NAVAL AVIATION NEWS

41st Year of Publication

JANUARY 1960

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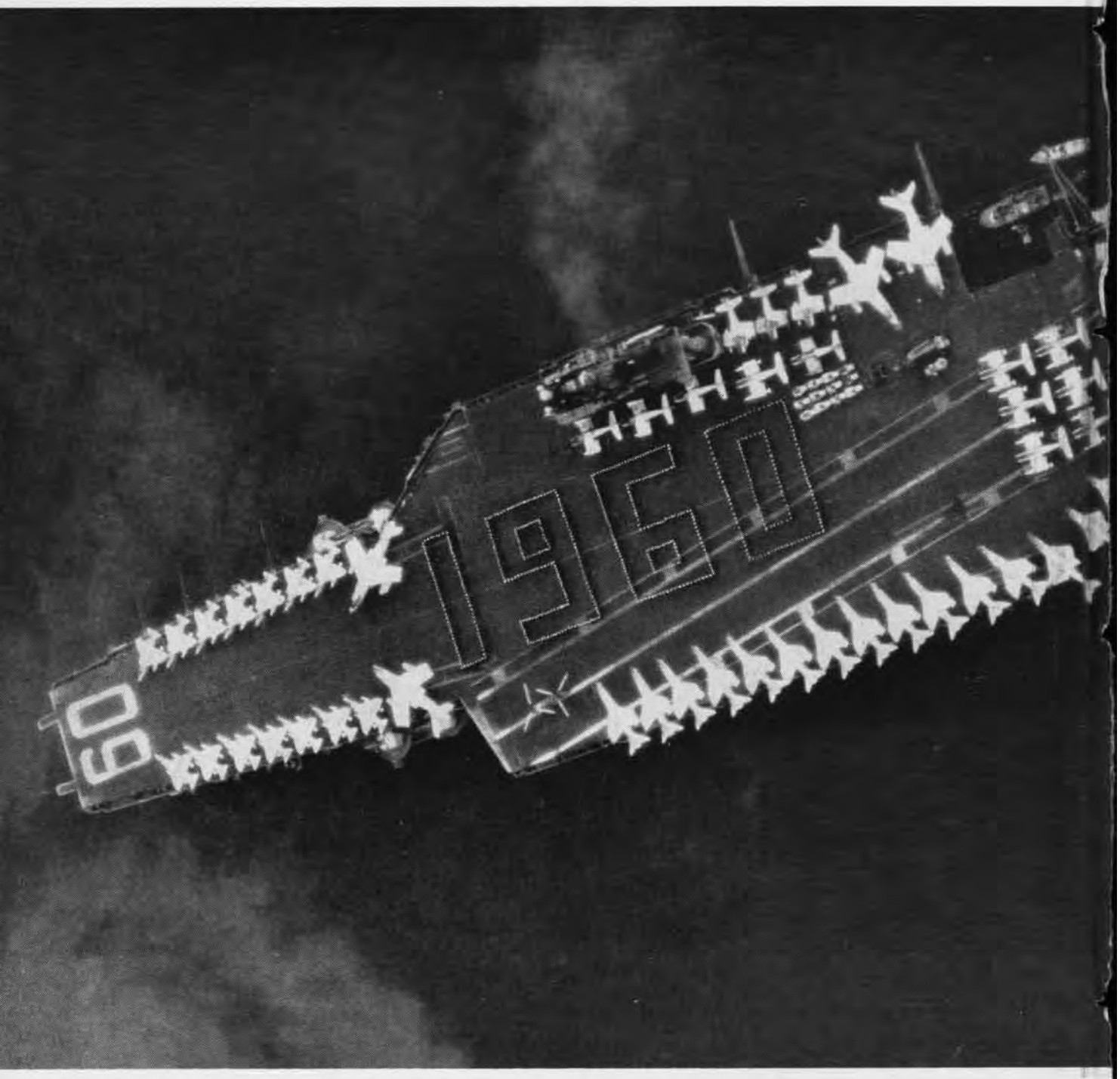

SARA'S SALUTE TO 'SIXTY

Men of the mighty aircraft carrier, USS Saratoga (CVA-60), and her embarked air group, CVG-3, stage a striking greeting to the New Year and the beginning of a new decade of Naval readiness and responsibility as a global, deterrent force. Fighting aircraft aboard make an appropriate frame for this picture of seapower. Capt. A. F. Fleming is the Saratoga's skipper.

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FORTY-FIRST YEAR OF PUBLICATION, JANUARY 1960

■ IN THIS ISSUE

. . . And So We Have FIIG	6	*Skillful and thorough training made available to Fleet Instructors Indoctrination Group at Pensacola.*
Tailor-Made for Jets	10	*Preview of what new master jet base at Lemoore, Calif., will be like.*
Space Research	12	*Pictorial review of research by the National Aeronautics and Space Administration on its first anniversary.*
Live Targets	16	*Principal targets for Sidewinders and Sparrows provided by Guided Missile Service Squadron Two.*
Flight Deck Helmet	22	*Faster, safer plane handling proved by use of radio-equipped helmets in trials aboard USS Forrestal.*
Busy Street at Norfolk	23	*Pier Twelve provides simultaneous service for two giant flat-tops.*
Operation 'Small Scale'	26	*Reservists from five West Coast stations on an off-shore, sub-hunt exercise.*
Meteorological Rockets	29	*Arcas and Loki missiles launched from Mugu to record weather at high altitudes.*
Dual Mission Completed	33	*Marine VMCJ-2 at Cherry Point in role of hunting and photographing "bogies."*

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■ COVER

Light and shadow which characterize this month's cover of Naval Aviation News suggest the title of "Intrepid Ballet." Making long silhouettes in the setting sun, plane handlers of USS Intrepid (CVA-11) maneuver an A4D-2 Skyhawk prior to its being launched by catapult from the carrier.

NAVAL AVIATION NEWS

Reliability Meeting Held
Weapon Systems Problems Studied

VADM. PIRIE WAS RANKING NAVY SPEAKER

The third annual Navy-Industry conference on aeronautical material reliability was held at Virginia Beach in November. Sponsored by RAdm. Robert E. Dixon, Chief of BuAer, the meeting was arranged by the BuAer-Industry Advisory Board on Reliability and Operational Design Requirements of Aeronautical Material.

Its purpose was to provide a platform for the exchange of information in an effort to improve the reliability and combat readiness of the Navy's weapon systems.

Principal Navy speakers were VAdm. Robert B. Pirie, DCNO(Air); RAdm. W. O. Burch, Commander of the Naval Aviation Safety Center; RAdm. L. D. Coates, Deputy Chief of BuAer; and RAdm. Dixon.

Technical papers were presented by experts from government and industry.

Maintenance Work Cited
Two Honors Given Lt. Hamilton

On 6 November, Lt. Leo L. Hamilton was presented a Legion of Merit Medal and Presidential Citation for the development of a maintenance program for Naval aircraft. Decoration was made by RAdm. Robert E. Dixon, Chief of the Bureau of Aeronautics, in ceremonies in his office in the Main Navy Building, Washington. RAdm. M. A. Hirsch, Assistant Chief for Maintenance and Support also attended.

Since March 1956, Lt. Hamilton has been on duty in Washington in the office of the Assistant Chief in the Bureau for Maintenance and Support. His studies and research, which led to the development of the Naval Aircraft Maintenance Program approved by the Chief of Naval Operations on 1 July 1959, began in 1946. At that time Lt. Hamilton, then a Chief Petty Officer, was on duty with the Staff of Commander Fleet Air, West Coast. Lt. Hamilton continued his efforts while serving on the Staff of Commander

RADM. DIXON CONGRATULATES HAMILTON

Naval Air Force, Pacific Fleet, before and during the Korean conflict, and subsequently while assigned to operational units.

Lt. Hamilton's citation reads in part: "Through his outstanding professional ability and tireless devotion to duty, he has been instrumental in improving the readiness and combat potential of the United States Navy, thereby making a valuable contribution to the defense effort. . . . Lt. Hamilton's distinguished service throughout was in keeping with the highest traditions of the U.S. Naval Service."

RAdm. Dufek Again Cited
Polar Vet Gets Gold Star for DSM

RAdm. George Dufek, Commander of Task Force 43 for four straight years of Antarctic operations, has been presented a gold star in lieu of a second Distinguished Service Medal.

Adm. Arleigh Burke, Chief of Naval Operations, made the presentation.

RAdm. Dufek, who left active duty 31 August, was cited for "exceptionally meritorious service to the Government of the United States in a duty of great responsibility as Commander United States Naval Support Force, Antarctica, during the International Geophysical Year, 1957-58."

