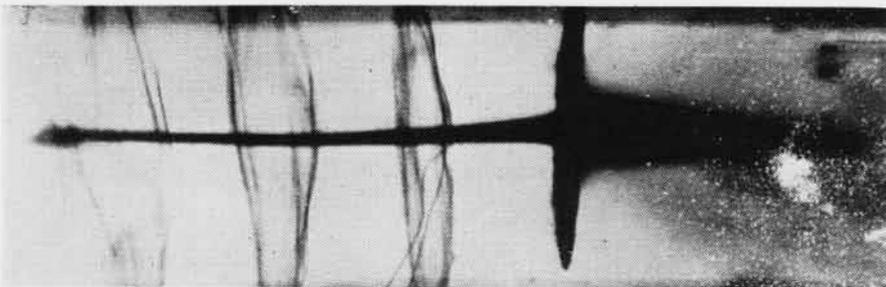
5. Landings were made with the wind varied from 26K to 42K and from 22°P to 10°S with no reported difficulties from burble effect from the island.

6. Night landings were conducted with F9F-6, F2H-3 and AD-4N with confidence and precision. The pilots were extremely enthusiastic with the ease of night landings and their lack of tenseness. The psychological effect on the pilots of having a clear deck ahead was excellent. The new night centerline lighting system made the alignment with the canted deck relatively simple.

7. "Touch and go" landings are a valuable aid to training for both night and day carrier landings.

It is considered that the advantages or the canted deck layout in increased safety, particularly for night operations, improved pilot morale, increased launching capability, shorter landing intervals and reduced aircraft landing loads have been adequately demonstrated. The tests to date have proved the basic feasibility and operational suitability of the canted deck concept. Further extensive tests are mandatory to obtain the final optimum deck layout, such as best angle for cant, arresting wire positions, and night lighting.

● NAS MOFFETT FIELD—Slated to be one of the most up-to-date stations on the west coast, this station will soon display a new Operations Building and Control Tower.



HIGH VELOCITY metal jets from shaped charges can make ordinary steel and even heavy armor plate behave like fluid as they pierce these tough metals. Fired as rockets such as 6" Rams or in the form of artillery projectiles, shaped charges are death on tanks, bunkers, and heavy emplacements. Once the projectile strikes, a super-quick fuze sets off the explosive. Thus penetration is not dependent upon the velocity of the missile. Here is a high-speed x-ray photograph, taken at one-four-millionth of a second. The projectile has struck the armor plate and the stream of fine metal particles has pierced the steel and is still travelling at high velocity.



TWO BROTHERS REPRESENT 48 YEARS SERVICE

Chiefs Retire at Same Time Brothers' Careers Like Peas in a Pod

Even though they're not twins, the Davis brothers might as well be. Like two pieces of scotch tape, they've stuck together ever since they joined the Navy.

On the same day back in 1929 they enlisted in the Navy at Beaufort, S. C. They have served together ever since, having had duty aboard the USS *Concord*, USS *Colonial*, USS *Cabot* and at present the USS *Tarawa*. Their shore stations have been limited to two—AGRS CHARLOTTE, North Carolina and NAS WEEKSVILLE, North Carolina.

Both men are Chief Machinist Mates. Both will be released from active duty in May after 24 years of continuous service. They are planning to become partners in the landscaping and farming business in Sheldon, S. C. To make this duplication of their lives complete, their wives are sisters.

Exchange Pilots Are Named 13 Men Will Serve Year with AF, RAF

Twelve men who will be exchange pilots with the Air Force for a year and one who will be with the Royal Air Force have been announced by the Navy.

The group was brought to Washington, D. C. for a two-day indoctrination course before being sent out to their

new duty. Some will end up in Korea flying F-84's and F-85's.

The indoctrination included information on naval aviation programs such as LTA, aviation safety, Reserves, new plane developments, *Forrestal*-class carriers, naval aviation budget, and carriers.

In a talk before the group, VAdm. M. B. Gardner, Deputy Chief of Naval Operations (Air), told them he once had been an exchange pilot with the Army Air Force in his earlier flying days. From this duty, he said, he brought back information which the Navy used to improve its cadet training program.

Pilots who will go to the Air Force for a year, with their AF destinations, follow: Lt. C. L. Wilcox, George AFB, Calif.; Lt. F. E. Blackman, Nellis AFB, Nevada; Lt. R. P. Yeatman, Turner AFB, Ga.; Lt. W. L. McDonald, George AFB; Lt. W. W. Henry, Westover AFB, Mass.; Lt. R. J. Gray, Moody AFB, Ga.; Lt. C. Plerozzi, McChord AFB, Wash.; Maj. J. P. Lindley, USMC, Bergstrom AFB, Texas; Capt. T. J. Keane, USMC, 354th Fighter Interceptor Sq.; Capt. J. M. Mason, USMC, Bergstrom AFB; Capt. R. J. Wright, Alexandria AFB, La.; Lt. (jg) W. C. Sandlin, Shaw AFB, S. C.; and LCdr. A. C. Koplewski, RAF Test Pilot School, England.

Queen Chats with Marine Ex-Cherry Pointer Pictured with Her

2ND NAW, CHERRY POINT—A Marine pilot stationed here with the Second Marine Air Wing until last summer appeared on the front pages of newspapers across the country talking with Queen Elizabeth of England.

The different uniform worn by 2nd Lt. Jim Couch attracted the attention of the queen while inspecting pilots of the Royal Navy's Home Air Command in Hampshire where he is assigned as an exchange pilot.

Cough, formerly with VMF(N)-531, is in England under an American-English program of exchanging experienced air officers between both countries. Two RAF and two RN pilots are at Cherry Point under this program.

Hurricane Traps Bird Flock VP-2 Wins Praise for Year's Hunting

COMFAIR, JACKSONVILLE — A new type of hurricane was discovered by VP-2 during its patrol activities during the 1952 hurricane season. The squadron completed its hunting for the year with a commendation from Adm. Lynde D. McCormick, CincLant.

