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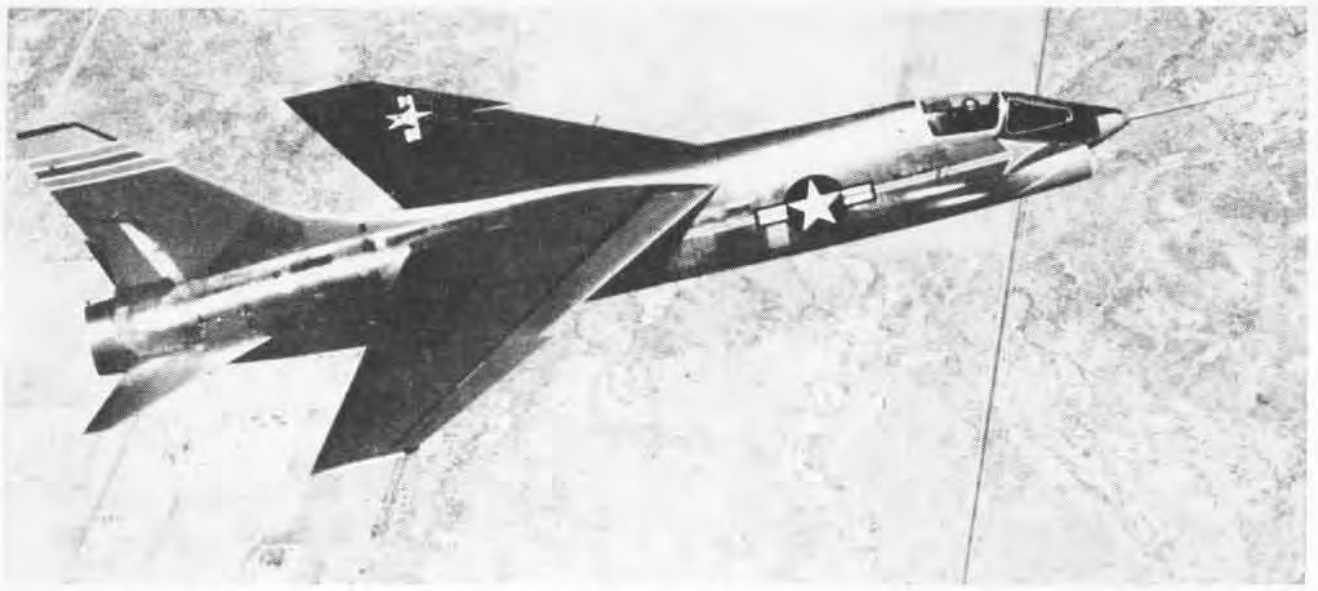
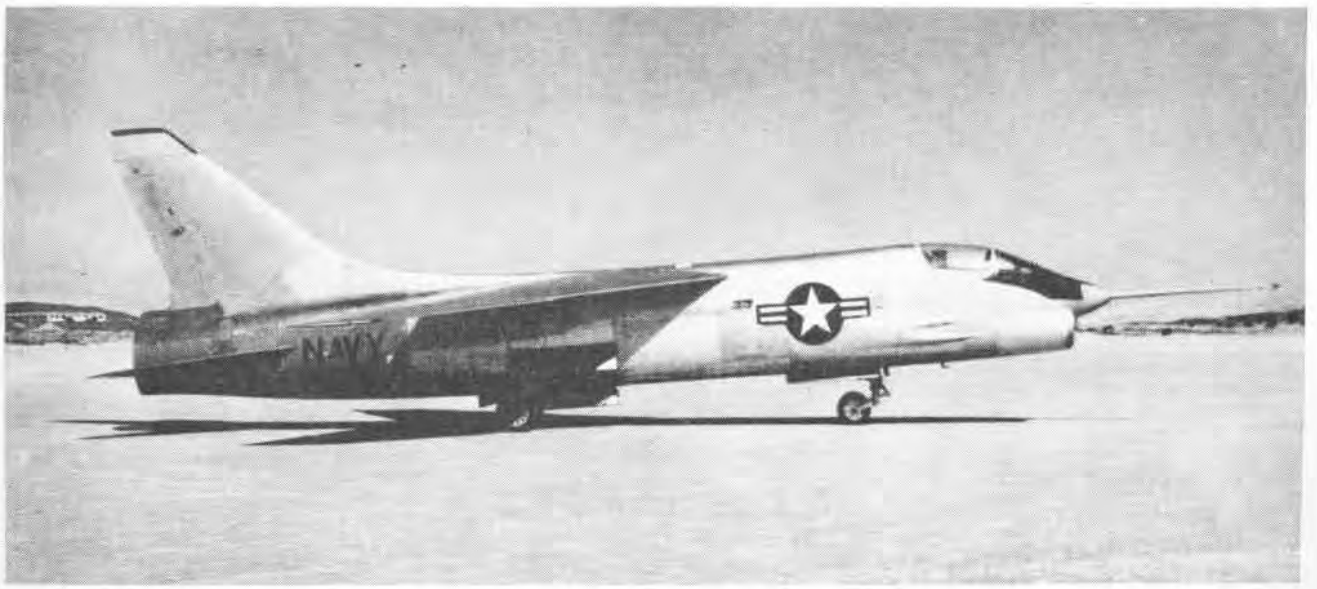


NEW NAVY FIGHTER FLIGHT TESTED

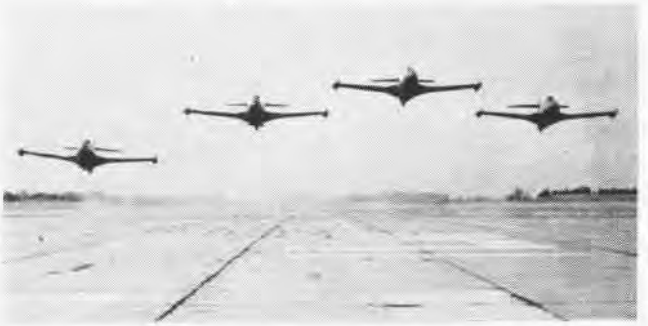
THE NAVY'S newest jet fighter plane, the XFSU-1, designed to operate from carriers at supersonic speeds, has made a series of successful flight tests at Edwards AFB. Built by Chance Vought, the new plane is powered by the proved Pratt and Whitney J-57-P-4, equipped with afterburner.

Specifications for the XFSU-1 call for a high rate of climb, exceptional combat ceiling, and penetration of the speed of sound in level flight. The slender, swept-wing fighter combines a powerful engine with a trim, lightweight frame to achieve the greatest possible speed consistent with shipboard operating requirements.

The thin wing is mounted high on the fuselage and is set well back from the cockpit. The horizontal tail is joined low on the fuselage. A short, pointed nose, fairing smoothly into a small cockpit canopy, helps reduce drag and aids over-the-nose visibility, essential to carrier landings. Weight is saved by a simplified pilot ejection seat and use of Titanium in some sections.



BLUE ANGELS



IN BEARCATS, PANTHERS, COUGARS, BLUE ANGELS, BY PERFECTION PERFORMANCE, REPRESENT NAVAL AVIATION AT ITS BEST

EIGHTEEN minutes after the blue and gold swept-wing jets had first flashed over the crowd in a low pass, the last precision maneuver had been completed in a vertical burst of speed. With the beautiful "fleur-de-lis", another *Blue Angel* demonstration of precision flying was over.

For eighteen thrill-packed minutes, more thousands of Americans had watched while these Navy pilots flying *Cougar* jets executed intricate close order aerobatic maneuvers, at all times holding a tight, five-foot separation formation.

From "eye level" to 6,000 feet, at times near Mach 1, the *Blue Angels* exhibit techniques taught every Navy fighter pilot. In performance polished diamond-bright by practice, they use two basic formations. From the echelon, they execute echelon, reverse echelon and change-over rolls, the "tuck-under" break, and formation landings. In the diamond, they fly barrel rolls, loops, reverse Cuban eights, and the French lily breakup. After each 4-plane maneuver, a fifth pilot demonstrates maximum flight performance.

BY AUGUST *'46, the Blue Angels were already winning honors. First five-man team was Cassidy, Taddeo, Voris, Wickendoll, and Robinson.*

FIRST *leader, first plane, Voris in his No. 1 Hellcat. From this beginning has come the world-famed Navy Flight Demonstration Team.*

THE BLUE ANGELS had come a long way since the 17th of June, 1946, when the following message was dispatched from the Naval Air Station, Jacksonville, to the Chief of Information, Washington: "Flight Exhibition Team is ready for future engagements. Team completed first public demonstration in F6F type aircraft at Southeastern Air Show, Jacksonville, on 15 and 16 June. Routine was received most enthusiastically. Team is an outstanding contribution for public information on Naval Aviation."

Thus began a schedule which would see the *Blue Angels* averaging three to five demonstrations a month before spectators ranging from a conservative 4,000 at the Naval Academy to a record of over 2,000,000 once at New York.

Since that day in 1946, members of the team had flown miles enough to encircle the earth many times. They had performed before crowds of Americans totaling well over 20,000,000. They had increased in actual numbers from four pilots and four planes, to seven pilots, seven exhibition planes, a transport plane, a maintenance officer, and 50 maintenance crewmen. They had known triumph, fame and honor as the world's best-known flight demonstration team. And they had known the tragedy of watching helplessly while a beloved leader, wounded in combat, had plunged to his death into the troubled waters of the Sea of Japan.

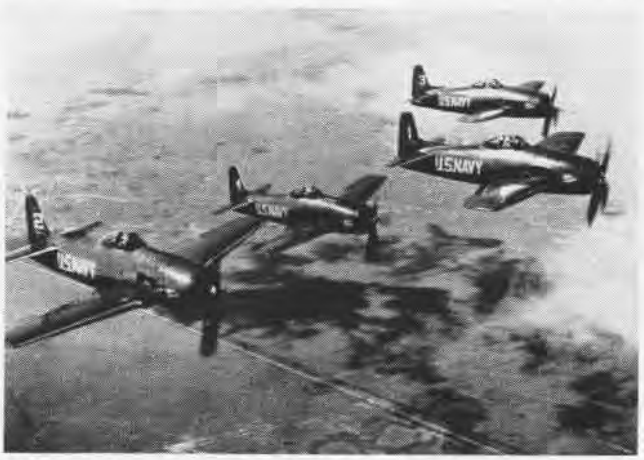
Earlier in 1946, the Chief of Naval Operations had directed: "A . . . . Flight Exhibition Team be organized within the Naval Air Advanced Training Command to represent the Navy at air shows and similar events."

LCdr. Roy M. "Butch" Voris was the man picked to lead the team, members of which were to be chosen from the Instructors' Advanced Training Unit, Jacksonville. The plane selected was the Grumman F6F *Hellcat,* replaced within a few months by the newer F8F's, lighter, faster and more powerful planes. In these *Bearcats,* the team began to build a reputation that has never been dimmed.

The original *Blue Angels* included, in addition to Voris who was Chief Flight Instructor of the Unit, LCdr. M. N. Wickendoll, Lt. Al Taddeo, and Ltjg. M. S. Cassidy. Within a short time Lt. 'Robie' Robinson was added.

Voris' tour of duty with the Team lasted from its activation in June '46 until June '47, when he was relieved

FLYING *F8's, early teams used a three-plane echelon. Fourth plane joins up for 'Zeke dogfight' and maneuvers in diamond formation.*



THESE *reliable and powerful Bearcats were well adapted for needs of the Angels' precision flying. But changing times banished them.*

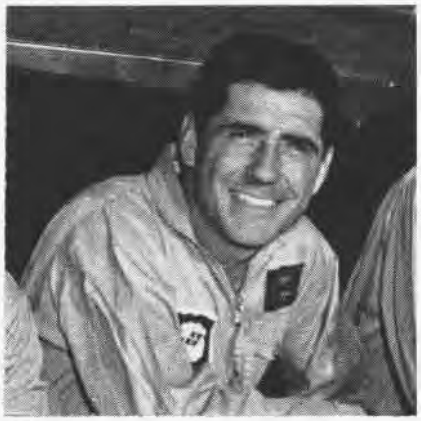
FIRST *and fifth leader of the Angels, LCdr. Roy M. Voris was the organizer of the team.*

LCDR. *R. A. Clarke, second OinC of the Navy flying group, was leader until early in '48.*

WHILE *"Dusty" Rhodes was skipper, the team changed from familiar F8F's to Panther jets.*

LCDR. *J. J. Magda led team in peace, in war. VF-191 CO, he fought and died in Korea.*

WITH *Ray Hawkins leader in '53, the Angels won additional honors for Naval Aviation.*



ZEKE *Cormier has the No. 1 airplane as his Blue Angel team flies at trans-sonic speeds.*

by LCdr. R. A. Clarke, who led the group until he, in turn, was relieved by LCdr. R. E. 'Dusty' Rhodes in 1948.

A tour of duty with the flight team has, from the beginning, been considered a normal tour of shore duty. Consequently, the personnel changes, from time to time. The team roster has included some of the Navy's best and most experienced fighter pilots, and always they are volunteers.

For about two years, the Team comprised five fighter pilots flying four F8F's and an SNJ painted to represent a Jap "Zeke", together with 11 mechs and radiomen. At this time, all the echelon maneuvers were performed by three planes. The fourth joined them to make two, two-plane sections for the Thach weave attack on the *Zero*, called "Meat Ball" or "Beetle Bomb", that hove into sight for a dogfight. Always the Jap was shot down, trailing smoke and dropping a dummy, which was promptly captured. The victorious *Bearcats* then went into their diamond routine.

The mechanics of securing several smoke flares to the *Beetle Bomb* and firing them by yanking the attaching wire while hurtling down in a spin, is a story from the fund of stories that are forming a *Blue Angels'* legend. Nor was it any easy task for the mech stationed aft in the SNJ to throw the dummy out the rear hatch while they spun "down in flames." But somehow he always did it.

Pilot replacements were LCdr. Dusty Rhodes, Lt. R. N. Thelen, Lt. Charles A. Knight and Ltjg. Wm. C. May. Even before joining the *Angels*, Dusty Rhodes was a well known figure in Navy circles. A fighter pilot, he was shot down in 1942 during the Battle of Santa Cruz. Picked up by a Japanese destroyer, he spent the remainder of the war in a prison camp at Yokohama.

The *Angels* liked the *Bearcats* for their loops, rolls, and Cuban 8's. Short-coupled and rugged as the *Bearcats* were, their stubby wings gave them an extremely rapid rate of roll. The F8F's stability at speeds even near stalling gave the pilots control on all maneuvers and inspired a maximum of confidence in their airplanes.

But as early as 1949, it became evident that unless the Navy was to be presented as something less than a forward-looking branch of the national defense organization, its demonstration team would have to shift to jets before long. (Though there are people, who to this day, maintain the *Bearcats* were the *Angels'* best planes.)

Panther jets of Grumman's "Cat" family were the ones chosen. And so it was that in May 1949, the *Blue Angels* went to the West Coast on temporary duty. Pilots were assigned to the jet transitional squadron for familiarization in the TV jet trainer. The engineering crewmen were detailed to the Pratt & Whitney jet engine school and the Grumman plant for a factory check-out in the new jets.

THIS WAS *a valedictory. The Blue Angels' appearance at the National Model Meet, Dallas, was final one before they went to war in Korea.*

THE PANTHERS were a lot more airplane for the *Angels* to handle than the *Bearcats* had been. They were fast, and sensitive, so sensitive that these new jet jockeys found themselves over-controlling all over the sky at first. Only practice at flying these planes could produce a familiarity with the delicate balance that proved so advantageous in the precision formation work that followed.

During the entire period of their jet instruction, Dusty Rhodes and his *Angels* were carrying out their regular air show schedule in the F8's, averaging five demonstrations a month in the *Bearcats*, in addition to their jet-familiarization program. There was very little confusion in shifting alternately from one type of plane to another. By mid '49 the *Blue Angels*' maneuvers had become pretty much standardized.

All was not smooth operation with their new jets, however. A former *Angel* recalls the difficulty in starting the engines in those days when the planes were away from home base and their jet starter. Even yet, a touch of embarrassment clings to the memory of their first jet show.

The team was based at Corpus Christi and had gone to Pensacola for this first jet show— to be viewed by "the admiral and his guests." One plane could not be started and had been left at Corpus Christi, according to the story. At showtime in Pensacola, a second jet was balky. The crewmen tried every way known to them to start a jet engine. As a last desperate measure, they taxied one "live" jet in front of the dead one and blasted exhaust down the intake ducts, to start it. They were not successful. The show went on, with two jet aircraft!

Personnel additions up to early 1950 had included Lt. Robert Longworth, *Beetle Bomb* pilot, Ltjg. E. F. Roth, Ltjg. George Hoskins, Lt. A. R. Hawkins and Ltjg. J. H. Robke. These men became another tight-knit team.

Evidence had been growing that the *Blue Angels* needed an officer to precede them for each performance to take care of the many matters incident to back-stage preparation for a demonstration. Accordingly, another member was added to the team. Equipped with a two-seated jet trainer, he was directed, along with his logistics duties, to give familiarization hops to a select representation from local press, radio and television. A conservative estimate is that, inch by column inch, this has resulted in more beneficial publicity for Naval Aviation than any other one thing.

AMONG those officers who have served in this capacity have been: Lts. F. A. Graham, R. D. Newhafer, Ed Oliphant, R. Smiegorki, E. T. Mahood, H. A. Riedl.

LCdr. John J. Magda added luster to the team's roster when he took over *Blue Angel* leadership early in 1950. A fighter pilot exclusively, Johnnie Magda destroyed five enemy planes in WW II Pacific carrier strikes. An experienced jet pilot, he had been a member of VF-51, the first carrier-based jet squadron in the Pacific.