Earlier, he was presented a DSM by Vice President Richard M. Nixon for his Antarctic work in 1955-56.

His latest citation stated: "Exercising outstanding leadership and organizational ability, RAdm. Dufek was directly responsible for the Navy planning and operations in support of the scientific program in the Antarctic for the International Geophysical Year. Through his superior judgment and professional skill, a rigorous and difficult mission was completed in good season and with marked success.

"RAdm. Dufek's tireless and distinguished performance of duty were in keeping with the highest traditions of the United States Naval Service."

SENATOR R. B. RUSSELL, *Chairman of Senate Armed Services Committee, is about to embark on a flight over Brunswick, Ga., prior to his inspection tour of NAS Glynco. He is accompanied by Capt. J. T. Moynahan, USN.*

Isbell Trophies Awarded
VS-38, VP-19, VP-48 are Honored

Air ASW Squadron 38 has been named Pacific Fleet winner of the Arnold Jay Isbell Trophy for 1959 in the carrier-based ASW class. Patrol Squadrons 19 and 48, based at Alameda and North Island respectively, are the other Pacific Fleet winners.

The Isbell Trophy, provided by the Martin Company, is awarded within each fleet to Naval Aviation squadrons receiving the battle efficiency "E" for their excellence in air ASW readiness.

Dual Purpose Craft Ordered
Tanker and Transport for Marines

A $19,200,000 Navy contract for GV-1 aircraft has been awarded to Lockheed Aircraft Corporation. The aircraft, which are for Marine Corps use, will be manufactured at Marietta, Lockheed's Georgia plant.

The GV-1, a Navy version of the Air Force C-130B, is being procured for dual-purpose use as an aerial tanker and as an intra-theater assault transport. As a tanker, it is capable of transferring 28,000 pounds of fuel during multiple refueling of jet aircraft 1000 miles from its take-off point. As a transport, the GV-1 can carry 92 combat-equipped Marines, 74 litter patients, or 35,000 pounds of cargo for 2000 nautical miles in seven hours at 300 knots.

Powered by four Allison T56 turboprop engines, the GV-1 carries a crew of seven, has about 4300 cubic feet of cargo space, and short take-off and unimproved field capabilities.

Range of the GV-1 depends on the loading for specific missions. Maximum is about 4300 nautical miles.

A3D Shaves Transit Time
Flies Whidbey to Atsugi via Adak

An A3D *Skywarrior* flown by Cdr. J. J. Emanski, Jr., C.O. of VAH-4, pioneered a time-saving route between the United States and the Far East in October. The flight began at 8:27 a.m. Pacific time at NAS WHIDBEY ISLAND. It was completed 11 hours and 29 minutes later when the plane touched down at NAS ATSUGI, Japan.

The *Skywarrior* was above Atsugi about 30 minutes before it landed, but lost time in the approach pattern.

The aircraft stopped enroute at Adak in the Aleutians.

The 10 hours and 45 minutes flying time required for the flight slashes about seven hours off the flight time necessary to fly this type plane to Japan via the Hawaiian Islands and other refueling points in the Pacific.

The mid-Pacific track covers about 7000 miles whereas the route via the Aleutians is only about 4000 miles.

Aid for Houston Tragedy
Kingsville Stages Foam Airlift

NAAS KINGSVILLE cooperated with civilian authorities when the flaming tanker, *Amoco Virginia*, threatened the Houston port. Kingsville transported vitally needed chemical foam.

The station used two aircraft, an R4D-6 and an R4D-8, to carry 423 gallon cans of chemical foam to a central distribution point at Ellington AF Base about 15 miles from the scene of the fire. It took two trips by each plane to deliver the entire cargo. Civilian motorcycle police escorted foam trucks to the dockside inferno.

Two hundred of the 423 cans of foam came from Kingsville; other cans were picked up at NAS CORPUS CHRISTI.

RADM. JOHN E. CLARK, *right, was presented a letter of commendation from SecNav by Dr. Roy W. Johnson, Director of the Advanced Research Projects Agency, for work as ARPA Deputy Director. He is now ComCarDiv 16.*

MARTIN P5M-2, *sporting new patrol plane paint scheme, has been delivered to Operational Development Force at Key West to test a new integrated and highly sensitive detection system for conducting antisubmarine warfare from an aircraft. The plane's unique electronic system provides for integrating information from various airborne detection devices within the aircraft at one control center. Control center operator directs other hunter-killer units.*

25,000th 'Cat' Shot Made
28,000th Plane Lands on Hancock

The *Hancock*, first U.S. carrier to be equipped with a steam catapult, made its 25,000th catapult launch in October. The same afternoon, the 28,000th landing was made aboard *Hancock* which was operating with the Seventh Fleet in the South China Sea.

Hancock's first steam cat launch was made 1 June 1954 when a prop plane was launched. Two weeks later, an F2H-3 *Banshee* was launched, becoming the first jet to be catapulted from a carrier. On the 25,000th launch, Ltjg. Arvil A. Holt of VF-151 was launched in an F3H *Demon*.

The ship's 28,000th landing was made by Lt. Donald A. Christenson of VA-152. He was flying a *Skyraider*.

GRAMPAW PETTIBONE

Hard Sell

An instructor-pilot and his midshipman passenger, on an assigned middie orientation hop, had completed one touch-and-go and an arrested landing aboard a training carrier. Now the pilot had the T-28 lined up for a free-deck take-off, rotated as he passed No. 2 elevator and *raised the gear handle!*

The nose wheel retracted, the nose fell through and the prop started taking bites out of the deck. The T-28 settled over the bow with its wheels fully retracted, dropped 15 or 20 feet, then vibrating badly, climbed to 150 feet. The pilot dropped his wheels and hook, declared an emergency, and came around for an immediate arrested landing. As the T-28 came to a stop, the engine quit!

Grampaw Pettibone says:

Suffering' catfish! This young middie was being given a ride to demonstrate both the technical skill required in carrier aviation and the personal satisfaction a man will have who is a part of this smooth team of aircraft and ship.

Nobody, but nobody, ever raises the gear before he is clear of the deck! That old axiom now has to be qualified somewhat, for we've got one pilot who thinks it makes him look sharp! We started discouraging and forbidding such things just about the time this pilot was gettin' checked out on his three-wheeler bike some 20-odd years ago, but every so often a throw-back pops up who thinks he *invented* the idea!

That was certainly a real sales job for Naval Aviation — like heck!

Memo from Gramps:

'Way back in April, old Gramps spun a yarn about an S2F pilot who did a fine job of handling some odd-ball engine trouble during a CV landing pass. This was in the DAYTIME. I mentioned knowledge of only one S2F bolter on single engine, and that one a successful job. Needless to say, my mail basket started fillin' up. Here's one a squadron C.O. sent in:

Two young S2F pilots were engaged in *night carqual* on a dark and moonless night with very little natural horizon. After their second touch-and-go, the starboard engine backfired, lost power and was immediately feathered. Cleaning up the plane, the pilot checked it out on single engine, found it O.K. and made a single-engine pass to the CVS. He was a little high and fast and *boltered*, had to take it around again. His next pass was VERY smooth and he caught a good wire.

Another pilot had to feather his port engine during the last stages of a practice CCA pass, took a wave-off, requested a ready deck, and made a good single-engine landing.

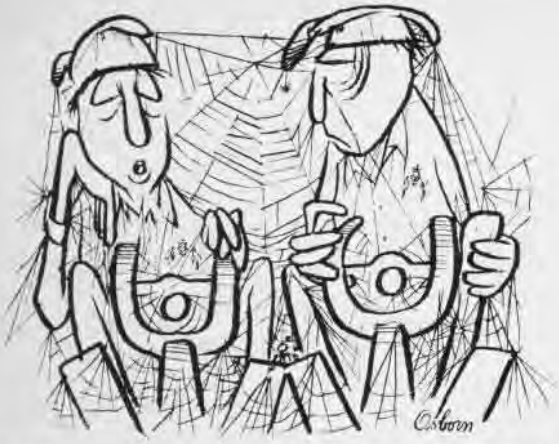
The moral of my tale is obvious. The S2F makes a good single engine pass, day, night, or on instruments and *will* take a bolter successfully on one fan. These lads played it like PRO's.

Sleepy Time Pals!

After a full normal working day, a pair of multi-engine pilots departed their home station in an SNB-5 at 2000 local time, on a scheduled night cross-country flight. Their original plan had called for an RON prior to their return the next day, but a three-hour delay in their departure time caused by lack of an available aircraft had made a stop for rest seem impractical.