Climaxing the season was hurricane *Fox* which formed in the Caribbean late in October. This storm was notable because of its "birds-in-the-eye" nature. The hurricane developed so rapidly and was so intense that thousands of birds were trapped in the "eye" of the storm.

Weather squadron planes often found themselves flying formation with a flock of birds while in this calm area in the center of the storm.

Headed by Cdr. David J. Walkinshaw, VP-2 hunted and tracked hurricanes in the Atlantic, Caribbean and Gulf of Mexico from May until late November.



GRUMMAN Albatross airplane bulls are traveling 984 miles overland from Chrysler Corporation's Plymouth plant in Evansville, Indiana to Grumman's plant on Long Island. Low-bed trailers carry the 60-foot-long bulls through low tunnels and narrow bridges across six states, via Pennsylvania Turnpike and Jersey City. People along the way think they are subs or secret weapons.

Italian Scouts Visit Leyte Big Carrier Gives Tour to 90 Visitors

USS LEYTE—While this carrier was at anchor outside of La Spezia, Italy, 70 Boy Scouts and 20 Girl Scouts from the area came aboard to visit the 27,000-ton flattop.

Guides took the scouts along the hangar deck showing them the planes and answering questions about the jets and conventional prop planes. They took the side elevator to the flight deck for a "guided tour", then to the crew's mess hall.

There they were treated to portions of fruit cocktail and cake and given a sample of the atmosphere in which an American sailor dines. Before going ashore via ladder and motorboat, the scouts each were given a picture of the *Leyte*. The scouts and their hosts both enjoyed the shipboard visit immensely.



EXCHANGE pilots with VAdm. Gardner, front row: Wright, Lindley, Keane, Gardner, Henry, Plerozzi, Gray, Sandlin; Rear, Kotlewski, McDonald, Blackman, Mason, Wilcox, and Yeatman.

USS Bataan Entertains VIP Bird Comes Aboard On Dark Night

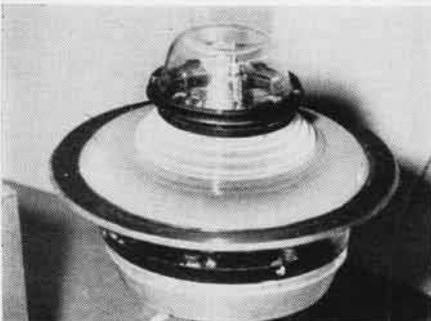
Centuries of sea lore and superstition have caused seafaring men to treat an albatross as a VIP whenever he honors a ship with a visit.

The USS *Bataan* entertained one of the big avian visitors when he came aboard unannounced one dark night at sea. His arrival was announced by a clatter in the radar gear, followed by a thud on the deck below. Investigators found the battered form of the albatross, sprawled helplessly in the corner of the bridge.

As the bird regained consciousness, he peered at the sailors with distressed and pained eyes. One wing was drooping helplessly, and he had a nasty bump on the head. He was rushed to sick bay where he was logged in as Albert Albatross. A dentist X-rayed Albert's skull and found no fractures. A splint was made for his ailing wing and rest was advised.

As the big bird was making a rapid recovery, he established the signal bridge as his particular domain. A pail of water was kept there, while the crew kept him supplied with choice morsels from the galley. Then on another black, starless night Albert departed, returning to the fog enshrouded sea with a good word for the hospitable men on the *Bataan*.

Moffett Has Flying Saucer Mech Designs One After Movie Version



MOFFETT FLYING SAUCER BUILT IN 400 HOURS

NAS MOFFETT FIELD—This West Coast base has a flying saucer to disprove the argument that those interplanetary visitors are all bunk.

The object has three crew members, a space pilot, engineer and navigator. It has 26 electric lights ranging from pinpoint size to 50-watt size bulbs and has a robot that shoots a beam of light.

The saucer is in the FASRON-10 tool room. Designed by John Kilther, AM2, it is 10" high by 15" in diameter. Construction took 400 man-hours covering three months of spare-time work. Kilther got the inspiration for his saucer after seeing a movie. All of the lights in the saucer work, Kilther's only worry being how to make the invention fly.

ALL-WEATHER PLANES

At NAS Moffett Field, VC-3 pilots fly in formation six of the seven plane types they use. The F6F *Hellcat* is followed by F4U-4 and F4U-5 *Corsairs*, Navy's famous workhorses; the F3D *Skyknight*; and last, the F2H-2 and F2H-3 *Banshees*.



Waves Boast Big Muscles Kingsville Team Gives Males A Race

NAAS KINGSVILLE — This base claims a first which it believes no other naval activity can boast—a Waves weight-lifting team.

The women got the idea while attending a men's weight-lifting meet with Corpus Christi. Before long, Lowell M. Frick, YNTI, the "professor," with 20 years of weight-lifting experience, had nine WAVES, two Navy wives and the 10-year-old daughter of the commanding officer in his classes.

Don't laugh, listen to what the women can lift! Two of the girls can dead lift 235 pounds, four of them clean and jerk almost 125 pounds over their heads, and two can lift 90 pounds in the military press. Men in Frick's classes have a hard time to keep up with the women.



HE DOESN'T look happy, but 1st Lt. Byrne P. Whalen, Air Force B-26 pilot probably is plenty glad to shake hands with his rescuers, LCdr. Stafford S. Pulford and John Jackson, AD1. The pair pulled him out of the Pacific off Oahu when his bomber crashed, and deposited him on a rescue boat. Both are from an HU-1 Detachment.

London Fog Hampers VR-25 Link Trainer Closed Down by the Fog

VR-25, ENGLAND—The worst fog in England's recent history last December curtailed this transport squadron's activities. It even got so bad the Link trainer had to be grounded—nobody could find the Link building.

The following day was slightly worse, so all activities were secured. No one could find the aerodrome. Normal operations were resumed when the weather went back to normal, i.e., 200 feet and 50 yards.