On July 29, 1950, a Department of Defense release was made: 'BLUE ANGELS' EXHIBITION SQUADRON ORDERED TO COMBAT READY STATUS.

"The Navy's "Blue Angels" jet flight exhibition team has been ordered to a combat ready status following its exhibition at the National Model Airplane Meet, Naval Air Station, Dallas, Texas, Sunday July 30.

"The No. 1 aerial exhibition team of the Navy, which has thrilled spectators with its precision aerobatics and formation flying at air shows throughout the country during the last four years, will be assigned to fleet operations as an organized combat squadron. The squadron will retain the name 'Blue Angels'."

Ordered to the West Coast, the Team became the nucleus of Fighter Squadron 191 aboard the carrier USS *Princeton*. Magda was named Commanding Officer of VF-191 and remained in command until he was killed off Korea's northeast coast near Wonsan in March 1951. He is the only *Blue Angel* ever to lose his life in combat. Magda Village, Whiting Field housing development, is named in his honor.

WITHOUT *the skill of the crewmen, all volunteers in the proud Blue Angels organization, these sleek jets could not be kept flying.*

At the time the Team "went to war", members were: Lts. Hawkins, Jake Robke and Ltjgs. Fritz Roth and George Hoskins, hold-overs from the previous team, and Lt. Ralph Hanks and Ltjg. F. J. Murphy. LCdr. R. L. 'Zeke' Cormier was the PIO, while Ltjg. R. D. Belt, engineering officer, had been directing the activities of the 24 select maintenance men now necessary for upkeep of the jets.

When, in late 1951, a need for the *Blue Angels* was re-evidenced, Adm. Wm. M. Fechteler, CNO, ordered their re-activation. The basic mission was modified from that set forth in '46, "an exhibition team, to represent the Navy at air shows and similar events", to a team which will "demonstrate precision techniques of naval aviation to naval personnel and, if directed, to the public."

With Navy fliers still fighting for their lives over Korea's rugged hills and icy waters, the *Blue Angels* were assigned the mission of demonstrating tactics which they and other pilots had developed in actual combat, and had proved in practice again and again.

For the second time LCdr. Roy Voris was given the task of organizing the team. Ordered to the Naval Air Advanced Training Command, NAS Corpus Christi, "Butch" Voris was given his choice of personnel, with the stipulation that he could include no more than two 'pre-Korean' *Angels*. LCdr. Hawk Hawkins and Lt. Pat Murphy were those two. When Frank Graham was ordered as PIO, and H. C. MacKnight reported as Engineering Officer, two more old hands were added. Both had been *Blue Angels*.

From volunteers from the Training Command, crewmen were selected, and three pilots to fill the complement: Lt. T. R. Jones, Ltjgs. 'Bud' Rich and D. E. Wood.

The aircraft chosen for the new group was the F9F-5, a later and considerably faster version of the *Panther* series than the dash two of pre-Korean fame. This straight-wing, 600 mph-class dash five Grumman jet was to prove itself worthy of being the *Blue-Angels'* plane.

Putting the Team back in business was an all-hands' job at Corpus Christi. But all hands turned to, willingly.

IN A ROLL *from right echelon, close as pages in a book, Voris, Hawkins, Murphy and MacKnight keep their five foot separation constant.*

WITH *their tip tanks blasting symmetrical vapor streams, the Blue Angels, in another high speed maneuver, form a pattern of beauty.*

The first public showing at the Memphis Mid-South Navy Festival in May '52 added about 50,000 to the millions of aviation enthusiasts who had seen the *Blue Angels* perform in the past.

Team members are largely heavily decorated, combat-experienced men. To read a list of their decorations is like reading a manual from the Medals and Awards section of BuPers. Next *Angels* leader, three-time Navy Cross winner, LCdr. A. R. Hawkins took over in December '52. During WW II, Hawkins shot down 14 enemy planes while flying 154 missions in the Pacific, and was credited with materially contributing to the sinking of the 34,000-ton Japanese battleship, ISE. This all happened before his 21st birthday. He also completed 47 missions over Korea while flying VF-191 jets off the USS *Princeton*.

It is said that he once complained that nothing very exciting had happened to him since he had reached voting age. He spoke too soon. When the F9F-6 he was ferrying to Corpus Christi in the summer of '53 suffered longitudinal control failure and went into a mach-busting dive, he was forced to eject, through the canopy, into a rock wall of supersonic slip stream. Something under 30 minutes and 34,000 feet later, he floated down into a Mississippi cotton patch, suffering only a few cuts and scratches, one cracked rib, and slightly frost bitten ears. He now can add to his honors that of being "Navy high speed ejection champion."

The team went about accomplishing its primary mission, that of demonstrating precision techniques to naval personnel. Whenever it made appearances at airshows, it also accomplished the stimulation of interest in naval aviation.

From October to December '53, the group performed before an estimated 800,000 spectators. One of the largest crowds ever to witness a single-day airshow in the history of aviation—300,000 persons—watched breathlessly while the *Blue Angels* demonstrated their close-order precision

IN THE *present team, Lt. Nello Pierozzi flies left wing. Cdr. R. L. Cormier is the leader; Ltjg. Ken Wallace flies difficult "slot" position, and Ltjg. Bill Guercek is right wingman.*

LCDR. *H. M. Sonner efficiently meets responsibility of keeping planes in "up" status.*

flying at NAS MIRAMAR on 3 December of that same year.

The year's end had seen almost a complete turn-over of the *Angels*. For the second time Dick Newhafer had relieved Frank Graham as PIO, Ltjg. F. N. Jones was doing the solo act. Ltjg. Dayl Crow was the spare pilot and Ltjg. Roland Aslund flew left wing. Ltjg. Kenneth Wallace had come to the team. No stranger to the *Angels*' way of flying, Wallace had served two tours in VF-191 where he racked up a total of 138 missions over Korea, flying with former *Angels*.

At this time a Marine Corps pilot was assigned for the first time. Veteran jet pilot, Capt. C. O. Hiett was the Marine chosen for this honor. He was succeeded in early '55 by Capt. Pete Olsen, whose place was filled in April '55 by Capt. Edward Rutty, another jet veteran from the Korean war. He is now the pilot of the spare *Cougar* jet.

ENJOY *the unearthly beauty of the "fleur-de-lis", then believe their name originated with the awestruck words: "They're out of this world!"*

Another innovation had been the addition of an F7U. LCdr. E. L. Feightner had flown the *Cutlass* for solo work the several months it remained with the team.

There have been many changes of command in the Navy, in many different places. But few are accomplished at an altitude of 6,000 feet, and a speed of 600 mph. Such was the aerial ceremony that marked LCdr. Hawkins' turning over command of the *Blue Angels* to his relief, LCdr. R. L. Cormier. The time was Feb. '54 and the place was NAS NEW ORLEANS, at the opening performance of the year. Climaxing the show, LCdr. Hawkins led his men over in diamond formation, with LCdr. Cormier about 200 yards behind. On signal, Cormier, the new leader, pulled from the rear into an Immelman. As he did, the rest of the team did a roll, pulled up, and on top of the loop, joined Cormier. Hawkins completed his loop and came over the crowd for his last pass as a *Blue Angel*.

Another heavily decorated combat veteran, WW II double ace with 10 Japanese planes to his credit, Cdr. Cormier was handpicked as *Blue Angels* leader on the basis of his long experience as a fighter pilot—12 years.

The Team, still in F9F-5's, performed before more people in 1954 than during any previous comparable time.

Once again, progress dictated a change, and the Navy's top flying group moved into swept-wing *Cougars*. An intensive indoctrination period at NAAS EL CENTRO prepared them for their debut in the supersonic F9F-8's.

In these swept-wing beauties, the present team has flashed, looped and zoomed to still greater fame. They are idols of all of America who have witnessed their marvelous performances.

In recent seasons, it has been the practice, after the demonstration, to taxi the planes in front of the stands, secure the engines and allow the spectators to get a close-up look at the planes and pilots. The response to that has been most gratifying. It has been easy to see in many hundreds of faces the pleased recognition of the fact that *these* were the planes streaking through the air short minutes ago, and *these* were the men who were flying those planes, men like your brother, or son—men you could talk to, could even get an autograph from! (And many *do* get autographs.)

BUT THESE men are not super men, nor are they stunt men. They are Navy fighter pilots. In the same kind of planes, they fly the same evasive fighter tactics taught *every* fighter pilot in the Navy. True, they do these maneuvers at tree-top level, instead of at a normal four miles, but before they bring any maneuver down, they have practiced it time after innumerable time at high level until they are letter perfect in it.

Ask any of the team members, the four who fly as one machine, or Ed McKellar who flies the solo plane in the hair-raising maneuvers. Or ask Harry Sonner, or any of his maintenance crewmen, or Ed Rutty, or PIO Red Riedl why the name *Blue Angels* is synonymous with perfection. Any or all of them will give you the same answer. It's work, work on maintenance of the planes, work on planning the maneuvers, work on putting them into practice, and work on polishing them to perfection.

And why do these men, like those before them, volunteer for this strenuous schedule of work, of long, irregular hours, of almost constant travel? Ask them that, and their answers may not be these words, but this is what they mean: "It gives a man satisfaction to be a part of something perfect. Whether it be the absolute harmony of a well-trained choir, the perfect coordination of a Notre Dame backfield, or a flawless performance of this flying team, perfection is a beautiful thing. It gives a man great satisfaction when he can say, 'I am a part of this precision. I am a part of the perfection that is the *Blue Angels'*."

THIS ATTITUDE *is common at Blue Angel performances. A combination of bright sunny day and the Miami air show-NARTU open house was the occasion for the crowd. The open-mouth, neck-craning was due to a Blue Angel low-altitude, right-echelon roll immediately overhead.*

GRAMPAW PETTIBONE

The Calculated Risk

An F9F-6 flight leader gave a preflight briefing to his flight prior to a practice rocket hop. He placed particular emphasis on the squadron policy that all pilots purge their tip tanks before making runs on the target, and that all pilots start their pull-out at 5,500 feet altitude as the elevation of the target was 2,700 feet.

The flight departed on schedule with full loads of fuel aboard. Approximately nine minutes later, the flight leader entered his first run on the target from 10,000 feet. He didn't purge his tip tanks. His dive brakes were not extended nor did anyone in the air or on the ground see them down throughout the dive. He overshot the line of intended run and S-turned back onto it. The angle of dive at the firing point was 55°.

He commenced pull-out much lower than 5,500 feet, according to the witness' statements. He managed to get the nose of the aircraft about 10° above the horizon, but the plane mushed into the ground and exploded. The pilot must have realized he wasn't going to make it and attempted an ejection. The impact and ejection were simultaneous, and the pilot was fatally injured.

Grampaw Pettibone Says:

Gee whiz, fellas! Why don't you give yourselves an even break and fly these machines according to prescribed doctrine? It's one thing to get into trouble because of inexperience, lack of knowledge, or incorrect technique. But there is absolutely no reason for a pilot to insist that his flight follow the rules, then go out and fail to execute them himself.

Sure, this lad forgot to purge his tip tanks. And he probably forgot to put his dive brakes down. But he had overshot the run line, and he certainly must have realized he was accelerating too fast. Instead of pulling out then, he bent the plane back into the target increasing his dive angle. In doing so, he lost his chance for a safe recovery.

He took the calculated risk because of his experience and confidence in himself. Maybe he had done it before and had had a close one, which might have lead him to believe he could get away with it again. But doctrine is made to prevent pilots from getting into a position where they'll only have a second or two to decide whether to take the risk or not.

In my opinion, it takes more will power to admit a mistake and abort the run than it does to take a chance and press home the attack. The only thing you prove by trying to salvage a bad run is that you exercised exceedingly poor judgment. After all, the target isn't shooting back at you.

Dear Grampaw Pettibone:

The April issue of *Naval Aviation News* contains an article on page seven in regard to a hairy incident in a Beechcraft in which it is alleged that both engines quit simultaneously on take-off at about 75 feet altitude and shortly after the gear was retracted. According to the article, there were traces of water in the gasoline.

Let me give you the correct version inasmuch as I was a witness and am a firm believer in calling a spade a spade, when it comes to accident prevention. Instead of water in the gasoline, the trouble was caused by the firm and smart movement of the mixture controls toward the aft position. In such a situation, those poor old engines get real upset as their policy is to operate on a cash-and-carry basis.

To say that the resulting landing was normal, but somewhat sloppy, is a minor understatement. It was a downright thrill which brought out the troops from their hiding places in the fox holes underneath the hangars. After rolling to a stop on the 8,000-foot runway, came the dawn to the intrepid aviators as to the cause of the engine failures. They hurriedly fired up the engines as the crash equipment

surrounded them and proceeded rapidly to the take-off end of the runway for another attempt. By this time the entire crew was tensed up wondering what maneuver would be attempted next.

A council of war was held on the ramp. By unanimous vote it was decided that the aircraft should not be allowed to demonstrate its capabilities again. A road block was established, and the Beech corralled and led meekly back to the flight line.

We happen to have the best sump drainers in the business, so it's rather a low blow to shift the blame to them

Very truly yours,
Cdr., USNR

Grampaw Pettibone Says:

I think I'll just sit this one out.

Chase Pilot?!

An F9F-6 pilot on his first familiarization flight in type took off accompanied by a chase pilot. Upon becoming airborne, the fam pilot observed his high pressure fuel pump warning light to be on. It went out with reduced throttle, but came back on again after a climb to 5,000 feet. The chase pilot then advised him to dump his tip tanks and return for a deferred emergency landing.

The approach was normal though slightly fast, and the pilot reduced throttle to idle just as he crossed the end of the runway at about 50 feet altitude. The aircraft commenced a rapid rate of sink which resulted in a hard landing and bounce. The pilot overcorrected for the bounce by jamming the stick forward and bounced again. Adding full throttle, he took a wave-off and made another approach.

The second approach was a duplicate of the first—only this time the pilot determined to make the aircraft stay on the deck. On the third bounce, the aircraft hit on the starboard wingtip, flap, nose wheel, and starboard landing gear, damaging all four. He took a wave-off and found he had difficulty maintaining control owing to several hydraulic leaks.

At 800 feet, he actuated the pre-ejection lever, which jettisoned the canopy, and unfastened the seat belt. At 1,500 feet, the control became effective again, so he elected to try another landing, this time in the emergency arresting gear on another runway.

He made two approaches, but waved off each time owing to drift. On the third approach, the tower waved him off because of the armed seat. The pilot climbed to 5,000 feet and ejected successfully about eight miles from the field. Abandoned, the aircraft tried to go it alone but only managed to get within three miles of the field where it crashed and burned.

Grampaw Pettibone Says:

Well, if that didn't wilt the lily, nothing would! Maybe the airplane did try to get back to the field for the pilot's sake, but I'll bet a plugged nickel, it gave a passing thought to the chase pilot and decided to end it all by heading for the nearest hole in the ground. That fella might just as well have been flying over in the next county for all the good he did.

He should have identified the fuel pump warning light as a condition peculiar to the recent switchover from aviation gasoline to JP-3 fuel. All the squadron pilots had been briefed on the probability of such an occurrence.

He should have realized that a pilot on his first fam flight in type is keyed up to some extent, and it doesn't take much to shake him up. After the pump light went out and they climbed to 5,000 feet to burn the fuel down, the chase pilot decided a deferred emergency existed and sent the fam pilot back to the field.

From here on, the fam pilot was on his own. He wasn't coached on his first approach. His errors weren't pointed out so he wouldn't repeat them a second time. He wasn't coached on his second approach and after his canopy was jettisoned, communications were practically nil. Three passes later, several of his squadron mates, who had rushed to the tower when the fiasco first started, had the presence of mind to order an ejection because of the armed seat.

The chase pilot did help some, however, in addition to furnishing moral support. He gave a blow-by-blow description of the damage as it occurred and changed the flight from a deferred to an emergency landing. If there is one thing that you need to know, it's the fact that all that noise of scraping and buckling out there on the starboard side on the last landing isn't an illusion.

This reminds me of the farmer who told Clem to check Zeke out in the caterpillar tractor. Clem cranked it up and told Zeke to step on the clutch, move the gear handle over here, and steer with the hand brakes. Away Zeke went. Five minutes later, after flattening 100 feet of corral fence, tearing out the corner of the bunkhouse, and nudging the side of one slightly used station wagon, Zeke had it under control and went barreling out across the field. Clem caught him at the first turn and stopped the machine.

"Say," he said, wiping his brow, "it's a good thing I checked you out in how to steer this thing. If you hadn't missed the old lady's pansy patch, we'da really been in trouble!" Which just goes to show that if you are sent out to do a job and do it right, you won't find yourself behind the eight-ball with your feet in your mouth.

HIGH INTENSITY *approach lighting systems have been installed in all major airports operated by Canada's Department of Transport, Civil Aviation Division. The one shown above, standard for RCAF fields, is known as the modified Calvert system. The Civil, or modified Alpha, system, is similar with a center line and crossbar light pattern and is standard for civil aviation.*

Mustin Field Gets Bell

DD Ship's Bell Returns to Duty

The ship's bell from the destroyer USS *Mustin* (DD-413) returned to duty recently at NAAS MUSTIN FIELD when eight bells were rung for the monthly Captain's Inspection.

Carrying out Navy tradition of having the youngest man on board ring the ship's bell for the first time was 17-year-old Filmore Ashcraft, AN.

Capt. M. M. Riker, Com-4's District Intelligence Officer, opened the ceremony with a talk. He was CO of the USS *Mustin* in 1943. Capt. E. M. Condra, Jr., CO of NAMC, and Cdr. John Ramee, Acting CO of NAAS MUSTIN FIELD, also spoke.

The USS *Mustin* was named in honor of the late Capt. Henry C. Mustin who pioneered the launching of aircraft by catapult from ships. He was the first officer to be shot from a catapult in an aircraft from a ship underway.