They had good weather to their first fuel stop, landing at midnight. After a good meal they refiled, and take-off was made at 0140. At 0455 they touched down at the base where an RON had originally been planned. Their aircraft was assigned to them only until noon of that day, and since neither pilot felt tired they decided to push on for the home base, an approximate two-hour flight.

At 0545, having filed a flight plan, they did a preflight inspection, conducted a cockpit check using a flashlight, and determined that all fuel



tanks had been filled except the nose tank, as requested.

The fuel selector valve was turned to #1 tank and checked visually with a flashlight. Taxi out to the duty runway and run-up were routine but the usual practice of switching fuel tanks to check them was overlooked.

Prior to take-off, the fuel selector valve position was again checked manually but not visually.

Take-off was made at 0600. While in a wheels-up climbing attitude, and as power was reduced, the port engine failed! The pilot immediately added power to the starboard engine, but this also failed; just seconds after the port engine failure!

The pilot rapidly scanned the instruments, noted a lack of fuel pressure on both engines and checked the fuel selector position manually, *but did not switch tanks!* The copilot worked the manual fuel pump. Both engines continued to windmill, so the pilot concentrated on a wheels-up landing straight ahead on the overrun while the copilot informed the tower of the power failure. The SNB touched down on soft sand at 70 knots, wheels and flaps up, and slid to a stop. Both pilots were uninjured.

Grampaw Pettibone says:

Great horned toadies! Although neither one of these lads has anywhere near the shock of grey hair Ol' Gramps has, both of 'em are 3000-hour men and the pilot had 700 hours of buckin' Beech time.

The SNB fuel selector is pretty simple but you CAN'T check it positively without a good keen look at it! These fellas took off with the selector on NOSE tank, which had only a few gallons in it to start with. They went in with *four full tanks!* A quick tank shift would have saved their bacon.

Every SNB pilot should review pages 35-40 (Emergency Procedures) of the SNB Pilots Handbook at frequent intervals. The Beech is a tricky little beast and can kill you just as dead as any of our high-powered machines. Don't underestimate it.

If you're gonna fly all night after working all day, you better keep your insurance paid up to date.

Slip-Shod

A fighter pilot returned from an afternoon FJ hop just in time to grab a soft drink and a candy bar and head right out on a scheduled night cross-country flight in a TV-2. His destination was an authorized civil airport some 450 miles distant.

To save time, the dual pilot had worked out the flight plan and navigation, consequently the pilot's pre-flight preparation was somewhat sketchy. In fact, they were in such a hurry they forgot their gas chits.

Enroute, while cruising at 31,000 feet, and with a cabin altitude of 29,000 feet, the pilot suffered severe gas pains and requested a lower altitude. This was approved and the situation cleared up. The rest of the flight to destination was uneventful.

As the pilot checked in over the field, he was cleared for a right hand break to the duty runway and was informed they had an F4D on an emergency arriving in four minutes; to standby for a possible wave-off.

Cutting his pattern down, he turned short at the 180 and angled into the groove, still turning as he approached touchdown point. As he rolled the wings level at an altitude of about 20 feet, he realized he was in a skid with a high rate of descent. The TV-2 hit hard, right wing slightly down and porpoised three times. It angled gradually to the right and finally hit the dirt off the runway after 6000 feet of roll-out. No apparent braking action was observed. The pilot stated he let it go off to clear the runway for the F4D.

Grampaw Pettibone says:

This pilot better slow down a little and take a good look at some of the bad man-killin' habits he's picked up. Just to list a few that the investigation brought out:

***1.* He always wears his oxygen mask loosely, allowing air to escape around the bridge and sides of his nose!**

***2.* He wasn't wearing his G suit because it had been stolen sometime before and he hadn't replaced it.**

***3.* Improper pre-flight planning. Some doubt exists as to whether he even had a NAVPACKET aboard, as the gas chits are included in the case. Boring off into the blue without personally checking the route, notams, en route alternates, the Nav kit, etc., can make it a one-way ride.**

***4.* Tryin' to beat an emergency into the field is a good way to start a *kill your buddy* movement. Zounds!**

This guy probably used to get his kicks in his younger days beating lame old ladies to the last seat on the bus.

. . . AND SO WE HAVE 'FIIG'

By 1st Lt. Ralph K. Park, USMC

DEAR JACK:

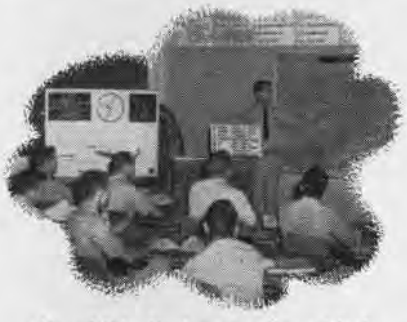
Real glad to hear that you have orders to the Training Command! As to your questions on what the duty is like, here's the best word I can give you. Pensacola is still Pensacola—same great beaches, swimming, water-skiing, etc. But the Training! What a change! Nary an SNJ in sight, and the word is that props will be, in the not too distant future, a thing of the past here in "Basic." And speaking of training—you may have been suffering under the

. . . first class at 0700; welcome aboard by LCdr. Jack Jarvis. . . .

delusion that you knew something about airplanes? Perish the thought! If it weren't for the Flight Instructors Indoctrination Group, the students around here could really snow their instructors. But I'm getting ahead of my story . . . let's start from the beginning. It's really quite a tale.

These people don't fool around! After you check in, your first class is at 0700 Monday morning, there's a "welcome aboard" talk by your Group Commander, LCdr. "Jack" Jarvis, and then greetings from the Academics Officer, LCdr. Tom Graham, who also heads up the Aerodynamics lads. There are five of these officers who teach the aero phase of the FIIG courses. They must have really "beaten the bushes" for these instructors, and what they don't know about their subjects isn't worth knowing. Not only do they have the "book larnin'," but they have the aviation instruction background to go with it.

At first I was a little shook at the subject matter they expected to cover in the next two weeks, but it wasn't long before I found myself looking forward to what would come next. These lads really know how to put it across. You remember when we got those new birds and our skipper and the maintenance officer made us know the fuel, oil, hydraulic and electrical systems inside out? Well, that's not enough around here! Man, if you don't know the aerodynamics of your bird, you're nothing but a stick and throttle jockey.



After LCdr. Graham got thru with the Vn diagram I understood it. . . .

To give you an idea of what I'm talking about, let me tell you what these aero instructors cover. After LCdr. Graham got through with the Vn diagram, I completely understood it for the first time. I found out, for example, that that bird you're flying isn't a 6G ship all of the time—that's only for one weight at a certain altitude, and airspeed has a lot to do with its G limitations, too. Then they go into a run-down on turbo-fan, pulse jet, ramjet, and even rocket engines—although I don't think they are going to be in Basic for a while!

They really keep you on the step and humping to get it all. When Lt. Dick Ballew tells you that in the next 50 minutes he will cram all the math and physics you'll need to see you through the course, he isn't kidding. By the time that period was over, terms like dynamic pressure, lift-drag vectors, mass density, coefficient, aerodynamic

center, aspect ratio, supercirculation, and quite a few others were explained so well that even I could understand them.

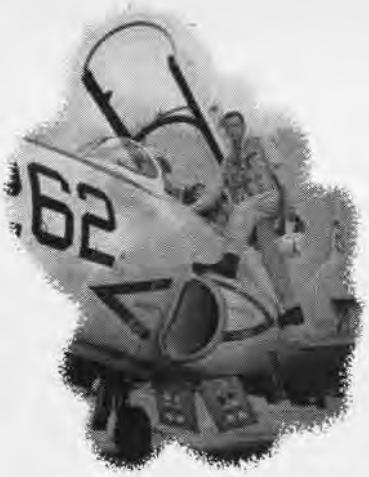
In the middle of the first week we studied what they call high lift and drag devices (flaps, slots, boundary layer control and speed brakes). Later on they gave us a couple of periods on take-off problems, climbs and dives. We were shown just what is included in the handbook and how to use it. Let me tell you, that handbook is full of

. . . we studied what they call high lift and drag devices. . . .

real good dope, if you know how to get it out. For instance, remember that summer we took off at Denver and used up 99% of the runway? Friend, if I had known then what I know now, I never would have tried it! We also got some new (to me, anyhow) info on climbs, called "total energy climb," that will really knock off your hat when you get it.