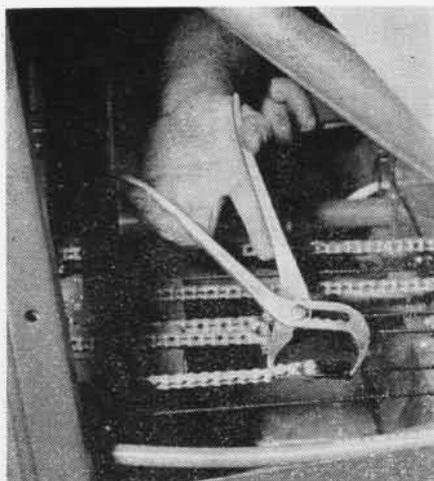
VA-15 Pilots Get Navy E's Share of Credit Given Ordnance Gang

Pilots of VA-15 at NAS CECIL FIELD scored a mark of *excellent* in two phases of annual competitive aerial gunnery and a *good* in a third exercise. Maintaining their excellent fleet standing, pilots of the squadron received their highest grade in rockets and dive-bombing, with glide-bombing second.

Five pilots chalked up individual Navy E's. Lt. Harry Allen attained the ultimate in garnering his E in rockets by scoring a bullseye with every round. Lt. (jg) Robert McMillen and Lt. (jg) W. V. Lassen also received the E for rocket firing.

Cdr. Roy Isaman, CO, earned the distinction of being the only double winner by getting E's in both dive-bombing and rockets. Lt. George Muirhead was awarded the only other dive-bombing E.

VA-15 prides itself on its crack ordnance crew and claims that a good share of the credit for their success must go to the outstanding work of the gang.



TOOL FOR CHAIN RELEASE INCREASES SAFETY

Tool for Chains on HO3S

At NAS SAN DIEGO, Gillman G. Cordle has developed a special tool to handle control chains on the HO3S. The tool has been approved for optional adoption by other activities under the Navy Awards and Incentives Program.

The use of this tool allows the chains to be released without removing passenger seats, back padding, back rest and cover panels. Since each plane has four chains that must be released, two hours work per plane is saved.

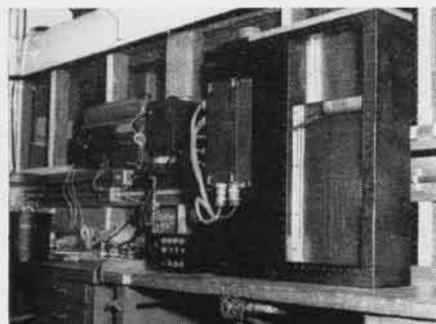
Pensacola Device Approved

At O&R Department at NAS PENSACOLA, Tom McNeece, AIM, has designed a test device for drone fuel quantity transmitters. It has been approved under the Navy Awards and Incentives Program.

The device is a system simulating conditions equivalent to those encountered in the F6F-5K reserve tank fuel quantity system and is used for checking reserve tank fuel quantity transmitters.

The tank has a cross section similar to that found in aircraft, a fuel junction box, a transfer pump, a quantity gauge, and necessary wiring and indicating lights to show operation of the system. The tank is filled with varsol, and the transmitter is inserted just the way it is it actually in the drone.

A valve in the bottom of the tank allows the fuel to drain out, simulating the use of fuel from the tank. Transmitters turn on a light showing that the correct magnetic values are in operation and will also begin to refill the tank by energizing the fuel transfer pump. When the proper fluid level is reached, the transmitters turn off the indicating lights.



DEVICE CHECKS ACCURACY OF TRANSMITTERS

This device helps to determine the condition of transmitters before they leave the overhaul shop, reduces the time required to check the transmitter during installation, and eliminates discrepancies and rejects.

Crane Built on Fire Truck

Chief F. M. O'Neil and his crew in crash and rescue operations at NAS QUONSET have designed and built a crane for a fire truck. Their design has been approved under the Navy Awards and Incentive Program.

Often a crane is needed as well as a fire truck at the time of a crash. The fire truck is always on duty during flight operations, but a crane must be sent for if needed and this takes time. A crane on the fire truck is the answer to the problem. The crane shown here is made from salvage material.



DUAL JACK STANDS PROVIDE CRANE STEADY BASE

The crane is located on the front end of the truck because it is easier to guide the crane to the best fitting points of the plane than it would be were it installed on the rear.

When the truck is used in an accident, the assistant driver immediately gets out at the right side and releases the right front jack. Next he releases the cable hook and then proceeds to the left side to release the jack there. Next he fastens the hook of the cable on the tail end of the plane, and the driver proceeds in lifting operations.

In addition to Chief O'Neil, W. M. Foley, Joseph M. Smith, Robert W. Dexter, and Joseph H. Galowski worked on the design.

Distinguished Extinguisher

After attending a recent conference in Los Angeles, Alfred O. Scott and William A. Stead of MCAS EL TORO's fire prevention bureau came up with a new kind of fire extinguisher. Emphasis at the conference was placed on the need for improved fire-fighting equipment.

The new twin 75 CO₂ extinguisher has several advantages over other models. It is constructed on horizontal rather than vertical lines, is 50 pounds lighter than the usual extinguisher and can be operated by one man rather than two.

The equipment consists of a cart on wheels which houses two bottles of chemical from which a hose and nozzle extend. The cart was built from salvage material. Total cost to the designers was \$90 while comparable commercial equipment runs around \$1100.

The first extinguisher went to VMF(N)-542.

Air-Driven Gyro Instruments

Bureau of Aeronautics has received recommendations from the Fleet to install air-driven gyro instruments in certain types of naval aircraft. These recommendations have been based in part on the fact that electrical system failure and simultaneous malfunction of the automatic changeover have resulted in loss of the gyro flight instruments.

Insofar as practicable, the bureau has complied with these recommendations. Present status of gyro instrumentation is as follows: Jet and piston carrier aircraft are, or will be, equipped with air-driven turn and bank indicators.