Also present at the ceremony were Henry A. and Gordon S. Mustin, sons of Capt. Mustin, both lieutenant commanders in the U. S. Naval Reserve.

Princeton Back at San Diego

Returns After 7 Months in Far East

The first vessel of its type to operate in the western Pacific, the USS *Princeton* returned to San Diego 31 May. An attack carrier converted for anti-submarine warfare, it is commanded by Capt. Henry G. Sanchez.

On 2 November 1954, the *Princeton* left San Diego to engage in ASW training, carrying twice the might of the smaller escort carriers formerly used. A number of ASW destroyers were also included in the program.

RAdm. Walter R. Rodee, ComCarDiv-15, directed the hunter-killer task groups during the pioneering operations with *Sweet Pea* as his flagship.

Though this completes the first tour in her new anti-submarine role, the USS *Princeton* made three trips to the Orient during the Korean conflict.

Korea POW Claims Awaited

Gov't. Urges Immediate Filing

More than 800 former American Prisoners of War in Korea have failed to file claims with the Foreign Claims Settlement Commission for compensation under Public Law 615, approved by President Eisenhower on August 21, 1954.

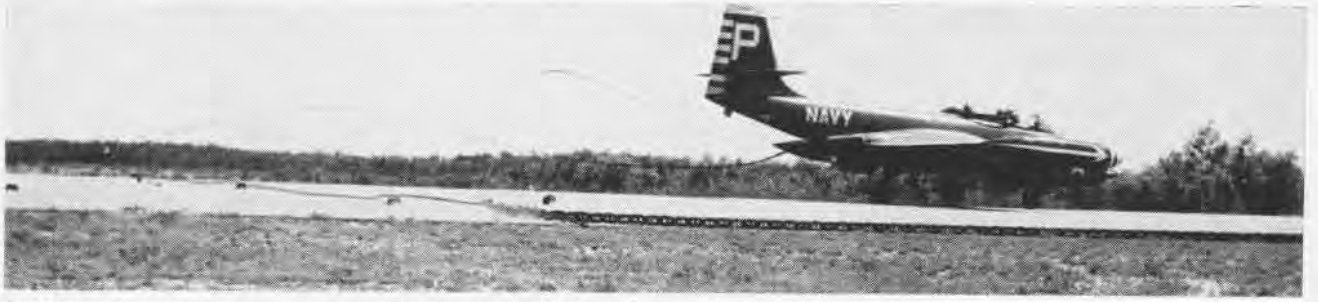
Commissioner Pearl Carter Pace urges all claimants to file immediately since the deadline in most cases is August 21, 1955. The Commission wants no eligible claimant denied because of failure to file on time.

In cases of death of the former prisoner of war, claims may be filed by the surviving widow, husband, children or parents.

Payment is authorized to be made at the rate of $2.50 per day for each day of imprisonment.

Any member of the United States Armed Forces presently held as prisoners of war as a result of the Korean hostilities will be eligible to file his claim within one year after returning to American Military Control.

Survivors of prisoners of war who have not returned to the jurisdiction of the Armed Forces of the United States may file not later than one year from the date the Department of Defense makes a determination that the POW has died or is presumed dead.



DURING *a demonstration of emergency arresting gear at NAS Cecil Field, the tailhook of an F2H Banshee from VF-62 whips the wire rope into snake-like design as the wire is engaged. The gear has been in use at the master jet station for over a year and has saved 20 aircraft from serious damage. Designed to bring a speeding jet to a safe stop within 600 feet, similar equipment is used by Navy worldwide.*

JAX READIES 'DEEP FREEZE' AIRCRAFT

OFFICERS *and crew members from VX-6 came to Jacksonville to accept delivery of the specially equipped R4D's for Deep Freeze.*

THE SIKORSKY *HO4S-3's received alterations and innovations to make them more versatile in carrying out missions in the Antarctic area.*

FIVE OF the aircraft to be used by TASK FORCE 43 during the 1955-56 expedition to the Antarctic have been readied by the O&R Department at NAS JACKSONVILLE. The expedition has been dubbed Operation *Deep Freeze I* by the Navy Department.

Work assigned to Jax consisted of equipping two R4D aircraft and three HO4S helicopters for sustained operations under Antarctic conditions. The limited number of aircraft assigned to the expedition, and the wide variety of tasks they must perform made many special installations and innovations essential for safe operation.

These installations include extra fuel tanks to double the normal capacity of the aircraft; skis for snow take-offs and landings; oil cooler inlet relocation to eliminate damage by ice and snow thrown up by the skis; high visibility exterior paint; and remote oil pressure indicating system to preclude loss of readings resulting from congealing of engine oil in the lines at extremely low temperatures.

A polar compass has been installed to provide navigation in areas where the earth's magnetic field is unreliable. Jato units were also installed. Anti-precipitation static antennas reduce heavy radio interference in the polar area, and an elaborate intercommunication setup was installed for crew members as well as a wire recorder to permit noting observations verbally.

Trimetrigon camera installations for aerial mapping and extra large side cabin windows for general photography make the photographer's job easier.

High capacity gasoline-fired cabin heating system plus covers for the wings, elevators, and engines to prevent snow and ice accumulation while the planes are parked, will add to the comfort of the men and insure proper performance of their equipment. Similar changes have been made on three helicopters, which will be utilized for transportation of men and equipment.

ACCESSORIES *Engineer A. L. Kolbe of the O&R Department demonstrates the ease with which ice/snow accumulation can be removed from wings.*

PRIOR TO *acceptance by VX-6, LCdr. Bob Graham gets thumbs-up sign from plane captain Ken Aspinall to taxi for testing of the R4D.*

HOW GREEN IS YOUR PASTURE? OR
HOW TO SECURE YOUR EQUITY IN A $50,000 TRUST

DISCUSSING *advantages of a Navy career, R. C. Underhill, AD3, who reenlisted for six years is interviewed by E. C. Richardson, AMC.*

THE BIG *pay-off comes when D. R. Savage, AG3, at NAS Norfolk, collects $1092 on his first reenlistment from Ltjg. E. M. Morris, SC.*

IF YOU stand in the south forty and gaze intently into the next farm, you will undoubtedly notice that the grass in the other fellow's pasture is apparently much greener than in the one in which you are standing.

The great big world outside the Navy viewed by those inside the Navy takes on a greener hue. This has nothing to do with color vision. It is a disease of the ears rather than the eyes and is generally brought on by listening to too much scuttlebutt.

This is the way the grass is made to look greener. "I'm tellin' you guys, once I finish this hitch, nothin' will get me back. I'm not going to be a sucker. I can get a hundred dollars a week in no time and a lot better than that in another year."

By the time this siren song with variations and chorus has been heard from the pharmacist's mate, the mess cook, a yeoman 2nd class and from every direction, it begins to have the sound of absolute truth, but "it ain't necessarily so."

Ever alert to bad influences on the health of her men, the Navy is eager to correct this "ear" trouble. The treatment is not in this instance affected by sticking the man, but by spiking the scuttlebutt. An honest answer is the only antidote to the "bum dope."

Today in the Atlantic and Pacific Fleets and throughout the shore establishment, 106 units called Career Appraisal Teams are making a strong bid for re-enlistment of the Navy's skilled men. Armed with a wealth of facts, figures, graphic training aids and honest conviction, these teams are speaking wherever they can get a dozen or more men together at one time.

In 1954, Submarine Squadron Seven initiated the first Career Appraisal Team. It proved so effective that Commander Submarine Pacific had the system extended throughout his command. From there it went on to approval and extension of the Commander Pacific Fleet who invited other commands to participate.

Typical of most Navy Career Appraisal Teams—nicknamed "NAVCAT"—is one organized by VAdm. F. W. McMahon, Commander Air Force, U. S. Atlantic Fleet. After screening a number of candidates for the proposed team, ComAirLant selected LCdr. Joseph D. Bedford, an aviator and former enlisted man, as officer-in-charge. Ferguson Lambert, ABC, and Roy Cline, AD1, were named as his assistants. They were all careerists with long service and experience with thorough knowledge of the Navy.

These three team members were trained by SubPac headquarters at Pearl Harbor. Returning to Norfolk, the ComAirLant Career Appraisal Team immediately set to work scheduling local squadrons and units first. The team plans eventually to cover AirLant ships and activities elsewhere.

A typical AirLant NAVCAT presentation, including a question and answer period, usually lasts about an hour and a half. It starts off with a humorous movie entitled "The Sailor and the Seagull" and quickly develops until it covers all phases of a career in the Navy.

Using figures taken from the Statistical Abstract of the United States and facts gathered from various industrial sources, the presentation moves from one subject to another at a fast-moving pace that is both interesting and informative. It is designed to appeal to enlisted men and their wives.

Beginning with the reasons why a man enlists in the Navy, the presentation follows his career over a 20-year period and outlines all the privileges and advantages he receives along the way. His pay and allowances, fringe benefits, opportunity for education, training, promotion and travel, 20-year retirement and job security are covered thoroughly and effectively.

Some of the facts and figures used

to illustrate certain points in their presentation are real eye-openers. Personnel are asked to take such facts as the following into consideration before they decide to leave the Navy:

Of all military personnel who leave the service with full intention of going to college, only 50% ever enroll. Of these, it is estimated only 25% ever get past the second year.

Of all chief petty officers on active duty in September 1954, almost 20,000 have over 16 years' service. Most of these men will retire in the next three years, leaving more openings in almost all CPO ratings.

The Navy man who completes his initial enlistment has already contributed four years towards his "early retirement." After 15½ more years, he can retire with an annual pension of $1800. This is just like having an investment of a little over $50,000 at 3.5% in the safest security you can put your money in. It is pointed out during the presentation that the average Navy man can usually retire before his own father and also at a greater annuity. He also retires at such an early age that he can commence a "second career" after entering the Fleet Reserve.

The man who completes his initial enlistment and leaves the service for a civilian job must start at "Time Zero." To become eligible for retirement on most jobs under Social Security, he must work until he reaches the age of 65—another 43½ years. His pension check is usually much less than retired Navy personnel receive.

At the end of ten years service, the average Petty Officer, first class, draws $82.36 a week which includes base pay, sea pay, BAQ and clothing allowance, but does not count the savings he accrued in free medical treatment, Navy exchange and commisary privileges and other fringe benefits. The average civilian, starting at the bottom and working his way up to the level of the skilled, unionized industrial worker, draws $71.69 a week (before deductions) after ten years. He makes less money than the PO1 and receives no fringe benefits unless he pays dearly for hospitalization, insurance, retirement fund, Social Security, etc.

To buy an annuity over a period of 20 years worth $152.10 a month thereafter (CPO retirement pay) would

LEMOIN *Gill, AKC, becomes warrant officer as Capt. J. H. Flatley administers the oath.*

cost a civilian $141.62 per month. Thus at the end of four years a man leaving the service is giving up the equivalent of $7,800 in such annuities; at ten years, he is sacrificing the equivalent of $21,000. If he remains in service, there is an approximate equivalent of $50,000 for his retirement.

These and many more benefits are pointed out to the enlisted man who is undecided about a career in the Navy. However, he isn't the only one who gains by his reenlistment.

LCdr. Bedford points out that the average petty officer receives about $15,000 worth of pay, clothing, training and experience during his initial enlistment. When he is discharged, the Navy loses a mighty valuable man.

During March 1955, before the NavCAT Program was inaugurated, about 2,600 men were discharged from AirLant units while only 172 reenlisted. Figured on the basis of $15,000 per man, the Navy and the taxpayer lost 39 million dollars in one command.

B. F. PHILLIPS *was sworn in on his six-year reenlistment by LCdr. E. C. Vanderwalker.*

In the short time that ComAirLant's NavCAT has been in operation, the results have been highly encouraging. The well-prepared and documented presentation has not only spurred reenlistments, but has also helped career men to appreciate the advantages they now enjoy.

Following each presentation, there is a question-and-answer period, and questionnaires are passed out to the audience. Ninety-nine percent find the Career Appraisal Teams of value to the Navy, and 80% thought the presentation should be made after three-and-a-half years of the first enlistment. Between 35 and 40% thought the presentation helped them to decide continuing their Navy career.

A man accepted for reenlistment is some one the Navy wants. The procedure at one naval air station is typical. A man wishing to reenlist goes before a board composed of the executive officer, the training officer, the education officer and a warrant officer to determine his fitness for reenlistment.

A standardized form is sent to the department head in which the man works so that his work is evaluated. The commanding officer studies the board report, and gives the final O.K.

THE PROGRAM of presenting the facts does work. Men do change their minds. For example, take Nicholas J. Calabrese, ATAN, a member of FAETULant. He attended the presentation at the ASW School at Norfolk and later reenlisted for six years. He attributed his decision to the NavCAT presentation.

Another man at Norfolk, T. D. Hicks, AD2, currently serving his first reenlistment, says he reenlisted "because I like the Navy and I particularly like the security it offers."

George R. Hall, an AD3, in O&R, reported he reenlisted "because I think the Navy offers a great opportunity for a variety of experiences through the various duty assignments."

Despite filling a busy schedule in the Norfolk area, ComAirLant's NavCAT still finds time to train units of subordinate commands.

The teams are determined to make their point: the grass isn't greener in the next field. Your career in Navy assures you of a future worth having. Green is really the go-ahead signal for your future in the Fleet.

FIELD PROBLEMS SPEED TRAINING

PILOTS STUDY ENGINE OF CRASHED PLANE IN DETAIL TO UNCOVER CLUE TO ACCIDENT

FIELD trips are combined with class work in the special eight-weeks course Naval and Marine aviation safety officers take at the University of California. Only recently these officers investigated an "F-86D field problem" at Norton AF Base. They were members of the third class of Naval Aviators attending the safety course.

The field problem was designed to make techniques of accident investigation concrete and to give the students an opportunity to apply their knowledge. Students examined the wreckage, prepared sketches of wreckage distribution and studied photographs taken at the scene of the accident. They also went over witnesses' statements and all other available information.

Thereafter, they individually wrote up the aviation accident report and reached a conclusion regarding the cause of the accident. Reports were then checked against the actual findings of the investigation board.

Shown in the picture above, left to right, are: Lt. N. O. Stieler, LCdr. R. B. Segerblom, Maj. J. H. Rinehart, J. A. Anderson of United Airlines, F. G. Andrews, instructor; George T. Tremble, also of United; LCdr. John Dooley and Maj. J. L. Neuman.

Additional field problems are set up at NAS LOS ALAMITOS so that the students will have several opportunities to conduct actual field investigations. The knowledge and experience gained through actual investigations should advance the accident prevention program, especially in that area which heretofore has been in the category of "cause unknown." Super-sleuths will replace investigating officers whose practical knowledge is limited to the actual mechanics of flying. Since complete and comprehensive statistical material is the information upon which design changes are made, the necessity for accurate reporting is obvious.

During Fiscal 1956, a total of 125 officers will be trained at USC in five groups of 25 each. The course is usually given to officers enroute to new duty assignments. Naval aviators scheduled for a change of duty in the near future who wish to apply for the course at USC should submit an Officer's Data Card (NavPers-340) in triplicate as soon as possible. One of these copies is received in the Aviation Detail Office (Op-54), the Office of the Chief of Naval Operations in Washington.

NAS CO Honored at Norfolk

Capt. Flatley is Given Silver Mace

Capt. J. H. "Jimmy" Flatley has been honored by the City of Norfolk for his contributions to the betterment of Navy-community relations during his tour of duty as commanding officer, NAS NORFOLK. Mayor W. F. Duckworth presented him with the first sterling silver replica of the Norfolk city mace at a weekly Rotary Club luncheon in June.

In addition to commending Capt. Flatley's community relations program, Mayor Duckworth praised his internal programs to improve the welfare of personnel at the air station. Of particular interest is "Flatley High," the high school and education program which in 18 months has assisted about 1,500 Navy personnel to earn high school diplomas or certificates. His energetic moral guidance program, aimed at a fuller adjustment of the young Navy man to his service surroundings and early responsibilities as a citizen, was also lauded.

Capt. Flatley recently assumed command of the USS *Lake Champlain*, having been succeeded at NAS NORFOLK as CO by Capt. Samuel G. Mitchell.

DUCKWORTH PRESENTED MACE TO FLATLEY

VF-194 is Commissioned

Former VC-3 Outfit Joins CAG-9

Team Mike of VC-3 has been commissioned as VF-194. Inaugurated as a fighter squadron at NAS MOFFETT FIELD, the squadron will join CAG-9.

LCdr. Anthony J. Caprotti, Jr., assumed temporary command at ceremonies attended by officer and men of VC-3. Cdr. E. A. Parker, CAG-9, Cdr. R. W. Rynd, CNO representative, Cdr. D. L. Irgens, CO of VA-195 and Cdr. B. N. Gockel, VF-91 skipper, also attended.

A VC-3 team had been available to CAG-9, but a squadron employing the capabilities of a team would carry the operating administrative requirements better—thus the birth of VF-194.

Although VC-3 has trained nucleus crews for squadrons with new aircraft, this is the first time a squadron has originated from within its own ranks.

SPOTLIGHT ON AVIATION'S AMES

EACH YEAR the National Advisory Committee for Aeronautics opens wide the gates of one of its three major research centers for inspection by representatives of the organizations it works for. Customers of NACA include aircraft and engine manufacturers, military services and engineering schools. Ames Aeronautical Laboratory at Moffett Field, California, was the focal point of the 1955 spotlight in June.

The primary role of the Ames Laboratory is research in high-speed aerodynamics. Much of its work is fundamental research, an attempt to understand the physical laws which govern flight up to and beyond the speed of sound. Other research is directed toward specific problems arising during the design and development of new airplanes and missiles by the aircraft industry. While NACA scientists gather and interpret this information, they do not design or build airplanes; their role is to support the aircraft manufacturing industry and the armed forces in the common aim of ensuring national security through technical superiority in the air.