Do you remember the big argument we had in the squadron last summer on which side to bail out of in a spin? Well, it seems we weren't the only ones in doubt. My whole class was undecided until we got the straight word—the outside man—to the *outside!* The spin lecture was most informative as to what causes a spin, how the forces act on the bird during the spin and what affects the spin recovery. Did

. . . bail out of a spin on the outside, man—the OUTSIDE!



. . . Lt. Eakle pounded a jet engine course from the chocks to Mach 3. . . .

you know that spin recovery technique is not the same for every type of aircraft? Brother, neither did I, but you can bet I'll find out what they are for my aircraft the next time I fly a different type.

At last I'm clear on this business of "tuck under" and "pitch up." I've had supersonic flow explained until I'm blue in the face, but now I have a better picture of what happens to form the shock waves and how they act on the airplane. Did you know that once the shock wave forms and attaches to the aircraft it is there to stay

. . . I finally saw why there was a roll rate restriction at high speeds. . . .

unless you slow down? This old jazz about being able to dive it off or "sling" it off just ain't so.

We also had a series of lectures on aircraft performance by Lt. Burke Eakle. He believes that all aviators should fly their birds right up to the prescribed optimum. As a matter of fact, all the aero instructors stress this all the way through. "Get out of the machine what the designer put into it," they say. Lt. Eakle pounded a jet engine course into us in three hours that took us from the chocks to Mach 3 and back again. (Did you know that at Mach 3 the air is subsonic as it starts through the compressor?) Next we got hit with the thrust and power curves and all their variations. Believe it when I tell that I've been doing things for years and I'm just now

The Exec of the unit, LCdr. George Smith, teaches leadership. . . .

beginning to learn the reasons why.

I had heard something about this "being on the step" business, but thought that it only applied to multi-engine aircraft; but now I know better. Man, why haven't we had these thrust and thrust-horsepower curves before? Remember all the haggling we did about what we should do in a fouled deck, short-on-fuel type bind? Well, now it has been shown to me how to really stretch that last few pounds of fuel for max range *or* endurance using the thrust and power curves coupled with the angle of attack system. Using the same system, you can *beat* the flame-out glide range given in the handbook!

One of the best things about the course is the down-to-earth approach that all the instructors use and their efforts in presenting this highly tech-

. . . and some of their answers floored us. These boys are really sharp!

nical dope in terms a layman can understand. These gents are always ready, willing, and able to help you understand what they are trying to get across and will spend as much out-of-class time as necessary to make sure you've got the word. One thing that really helps is their enthusiasm in teaching these subjects. It helped us establish the proper attitude.

The Exec of the unit, LCdr. George Smith, teaches an advanced course in leadership (everyone in this group teaches something). I know—you think you're too experienced for a class in leadership. I think you'll change your mind. It's the first time I can remember having good discussions on moral philosophy since college. Lt. Fred Nystrom assists in this course with a class or two on Cadet Regs and Uniforms (yep, they've changed, too). He also handles two classes on "Techniques of Flight Instruction."

How's your public speaking? Well, it'll be better, believe me. They've got a course here on that too. Stage fright? We all have it at first. They give you four chances to speak in class: two short speeches (one of these impromptu, one a surprise subject) and two long ones (one on a subject of your own choosing and one an assigned

Would I like to try one? Is this guy really crazy??????

flight-support-type lecture). Bring on the students, boy! I'm ready to lecture 'em now! Lt. Vince Tenney (the Oral Communications Instructor) prepares you for any speaking assignment you may pull here: ground school, foul weather lectures, anything.

For an over-all look at the Command and how things have changed since you and I came through, 1st Lt. Ralph Park tells you all about the new syllabus, the new programs for students and how to grade 'em, write up their jackets, etc. He also hooks a couple of *real* flight students from some place and brings them to class for us to interview. "Ask 'em anything you like," he said, and we sure did—some of their answers floored us. Are these boys sharp nowadays!

To top it off the aero instructors don't ask you to swallow all they say just because they've said so; they go out and fly with you to support the facts they have presented.

Each of us was required to get "checked out" in the inverted spin. Since the T-34 is the only aircraft (in the Command) not restricted from intentional spins, we used it. Now don't get me wrong, this doesn't mean that the other aircraft in the command will not spin inverted. There are a few pilots around here who have made the

. . . and if the blood would stay outa my eyelids, I probably could see. . . .

nylon descent and will vouch for that. That's just the reason for the check-out; so that if we get in that situation, we will be able to recognize what the aircraft is doing and will know how to recover without having to resort to the nylon. That phrase, "be able to recognize what the aircraft is doing," is no joke. Do you think you can tell the difference between an inverted spin and an inverted spiral? (The recoveries from each one are different, you know.)

When we found out we were all to get an inverted spin demonstration, we all had our ideas of what it would be like. One clown-type in my IUT (Instructor Under Training) class wrote on his critique sheet this humorous (but accurate) description of his bewildering reactions during the check-out:

And tighten your lap belt as tight as you possibly can, no matter how tight you think you've got it; it won't be tight enough.

With these reassuring words ringing in my ears, that idiot staff instructor in the front seat does a modified Split-S to pick up airspeed. (I think it was a Split-S, but don't pin me down.) And then we grunt our way through the

. . . look down in the cockpit! Which way is down?

first part of a loop; with him jabbering all the time, trying to explain to me what he's doing to the controls (I never heard a word). OOOOOPS! He was right. My lap belt's not tight enufff. Feel like I used to when I'd hang by my knees from the 'ole apple tree! Not too b-a-a-a-a-a-d. (I learned later some cute little things had happened at that point—something about exceeding maximum angle-of-attack, inverted stall, outward side slip, etc.)

"There's one turn, one and one-half, two turns," (oh, shut up and stop this thing). "Two and one-half, now look down into the cockpit and follow the position of the controls as I execute recovery."

I can't. I'm trying but I can't. I have to swallow up to keep my stomach down and I don't know whether my helmet is going to pull my head off before or after I red out. Follow his recovery? When I was a student, there was only one recovery for an inverted spin—get out! (I'm not going to—but I want to.) My gosh! Everything is right-side-up-again! It's all over! What's he saying?

"We normally do two spins per hop because we realize the first one is sort of a surprise," [Is he kidding?] "and you don't really get much out of it.

. . . feels like when I'd hang by my knees from the 'ole apple tree. . . .

Would you like to try one or would you rather I demonstrated another for you?"

(Is this guy crazy?) "I think I'd prefer another demonstration, thank you."

"Look at the turn needle. The needle will tell you which way you're spinning. Ignore the ball; inverted—it's no good. Now follow me through recovery."

Not bad this time. If the blood would stay out of my eyelids, I could see the turn needle, and if I didn't have to swallow my stomach up, I could find the controls. But the worst is over. If we could recover from those two, well, let's do a few more. And "this time let me fly it. If one of my flight students goofs and we're spinning inverted, I want to impress him with a professional approach. Besides, it's a new maneuver and I'm getting a kick out of it *Now*."

In addition to the inverted spin, we also had aerodynamic demonstration flights in the T-28, T2V and the T2J. At the present time they give us flights in the aircraft that we are to instruct in, but in the future they hope to give everyone a series of these flights in *all* types so things peculiar to the jets can be shown in the jets and the same for the props. (My hop was in a T-28.) The staff instructor met me in the ready room following the last class of the day and went over the things we would do in the air. It was apparent from the briefing that he was out to demonstrate that the information given in the classes really applied in flight.

We went into our first stall with power on, clean configuration. We followed this with a power-off stall clean, and sure enough, as advertised, there is a difference in the stalling speeds. Then we did the same thing dirty, routine I know, but keeping in mind what the power-off stalling speed was as we went into the next maneuver.

We trimmed her up to reduce the elevator forces to zero while flying at the power off stalling speed (power on, natch). We know that we can't fly hands off because we are in the "area

. . . I don't know whether my helmet is going to pull my head off. . . .

of reverse command," so the best we can do is trim out the forces. Next we cut the throttle, let go of the stick and maintained directional control with rudder. Now here we are with power off and at the stalling air speed, but the old bird just noses over; doesn't even shudder. I understand that this is one of the requirements that our aircraft must meet before they are acceptable to the Navy.

In the last demonstration, I was shown that within a certain speed range, it is possible to maintain two different speeds with the same power setting. The aircraft flew at the stable higher speed and also at the unstable lower speed with identical power settings. At that unstable lower airspeed we first set up a sink rate (quite a trick in a prop type basic trainer) and attempted recoveries from this high rate of *vertical* speed. There's only *one* way out without losing more altitude and that's *power*—thrust horsepower (which a jet just hasn't got much of at low airspeeds). And hauling back on the pole will only aggravate the situation—we tried it and all you'll get is a stall. I can see now what they mean when they talk about flying on the "back side" of the power curve!