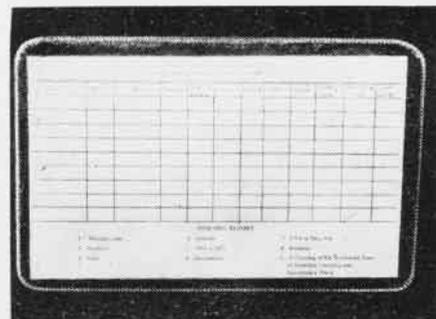
Older-type transport aircraft like the R4D, R5C and R5D have complete air-driven gyro instrumentation. However, some of these planes will have electrical gyro instruments installed during modernization. Current patrol aircraft are equipped with all electric instruments with separate and isolated electrical circuits for the main and alternate inverters to the instruments.

These instruments, considered the most reliable electrical circuits available, are designed so that no point of failure can cause complete instrument loss.

New Plastic Chart Aids Fliers

A plastic cover for the pilot's flight progress chart is making things easier for pilots at NAS QUONSET POINT.

Designed and constructed by Lt. R. E. Schierenberg, the chart is laminated in plastic with a rough transparent surface for inscrib-



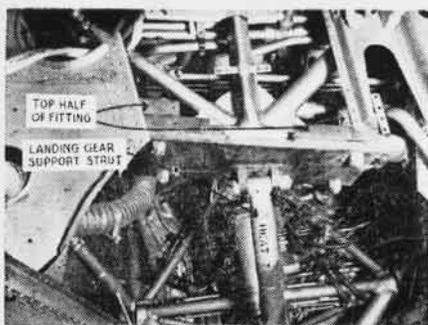
PENCILLED DATA ON PLASTIC CAN BE ERASED

ing flight data on both sides. One chart can be used over and over again as penciled data can be readily erased on the plastic cover.

Pilots at NAS QUONSET POINT have used and evaluated the device and claim it has made a material contribution to the ease of recording flight data on instrument and VFR navigation hops. The chart provides less cumbersome equipment to handle and makes a steady writing board. It is compact enough to be carried in the pocket of a flight suit. The device is a navigational aid since the pilot knows at all times where he is.

Proof of the pudding is that Lt. Schierenberg made up enough to put in cross-country packets and every one has disappeared.

● USS PHILIPPINE SEA—Eight men from the Convair Plant in San Diego enjoyed a week's cruise as Navy guests. Purpose of the cruise was to acquaint them with the Navy, bringing them into contact with many of the weapons they build, seeing them at sea.



AUXILIARY LANDING GEAR SUPPORT IS SHOWN

Fix for Damaged Beechcraft

NAS SAN DIEGO—The O&R department is making available fittings which can be used to make a damaged Beechcraft capable of flight from some outlying point to points of overhaul. The idea is credited to Jean F. Pierce who has received an award under the Navy Awards and Incentives Program.

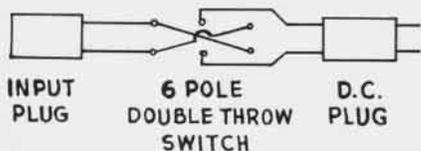
Frequently a plane sustains landing gear failure, and the landing gear slide tube supports are damaged. If this occurs where there are no adequate facilities for repairs, it will result either in the striking of the aircraft or in the expenditure of a great amount of time, trouble and expense as it is not feasible to truck this type of aircraft on public highways.

These special interim fittings have been used to fly an SNB-5, and it appears that the fittings are a real solution to making an interim fix so that the airplane can be flown to overhaul.

Collins Tuning Drive Tester

VF-62 reports a simple, but very effective, device for testing the Collins tuning drive unit of the AN/ARN-6. It was perfected by L. D. Berry, ATI, and W. Ascroft, AT-1, while aboard the USS *Coral Sea*.

This device is used in lieu of the correct control box normally used which was not available aboard the carrier. With this device, one can check the operation of the tuning drive unit and also preset the equipment to a desired frequency in the ship, thus assuring correct alignment between control setting and receiver.



VF-62 HAS FOUND THIS TESTER VERY EFFECTIVE

The device consists very simply of a six pole-double throw switch connected to a 28-volt DC source and the input side of the tuner. The switch allows a reversal of polarity, thus obtaining a device which will permit operation of the tuning motor in either direction, depending upon the position of the toggle switch.

● MCAS KANEHOE BAY—The first jet fighters to be based on Windward Oahu have been delivered to VMF-214.

Snapback Method for Canopy

Lawrence D. Woodward of NAS SAN DIEGO has received recognition for suggesting the use of the "snapback" method of forming F4U plastic canopies. The Navy Awards and Incentives Program has announced that Woodward's suggestion has resulted in an improved procedure.



SNAPBACK METHOD YIELDS SUPERIOR PRODUCT

The suggestion was made when the Supply Department received a large number of F4U canopies that were optically imperfect and could not be used. The canopies were urgently needed, and the plastic shop had to manufacture canopies. This took eight men for short periods of time when plastic sheets came out of the oven to stretch over a plug. Using this method, the production maximum for one day was seven canopies.

Woodward's method was suggested. In this a vacuum tank with suitable yoke to form a reverse curve and plug to form contour was used. The glass was drawn by vacuum and then plug-lowered, allowing the glass to snap back against the plug.

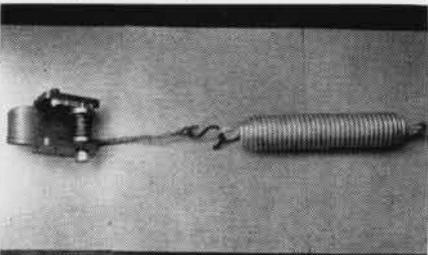
This method required only five men to handle the glass, and with a suitable ram, three could do it easily. This method raised the production maximum to 12 canopies per day.

While this method has been used by private industry and NAS SAN DIEGO for many years, the suggester was given credit for persuading O&R to employ this technique for this particular type of work.