Primary tools of research at Ames are wind tunnels and airplanes. Wind tunnels provide a uniform, controllable air stream and the means for measuring with scientific accuracy how a model airplane, wing section or other component reacts to the moving air. NACA pilots flying specially instrumented airplanes obtain similar measurements in actual flight. Knowledge acquired by both methods is essential for designing greater capabilities into the aircraft of tomorrow.

CRASH *and fire research are leading to design principles which will increase safety. Piston and jet planes, such as this cartwheeling Phantom, were used in the Lewis Laboratory program.*

SIX DUMMIES *rode a worn-out transport plane through a severe crash landing staged by research scientists. Instruments measured forces exerted on passengers seated in various positions.*

The 19 major wind tunnels at the Laboratory are among the largest and fastest in the world. They range from the eight-inch Low Density tunnel to the world's largest, or 40 by 80 foot size, capable of accommodating a full-sized airplane up to 70 feet in wing span, and speeds up to 9,000 mph.

The newest supersonic tunnel is the Unitary Plan Wind Tunnel. This 180,000 horsepower facility has three separate test sections in which speeds can be simulated through a Mach range 0.7 to 3.5. A 10 by 14 inch tunnel is used for the study of hypersonic performance, stability and control up to 4,500 mph, and research into the effects of aerodynamic heating are carried out in a 10 by 12 inch Heat Transfer Tunnel. The 8,000 hp device can provide air temperatures up to 1,200 degrees F. and speeds from 1,700 to 4,000 mph.

VALUABLE *indications to the designer of flight performance to be expected of a new plane are obtained in wind tunnel tests. Here an F-101 model is mounted for tests.*

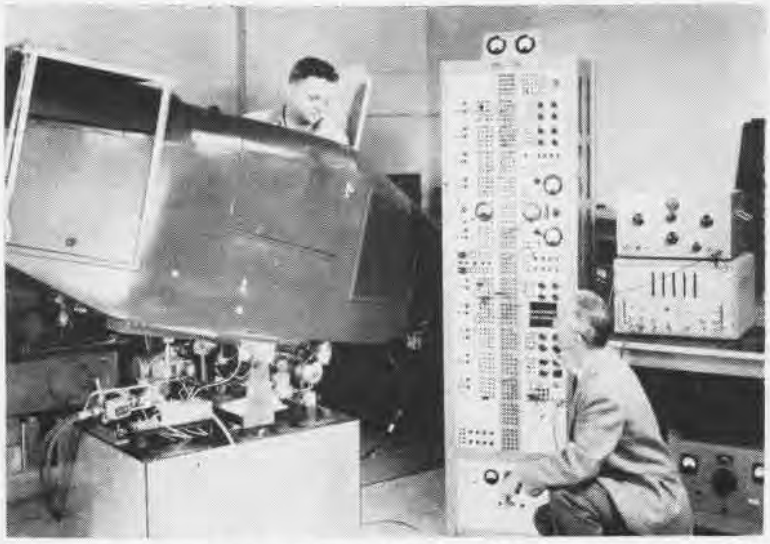
DYNAMIC *stability testing is accomplished by using oscillating models like the F-102 fighter shown here.*

But these fantastic speeds are slow compared to inter-continental missiles of the future, according to NACA scientists. They foresee speeds of 15,000 mph. The heat problem is perhaps the most difficult technical hurdle to surmount before a successful long-range missile can be flown, but the scientists report progress in the concerted attack being made by all of the NACA Laboratories. Research on the problems has been intensified because of the potential advantages of hypersonic flight, at many times the speed of sound.

The most significant advantage of a 15,000 mph missile is that it is relatively invulnerable to currently known methods of defense. Even with a defense missile equally fast, the job of shooting down anything moving 20 times the speed of sound would be enormously difficult. Only seconds would elapse between the time such a missile could be detected in flight and the moment of its impact at destination.

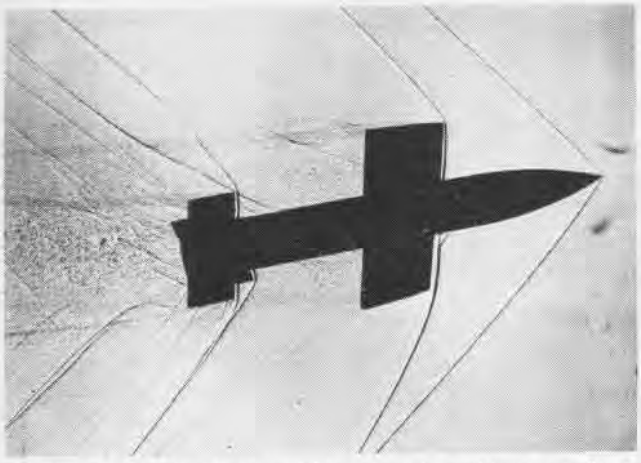
Two major types of hypersonic missiles are of interest; the ballistic and the glide missile. The true ballistic missile will be accelerated to hypersonic speeds in the first 15 or 20 miles of its flight. The initial push will carry it outside the earth's thin atmosphere to heights between 500 and 600 miles, where it will travel in outer space during the main part of its flight. Its name comes from the fact that under the influence of gravity, it will follow a curved path like the trajectory of an artillery shell. When it returns to the atmosphere, resistance of the air will slow it to about 5,000 mph at the end of its flight. Tail fins, useless in outer space, might be required in the final phases to provide control.

A flat trajectory inside the atmosphere marks the glide-type missile, which will also be propelled at 10,000 to 15,000 mph speeds. It will have wings to obtain aerodynamic lift. Like the ballistic missile, this second type would get its major push in the first



ELECTRONIC *computer, using aerodynamic data obtained from wind tunnel tests, feeds results to flight simulator, enabling study of expected responses in a new design.*

EXTENSION *of wing leading edge to improve lift of sweptback wing is flight-checked by wooden contour.*



AT MACH *1.6, free-flight stability research model is caught in flight by shadowgraph technique, showing pattern of shock waves.*

SIMULATED *aerodynamic heating on a model placed in a jet of hot gas shows how sharp nose and thin wing edge heat more rapidly.*

few minutes of flight and would then glide to destination. The lifting wings present the interesting possibilities of landing a vehicle of this type under control and it may thus have commercial as well as military applications.

Temperatures high enough to melt or vaporize most metals in general use today, quickly develop in the air next to the skin of a missile flying at hypersonic speeds. Even at only half the speeds envisioned, or about 7,000 mph, sustained flight could produce temperatures up to 8,000 degrees F. One promising technique for keeping the aircraft cool is transpiration cooling. It requires porous skin through which liquid is evaporated. The human body is cooled efficiently by this method, and the same liquid, water, may be used in missile application.

Many such research problems are being studied at the NACA installations. The Lewis Laboratory at Cleveland, Langley Laboratory at Langley Field, Va., and Ames Laboratory in the 1955 spotlight, keep U.S. aviation in front.

AMES UNITARY *Plan Wind Tunnel covers 11 acres. It is a continuous flow tunnel in which three separate test sections cover speeds of Mach .7 to 3.5. Four wound-rotor-type electric motors connected in tandem deliver 180,000 hp, have overload rating of 216,000 hp.*

RESERVIST HAS HOBBY WITH A PAST

—Warren C. Wright, JOC

TALLMAN FLIES HIS SOPWITH CAMEL, WW I PLANE, OVER THE MIDWEST COUNTRYSIDE

SOME PEOPLE collect marbles. Others collect meerschaum pipes, or stamps, even stray cats and dogs. But a Naval Reserve helicopter pilot at NAS GLENVIEW comes up with the prize collection. He collects WW I airplanes!

Not models, but real flyable airplanes, airplanes that were the first military aircraft ever to be used at a time when everything in aviation was still to be learned. In 1917 the maneuvers of the early planes could rightly be called "daring exploits."

Recently, visitors at Glenview were startled to see LCdr. Frank Tallman climb into one of his relics, an old British Sopwith *Camel* of 1917 and head off into the yonder. Most people today feel that the skies belong to the slender jets and the great airliners. They wonder that a plane like the *Camel* can fly at all, let alone contest the airways with modern planes. But there it is, climbing easily into the sky after a short run that could have been accommodated by a short pasture—with a barbed-wire fence at the end.

But it is that very type of plane that Capt. Roy Brown of the RAF was piloting when he shot down the great Baron Manfred von Richtofen, the Red Knight of Germany. It was no easy triumph, but it happened. The greatest ace of all time, with 80 confirmed "kills" to his credit, was a victim.

Here is how the battle ended: "Capt. Brown watches the tracer bullets from his twin Vickers going into the red triplane from the right side. They hit the tail first. A slight pull on the stick—a fractional elevation of the *Camel's* nose, and Capt. Brown's line of fire starts to tuck a seam up the body of the Fokker. The Red Knight of Germany goes down. Rittmeister Baron Manfred von Richtofen is dead."

When LCdr. Tallman got the Sopwith *Camel* from the Jarrett Museum in New Jersey, it was a battered, war-weary relic no one ever thought would fly again. But fly it does, with the grace of a cat skimmering the alley fences.

For many who watched it that day at NAS GLENVIEW, there was a feeling of nostalgia. But modern pilots shuddered that any plane could be flown with only four or, at the most five, instruments in the cockpit. But these were all the instruments required by a *Camel* with a 110 hp *Gnome Rotary* engine. In those days a pilot flew by the "seat of the pants," and when the weather was bad, planes stayed home. The enemy did likewise.

EARLY in WW I when this plane first took to the air, guns were not put on planes. The *Camel* was used only for photographic and reconnaissance purposes. Occasionally the two-seater version dropped Allied spies behind the German lines. The first guns used were repeating rifles, pistols, sporting rifles, and even double-barreled shotguns—anything to knock the other planes out of the air and prevent the enemy from gaining information that would prove of value to them.

Flight training in WW I was meager compared with the long thorough training required today. For example, Richtofen recorded 25 hours before he took a Fokker aloft alone for the first time. At that, he appears to have had a longer introduction to aeronautics than Capt. Eddie Rickenbacker who went into aerial combat with only four hours time recorded in his log book. As for pilots flying the Sopwith *Camel*, they were known to take one up for a solo flight after only 30 minutes instruction in aircraft handling.

LCdr. Tallman recalls that his father, a Naval pilot of WW I had somewhat less than the 25 hours training at the time he won his Naval Aviator's wings at Pensacola. This compares very favorably with the time it takes to learn to drive a car today.

But then in the days of the first World War, navigation instruments, with the exception of the compass, were unknown. There was no need to worry about manifold pressure or engine temperatures. If the engine overheated, you just landed in the nearest available pasture, filled her up with a fresh drink of water, taxied back to the end of the pasture, and skimmed over the stone wall or barbed-wire fence at the end. It was as simple as that. No long concrete landing fields; no tower control operator to worry about; just take off and fly, hunting for a gentleman-enemy to try and shoot down, if you had guns. If you didn't, you flew ring-around-the-rosy with him for awhile until one of you got tired of that game and quit.

If the German had guns and you didn't, you tried to get away from him by using the full power of your 110-hp engine and wound her up to a fantastic 125 and kited for home.

LCdr. Tallman's first hobby of collecting guns started him to collecting aeroplanes. From ancient rifles he graduated to aeroplane machine guns, and here his collection of guns really blossoms out. There is the Spandau, a German machine gun. At first, this gun was mounted on the top wing of

the plane where it could fire over the arc of the propeller. Later, it was mounted between the two center struts, on the cowling and on a level with the naviator's eyes. This mounting was made possible by a gear train which synchronized the firing of the machine gun with the propeller, so that the line of fire was directly through the propeller. At one shot for each three revolutions of the prop, it fired at the rate of about 300 rounds per minute.

He also has one of the first adaptations of the Lewis machine gun. Adapted to aeroplane use, it still had the shoulder stock, but with a round drum on the top of the gun. On later models, the stock was left off and another gun was mounted.

LCdr. Tallman has a German *Parabellum* gun which was designed to shoot down observation balloons. The Allies used the regular Lewis and Vickers guns with tracer bullets to explode the gas in the balloon and set it afire. With these guns Frank Luke, the tall Texan, won his familiar title of the "Balloon Buster."

Among the other items of his collection LCdr. Tallman has several cases of duelling pistols, officer's pistols, dress swords and the more useful cavalry sabre. Several complete suits of armour from the 11th and 12th centuries, and early battle helmets are displayed.

LCdr. Tallman comes by his plane hobby honestly, for it is apparent that he cut his teeth on the struts of a "*Jenny*", guided his first steps by hanging on to the guy wires of a "*Spad*", and used the hurricane deck of a "*Camel* fuselage" in learning to ride. With his father a Navy pilot of WW I and his uncle as an Army Air Corps pilot with Composite Group No. 1, he was born to fly, and collect planes.

A civilian flight instructor for the Army Air Corps, LCdr. Tallman was commissioned a Naval Officer in 1942 and sent to Pensacola for orientation, the same station where his father had been trained during WW I. Tallman is one of an increasing breed of Naval pilots who are qualified in fighter planes and multi-engines, as well as helicopters.

The CO of a helicopter squadron at NAS GLENVIEW, LCdr. Tallman in civilian life, is an account executive with the Radio Division of the Columbia Broadcasting System in Chicago.

VMR-152 AIRLIFTS MARINES

SCALE MOCK-UP OF R5D INTERIOR WAS USED TO TRAIN MEN IN PLANING AND DEPLANING

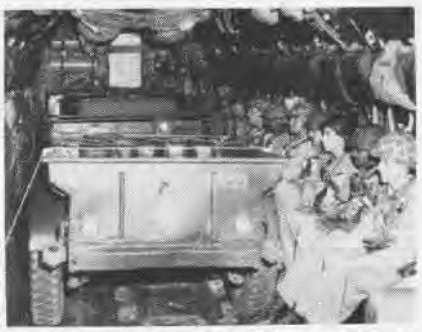
VETERAN VMR-152 has completed an air-ground exercise at MCAS KANEOHE BAY without marring its 14-year personnel safety record. About 2,000 men from the 4th Marines and five R5D *Skymasters* of VMR-152 took part. The airlift was designed to coordinate air and ground elements and familiarize personnel with procedures involved in airlifts.

The lifts involved the movement of 14 reinforced companies and equipment of the 4th Marines. Each battalion was organized into three supported rifle companies and a command group composed of weapons and H&S companies. In addition, a 4.2" mortar company and an anti-tank company plus batteries of the 3rd Battalion, 12th Marines, participated. The latter organization is an artillery outfit attached to the 4th Marines.

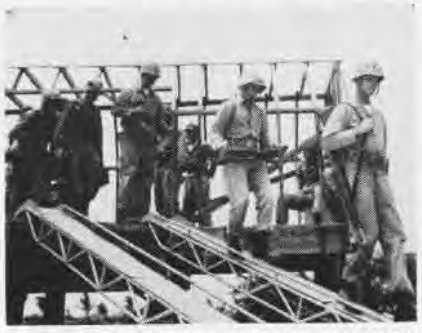
Seventy men from VMR-152, on detached duty from MAG-25 at MCAS EL TORO, gave the regiment its air baptism. The unit made 400 flights in 15 days. The biggest day was May 19 when the planes racked up 48 flights.

It was estimated that the planes hauled a grand total of 2,000 tons of men and equipment during the lifts without as much as an upset stomach. During the Korean campaign, the unit evacuated over 3,000 wounded soldiers and Marines without loss of life or aircraft.

Supervising the task of loading and unloading men and equipment fell on the shoulders of MSgt. Paul Perry, acting coordinator for the 1st Provisional Marine Air-Ground Task Force, which controlled the operation.



JEEPS WERE ALSO AIRLIFTED BY VMR-152

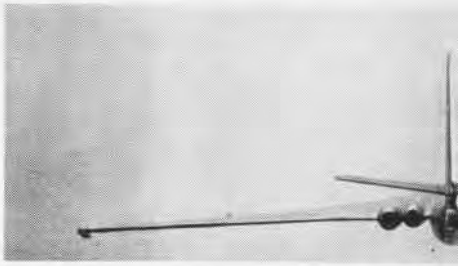


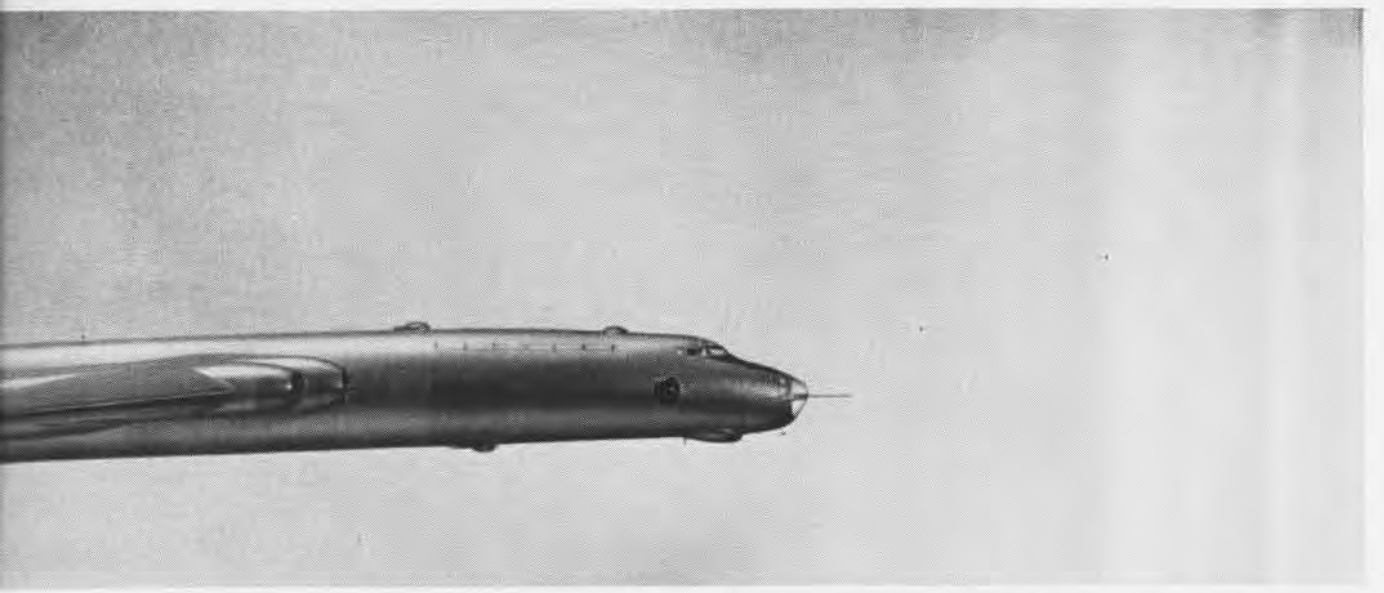
COMBAT-CLAD MARINES PRACTICE DEPLANING

Each unit received preliminary instruction on flight procedures the day before taking to the air. A school was set up, complete with dummy transport plane to teach personnel loading of equipment, flight safety and conduct in survival and rescue. LCol. C. W. Somers is the VMR-152 skipper.