The IUT's assigned to jet training groups receive demonstration hops in the T2V or the T2J. The main stress on the jet flights is the value of the angle-of-attack detection system for such items as best endurance performance, best flame-out glides, precision approaches and landings, minimum radius turns, stall predictions, take-off and climb performance, etc.

This has turned into quite a letter, but let me give you some info on the other subjects these people teach at FIIG, for instance: LCdr. Jarvis teaches "Principles of Instruction"—all about "good" instructors (patient, safe, takes personal interest in this situation) and "poor" instructors (yakety, yakety, chip, chip, sloppy, and careless). LCdr. Jarvis has a repertoire of sea-stories about instructors and students that'll keep you in stitches, but better than that, they prove his points.

. . . we grunt our way through the first part of a loop. . . .

That just about wraps it up. From FIIG you'll be sent back to your group for a check-out in your aircraft type and syllabus, and then your first student. And with him will come your first opportunity to help train a future officer and aviator for the Navy (notice I said officer *first*. That's the way they feel about it down here.). A big responsibility? Yep. Flight time? All you could ever ask for. Fun? You bet! And self satisfaction? Take it from me, Jack—it's the greatest feeling in the world to see these students progress through the program and know that you had a part in it.

Words of wisdom from a still hot, but now *smart*, pilot.

JOE

TAILOR-MADE FOR JETS

In the heart of the San Joaquin Valley, midway between San Francisco and Los Angeles, a new naval air station is rapidly taking shape. Located in Lemoore, California, it promises the ultimate in facilities for high-performance aircraft of today and tomorrow.

Since it is one of the fortunate Naval Air activities to forego the growing pains entailed in transitioning from prop to jet operations, it could be designed from the very start to meet the stringent requirements of a modern master jet base.

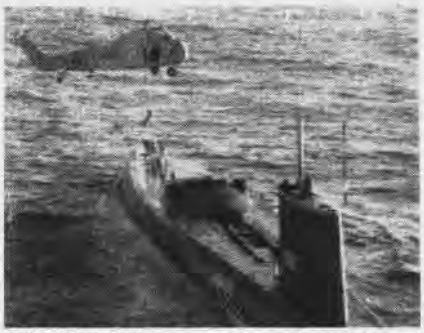
The two runways, laid out northeast-southwest, are 14,200 feet long. They are parallel but laid out with separation between the runways and staggered end to end. One will be used exclusively for take-offs, the other for landings. High speed turn-offs to the hangars and parking spaces between the runways expedite handling. The prime advantages of the radically new "operational centroid" concept are safer flight patterns for normal operations and the capability of simultaneous use of both runways under instrument conditions.

The Navy owns and controls a total of 32,500 acres for the station. Housing and administration buildings will be six miles from the operating area, thus eliminating much of the noise nuisance and other inconveniences often found closer in.

One of the reasons for the construction of NAS Lemoore is to relieve the congested air traffic situation in the San Francisco Bay area, by moving high-performance jet operations to the new site. Scheduled to be fully operational by 1 September 1961, Lemoore was established in a development status this month. The goal is to accommodate three carrier air groups, plus about one-half of a replacement group. There will be dependent and community support facilities for the personnel of five CVG's. Ultimately, there will be 1800 units of Capehart housing. The whole project is expected to cost in the neighborhood of $85,000,000.

Sun is the rule, rather than the exception, in the San Joaquin Valley, promising near-perfect flying conditions the year around. Twelve years of experience have gone into the planning of every detail of NAS Lemoore. It is really tailor-made for jets.

OPERATIONAL CENTROID *permits simultaneous use of both runways under instrument conditions. Port strip is for landings, starboard for take-offs. Fast turn-offs increase efficiency.*



SLING-HOISTED *from nuclear sub Halibut on sea trials in NAS Oakland helo is VAdm. Hyman Rickover. RAdm. L. V. Honsinger, Commander, Mare Island Shipyard awaits his turn on deck. LCdr. R. E. Roby is HSS-1 pilot.*

To Catch a 'Litterbug': 136 Sailors Seen Avoiding Trash

This editorial appeared in "The Fifty Niner," USS *Forrestal's* paper:

"We tried an experiment the other day.

"Placing a piece of paper wadded up in a ball on the hangar deck, we stood by to see what would happen. The paper was dropped in a conspicuous place in Hangar Bay No. 2, directly in the middle of an aisle created by two parked *Demons*.

"In five minutes, 46 persons—including two MAA's—passed the unsightly wad without giving it a second glance. Some didn't even see it; others did, but took the energy to neatly sidestep the discarded trash.

"We tried again, this time at the forward end of Hangar Bay No. 1. Thirty-eight men passed us in the five minutes we stayed there.

"Our third attempt was finally rewarded: we moved to the starboard side of the second deck and after 4½ minutes and 52 persons, Thomas R. Marasek, SA, picked it up.

"In 14½ minutes, 136 sailors passed the trash without picking it up.

"On the carrier *Randolph* they have an interesting approach to litterbugging. An offender who is caught red-handed by the MAA's is given a white helmet with a litterbug—a beady-eyed, many-legged monster — painted in black on the front. He also is given a bag.

"After 1600, the helmet-clad offender must go around the ship picking up trash. And he is not relieved from his new duties until either he or the MAA's catch another man in the act of litterbugging. Maybe we should consider *Randolph's* system on *Forrestal*."

USAF Men Visit Argentia

Briefed on Atlantic Barrier Task

Seventeen U. S. Air Force men, stationed at Pepperrell AF Base, St. John's, Newfoundland, now know exactly what their Navy counterparts are up to, and up against, when the giant WV-2 Radar *Super Constellations* of the Airborne Early Warning Wing, Atlantic Fleet, roar into the sky from NAS ARGENTIA.

With their officer-in-charge, Capt. Emerson G. Zapotosky, USAF, the men visited the headquarters of RAdm. W. I. Martin, Commander, Atlantic Barrier Force, for a two-day briefing on the Barrier Force's operation control procedures. The briefing session was capped by their participating in an actual Barrier mission.

The Barrier has been manned for more than three years on 24-hour basis.

Training Ground for MATS

Litchfield Park has New Task

What once served as a training ground for Indian braves is used now to train officers and men of Air Transport Squadron Seven.

The Naval Air Facility at Litchfield Park, Ariz., is playing host to MATS crews that are being trained to fly the *Super Constellations*. The newly assigned pilots are fully qualified Naval Aviators, but must receive a complete check-out in the *Connie* before flying as pilot or co-pilot in MATS aircraft.

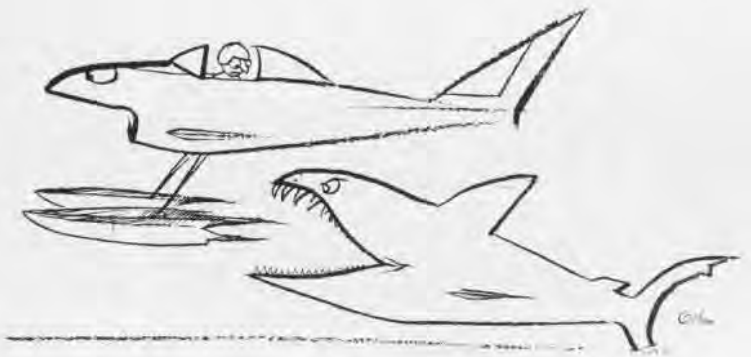
The dolphin-shaped, triple-tailed *Connies* are based at NAS Moffett Field, Calif. VR-7 is attached to the Western Transport Air Force, as part of MATS flying the Pacific Ocean routes from California to Western Pacific.

Training a pilot in a new type aircraft, especially one as complicated as the *Connie*, presents problems to which the pilot must give his undivided attention. Litchfield has helped solve this problem with its ideal winter flying weather and lack of congested airways, thus letting the flight crews concentrate on the training problems at hand.

The students are in training at Litchfield for a period of one week—seven days divided into a daily four hours of flying and four hours of ground school. Training flights allow each student pilot two hours a day at the controls of the aircraft, and two hours observing another student.

SHARK SENSE:

DON'T GET SHOOK



ONE OF THE advantages of being a Navy-type flyer is that you often have an opportunity of aviating over large expanses of deep blue sea where there are no water towers, tall buildings, or clouds stuffed with rocks to bump into. There aren't many check points either, but then you can't have everything. Another little drawback, as the survival experts point out, is that if your airplane has to come down for reasons of its own and in opposition to your wishes, you are pretty certain to get wet."