Bungee Cable Tool Devised

The Navy Awards and Incentives Program has approved a bungee cable and spring tool designed by Joe M. Estrada of NAS CORPUS CHRISTI. BUAER believe that it will be found useful to squadrons operating R5D aircraft.

The tool is designed for use in replacing landing gear warning switch brackets or bolts,



BUNGEE CABLE TOOL PROVES USEFUL AT CORPUS

bungee cables and bungee springs or rollers.

Although the contractor recommends the use of block and tackle for this operation, this tool is considered an improvement because a positive locking mechanism will hold the bungee, the tool is easier to use, and it takes less space.

Using this tool, the airplane does not have to be raised off deck on dollies. Now the job can be done with one man using this tool. About 10 man/hours per airplane is saved. It takes only four or five minutes to install this tool and relieves the pressure on the bungee spring allowing the changes to be accomplished. This takes about one-half man/hour.



TYING DOWN JRB and SNB because of a sudden squall is made easier and surer by a hook attached to wing tie-down eyes. H. A. Baldwin, AMG at Pensacola received an award from Navy Awards and Incentives Program for making this beneficial suggestion.

Clutch Actuator Test Kit

NAS LAKEHURST—A clutch actuator test kit which has proved to be a very efficient trouble-shooting device in the maintenance of HUP-1 and HUP-2 Piasecki helicopters has been developed by W. L. Goodspeed, AEC.

To assure proper friction clutch engagement, "Dog" clutch engagement, and friction clutch disengagement, the arm of the clutch actuator must be set to close critical tolerance. Attempts to adjust all of these settings in the aircraft have proved difficult and time-consuming. The new test kit offers a solution.

The tester may be connected directly to the actuator in the tail of the aircraft. It is powered by a battery cart or the aircraft battery. This tester merely replaces the aircraft's electrical system and all the operations carried out by the pilot may be duplicated on the tester. In this manner, a rapid check may be carried out to determine whether the defect is in the actuator alone or in the aircraft electrical system.

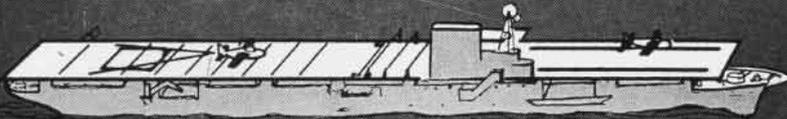
In the shop, the tester may be used to make fine adjustments to the actuator in conjunction with the universal mounting jig which holds the actuator in a rigid level position horizontally and vertically.

The tester has been used by Helicopter Utility Squadron Two and has prevented the failure of many clutch actuators, which might ordinarily have been turned in to supply as defective, have been repaired, adjusted and used again.

BUAER has approved the tester for optional adoption by other activities.

● NAS ALAMEDA—VP-9 has returned to its home base after a six-month tour in the Korean Theater. They are glad to be home.

CARRIER NOTES



BUREAU OF AERONAUTICS—SHIPS INSTALLATIONS DIVISION

Fortune Smiles on Marines

Leathernecks Win \$1000 on CBS Show

The nationally televised "Wheel of Fortune" spun to a thousand dollars for two Second Marine Air Wing corporals, Ronald Berg and Raymond Fraley, who recently figured in a dramatic rescue from the intake of a jet plane.

Newspaper accounts of Cpl. Fraley's



FRALEY, BERG (CENTER) GET RUSSELL'S WORD

action in saving Berg prompted the Columbia Broadcasting System to invite the two Leathernecks to New York for an appearance on the television quiz.

The show's emcee, Todd Russell, offered Cpl. Berg a chance to thank his buddy again by spinning the program's "wheel" in quest of prizes. His luck stayed with him as the wheel spun and came to a stop at the thousand-dollar group of prizes.

Needing correct answers on two of his four questions, Berg missed the first, recovered on the second, missed the third, but to the relief of everyone answered the fourth correctly.

Before the spinning of the wheel, Berg described Fraley's alert action in saving him from the intake of a *Banshee* jet. Fraley had reached into the intake up to his shoulders to grasp Berg and prevent him from being sucked in further than his hips until the engine could be turned off.

The television was thrilling for both men. Fraley wasn't sure which was more full of suspense—holding Berg against the force of the jet intake or waiting as he unscrambled the winning proverb.

4 Engines Have 1350 Hours

VR-8, PACIFIC—This transport squadron's flight engineering department set a first in maintenance when their own record was broken in November for flying hours on engines of a Douglas R5D *Skymaster*. Each of the P&W engines had completed more than 1,350 hours.

It is not unusual for one or two engines on a plane to better the 1300-hour mark, but is considered outstanding for all four to exceed that total. Flying time was made on hops between the West Coast and Far East.

Cooling H4B Catapults

Excessive oil temperatures were recently reported in the H4B catapults aboard the USS *Leyte* (CVA-32) during rapid and prolonged aircraft launchings occasioned by carqual operations. Reduction of oil viscosity, causing an increase in the pumping time required to build up the launching pressure, pump pounding, and uncomfortable machinery compartment temperatures accompanied the high oil temperature.

The introduction of a sea-water-cooled heat exchanger into the oil system of each catapult was recommended by the Naval Air Material Center as the most feasible method of maintaining a satisfactory oil temperature, namely, a temperature below 140° F. Such a system has been installed and tested aboard the USS *Tarawa* (CVA-40).

To determine the effect of high oil temperatures on catapult pump operation, NAMC is installing appropriate test gear on the H4B catapult at that activity.

Evaluation of test data from the above installations will determine the necessity for installing oil cooling systems on all H4B service catapults.

Arresting Engine Problems

The installation adopted for certain Mk 5 arresting engines on the CVE-105 class escort carriers has caused some single-reeved barrier engines to have two purchase cable sections differing greatly in length. Repeated application of load to the purchase cable will therefore result in different amounts of permanent stretch occurring in each half of the purchase cable. Consequently the cable terminal on the side of the long purchase cable will not properly be retained in the stop at the deck sheave, and repeated operation of the barrier stanchion might pop the terminal out of its socket in the stop.