RUSSIA'S BI

The USSR's new swept-wing, f
shape of a slender cigar is well
bottom of the fuselage, three s
side of the nose and one forwa
a stinger set low in the tail. The
with a broad, thick inboard s
housed internally. Wing tip p
rigger landing gear. Note large
nose section and tremendous s

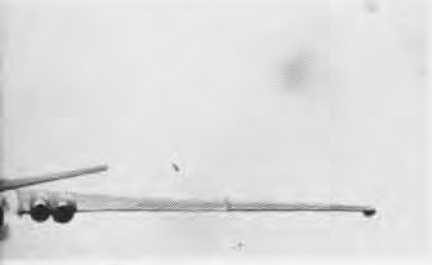


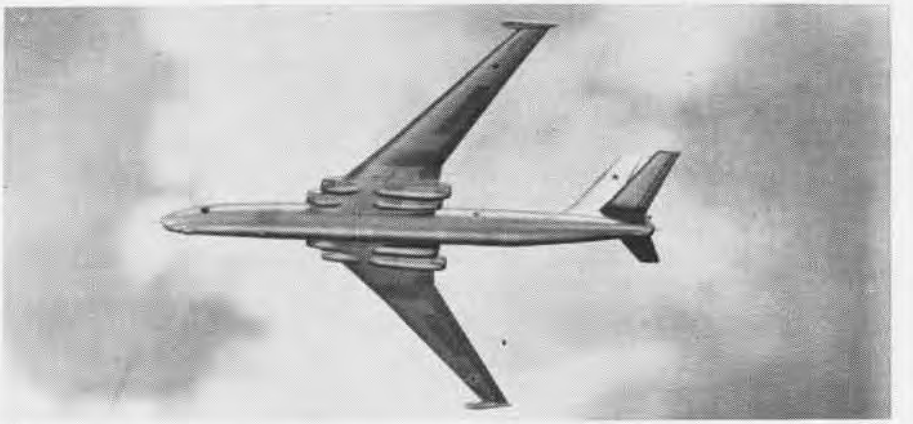


SON BOMBER

★

our-jet heavy bomber with the armed: gun turrets on top and ighting blisters—one on either d of the upper gun turret—plus wing is high-shoulder mounted ection where the engines are ds are believed to house out- radome on the bottom of the ize of the angular stabilizer.





Weekend Warrior NEWS

FLORIDA *Reservists will patrol many miles over much water before they return to the blue waters that wash Miami Beach's "Gold Coast."*

NAVAL *aviator No. 520, Capt. W. W. Townsley (R) hands over his desk and duties as CO, NARTU Norfolk, to his relief, Capt. W. E. Fowler.*

Overseas Deployment for Training

Port Lyautey, French Morocco, is headquarters for over 200 South Florida "Weekend Warriors" this month. These Miami NARTU civilian-sailors are fanning out from the coast of North Africa, performing their annual 14 days active duty training, in conjunction with operating squadrons of the fleet in the Mediterranean area.

The eight PBY *Privateer* patrol bombers of VP-801, commanded by Cdr. E. E. Laughlin, and their full tactical crews, are being coordinated with units of the fleet in the Mediterranean area, in the discharge of their anti-submarine warfare and mine laying missions.

VR-801's three R5D's have joined the squadrons based at Port Lyautey in logistic support of the Naval Operating Forces throughout the Mediterranean area and Europe. LCdr. G. R. Tamalis is the CO.

On the other side of the world, two other state-side reserve squadrons are deployed. Olathe's VP-881, commanded by Cdr. L. Jones, is conducting patrols from Barber's Point along with squadrons based there, while VR-811 of Minneapolis has integrated its R5D's and men into Fleet Logistics support for operating forces in the Pacific. Cdr. P. H. Janes is VR-811 CO.

MIAMI *squadron skippers Laughlin and Tamalis plan deployment route "from here to here."*

BRIGADIER *General Arthur F. Binney is the new Commander, Marine Air Reserve Training.*

Early Aviator Grounds Himself

When Capt. W. W. Townsley retired at the end of June, he left the low spot in designator numbers for aviators on active duty to Capt. A. O. Priel, N.A. #538. One of the old timers in Naval Aviation, Capt. Townsley can match yarns about those early days of flying with any of the QB's.

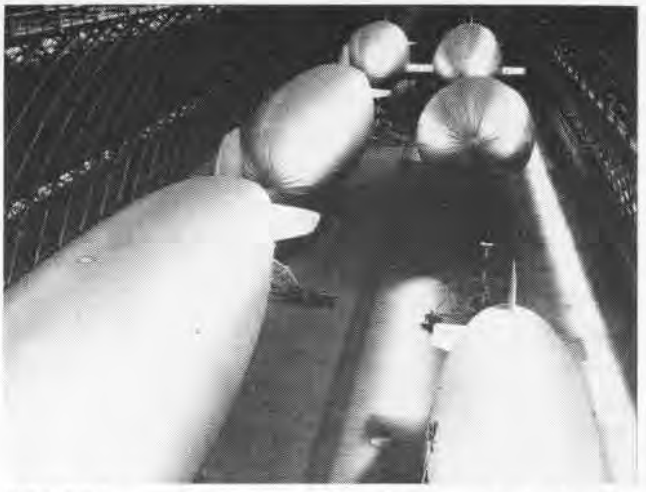
Entering the Navy in April 1917, he took flight training that same year. Within 12 months he had qualified as an aviator, had been through Royal Flying Corps Gunnery School, Ft. Worth, and had been indoctrinated in "Big Boats" at NAS NORFOLK. Immediately thereafter he was shipped overseas. From NAS KILLINGHOLME, England, he engaged in antisubmarine patrol and convoy escort work until the end of the "war to end all wars."

Back home, he was assigned to the Air Detachment, Atlantic Fleet, forerunner of Air Force, Atlantic Fleet.

Between the years 1920 and 1941, Bill Townsley was twice out of the Navy, only to be recalled each time to active duty in naval aviation.

At the end of WWII, he was CO, Naval Air Base, Eniwetok. End of his naval career found him CO of Reserve Squadrons, NARTU, Norfolk. And now he retires to his Pa. farm with a Navy call-sign name—CONNEMARA.

NAS DALLAS *was overnight stop for K-40 on cross country transfer as she was ferried, with sister ships, from Lakehurst to Santa Ana.*



WITH THE *new arrivals, it seemed like old times at Santa Ana. For the first time since WW II, six airships were hangared at one time.*

He Sold Himself

Joseph E. Ostrum, AN, was detailed to the NavCad Information Office, Akron, Ohio, to assist in college visits.

After his first field trips, he was 'selling' the NavCad program like a veteran. On a recent assignment, he showed a lively interest in becoming a Cadet himself. Current status—The Akron office is now seeking qualified replacement for NavCad Ostrum.

Results Were Immediate

NAS SAND POINT was bursting at the seams last May. Seven hundred forty-eight Sea Explorer Scouts had taken the Seattle station by storm during their three-day Region Eleven Regatta.

Coming from Washington, Oregon, Idaho and Montana, the boys arrived by boat, rail, bus, and by caravans of private cars.

Saturday was a busy day for the Scouts and for the Air Station. That morning they witnessed a simulated helicopter rescue, a fire fighting demonstration, and a flight exhibition by VMF-216. About 80 lucky Scouts got R5D rides over the area, while all the boys were taken on a cruise around Lake Washington aboard the USS *Gilligan*, DE-508.

Climaxing the day's events was the Inspection and Review conducted by RAdm. A. M. Bledsoe, Com-13, followed by a dance in Hangar 30.

Saturday night one 17-year-old Sea Scout telephoned his father long distance, requesting permission to join the Naval Air Reserve. At 7:30 Sunday morning, they were both waiting at the door of the Recruiting office!

Buz Sawyer's 'Pogo' is on Float

For its part in the Atlanta Armed Forces Day Parade, the naval air station featured Buz Sawyer's *Pogo* plane.

Personnel of the station's metalsmith and ordnance shops built a model ship similar to an ice-breaker with the Navy's *Pogo* plane erected on its fantail. Depth charges and two .50 cal. machine guns were mounted on the ship's float, and five stationkeepers (getting their sea time in) dramatized the actual running of a ship.

A sound system enabled all to hear "Flight Quarters," "General Quarters," and word passed for working details.

CREW *of No. 2 airship to leave Lakehurst. With only one mooring mast available at overnight stops, ships proceeded independently.*

FG1D *model Corsair, flown at NAS Sand Point model meet, has made 12 flights, Capt. Alexander, VMF-218, learns. His Corsair stands by.*

A FATHER, *doubly pleased, watches while his son receives congratulations upon having received an appointment to the Naval Academy.*

WHY *shouldn't these VF-741 pilots be pleased? Lts. Donald Lynch, Charles Kline and Ken Bailey have just helped save a man's life.*

He's Navy All the Way

Airman Ronald W. Render entered the Weekend Warrior program in February 1954 when the Auxiliary Aviation Unit 742 was located in Columbia, S. C. In the summer of that year, he attended the 56 and 90-day Recruit Training schools held at NARTU JACKSONVILLE.

And now his CO, LCdr. Jack T. Welch congratulates him upon his appointment to the Naval Academy.

Parental influence is suspected in Ronald's choice of the Navy. His father, LCdr. W. E. Render, is OinC of Navy Recruiting in South Carolina.

Good Word from the Press

"The trouble is that it whets our appetite for more jet flying," wrote Bicky Caskill, reporter for Denver's *Boulder Daily Camera* after hop in connection with *Blue Angels'* appearance.

Team Work Pays Off Again

What was a routine training flight for three VF-741 *Guardians* became a teamwork search and rescue mission.

The NARTU JAX fliers were beginning their syllabus flight when the tower picked up a distress signal.

A Marine FJ-3 had developed engine trouble about 40 miles east of Brunswick, Ga., and the pilot, Lt. W. O. Goller, had ejected and parachuted safely to the sea. His wingman put out the distress signal and began to orbit around the downed Marine flier.

Dispatched to the scene, the VF planes took up the orbit, relieving Goller's wingman, now low on fuel. Within minutes, two Hunter AF Base jets and an NAS JAX rescue *Albatross* joined the team.

An NAS GLYNCO 'copter completed the mission when it arrived, despite strong head winds, and made pick-up.

Awards Presented for Heroism

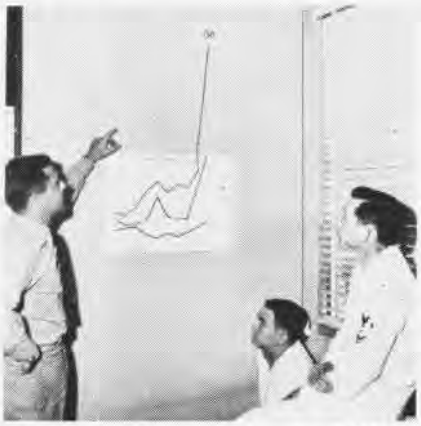
During ceremonies held at the Naval Air Station ST. LOUIS, Capt. H. K. Edwards, CO, presented awards for heroism to one civilian and three Navy men.

The four men, W. M. Kragh, J. D. Fortner, AO2; Lt. R. D. Murphy and Ltjg. J. F. Dobronski, all displayed outstanding courage and gallantry in their efforts to save the life of a fighter pilot who crashed in August 1954 near the air station.

With spilled gasoline burning in the cockpit, they unhesitatingly ran into the fire, and despite the intense heat and the imminent danger of a gasoline explosion, they extricated the unconscious pilot from the flames.

The 3 Navy men received Navy and Marine Corps medals while Mr. Kragh received a letter of commendation from Secretary of Navy Charles S. Thomas.

NAVCAD *procurement officer, Lt. P. R. Craven, is ready to assist passenger Caskill from TV.*



TO SHOW *results of Columbus NavCad drive, Bush, McNamara, May, YN2, need new chart.*

CAPT. *Edwards pins medal on Ltjg. Dobronski while the others stand by for their awards.*

GROUCHO *Marx clowns with VAdm. Harold M. Martin, ComAirPac, on "You Bet Your Life." Adm. Martin and his partner won $175.*

College Graduates Go Navy

Six Selected for NavCad Program

Recent graduates of Perkinston Junior College, Perkinston, Miss., have displayed an unusually active interest in the NavCad program. Nineteen applicants have reported to NAS NEW ORLEANS in the past few months for examination. These men represent about 50% of the eligible males who

SIX PERKINSTON MEN ACCEPTED NAVCADS

completed the college requirements the latter part of May.

Five former graduates are now undergoing flight training at Pensacola. The most recent to be accepted are pictured above, from left to right: J. A. Thomas, George E. Cochran, Jerome M. Morgan, Ralph N. Brown, J. A. King and Bert Phelps.

IFR-IQ?

What is the initial penetration altitude?

Answer on page 40

FAMOUS SHIPS OF THE LINE

THE USS INTREPID

COMMISSIONED 16 AUGUST 1943

THE INTREPID (CV-11) deserves her name as did her 18th Century predecessor. The first *Intrepid* was a Tripolitan corsair seized on 23 December 1803 during the Barbary wars. The 64-ton ship was renamed and earmarked for danger.

Her first assignment was the destruction of the USS *Philadelphia*. Since the *Intrepid* was in Mediterranean rig—a lateen sail—she was able to get into the harbor of Tripoli where the captured *Philadelphia* was anchored. For this mission, she was manned by 84 volunteers led by Lt. Stephen Decatur. Many others aboard were to become famous in Navy history. On the night of 16 February 1804, the *Intrepid* slipped into the heavily fortified harbor and accomplished her mission spectacularly.

As if destined to meet tragedy, the *Intrepid* was selected to shatter the pirate castle, the town and wipe out enemy shipping. Three officers and 10 enlisted men from the *Constitution* and the *Nautilus* volunteered to take the ketch into the heart of the anchored enemy fleet with a slow burning fuse attached to 100 barrels of powder and 150 fixed shells. The mission failed.

The second *Intrepid* was an experimental steam torpedo ram, built at the Boston Navy Yard, commissioned in 1874, and sold as scrap in 1892. The third *Intrepid*, built and launched at Mare Island, was an 1800-ton steel hull sailing ship constructed for training landsmen and apprentices. Launched in 1904, she was sold in 1921.

The CV-11, latest of the *Intrepid* line, was slated to travel far with the famed fast carrier forces of WW II. Into her hull had been welded the toughness necessary to keep her fighting in Kamikaze-hot corners of the forward areas. Although hit by five suicide planes on four occasions and by an aerial torpedo on another, she survived each time.

Her role in aerial combat, in neutralizing enemy islands, and in levelling defenses in regions marked for invasion, began on 29 February 1944 with attacks on Roi-Namur and Kwajalein to open the way for invasion of the Marshalls. It continued with the first carrier strike on Truk, operations against the Philippines in support of the Palau and Morotai landings, support of the Leyte invasion, the Battle for Leyte Gulf, Okinawa, and the Battle of the East China Sea.

The long awaited word "cease offensive operations" came on 15 August 1945. Japan's defeat was complete. The *Intrepid*, on her way to join Task Force 38 off Japan, was too late for the final battle, but on 2 September she was one of the long line of ships steaming into Tokyo Bay.

She joined the Navy's "Mothball Fleet" in 1947, but she was put back in service in 1954 at Newport News. She is now part of the US Atlantic Fleet.

AIRLANT IS READY FOR UNDERSEAS RAIDERS

LOOKING *through the props of one Marlin, the USS Currituck and plane 9 of VP-44 are framed with sunny Bermuda as backdrop. Seaplane tenders are patrol squadrons' "home away from home."*

THE VITAL and tremendous responsibility of off-shore patrol for protecting Atlantic sea-lanes from enemy submarines rests with the Commander, Fleet Air Wings, Atlantic. RAdm. Francis M. Hughes, incumbent, is a veteran of many years association with naval aviation. His Chief of Staff, Capt. William O. Burch, has been a naval aviator since 1930.

Under this experienced leadership, the antisubmarine patrol command operates from Baffin Bay to the Caribbean. There are four major subdivisions within the command: FAW-3, FAW-5, FAW-11, and Fleet Airship Wing One. These subdivisions are, in turn, divided into patrol, fleet aircraft service squadrons and airship squadrons. Support, when deployed to the seaplane squadrons is given by the seaplane tender, USS *Currituck*.

The units of FAirWingsLant fly a wide variety of aircraft, most of them developed specifically or modified for their antisubmarine or mining function. Among the type of planes flown are the P2V *Neptune*, the PBM *Mariner* and the newer P5M *Marlin*. The airship units patrol in the Goodyear ZSG-class and the larger ZPG-class airships.