Following this preamble, the *Shark Sense* pamphlet continues with its invaluable collection of facts based on sound research, and advice founded on irrefutable logic. The illustrations adroitly emphasize major points.

There is no mincing of words, "The shark is a mean, treacherous, hungry predator." A run-down on the habits and habitats of the most dangerous species is given, accompanied by recognition drawings. Three favorite superstitions are exploded. After reading the booklet, Naval Aviation personnel should be well-prepared for meeting a "sub-aquatic maverick" if downed in the drink.

The dissertation ends on a comforting note, "Many men have survived hours and even days in shark-infested waters by remaining calm and using their heads." Just remember that sharks are unpredictable and the repellent is the best protection.

NavAer 00-80Q-14 is the designation for *Shark Sense*. It's issued by the Aviation Training Division of the Chief of Naval Operations.

Missile Tracking Expanded

Additional Men to be Employed

Tracking and monitoring of space satellites passing the Hawaiian Islands area is being provided under an expanded contract with Chance Vought's Range Systems Division.

For the past six months, Vought has been operating the Pacific Missile Range's fleet training facility at Barking Sands, Kauai, Hawaii. It provides missile range facilities for Pacific Fleet operations with the *Regulus I* guided missile.

Under the expanded Navy contract, Vought is tracking and recording telemetered data from the National Aeronautics and Space Administration's heavy IGY composite radiation satellite. This heavy satellite is gathering data on radiation, charged particles and micro meteorites in the ionosphere.

Two additional men will be added to the 10-man unit now at Barking Sands.

UNLOCKING THE UNIVERSE

NASA STUDIES SPACE FLIGHT PROBLEMS

OUTLINING what the National Aeronautics and Space Administration has done in its first full year of operation and citing some of its future goals, NASA Administrator T. Keith Glennan said:

"An important share of the national research effort is currently directed toward discovering new knowledge about our universe and formulating new concepts of flight within and outside the earth's atmosphere.

"The National Aeronautics and Space Administration, aided by the resources of the entire country, is responsible for this research effort and for the application of resulting new knowledge and supporting technology to benefit all mankind."

In its first year, NASA launched three probes into deep space and fired three satellites into earth orbits. These payloads sent back data on meteorology, cosmic radiation, the earth's magnetic field, solar energy, and environmental conditions in space. Further probes will answer questions on the distribution of micrometeorites that might strike manned space vehicles, the amount and nature of energetic particles in space, and what types of environment may be encountered on the planets. Sounding rockets and probes also will serve as tools in re-entry physics and geophysics. Scientists will continue to conduct laboratory research in space vehicle control, guidance, materials and structures for projects of the future.

In the area of manned space flight, the public is most aware of the X-15 project and Project *Mercury*, for which astronauts already have been chosen. But in a long-range view, these are mere surface-scratchers. As questions are answered and as better vehicles are designed and produced, space flights of much greater magnitude are envisioned.

All NASA effort is not directed toward space research, however. As its name implies, NASA is engaged as well in aeronautical research, continuing the work of its predecessor, the National Advisory Committee for Aeronautics. This research is focused on improving existing airplanes, developing vertical and short take-off and landing craft, and providing research information for aircraft which will operate in the supersonic and hypersonic speed ranges.

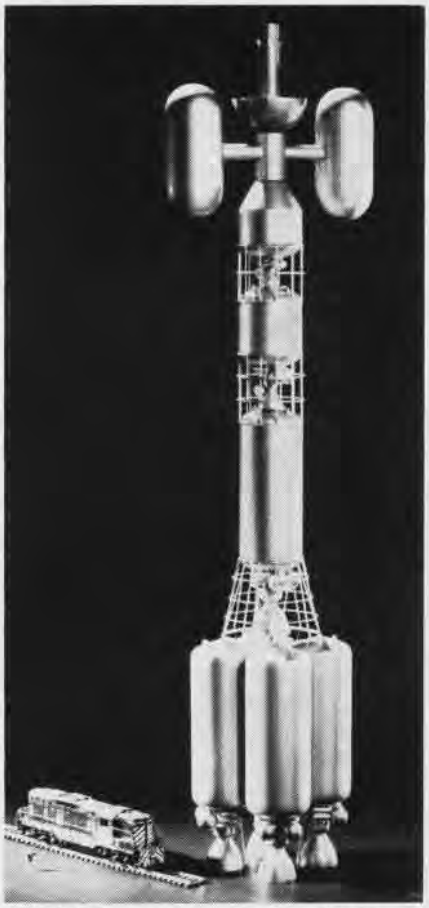
The aeronautics program includes structures, controls, guidance, and heating associated with space vehicles, since manned space vehicles will begin and end their journeys in the earth's atmosphere.

NASA is conducting research on transport aircraft concepts which may some day enable passengers to travel at speeds in excess of a mile a second. But current vehicles powered by air-breathing engines and designed to cruise in the atmosphere continue to receive a significant amount of attention from NASA scientists.

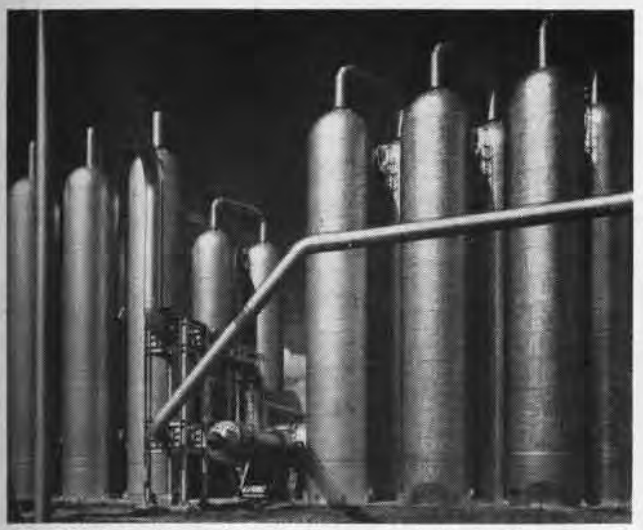
NASA is studying other problems of faster-than-sound flight, such as runway length required for take-off and landing, good flying qualities over a wide speed range, high-temperature structures, and sound controls.

On this and the next three pages is a photographic essay of NASA's vehicles, its projects, its research facilities and its scientists working to insure man's conquest of the skies.

A MERCURY *test capsule is mated to the booster which will blast it out into space.*



FUTURISTIC *chemical rocket like this is seen as hope for taking 8 men to Mars and back.*



AIR STORED *in this steel bottle farm is used by Langley scientists to conduct studies in aeronautical and space research programs.*