The Naval Aircraft Factory is producing a supply of turnbuckles for installation at the anchored end of the purchase cable on engines having this arrangement. A simple adjustment will eliminate the effect of the length difference and prevent cropping of one side of the purchase cable and repouring of the socket, until the purchase cable stretch has reached the limit of the turntable adjustment. An arresting gear bulletin will be issued to cover the details of installation of the new turnbuckle.

CVA-41 class carriers engaged in *carqual* operations using jet aircraft have reported that repeated landings of this sort produce higher arresting engine temperatures than those encountered previously, drastically shortening the usable life of the ram packing on #2 engine. Apparently there is a lack of lubrication because the liquid film on the ram evaporates as soon as the ram is

withdrawn from the cylinder into a region of atmospheric pressure. The problem of providing a clean, simple and effective installation of some cooling system is most difficult, and other solutions are being sought.

The most promising solution aimed at halving the number of landings on the #2 engine is to single-reeve the #2 engine (instead of the #1 engine as at present) and to double-reeve the #1 engine (presently single-reeved) to the #4 deck pendant. This change will make the #1, #2 and #3 engines all take about the same load, whereas the #2 engine now carries much more than its share, and the #3 engine carries more than the #1 at present.

This change in reeving will be covered by a shipalt to be accomplished during the first extended availability. Also, a new type of ram packing, designed specifically for extra high temperature operation, is being procured for test aboard ship. In addition, an experimental lubricator is being installed on CVA-42 for evaluation prior to the installation of the new high temperature ram packing.

H4 and H8 Catapult Rings

Testing has been completed on a "D" shaped holdback and tension ring and a modified holdback head to be used with it. This new assembly will eliminate the need for a tension ring retainer boot and prevent rings from "cocking" and breaking prematurely. Change kits with the "D" ring and new holdback head are being manufactured and will be issued to the Fleet in the near future.

● USS *BON HOMME RICHARD*—The *Bonnie Dick*, flagship of RAdm. W. D. Johnson, ComCarDiv One, returned to NAS ALAMEDA after eight months' combat duty. Four squadrons of CAG-7 from NAS QUONSET POINT were aboard.





AVIATION ORDNANCE

Chourre New Bomb Test Unit

Faced with the possibility of testing several thousand aircraft spark plugs, the aviation repair shops of the USS *Chourre* (ARV-1) took an old B. G. pneumatic bomb test and converted it into a fast operating model.

Robert A. Harper, ADC, and John D. Rown, AD, combined their technical skills to devise the improved model. Harper provided the majority of the brain work while Rown supplied the brawn.



CHOURRE SHOP INGENUITY BUILT THIS TESTER

The modified bomb test allows one man to do the work of three or four. Using the old hand model, it was a good day's work to test 700 plugs. With the new model, the work is over 70% faster. One man can now test approximately 2,600 plugs in eight hours.

The basis of the improved model is an M-519 pneumatic type bomb test. The operating handle was removed, and the plug sear replaced by a brass hinged holder. The plug is inserted in this holder and swung into its vertical position.

Underneath the bench is the new actuating arm. With one motion of the foot pedal, the new arm (1) closes the electrical circuit sending juice from the magneto to the plug, (2) seats the plug, and (3) opens the compressed air valve.

The foot pedal and actuating arm allows the operator to have both hands free for insertion and removal of the plugs. Removable inserts in the hinged holder permits rapid change over from long reach to short reach plugs.

As an added convenience, an inspection mirror is placed on top of the assembly. Inserting an elbow in the line to the pressure gauge and placing it in a vertical position has eliminated the necessity of bending over to read the gauge.



TOOL SHORTENS ROCKET PLUG-IN TIME GREATLY

Rocket Plug-in Time Lowered

As a result of difficulties encountered in plugging in rocket electrical connectors, Mk 10 Mod 3 in AD type aircraft, a special tool was devised by Arthur Fuoco, AO1, aboard the USS *Franklin D. Roosevelt* (CVA-42).

This tool was made from a 7/8" box end wrench, modified by heating and bending the box end at right angles to wrench shank. The shank was then cut approximately 4 inches below box end. A 3 1/2" handle was then welded to shank. A 3/4" segment was removed from the box directly opposite where shank joins the box. The segment was removed for passage of the rocket pig tail. Two notches, 3/32" deep by 1/8" wide, were cut in top of wrench to fit over lugs on rocket plug.

It has been found that the use of this tool decreases rocket plug in time considerably. However, owing to the greater leverage obtainable users of such a tool should take care to avoid use of excess force which may cause shearing of the locking pins of the electrical connector plug.

Test Unit Mk 37 Mod 0 Chan

Maintenance activities using test unit Mk 37 Mod 0 should modify it as soon as possible to Mod 1 in order to make the test unit usable with bomb director Mk 3 Mod 4.

Three changes are specified:

1. The *test point* selector switch and the T1-T2 lever switch are to be modified to permit timing cycles to be run in test points D and G. The indirect effect is to permit the use of an improved procedure for adjusting the *alt-fire* potentiometer of computer Mk 63 Mod 0 or 2.

2. A filter is to be added to the test point B to facilitate the adjustment of the K-NUL potentiometer.

3. A Mod 3-Mod 4 switch is added to make necessary changes in the circuit for testing bomb director Mk 3 Mod 4.

Modification kit, stock number J942-K-314-125 is available in the Aviation Ordnance Supply System and may be requisitioned in accordance with OP 1820. This kit contains one double-pole, double-throw toggle switch, one Mod 3-Mod 4 switch plate, one filter assembly, and all necessary wire.

For more detailed instructions refer to NAVORD Instruction 8610.1 just released.

NavOrd Instructions Are Out

BUORD has issued the following NAVORD Instructions on aviation subjects. If aviation activities have not received their copies, NAVEXOS 158, stock forms and publications requisition, should be submitted through the District Publications and Printing Office by which addressee is serviced.