Newest addition to this big family of submarine hunters is the P5M-2 "T"-tail Martin *Marlin*. In VP-44, the P5M-2's have replaced the P5M-1, and eventually they will be assigned to other seaplane squadrons within the command.

Mobility of striking power is enhanced by the use of the *Currituck* and FASRon-121. The *Currituck* can operate in relatively shallow and sheltered water to service aircraft. She is large enough to carry the men and supplies essential to her mission, yet small enough to navigate in areas that might be used for seaplanes. Working with the tender for re-fueling and repairs, squadrons can continue on sea patrol for days, or even weeks on end.

Fleet Air Wings, Atlantic, have participated in many Atlantic Fleet and NATO exercises. In these, the officers and crewmen study the intricate problems involved in defending the shipping lanes of the Atlantic and our own eastern shores. Frequent underway training exercises fit each man for his job and perfect his use of special equipment.

There are also special missions for certain groups. For example, the *Hurricane Hunters* of VW-4 fly far and wide in the Gulf of Mexico, the Caribbean and far into the Atlantic to track these destructive tropical giants. Once a hurricane is located, the storm is kept under constant surveillance. One or more planes each day fly into the storm at low levels to determine its exact location. During the flight, aerologists report weather data so that the size, intensity, and direction of the hurricane can be broadcast to weather stations along the coast. The men of VW-4 will tell you that hurricane hunting is "dangerous but interesting."

Typical of the patrol squadrons now flying under the command of FAirWingsLant is VP-44 skippered by Cdr. W. F. Laffey. In the squadron there are 55 officers, 300 men, and 12 patrol aircraft.

During the last year and a half, VP-

RADM. *F. M. Hughes assumed command of FAirWingsLant in the early part of 1954.*

44 has flown some 5,000 accident-free hours. It takes the squadron just one half hour—from call to flight—to get one of their huge P5M-2's manned, launched and airborne on an assigned mission.

The squadron often participates in search and rescue. In November 1954, they were active in search operations for the SS *Mormackite* which capsized and was lost, a downed PV-2 and a lost T3D. The squadron was also called away while involved in Operation LantFlex '54, to hunt for an African-bound R7V-1 *Constellation* lost at sea. Two VR-44 *Marlins* searched some 7,000 square miles for a converted LST in mid-December 1954.

An example of the squadron's determined spirit occurred several years ago after a forced landing. In flight one of

THE NEW *P5M-2 is easily distinguished from its predecessor, the P5M-1, by the high "T" shaped tail. The plane weighs 56-tons fully loaded.*

VP-44 *was the first East Coast-based squadron to get the P5M-2 Marlin for operational use. It is capable of rough water take-offs.*

VP-44's planes suffered damage and lost the outer section of its starboard aileron. Emergency ditching procedures were carried out efficiently and the pilot landed the plane without further damage in Chesapeake Bay near the mouth of the Rapahannock River. He then proceeded to taxi it back to its base at Norfolk!

Some years ago, on another occasion, during an ordnance experiment about 100 miles off shore, a large explosive charge attached to a buoy was lost in heavy weather from the deck of the ship carrying it. An immediate search was organized. A crewman flying in one of VP-44's PBM's spotted the object and sank it.

The acceptance of the P5M-1 by VP-44 in April 1952 was a big day for the squadron. Officers and men will remember what RAdm. G. B. H. Hall, then ComFAirWingsLant, said on that occasion, "In introducing a new aircraft, the selection of the first Fleet unit to operate it is always of importance. In selecting the pilots and airmen of VP-44 to fly the first *Marlins*, the Fleet Air Wing Commander has chosen a group with an outstanding record in safety, maintenance and aviation skill. From the captain to the last member of the beach crew, the squadron has exhibited a spirit and stamina in Fleet maneuvers that makes it worthy of the best."

In April 1954, these words were dramatically proved by the crew of one of the P5M's. LCdr. E. F. Tate and his crew were on the return leg of a routine night operational ASW flight when the plane developed serious engine trouble. Tate ordered crash station when the plane was about two miles from Cape Henry. He made an open-sea landing without injury to his crew members or damage to the plane by using partial power on only one engine.

As with VP-44, this variety of assignments is routine among other units of the antisubmarine patrol command. Constant training and a deep sense of responsibility insure that they are ready to accomplish their mission. Bitter lessons of WW II, in which the Allies were in danger of losing the battle of the Atlantic to Nazi U-boats, are constant reminders to the antisubmarine squadrons of their grave responsibility.

PLAYING *a major role in the suppression of possible enemy submarine activities along the East Coast of the U.S. are the ZPG-class airships. They supplement job of land/water-based planes.*

MERCHANT *ship taking belting from hurricane as seen by Navy "hurricane hunter."*

CROCKETT'S MEN TRAIN GUNNERS

AN OUTSTANDING faculty, appropriately headed by Cdr. Dave Crockett, former CO of VF-64, is responsible for the training given by Fleet Air Gunnery Unit, located at NAAS EL CENTRO, California. Instructors put members of all Fleet and Marine squadrons through the five-week course that involves 55 hours of ordnance instruction in the air and over 200 hours of classroom lectures.

The subjects covered range from gun film analysis to fighter tactics and from 20mm cannon operation to gunsight functions. So thorough and efficient is the course that when FAGU graduates return to their own units, they really deserve the designation of ordnance experts.

At El Centro, the Navy has the latest technical machines of war: machines that pinpoint enemy targets with the speed of high Mach interceptors, machines that lock the cannon of these interceptors on the cockpit of an enemy aircraft, and finally, machines that, with the staccato crack of an electronic computer, rifle missiles into that enemy cockpit with lethal accuracy.

FAGU keeps abreast of the operating squadrons. The bomber syllabus uses the new, rugged AD-6's for the bombing, rocketing, air-to-air gunnery and mining hops that are flown over the sun-baked targets dotting the floor of the Imperial Valley. The FAGU trademark—a target pierced by a lightning bolt—has only recently been painted on six new F9F-8's to augment the F9F-6 fighter syllabus. Eventually heavy-ordnance *Cougars* will replace the F9F-5 fighter bombers now used.

Cdr. Crockett's roster of officers probably has a cumulative background of military air experience second to no other single unit in the Navy. LCdr. Jack McQuary, executive officer, and LCdr. Don "Red Dog" Davis, operations officer, fly mostly with the *Panthers* as fighter-bomber instructors. The Texas *Zero* killer, Bob Kelly, is training officer and concentrates on the interceptor syllabus while LCdr. Bob Ricks, former exec of the VA-125 *Rough Raiders* handles the AD training and specialized briefing.

The other instructors now include Academy-trained Ltjg. Wayne Smith and Lt. Andy Burkett—the latter claims a Navy record for having pulled the most G's in one day, 250—in the AD department, as well as Ltjgs. Bruce Ashley and "Red" Isaacks, who combined on a record banner recently, even showing the "Old Hands" a few stick and rudder tricks.

But the officers are only as good as the men serving under them, and when better ordnance and maintenance crews are operating in the Navy, they will be FAGU. Constantly on the alert for better ways and means to meet demanding schedules, the enlisted men at FAGU are experts in their field. Their proficiency has led to several new methods, first tried at El Centro, being used throughout Naval Aviation.

Tape Recorder Instructs

Wire Method Used at NAS Spokane

When NAS SPOKANE received the *Cougar* jet last January, Mr. William Cochran, a Grumman test pilot, spent a weekend at the station giving lectures on the aircraft, its operation and cockpit arrangement, to the pilots of squadrons checking out in the F9F-6. Everything he said was recorded so that his instructions could be used in subsequent transition training.

The pilot who is checking out sits in the cockpit with earphones on. The training instructor stands over him as he listens to the recording. If the pilot being checked out does not understand a statement, the recorder is shut off while the training officer explains the matter thoroughly. Then, and only then, the machine is turned on again. This check-out is given at the beginning and end of the 20 hours prescribed ground school prior to flight.

Right now 82% of VF-901 and VF-902 have received their check-outs and are flying the *Cougar* jet.

Marine Lauded for Rescue

Receives Navy-Marine Corps Medal

Several things have happened to Marine Cpl. Leroy Lee that make him the pride of MCAS CHERRY POINT and ALF EDENTON, N.C. On Armed Forces Day, with full military honors, Lee was presented the coveted Navy and Marine Corps Medal for saving the life of a fellow Marine. He received two citations, one from SecNav in the name of the President and one from Gen. Shepherd. The man he saved was there to offer congratulations.

Last September a *Skyraider*, piloted by Capt. Gordon Squires of VMA-225, crashed into a densely wooded area near the field and immediately burst into flames. Lee rushed into the fire and intense heat without protective clothing, found the severely injured pilot lying on the ground a few feet from the torn cockpit and moved him to safety.

Gen. Shepherds' letter read in part, "I wish to express my gratification upon the recognition of your heroic conduct as evidenced by the award to you of the Navy Marine Corps Medal with citation by the President."

FACULTY AND MAINTENANCE CREWS AT FAGU EL CENTRO ARE EXPERTS FROM THE FLEET WHO PRODUCE TOPNOTCH AERIAL GUNNERS

DECK LOAD OF 'COPTERS WAITS FOR TRIP TO HANGAR DECK

AT ANCHORAGE, 'COPTERS TOOK OFF FOR RAILROAD SIDING

'STAND BY TO LAND AIRCRAFT!'

"FLIGHT Quarters! All hands man your flight quarters stations. Stand by to land aircraft."

This word, passed over the bullhorns and announcing system of the USS *Windham Bay* (TCVE-92), followed by "Boots and Saddles" played by a borrowed bugler, aroused varying emotions in those within hearing in the vicinity of the docks at NAS ALAMEDA, on a morning of late April.

Among the majority of the crew, the feeling was one of mild curiosity and some excitement. On board the mighty fleet carrier moored to the opposite side of the pier, the amused comment probably was that the little MSTS "jeep" carrier was having delusions of grandeur. Perhaps the CO had "flipped his lid."

In the small group of "Airdales" actually stationed on the ship, however, and probably in the old lady herself, the sounds stirred feelings of deep nostalgia. And when, with a roar of engines, and the sweet smell of exhaust fumes, the aircraft actually began landing aboard, the joy of the Air Department was unconfined.

What matter that the aircraft were helicopters—and Army helicopters at that! After more than nine years, the *Windy* was an operating carrier again, even if but for a brief time, and while moored to the dock.

The slightly incongruous situation occurred when the TCVE-92, a unit of MSTSPacArea, was ordered to interrupt her normal trans-Pacific runs to Yokosuka, Japan, (and points west) long enough to lift the major portion of Task Force Alaska of the 30th Engineer Group (Topographic Survey) to Anchorage, Alsaka. From there the group heads for their sixth summer survey and mapping expedition.

Forty-seven Sikorsky and Hiller helicopters made up the most important and fragile part of their equipment, and it was decided that the whirlybirds could most expeditiously and safely be loaded and off-loaded under their own power. Such proved to be the case, for in less than three hours after the first Army pilot set his plane down on deck, all 47 were aboard and in a few minutes were snugly stowed in the hangar without a scratch.

During the operation, which involved radio and visual control, landing signal officer, spotting crews, crash crews and boats, the Commanding Officer of the *Windham Bay*, Capt. Jack Roudebush, piloted one of the 'copters aboard himself. He was greeted on arrival by the executive officer leading a reception committee—the entire crash crew with hoses and foam extinguishers ready, two "Hot Papas" and the medical department with a stretcher. (It was a gag; none were needed).

'WINDY'S' CO GREETED BY COL. DOWNING

During the unusually smooth trip across the Gulf of Alaska, old *Windy* must have been recalling the time, almost ten years before, when the weather lived up to her nickname. In early June, 1945, wind gusts up to 150 knots battered the *Windham Bay* during a typhoon, causing extensive damage. But this trip was uneventful.

AFTER tying up at Anchorage, flight quarters was again sounded, and soon thereafter all aircraft were off-loaded. The skipper again took to the air in one of the Hillers. The ship received a "Well Done" from the 30th Engineers for the efficient job.

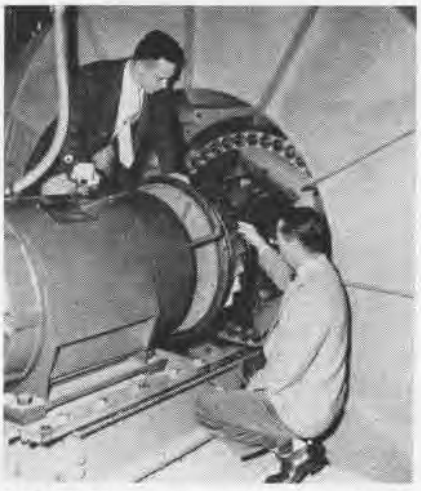
The *Windham Bay* caused quite a stir among the citizens of Anchorage. Over 8,000 of the citizens took advantage of visiting hours on board after the cargo and troops had been discharged. The ship was the first large vessel to make the port after the seasonal ice break-up in Cook Inlet, and only the second carrier of any kind to put into their fair city. The *Sitkoh Bay*, sister ship of the *Windy*, made the trip there in 1952.

All hands agreed that Anchorage was a good liberty port, although a bit chilly compared with Saigon, Viet Nam, where the ship called a month earlier.

GRADUATE OPPORTUNITY AT MONTEREY

THREE STUDENTS *arrive at school. In background are aeronautical, electrical engineering buildings and the five-story main building.*

MONTEREY *has provided study halls for students of each curriculum. Here is one section of Aeronautical Engineers in their study hall.*

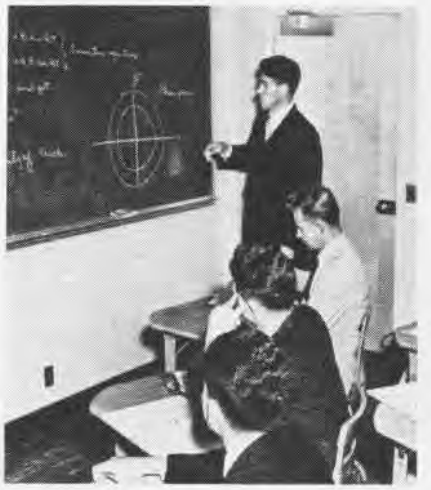


TWO STUDENTS *study machine designed to be used for turbine and compressor research.*

IN ONE of the most picturesque spots in California is the "Navy University." The U. S. Navy Postgraduates School at Monterey comprises two colleges: the General Line School and the Engineering school. Monterey is accredited to award baccalaureate, master's and doctorate degrees.

Forty engineering courses to prepare officers for technical direction in scientific fields, are in its catalogue. Twelve are in specialized fields of aeronautics, including nuclear propulsion.

Applications are now due from those desiring to start school in August 1956. Information is set forth in a new BuPers Instruction 1520.15B. The OinC of the Aero-Engineering School welcomes officers' inquiries.



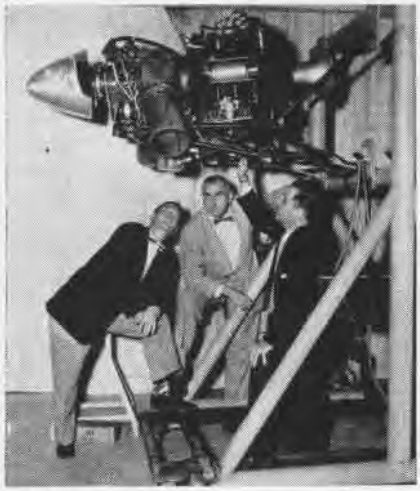
MATHEMATICS *used in stability analysis of aircraft and missiles is major subject.*

WHILE *studies are heavy, there are occasional breaks between the four ten-week terms per year, and beautiful scenic areas are right at hand.*

SUFFICIENT *day and night flying time are available to meet requirements of aviators with NAAS Monterey less than a mile from school.*

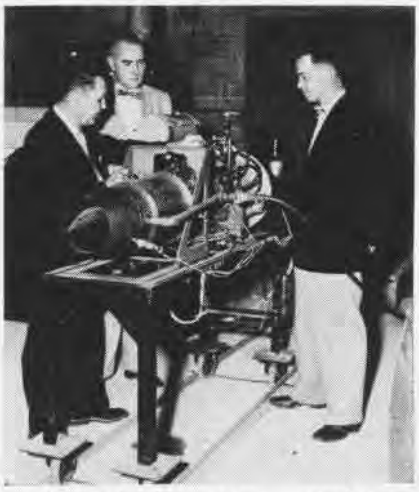
SERVO-*mechanisms play an important part in Armament and Guided Missiles Control curriculum, and analog computers built by students are used.*

EVEN IN *these times of supersonic flight, much basic knowledge must still come from subsonic windtunnels. Here students install a model.*



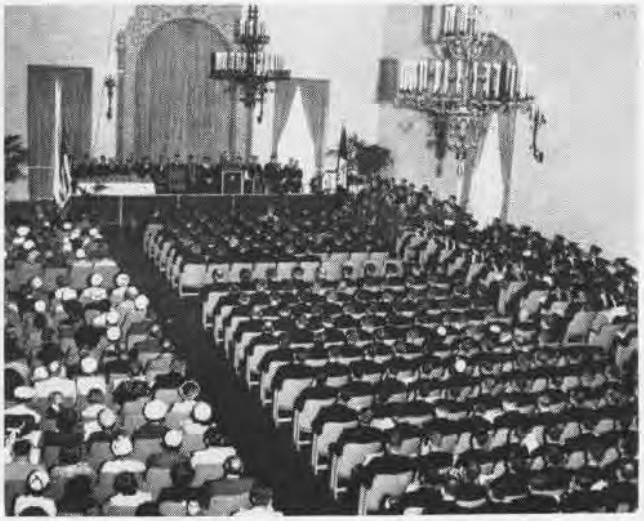
MOVABLE *stand which permits outdoors operation illustrates turbopropeller engines.*

INSTRUCTOR *shows intricacies of wind tunnel with Mach range of one through four.*



PROFESSOR *briefs two Monterey students on special accessories of a small jet engine.*

TWO-YEAR *Aeronautical Engineering Curriculum includes course in flight testing. Here students discuss techniques before F8F flight.*



AT 1954 *graduation, 46 aeronautical engineers with 300 other officers heard Assistant Secretary of the Navy Fogler give commencement address.*

CAFSU GIVES SPECIAL SERVICE TO FLEET

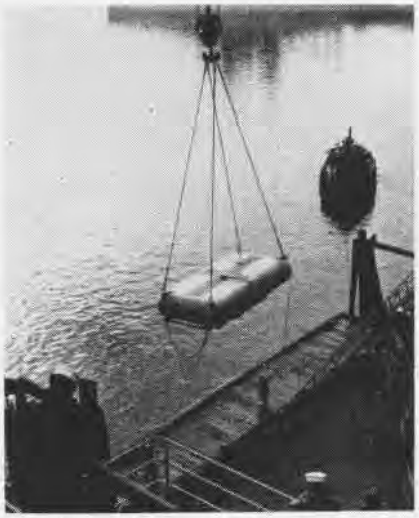
CATAPULTED AT MORE THAN 100 MPH, F7U-3 IS SHOT INTO AIR

BAIR (L) DISCUSSES CATAPULT PROBLEM WITH NORFOLK OFFICER

ONE NIGHT last November at 2230, a tired group of civilians and officers aboard the USS *Intrepid* were reviewing the catapult test records from the day's operations. The new steam catapults and Mark 7 arresting gear had been installed and were undergoing operational tests off the East Coast. A messenger carrying a dispatch entered and asked for a Mr. R. L. Bair. A tall civilian with a burr haircut, wearing grease-stained khakis that had literally been through the war, accepted the message. The dispatch read briefly, "Request R. L. Bair return ComAirLant. Urgent assignment *Lake Champlain*."