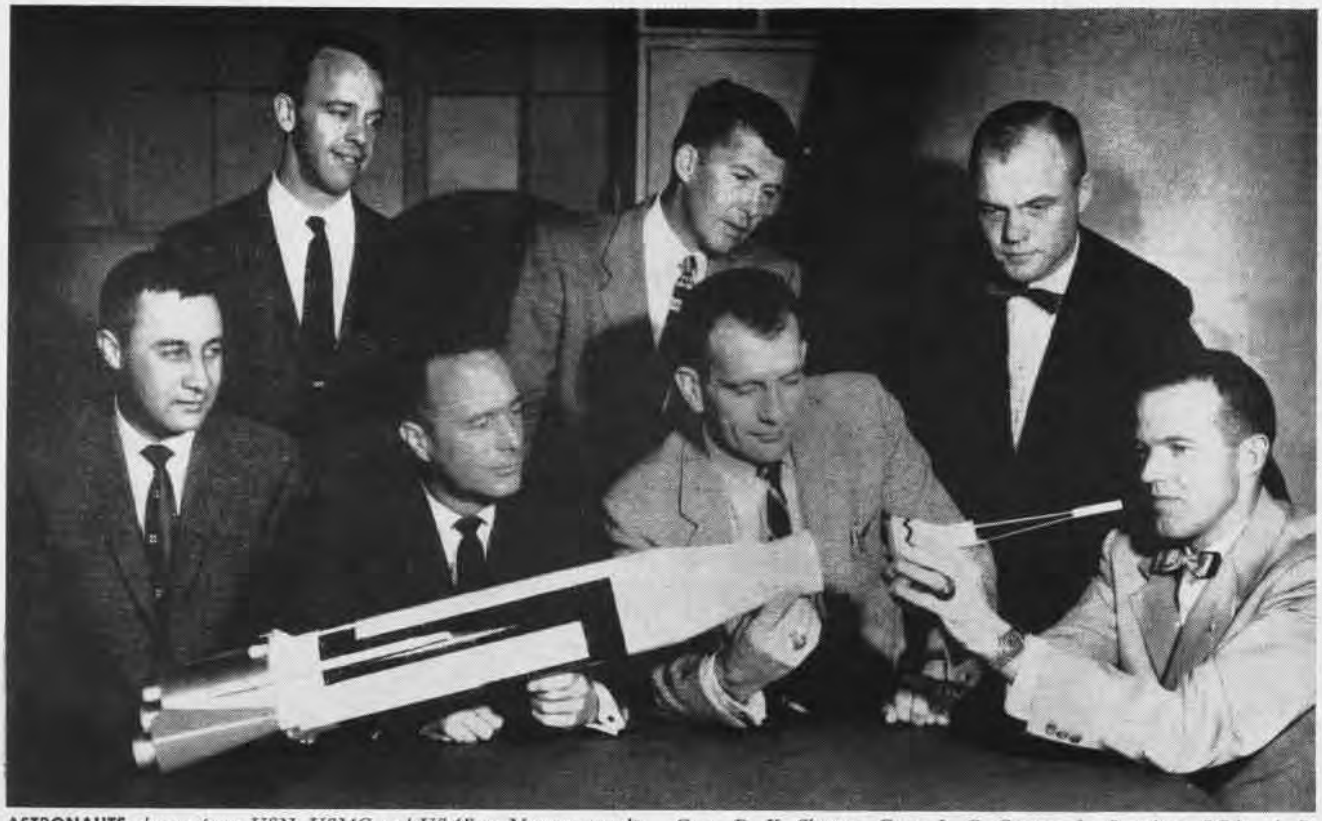
SCALE MODEL *of Scout vehicle is prepared for scientists to determine effect of fin size and second stage flare angle of stability.*

RE-ENTRY VEHICLE, *scaled down, is tested in 4-foot supersonic pressure tunnel as part of basic research on proposed manned vehicles.*

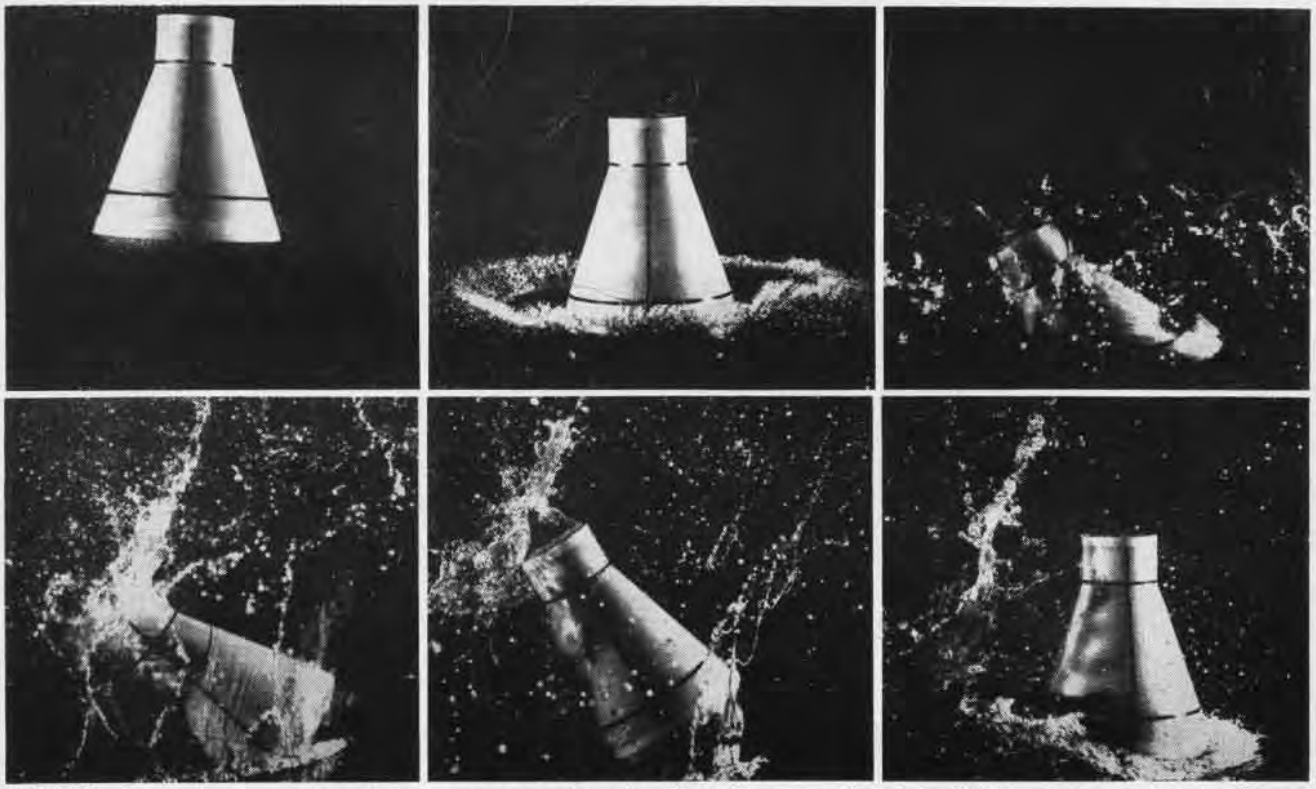
SCIENTIST *observes model of flexible structure designed for possible use as auxiliary wing to aid in reducing landing speeds.*

DYNAMIC STABILITY *and control characteristics of supersonic airplane configurations are studied by remotely controlled models.*

RESEARCH MODEL *of a supersonic transport is designed to reduce drag at speeds between two and three times the velocity of sound.*

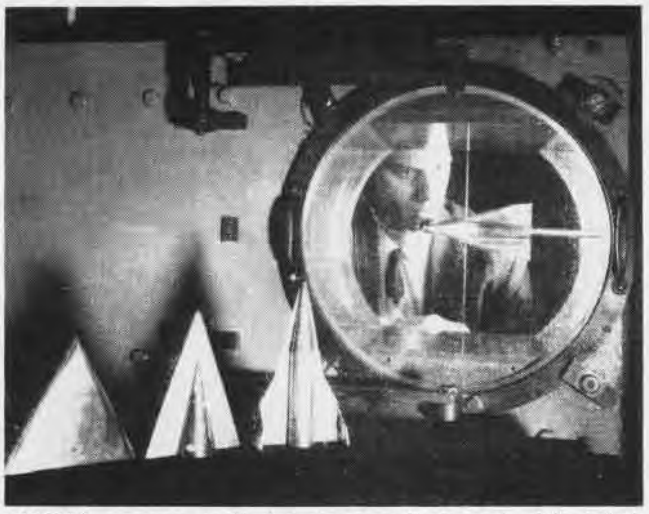


ASTRONAUTS *chosen from USN, USMC and USAF as Mercury candidates are, seated from left: Capt. V. I. Grissom, Lt. M. S. Carpenter, Capt. D. K. Slayton, Capt. L. G. Cooper, Jr. Standing, LCdr. A. B. Shepard, Jr., W. M. Schirra, Jr., and LCol. J. H. Glenn, Jr.*



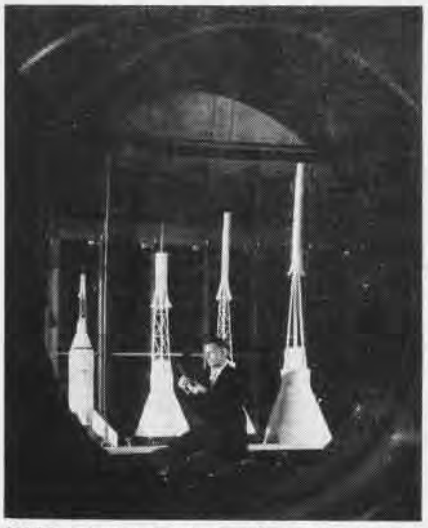
SEQUENCE *photographs show scale model of a space capsule as it is dropped into a water tank to simulate landing in ocean after flight. Test is conducted by NASA scientists at Langley Research Center as part of extensive study in support of Project Mercury.*

THIS MODEL *is used in tunnel to study ejection and opening of a lightly loaded space glider having a flexible lifting surface.*