- 8036.1 Shotgun Ammunition Allowances; Cancellation of
- 8500.1 Underwater Ordnance; Security Classification of (includes aviation)
- 8600.1 Caliber .30 and .50 Aircraft Machine Guns and Pyrotechnic Equipment including all Accessories and Spare Parts; Change in Inventory Control Cognizance of
- 8600.2 Line Maintenance Repair Part Sets and Tool Sets; Changes in Method of Requisitioning, Replenishing and Stocking of
- 8610.1 Test Unit Mark 37 Mod 0, Conversion to Test Unit Mark 37 Mod 1
- 8630.1 Annual Ammunition Training Allowances for Naval Air Reserve Command and Marine Air Reserve Command
- 8630.2 Obsolete M3A1 and M7 Disintegrating Links
- 8640.1 Aircraft Parachute Flares Mk 5 and Mk 8; Suspension Bands for
- 8640.2 J48 Jet Engine Igniting Cartridges
- 8650.1 5" Rocket Head Mk 25 Mod 1 for the 5" Rocket Mk 32 Mod 1, Description of
- 8680.1 Suspension Band Mk 43 Mod 0 (Torpedo); Preparation before using
- 8710.1 20 mm Automatic Gun M3, Proper Maintenance Procedure for
- 8710.2 Suppl. 1 20 mm Feed Mechanism AN-M2, Relubrication of
- 8710.3 Trigger, Electric AN-M4, Modification of
- 8710.4 Log Books for 20 mm Aircraft Guns, NAVORD Form 2086 (New 1-52), and Feed Mechanisms, NAVORD Form 2092 (New 1-52), Use and availability of
- 8710.5 20 mm Feed Mechanism AN-M2, Modification of

Link and Delink Information

OP 1713, 20 mm link loading machine (Army M16), which is an instruction manual and parts list, has recently been published and issued to the Fleet.

All activities using the 20 mm link loading machine should ensure that the operators of the machine are furnished a copy of this OP to insure proper operating and maintenance functions. It contains operation instructions for both linking and delinking 20 mm ammunition, assembly and disassembly instructions, maintenance and packaging instructions as well as a parts list by drawing number and BUORD stock number.

This publication supersedes NAVORD OD 6680, 20 mm link loading machine M16 (T27) and Delinker, copies of which should be destroyed.

New Feeders Ready for F9F

All F9F squadrons are requested to draw 20 mm AN-M2 feed mechanisms of Sunbeam Corporation manufacture in sufficient quantities to replace all feed mechanisms on hand not of Sunbeam manufacture.

Replaced feed mechanisms shall be thoroughly cleaned, preserved with oil 1363 or MIL-L-3150 by brushing on, packaged in the same cartons that the Sunbeam feeders were received in, and return to supply for re-issue.

All requests for Sunbeam feeders should cite this article as authority.

LETTERS

SIRS:

I hope you can help me. I am collecting squadron insignia patches and if you can give me the addresses of the units from which I can obtain them or put this in NAVAL AVIATION NEWS, I would be grateful.

I was a member of VF-913, VF-837 and VA-913; but I have been inactive since last June when I entered the hospital for a lung infection. This hobby does a lot to make time pass and things look brighter.

Thank you from a sailor in drydock for repairs.

WILLIAM D. JONES, AMH3

Boston Sanatorium, Ward F

249 River Street

Mattapan 26, Mass.

How about it, boys? Here's your chance to give a lift.



SIRS:

In looking over back issues of NANews and the BUAER Newsletter, I came across numerous references to the late Adm. Marc A. Mitscher. I am engaged in researching material for his biography.

I am particularly anxious to contact naval aviators who had some personal experience with the Admiral during the period 1919 to 1941. I would also like to contact strike leaders who were interviewed by him during World War II.

Any anecdotal matter, personal letters from the Admiral, or notes of interest relative to his naval career would be appreciated.

TED TAYLOR, Lt., USNR

OFFICE OF INFORMATION

DEPARTMENT OF THE NAVY

WASHINGTON 25, D. C.



Blinker Comes to Hangars

VP-10 Peps Up Its Training Program

NAS BRUNSWICK—A unique method of sending and recording blinker has been devised by VP-10's training division to give officers more chance to practice code.

When pilots were not flying, there was always office work to occupy their ground time. So instead of sending them to the training building, training officer LCdr. T. M. Campbell brought the blinker to the office spaces.

Now the blinker practice is scheduled in the hangar, flashing from one balcony and receiving on the opposite balcony where office spaces are located. The leading radioman sends code while the officers and enlisted office help who are free can copy the "dit-dahs" outside the office doors. Messages were prepared with help of Lt. (jg) G. S. Schuchart, communications officer.



VR-6 Finds A Lost Plane Plane Crash In Frozen North Averted

On a routine *Bluejay* hop from Westover AFB to Thule, Greenland via Goose Bay, MATS 50863, an R5D operated by VR-6, helped avoid a plane crash in the frozen north.

Pilot Lt. Russell Stokke and co-pilot Lt. A. A. Degennaro were carrying a payload of passengers, cargo and mail in support of the Thule construction job. Lt. Stokke heard Goose Bay reporting a *de Havilland Dove* being ferried from England to the west coast was long overdue. Goose Bay couldn't receive the *Dove* on any of its radio frequencies, and it was difficult to pick out the tiny blip on the radar scope because of bad weather.

The British plane was estimated somewhere north of Goose Bay, so Lt. Stokke overflowed the base and alerted crew members and passengers to keep a sharp lookout for the *Dove*. The plane was finally sighted about 50 miles north of the base, flying a heading that was taking it away from Goose Bay.

The R5D got into formation alongside the lost plane and established radio contact on one frequency. Lt. Stokke told the pilot to fly formation with him so that he could lead the plane back to Goose Bay. The field was closing in, and it would be necessary for the pilot of the *Dove* to come in on GCA. But the pilot couldn't receive GCA on his radio frequency, so the R5D stood by to relay instructions.