Forty-eight hours later Bob Bair was consulting the catapult officer and crew aboard the USS *Lake Champlain* at Naples, Italy. In that 48 hours he had left the USS *Intrepid* by the COD plane and been briefed at ComAirLant on his assignment. Since both HS catapults on the *Champlain* were reported inoperative, he had to leave immediately. MATS transportation had been arranged. A passport, travel authorization, etc. having previously been arranged for just such emergencies, all he required for immediate departure was a newly packed suitcase.

Although usually there is more advance notice on assignments, such an incident is not uncommon in the life of Bob Bair. For almost two years he has been a member of the Catapult and Arresting Gear Field Service Unit (CAFSU). CAFSU Reps is a recent designation for the 24 member unit.



CATAPULT TESTING DEVICE IS DELIVERED

TUG RETRIEVES 15-TON TESTING MISSILE

At times since its formation in July 1953, CAFSU Reps have also been referred to informally as Bliss Reps or NAFACT (Naval Aircraft Factory) Reps. These men are supplied to the Navy by the E. W. Bliss Company of Canton, Ohio, and are under the administration of the Naval Aircraft Factory. Regardless of designation, their purpose is to assist the Navy in continually improving the performance of launching and recovery gear.

CAFSU was organized in late 1952, about the time that the conversion to steam catapults became a certainty. The Bureau of Aeronautics decided that the increasing complexity of catapults and arresting gear warranted the establishment of a service group to supplement the work of the Naval Aircraft Factory.

In June 1953, the contractor, a manufacturer of steam catapults for the Navy, was selected to provide the services of engineering and technical personnel for the fields service. Since that time the original quota of 18 has been expanded to 24.

The first CAFSU assignment was performed in July 1953 with the certification of the Mk 5 arresting gear installation aboard the USS *Badoeng Strait* at the San Francisco Naval Shipyard. Since then, hundreds of assignments have been carried out by the unit, involving all phases of catapult and arresting gear service and repair.

The efforts of CAFSU are coordinated, directed and administered by the Manager, Naval Aircraft Factory, for the Commanding Officer, NAMC PHILADELPHIA, Pa. The commanding officer of NAMC delegates this authority to another command when CAFSU men are assigned to another command.

CAFSU handles many kinds of assignments involving technical or engineering assistance in connection with operation, maintenance, repair, tests, calibration, trouble diagnosis, modification and improvement of service type launching and arresting gear equipment. Besides on-the-job assistance, CAFSU maintains liaison between the operating fleet and the shore activity responsible for the support of this equipment, the Naval Aircraft Factory. will be forwarded to the Manager, Naval Aircraft Factory, for action.

During the past few months, CAFSU Reps based at the Naval Aircraft Factory have been concerned principally with the conversion of carriers to steam catapults and Mk 7 arresting gear. CAFSU engineers have worked closely with the shipyards during the installation of this equipment.

When the installation is complete, CAFSU Reps supervise tests of the equipment, including deadload calibration of the catapults, in conformance with NAFACT procedures. With satisfactory test results, the gear is certified by the Naval Aircraft Factory as being ready for operations. When the ship leaves the shipyard for operations with aircraft, CAFSU Reps continue to participate as technical observers or members of a test team to conduct further tests as specified by the NAFACT and to provide assistance if the operation of catapults or arresting gear is not entirely satisfactory.

Besides their assistance in the steam catapult conversion program, CAFSU Reps in the past 18 months have supervised changes in the fleet to the improved Runaway Shot Preventer and Mechanical Cutoff on HS hydraulic catapults. They have guided ships' crews in the conversion of all hydraulic catapults to non-flammable fluid.

THE MANY different kinds of difficulties encountered on operating vessels often demand on-the-spot ingenuity. The varied experience of CAFSU members with catapults and arresting gear qualifies this unit in a unique field. Twelve have operated catapults and arresting gear in the fleet during WW II and in the Korean war.

Six have been project or design engineers on this equipment. Two are qualified catapult and arresting gear machinists, while two others are electronics engineers handling instrumentation tasks. Only two in the group were without previous experience in the work when they joined CAFSU, and all but three have been in the Navy. So the majority are familiar with the Navy system.

Training of new members is handled by the unit itself with the aid of Navy facilities. The extent of the training depends on each new man's qualifications. But as one CAFSU Rep says, "We learn something new every day. In this changing business, training never ceases. With each new problem, we gain in knowledge. Some day we may even qualify as experts and come up with some of the answers." The record shows they are on their way.

R. H. KRIDA (L) AND D. A. REIHANER LOOK AT PLANE BARRIER

OFFICER INSPECTS EXHAUST TEE FLANGE WITH G. L. FERRIS

Periodic visits to inspect ship equipment and observe operations are also carried on by CAFSU Reps. Experience with the difficulties of one ship allows them to correct an impending trouble on another before it occurs. Suggestions for improving an operating procedure are occasionally given.

At the outset, all CAFSU Reps were based at the Naval Aircraft Factory. As the unit expanded, personnel were assigned to other Commands, as this made for increased efficiency. At present, there are three representatives at ComAirLant, two at ComAirPac and two at ComFairJap. Requests for catapult and arresting gear technical assistance should be submitted to the appropriate commander via proper channels. If the request cannot be filled from the technicians assigned to the ComAirLant and ComAirPac, the request

One member of the unit has been assigned to three carriers in succession to conduct certification tests of steam catapults. Since January 1954 he has been back at his NAFACT home base for only about six weeks.

Particularly for the benefit of those on extended trips and for men based at fleet commands, the CAFSU office at the Naval Aircraft Factory prepares a mimeographed monthly issue of *The Blurp*. It circulates ideas on service techniques and keeps the men posted on current developments at the Naval Aircraft Factory in Philadelphia, Pa.

AFB Gets Transmissometer

New Gadget Measures Visibility

The Air Force's first operational transmissometer, an electronic instrument for accurately recording visibility, has been installed at Andrews AFB near Washington. It was originally designed by the Bureau of Standards.

Consisting of a projector which directs a beam of light to a photo-electric cell, and a recorder in the weather station which indicates the amount of foreign material in the air, the new gadget indicates how far away objects are visible.

The transmissometer measures light continuously through a horizontal path in the atmosphere. The projector unit generates a light of 140,000 candlepower. Light transmitted from the projector to the recorder is turned into electric current by the photo-electric cell. An increase in foreign matter in the air causes the light from the projector to grow dimmer and when amplified and measured by a meter, the strength of this current gives an accurate evaluation of the visibility.

A continuous record is maintained on a paper roll by a stylus which is activated by the indicating unit.

Marine Record at AEC Tests

Helicopter Availability Outstanding

Marine Helicopter Transport Group 36, fully recuperated from its recent participation in Exercise Desert Rock VI, has taken time to assess the results of their efforts at the Nevada AEC Test Site. Availability of aircraft was the outstanding achievement.

Maj. Harold Hawkins, 1st Lt. R. L. Gallant, both of HMR-363, and Maj. B. Graham, 1st Lt. G. W. Hines, both of HMR-362, were the officers responsible for the record.

The two squadrons, each operating 15 helicopters, delivered 30 aircraft to Camp Desert Rock, 268 miles from MCAF Santa Ana, Cal. Stinging sand buffeted by gusty cold winds made flight and working conditions difficult, but on rehearsal day and shot day, 30 whirlybirds were "up".

Flight operations at 4,000-5,000-foot altitudes were close to critical, yet with hundreds of landings made in rugged terrain, not even a minor mishap occurred. Group Commander, Col. P. R. Byrum Jr., congratulated all personnel on their splendid maintenance record.

HTU1's *entry in the Armed Forces Day Parade at Pensacola was this HPB-1 "supra-ultra" training device powered by a one-cylinder engine. C. F. Lynch (AP) and LCdr. H. P. Brown were pilots.*

Navy Tries Out Color Radar

Actual Condition Tests Successful

The first tests of color radar under actual conditions have been successfully demonstrated by a contractor under BuShips auspices at the Washington International Airport. The color concept is an adaption of electronic parts built around the commercial tube.

The color model showed airplanes as bright orange dots moving over land area etched out in pale chartreuse.

The color set can be rigged so that planes flying at high altitudes appear on the scope as orange in color and those at low altitude as green. Thus, the operator could tell at a glance what air traffic looked like at high and low altitudes.

An aerial navigation map of the Washington area showed on the screen in pale chartreuse lines. This was an added visual advantage in that the operator was able to readily identify the orange dots moving over it as aircraft.

Friendly and enemy aircraft can be depicted in contrasting colors on the set.

AN R6D *attached to VR-3 was first plane to depart from the air terminal at the Naval Station, Midway Island. The terminal was formally opened 18 March after an inspection by Capt. M. H. Eppes, USN.*

Flight Time Award Given

Initial Award Won by FASRon-9

FASRon-9, based at NAS Cecil Field, is the first recipient of the NOOTOIT award. In full dress, this is "The New Order of the Old Inner Tube." The award provides recognition for those who have logged above the average flight time.

As its title implies, the unique award consists of an old, patched inner tube which will be presented to the squadron that has the highest average flight time per pilot. All the flight time that squadron pilots have amassed, even during their tours as exchange pilots, will go towards the final total.

All FAirJax fighter, attack and FASRon squadrons are eligible to try for the award. A patch will be placed on the old inner tube with the squadron designation of all squadrons that submit an entry for the award.

Entries for the first competition should reach FASRon-9 before the first of fiscal 1956 to be eligible for the award.

To start the ball rolling, FASRon-9 submitted an entry of 2530.7 hours flight per pilot to cop the first patch.

Link Develops a Computer

Designed for Engineering Needs

A new specialized analog computer, designated the Aerolog performance computer, which will accurately calculate steady state rates of climb, maximum speeds, lift coefficients and climb angles of any airplane has been developed by Link Aviation, Inc.

The computer is designed for operation and use by aircraft design groups and does not require a group of specialists for interpreting, scaling and scheduling of computations. All inputs are in a form familiar to engineers.

Output of the device is based on the following input variables: Mach number, pressure ratio, speed of sound ratio, engine thrust, airplane gross weight, reference area and profile and induced drag coefficients. Under assumed steady state conditions, the computer exactly solves the two longitudinal equations of motion simultaneously. Individual computations are made with accuracy consistent with input accuracy; generally to 0.1% of full-scale.

The Aerolog computer in a self contained console design may be conveniently located in office or laboratory.

PROBABLY *the Navy's first supersonic flight surgeon, LCdr. H. C. Nordstrom (R) is congratulated by Cdr. B. N. Gockel, CO of VF-91, after Nordstrom's solo at Alameda.*

Pilot Re-enacts Flight

Shows Aid Ground Observers Give

A grateful Marine pilot who was aided in a hazardous situation by an alert member of the Ground Observer Corps, recently flew to the West Coast to re-enact his experience for a television film short. The film, to be used to aid recruitment of volunteer ground observers, is made by Douglas Aircraft.

Second Lt. David L. Smith, piloting an AD4W *Skyraider* of MAW-2, was on a radar reconnaissance flight from NAS GLENVIEW to MCAS CHERRY POINT when failure of radar and radio aid made navigation impossible.

Unable to identify the surrounding area, he elected to orbit over a town and called NAS COLUMBUS, Ohio, reporting that he'd become lost. The Ground Observer Corps went into action, and soon Mr. Frank Shoemaker of Marion reported an orbiting plane over Bellefontaine, Ohio, to the GOC Filter Center in Columbus.

The message was relayed to a unit of the Air Force's radar net, at Lockbourne AF Base, who located the plane and guided Smith to a safe landing.

MEMBERS *of the Naval Reserve Chaplain Corps leave MCAS Cherry Point after visiting the base as part of their annual training period.*

Big Crane Lifts Privateer

Vehicle Displays Power and Speed

NAS NEW YORK now has an MB-1 mobile crane. At a public demonstration, the 48-ton giant lifted, without strain the four-engine P4Y *Privateer* and gently rolled away with it. The mobility of the big crane was displayed for newsmen. As they waited to see it, a loud roar was heard and the giant

MB-1 CRANE CARRIES A 30-TON PRIVATEER

vehicle came tearing around the corner at more than 40 mph.

To demonstrate the smoothness with which a four-engine bomber or an aircraft could be handled, an egg was placed under a wheel of the airplane the crane held suspended and its operator was directed to lower the wheels just enough to crack the egg without breaking it. He performed the feat six times without breaking the yolk once.

The P4Y used in the demonstration weighed slightly more than 60,000 pounds. The crane can lift 80,000 lbs.

A safety feature is the control release which can instantly halt the crane's operation smoothly and automatically. The crane was displayed to the public on Armed Forces Day.

Jet Training at Sherman

New Jet Program Headed by Doner

A new advanced training unit, ATU-206, has been established at Forrest P. Sherman Field, Pensacola, with Cdr. L. E. "Blood" Doner as skipper. With an allowance of 66 officers and about 866 enlisted men, the new squadron will train fledgling pilots in advanced jet tactics and aerial gunnery.

Destined for a full quota of 75 jet aircraft, the unit has already received the first shipment of the Grumman F9F jets. The pilots will receive about 70 hours in jets during the nine week course.

The squadron will operate under the control of CNAAT *Corpus Christi*.

DURING *a tour of NAS Iwakuni, Japan, four Japanese Air Self Defense Officers were shown weather maps received via radiophoto by K. K. Smith, chief aerographer mate, USN.*

Devices Speed Up Tasks

Two Sergeants Invent New Gear

Two master sergeants at MCAS MIAMI have come up with inventions that are labor-saving devices.

MSgts. Damon Sutton and Beverly Hodges of VMR-353 have designed an aircraft engine pre-oiler and a spray cleaning machine. Both devices were made from salvaged materials.

The pre-oiler has a 20-gallon capacity tank which was salvaged from a ship grounded on a Caribbean island. This portable device is much smaller and lighter than the old pre-oiler.

The aircraft spray-cleaning machine has reduced cleaning time from six hours to one and a half. In the "old days," it took six men to clean an airplane. Now it takes two: one to apply and one to rinse it off.

The cleaner has a 35-gallon tank, salvaged from an old truck; a four horse-power engine; and 50 feet of hose capable of providing 500 pounds of pressure.

Lt. Jack W. Demmond, VMR-353 assistant maintenance officer, has commended Sergeants Sutton and Hodges.

USC GRADUATE *P. H. Coyne (L) and LCdr. J. R. LeTourneau, ONOP, Los Angeles, stand near two aircraft that were used for Coynes' indoctrination flights for entry in AOC program.*

LT. DOUGLAS PAYNE (L) GETS LESSON FROM LT. M. R. CLEMENT ON PADRE OPERATION

'PADRE' DIRECTS AND GUIDES

IF A PILOT in VS-27 or VS-30 tells his co-pilot to see the *Padre*, he's not suggesting an interview with the chaplain. He is referring to the new navigational aid which these two squadrons, based at NAS NORFOLK, are in the process of evaluating.

This navigation instrument presents a pictorial display of ground position and the motion of a pilot's own aircraft. It is an eight-pound portable computer which derives its nickname from its proper name—Pilot Automatic Dead Reckoning Equipment.

Padre has been installed in four S2F aircraft. The new gear, designed by Cdr. Pliney G. Holt, is a development of the Aeronautical Instruments Laboratory, part of the Naval Air Development Center at Philadelphia, Pa.

A primary purpose of *Padre* is to free the pilot from many navigational problems, and it should be of great value in the immediate plotting of sighted submarines. It is especially designed for use of pilots of ASW patrol and fighter aircraft.

"Like any new instrument, there are a few 'bugs' to be ironed out," says Ltjg. H. R. Trimble of VS-27. "Although still in the evaluation stage, our pilots firmly believe that *Padre* will soon become one of the outstanding aids in conquering the elusive submarine."

The *Padre* receives electrical signals representing true airspeed and true heading as well as manual inputs representing wind velocity and variation. Signals and power are supplied to *Padre* through an amplifier unit. Thus the computer presents a continuous picture of where the pilot is with respect to his plotted data.

Padre is also a big help in intercept work. If intelligence is available in the form of a bearing to target from two or more positions of the aircraft, they can be plotted to obtain an intercept on target, and the computer can then be used to aid in flying to this intercept.

Pilots can be relieved of the work they used to do at the Mk 3 plotting board and spend most of their time scanning the water for subs. With *Padre*, all the pilot has to do is set in wind velocity and variation and take off on his desired course. The computer does the rest by means of two plastic hairlines, one horizontal and one vertical, moving towards a designated point. When hairs intersect, point is marked, and the plane is on target.

Only six of the computers have been constructed. Four are now being evaluated. Navigation during night flying has certainly become much easier, according to the pilots using the *Padre*.

AF Flight Tests XF-84H

Turboprop Fighter at Edwards AFB

The USAF has unveiled at Edwards AF Base its experimental turboprop fighter, the Republic-built XF-84H. Scheduled for flight tests, the radical new fighter is designed to test supersonic propellers and turboprop engines.

The Allison T40-A-6 engine converts jet thrust into propeller power through a propeller gear box and shafting. At the same time, it provides additional power by jet thrust through the tailpipe.

The "H" is the first experimental fighter to use an afterburner for jet thrust in conjunction with a propeller-driven fighter aircraft. Propeller for the plane was built by Aeroproducts.

Builder Trials for CVA-59

Stores Accumulate For Forrestal

Scheduled for builder trials this month, the USS *Forrestal's* outfitting materials were being amassed in June. The first truck load of more than 15,000 items for the huge carrier was delivered to the aviation Supply Depot at NAS NORFOLK.

Cdr. Vance Fowler, supply officer of the *Forrestal*, accepted delivery. The material was stowed temporarily in the warehouse at the Aviation Supply Depot. The stores were marked by compartment numbers they will actually occupy when moved aboard the *Forrestal*.

Scheduled for commissioning sometime in October, the *Forrestal* will then be readied for her shakedown cruise in Caribbean waters before joining the Atlantic Fleet in the spring of '56.

CAPT. SMITH AND CDR. FOWLER CHECK LIST

MERINGUE TOPPING SPEEDED TO FIRES

FOAM PLAYS DUAL ROLE IN PROTECTING PILOT AND FIREMAN

MB-1 TRUCK FEATURES WERE DEMONSTRATED AT NAS ANACOSTIA

THE NAVY'S fire-fighting teams and equipment are coming full circle. Oddly enough the same animal that went streaking down cobbled streets towing a smoke-belching monster behind it in the old days, is doing his part today. It's the horse, but he isn't pulling the equipment. His contribution is horse's hooves which combined with soy beans, fish scales, etc., produces a protein-based mix for fire fighting.

Just as important as this foam-type firefighter, is the equipment to get it to the fire. BUAER's Fire-Fighting Division has developed a new series of trucks that eventually will find their way to all naval air stations. The MB-1 has a 1000-gallon water and 65-gallon foam concentrate capacity, while the MB-2 has a 400-gallon water and 35-gallon foam concentrate supply.

Developed by the Naval Research Laboratory under the auspices of Bu-Aer, the new trucks utilize a revolutionary new aircraft crash fire extinguishing system. The MB-1's system can cover a burning aircraft with a blanket of about 12,000 gallons of thick, sticky, fire-smothering foam in two minutes.

The Navy's new truck combines the speed and acceleration of a modern bus with the cross-country mobility of an Army six-wheel drive truck. It is one of the highest performing vehicles for its size and weight ever built. Powered by a six-cylinder 320 hp gasoline engine, the MB-1 has superior speed—45 mph in 33 seconds and a top speed of 64 mph, the first mile in 83 seconds.

The system mounted within this 17-ton fire truck makes the anti-fire foam.

SMALLER MB-2 WILL REPLACE OLD TRUCKS

MERINGUE-LOOKING FOAM IS FIRE KILLER

The necessary ingredients—air, water and foam concentrate—are whipped together in eggbeater fashion by especially designed pumps. The mixture forced out through two nozzles on the roof of the truck provides a virtual snowstorm of fire-killing foam.

A separate 112 hp V8 engine drives each pump so that the truck has two completely independent foam systems. Mounted in turrets, the nozzles are operated by two fire-fighters and can be continuously adjusted from a solid stream with a range of 180 feet to a widely dispersed pattern for close-in work. This feature allows the operator to focus constantly on the target as the crash truck nears a burning wreck.

WHEN THE crash alert is sounded, the operators start the two pump engines, clutches are engaged and the operators mount their positions atop the truck. As the truck approaches the burning aircraft, the operators pull up on levers which open the foam liquid valves and water valves, as well as accelerate the engines to pump speed.

The truck features many special pieces of equipment in addition to its handline reels and nozzles for mopping-up operations after the fire. Special features include searchlights and floodlights for night operations, a separate gas engine generator for re-charging batteries, a two-way radio, space for the rescue squad plus an extension ladder for reaching high fuselages.

'RAILROAD' DOCKS NEPTUNE

HERE'S THE 'LOCOMOTIVE' WHICH PULLS AIRPLANES INTO THE HANGARS AT NAS WHIDBEY

"A SAILORS' railroad? It won't work," some said. "It won't work because it's too impractical." But it did work. That was back in 1950, and the NAS Whidbey Island hangar railroads are still carrying their heavy cargoes.

When NAS WHIDBEY was a temporary base, Public Works constructed some "temporary" hangars to house carrier-based aircraft and the few multi-engined planes. As time passed, the hangars were hosts to PBY's, even though the wingspan of this aircraft exceeded the hangar width dimensions.

This problem was solved by the ingenious application of beaching gear. Instead of placing the wheels parallel to the longitudinal axis of the aircraft, they were placed parallel to the lateral axis, thereby making it possible to move the PBY's into the hangar spaces sideways.

In 1948, P2V-2 *Neptunes* assigned to patrol squadrons based at NAS WHIDBEY ISLAND brought problems not encountered with PBY's. Maintenance personnel of both the local FASRon and the Patrol Squadrons were placed on a 24-hour work schedule to keep up with the load. Problems were compounded by the lack of adequate maintenance spaces and the foul weather conditions that frequently prevail on Whidbey Island. The only available spaces able to handle the P2Y's were canvas nose hangars, the regular hangars being too narrow to handle the wingspan.

VP-57 CO CHECKS CAR WHICH CARRIES P2V

At this point, LCdr. O. L. Woods of FASRon-113 decided to adapt the beaching gear principle to the P2V. Substituting carts with railroad wheels under the landing gear for the beaching gear and embedding railroad track into the deck of the hangar was his solution to the problem. A weighted dolly was hung on the after part of the fuselage to hold down the high vertical stabilizer so it could clear the overhead. Engine changes and periodic checks could then be made indoors.

The Whidbey Trolley Special ran successfully until VP-57 received the latest model P2V *Neptunes* equipped with the "stinger-tail". It was found that the additional length caused by the tail extension made the former trolley equipment inadequate. It was a natural for Lcdr. Woods, now of FASRon-112, to come up with the solution: Just add a third rail to move the center of the tracks sideways enough to permit the stinger to clear the side of the hangar.

Now that the third rail has been added, VP-57 aircraft can have their 60-hour or 120-hour checks indoors. VP-57 has been riding the rails for several months and believes that their sailors' railroad is unique in the Navy.

Corry Field Gets T-28B's

Gradual Transition Method Planned

Basic Training Unit 4 at NAAS CORRY FIELD has received the first shipment of its new T-28B trainers. The North American-built trainer will slowly replace the reliable old SNJ in the instrument phase of flight training.

The first T-28B's are being used to qualify the instructors. The students will be introduced to the new trainer as soon as the unit receives a greater percentage of its required operating quota.

The T-28B and the SNJ syllabus will run concurrently until enough new aircraft and qualified instructors are available to carry out training operations.

West Point Cadets on CVS

500 See Combined Sea/Air Strikes

Over 500 West Point cadets, embarked aboard a dozen of the Navy's major warships, have been given their first glimpse of naval operations. With such vessels as the USS *Valley Forge*, USS *Wisconsin* and USS *Albany* participating, the cadets witnessed exercises carried out during TRAMAC '55.

Air strikes against surface targets, blimp re-fueling at sea, a hunter killer demonstration, torpedo firings and anti-aircraft firing exercises demonstrated to the third year classmen how such a fleet would meet an enemy in time of war.

Exercises were directed by RAdm. W. B. Ammon, on the USS *Wisconsin*.

CORSAIRS WERE BIG ATTRACTION TO CADETS

Britain's New Wind Tunnel
Will Tackle Heat Barrier Problems

Hawker Siddeley Group's new supersonic wind tunnel at the Armstrong Whitworth guided missile plant at Whitley was opened in June. Designed to give a continuous flow at three times the speed of sound, it will be used for testing rockets, advanced jet engines, guided missiles and new aircraft.

Mach 3 was deliberately chosen as the upper limit because it represents the most pressing requirement of modern aerodynamic research. It is in the range of the "heat barrier"—the speeds at which heat generated by motion through the air begins to distort aircraft structures and makes airbreathing engines unusable in any form known today.

Occupying more than 30,000 square feet of floor area, the tunnel scoops up the entire summer flow of the Sowe River for cooling water, swallows 1.6 tons of air per minute, and its 10,000-hp motor consumes the equivalent of one-tenth of Coventry's peak electricity load.

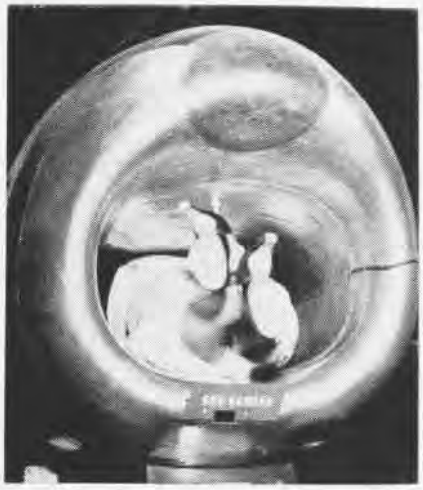
In contrast to the tunnel's size, the working section is so small that the test models used are only 16 inches long.

EM's End Jax IFT Course
Two Awarded Unusual Distinction

Two Jacksonville enlisted men have become the first non-pilot enlisted men ever to complete the Atlantic Fleet's Instrument Flight Training Course. Arthur E. Red, TD2, and Russell L. Anderson, TD3, both members of FAETU's Operational Flight Trainer staff, earned this distinction while participating in a joint exercise conducted by FAETULant and FAWTULant at NAS JACKSONVILLE.

Having the enlisted men take the course was an experiment designed to find out if acquainting FAETU's enlisted OFT instructors with the problems a pilot faces in the air would increase their understanding of the pilot's needs on the OFT. The experiment was the brainchild of LCdr. A. W. Callan, O-in-C of FAWTULant, and LCdr. E. T. Allen, O-in-C of FAETULant.

After a week of ground school, Red and Anderson checked out in the low pressure chamber and the ejection seat trainer before their first jet ride in one of the squadron TV-2 jet trainers.



FORE—*To see other end of venturesome young lady in the jet engine, turn to the next page.*

Record Set in FJ-2 Fury
Marines Log 245.4 Hours in Day

Pilots from VMF-235 set what is believed to be a new record for the FJ-2 when they logged 245.4 hours during one day. The squadron flew 122 training sorties with 24 planes and 44 pilots.

Working in relays from NAS ATSUGI, each pilot flew three hops. Pilot limitations kept the number of sorties from reaching a greater number. Flight operations started in the pre-dawn hours and continued throughout the day.

The squadron, commanded by LCol. R. W. Teller, operates as a unit of Marine Air Group Eleven in Japan.

Liquid Oxygen Use Slated
Great Savings in Weight and Bulk

Tactical aircraft of the Navy may shortly be equipped with liquid oxygen systems.

At 20,000 feet, the human body needs at least 50% oxygen; at 30,000 feet it requires 90% and at altitudes of 32,000 and above, a continuous supply of 100% oxygen. There must be no interruption in the supply for a pilot loses consciousness in about 50 seconds without oxygen, and yet it is at these altitudes that a jet plane does its best work.

Various problems have been inherent in using liquid oxygen as a supply source for pilots, but these problems are now being met. First, there was the problem of keeping the oxygen in a liquid state; this was desirable from the standpoint of weight, and bulk. A cubic inch of liquid oxygen will expand more than 800 times to a gaseous form. Thus a larger amount can be carried and controlled for immediate use.

The equipment for the use of liquid oxygen in a fighter is less than half the weight of that required for gaseous oxygen. The overall saving in weight in a single fighter plane amounts to nearly 30 pounds; in bombers, a proportionately larger amount.

Various manufacturers are now expanding their facilities for research and manufacture, and it is expected that production models will be available for aircraft installation in the near future.

MEMBERS *of Air Explorer Scout Squadron 123 and members of VR-21 pose before one of the transport squadron's R6D's at NAS Barber's Point. VR-21 took over sponsorship of the Air Explorers from FAWTUPac. The scouts compose the only unit of its kind in the Honolulu Boy Scouts of America Council. Ranging in age from 14 to 17 years, the scouts are rabid enthusiasts in all phases of aviation. Each is given every opportunity to inspect and study all types of planes.*

LETTERS

SIRS:

Would it be possible to subscribe to your magazine as a civilian? I find it both enjoyable and educational.

The only constructive criticism I can make is that you don't carry enough material on the Marine air arm. Seeing as your magazine is distributed in Marine squadrons, it would let us know more about the activities of other squadrons.

ROBERT S. SUTHERLAND, CPL.

¶ Yes, you can subscribe to NANews. See this month's back cover. About more Marine air material, we would like to print more, but our only source for material is from the squadrons themselves. Articles especially written for publication in NANews may be sent to us direct, and not necessarily through channels.

SIRS:

My compliments on a very fine aviation magazine. I have but one complaint. Being only a sophomore in high school, I have not had any association with the Navy. Therefore, I do not know the meaning of some terms used in NANews. I would appreciate your forwarding to me a decodification booklet so I can understand some of the terms.

And please don't suspend the series of identification of aircraft, friend and foe series. Here's hoping you make it bigger and better.

JOSEPH HIRTZEL

Chautauqua, N. Y.

¶ Sorry we do not have such a booklet as you request. If you will make a list of the terms which stump you, I'm sure your nearest Naval Recruiter will be most happy to help you.

SIRS:

Answer to July IFR-IQ. Bale out P.D.Q.

ANON.

¶ This was postmarked Washington, D. C. The writer must have gotten his copy hot off of the Press. Watch for more answers in the future.

IFR-IQ?

According to the All Weather Flight School, the answer is: "Normally 20,000 feet M.S.L., or 1000 feet on top."

Ref.: ANC Criteria for Standard Instrument Approach Procedures, 1 July 1954.

AFT—*Carol Dickie relaxed this way at recent Trade Fair in Toronto, Canada. Telegram photos.*

IBTUF Gets First T-34's

Thirteen More Will be Delivered

Instructors' Basic Training Unit Flight at Forrest Sherman Field, Pensacola, has received the first two T-34's to be assigned to it. Delivery of the new aircraft was made by Lt. J. S. Oswalt and C. F. Ervin, ADC (AP). Cdr. W. C. Bender, OinC of IBTU-F, accepted them on the flight line at Pensacola.

LCdr. A. W. Holmes and Lt. C. L. Stiles were the first instructors to check out in the T-34's. These two officers with the assistance of Lt. Ray Smith and Ltjg. D. F. Dearolph, will set up the primary syllabus.

Among the outstanding features of the T-34 are its superior speed, its rate of climb and its range. Other features are the tricycle landing gear, constant speed propeller, and a Continental six-cylinder, air-cooled, horizontally opposed engine. In addition to the ARC-12 and VHF radio, the new trainer is equipped with VOR.

The unit will receive an additional 13 trainers in the near future. Once the syllabus has been completed and staff instructors have been checked out in the plane, the T-34's will replace the old SNJ's in primary phase of training.

★ NANews gratefully expresses appreciation for the fine assistance given by the **Blue Angels** and former **Angel** Frank Graham during preparation of the Team story.

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● SUBSCRIPTIONS

Naval Aviation News is now available on subscription for a $2 check or money order made payable to Superintendent of Documents, Government Printing Office, Washington 25, D. C.

● THE COVER

The Blue Angels zoom skyward, their F9F-8's trailing vapor streams. Photo made by Lt. Ed McKellar, from TV piloted by Lt. H. A. Riedl, both *Blue Angels*.

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SQUADRON INSIGNIA

SQUADRON insignia reproduced this month are simple but effective. The submarine-destroying Marlin portrays the mission of VP-40 and identifies the P5M *Marlin* VP-40 flies. The speed and vicious attack capabilities of VF-91 are symbolized by a bolt of lightning piercing the ace of hearts, and VF-152's bomb-carrying buzzard swoops down with talons extended, depicting fearlessness and multiple missions for which the squadron is trained. A clock dial, compass rose and bird in flight tell the story of VMR-152 and its ability to fly speedily and dependably in any direction at any time of day or night.

VP-40

VF-91

VF-152

VMR-152

HEADING YOUR WAY

NAVAL AVIATION
NEWS

are twelve months of latest developments in Naval Aviation, tips on maintenance, interesting features on present and past events, and regular doses of Grampaw Pettibone's salty and caustic chidings of errant pilots. Your personal copy of NANews can be mailed to you each month. Send your check or money order for two dollars to the Superintendent of Documents, United States Government Printing Office, Washington 25, D. C.