When the British plane was safely on the ground, the pilot had only five minutes of fuel left in his tanks. He wanted to buy all the Navy men in the R5D a drink, but by that time visibility was below MATS landing minimums and the plane and crew flew on without accepting the pilot's offer.

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● THE COVER

Another in Naval Aviation News' series, "Faces in Naval Aviation", is featured this month. Cdr. W. R. Peller, CO of ZP-3, Lakehurst, symbolizes the lighter-than-air pilot.

● PHOTO CREDITS

Inside front cover photo of Gloster GA-5 delta wing jet from "Flight" magazine. The picture of the helicopter rescue on page 15 was from the Ocean County Leader, Point Pleasant, N. J.

● SUBSCRIPTIONS

An unclassified edition of Naval Aviation News, containing special articles of interest to Reserves, is available on subscription for \$2 a year through Superintendent of Documents, Government Printing Office, Washington 25, D. C. Changes of address for this edition should be sent to the above address.

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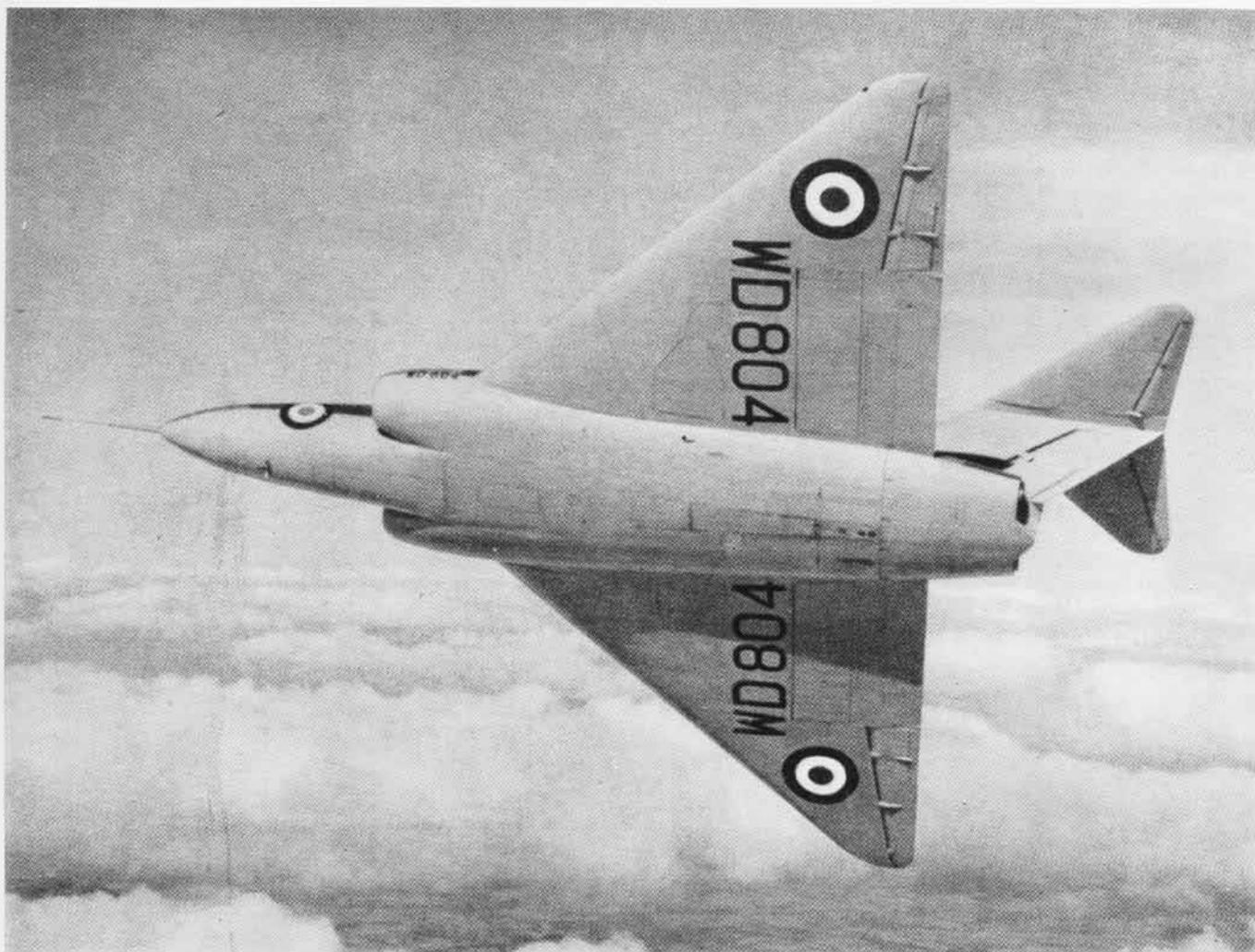
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NEW FOREIGN JETS

Recognition students will have little trouble with the Gloster GA-5 delta-wing jet with elevators atop the vertical stabilizer. Below is the new Swedish Saab-32 with radar in its nose.





NAVAL AVIATION
NEWS

Badges of a Proud Profession

AN OFFICER'S shoulder board, pilot's goggles and Navy gold wings: each is a symbol of a proud profession. They mark a man doing a man's job. Naval aviators flying the U. S. Fleet's swift fighters, attack bombers and ranging patrol bombers wear them all. You can too, by becoming a Naval Aviation Cadet—NAVCAD. The Navy and Marine Corps need pilots now. NAVCADs are given intensive flight and officer training, following which, they are commissioned as Ensigns or 2nd Lts. The new officers then join a squadron for challenging and rewarding service. If you are in good health, between 18 and 27, unmarried and have two or more years of college, get all details on NAVCAD from your nearest Naval Reserve Air Station or Navy Recruiter. **YOU** can wear the badges of a proud profession through NAVCAD.