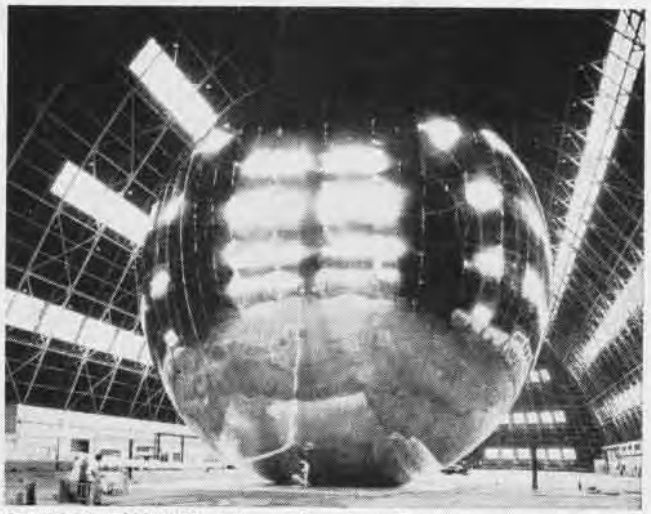
LANGLEY *scientists study hypersonic rocket-boosted glide vehicle capable of orbital flight to learn its stability characteristics.*

ARTIST'S CONCEPT *of supersonic jet VTOL transport, a model of which is undergoing flight tests at Langley. Large number of lifting engines in fuselage would be shut off in flight.*



NASA *scientist in the wind tunnel at Langley, with models of several space vehicles.*

X-15 MODEL, *suspended on wing of B-52 model, is observed by scientist in test to determine release and drop motion characteristics.*



100-FOOT DIAMETER *foil satellite is inflated in ground test. It could be used as a satellite for radio tests or in a lunar probe.*

LIVE TARGETS FOR THE FLEET

GUIDED MISSILE Service Squadron Two provides "hot" targets for air-to-air and surface-to-air missile training in the Caribbean. Grumman F9F-6K *Cougars* and Ryan KDA-1 *Firebees* are used, principally as targets for *Sidewinders* and *Sparrows*.

A *Cougar* drone is lined up, its engine started, and all controls are prechecked. The taxi pilot leaves the aircraft and it is ready for take-off. It is released electronically and takes off automatically. Two piloted FJ-3 *Furies* pick up the *Cougar* in flight and control it remotely. The robot is thus flown to the firing area where it goes into its target pattern. The *Furies* break away and clear the area. If the drone is not destroyed, the *Furies* return it to base. A T-28 stands by to help land it.

The KDA-1 is flown to the firing area as a parasite on a P2V-5F or a JD-1D; either can carry a KDA-1 under each wingtip. On reaching the launch site, the drone's engine is started. Two FJ's, who by that time have joined the parent plane, run a series of control checks. When the airplanes reach the firing area the drone is released from the parent plane and its control is taken over by the *Furies*. When the KDA-1 is destroyed or expends its fuel it goes automatically into its recovery phase and is picked up by a HUS helicopter.

Based at NAS ROOSEVELT ROADS, P. R., GMSRon Two provides detachments to Naval Air Stations Jacksonville, Fla., and Guantanamo Bay, Cuba.

ROBOT COUGAR JET FLIES OUT TO MISSILE TARGET AREA OVER THE CARIBBEAN

F9F-6K IS CONTROLLED IN FLIGHT BY TWO FJ-3 FURIES. THE T-28, TOP, HELPS TO LAND IT

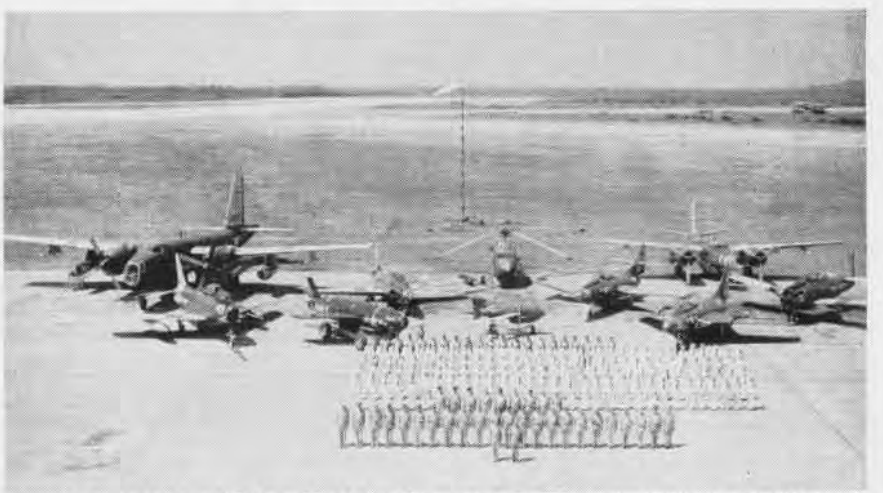
P2V-5F NEPTUNE OF GUIDED MISSILE SERVICE SQUADRON TWO, WITH TWO KDA-1 FIREBEE DRONES ABOARD, ONE UNDER EACH WING

LEAVING PUERTO RICO BEHIND, TWO FURIES TAKE F9F-6K TO FIRING AREA WHERE IT WILL SHARPEN EYES OF FLEET MISSILEERS

COUGAR JET IS READIED FOR TAKEOFF AT ROOSEVELT ROADS

CDR. J. E. BRAUN, SQUADRON SKIPPER, INSPECTS AIRCRAFT

KDA TARGET IS MOUNTED ON WING OF P2V



SQUADRON POSES WITH ONE OF EACH TYPE AIRCRAFT USED IN CONDUCT OF TRAINING

PROLIFIC POLAR PENMAN

Any time you feel you've done your share toward keeping all of Naval Aviation informed about the accomplishments of your squadron or unit, take a deep breath, lean back, dust off your typewriter for more work, and consider the output of JOC Scot MacDonald, the prolific penman of Air Development Squadron Six.

In one day's mail from the Antarctic he reported to Naval Aviation News:

DATELINE McMURDO SOUND, ANTARCTICA: Puckered Penguin Tuckers VX-6-ers—On the rim of the Antarctic continent, three Navymen tracked down, tussled with, and finally captured a young emperor penguin which waddled across the slippery ice landing strip at McMurdo Sound this morning.

Though curious about the invaders of its natural domain, the penguin reacted violently as the humans approached. It was the first emperor sighted here this season.

Norman T. McCrimmon discovered the bird. He, Lt. Garland M. Renegar and John C. Harris, AB3, gave chase.

"He kept us running for nearly 15 minutes," Harris said, obviously proud of the bird's fighting spirit.

This same spirit caused Lt. Renegar to nurse his beak-pecked shins and comment, "The little rascal gave us a boxing lesson."

The penguin was harnessed and brought back to camp, some four miles distant. Men from all units flocked around to photograph the brooding bird.

Interest was sharpened by men of VX-6 whose mascot, which has no living counterpart, is a "puckered penguin."

SAME DATELINE, SUBJECT:

"Stay Alert, Stay Alive."

"Complacency has no place in the Antarctic," said Capt. William H. Munson, C.O. of VX-6, to his officers and men in a special meeting.

The men are on ice, providing aerial support for scientists and Navymen participating in Operation *Deep Freeze 60*.

"Not a year has gone by since the Navy entered the Antarctic that there has not been an accident. Several of them have been fatal," he said.

"I am not telling you this to alarm you nor to tell you something you don't already know. I am simply re-emphasizing that these accidents and these fatalities need not have happened in most instances."

SAME DATELINE, NEW SUBJECT:

The "Lost Continent of Antarctica" came up with two more debits on November 1 when a Navy *Skytrain* reported the disappearance of two tall mountains.

The discovery was made during a routine aerial reconnaissance by a plane of VX-6. It flew over the zigzag route to be followed in the next three and a half months by a nine-man traverse party in Marie Byrd Land.

One of the mountains, Mt. Vinson, was charted during Operation *High Jump* in 1946-47. Mr. John Pirrit, glaciologist and leader of this year's traverse party, believed the 20,013-foot mountain non-existent as a result of observations made last year.

Aboard the *Skytrain* he saw an aerial confirmation of his suspicions.

Thirty miles further, 15,000-foot Mt. Nimitz also failed to materialize as the *Skytrain* flew over its charted position.

It is understandable how Mt. Vinson got on the chart, Mr. Pirrit said. By flying over the Executive Committee Range, an aberrated image of Mt. Sidley is seen. Mt. Sidley is about 180 miles from Byrd Station. Deduction therefore was that Mt. Vinson must have been a mirage.

On the credit side of the ledger in Antarctic explorations is the discovery of a large mountain and a range of smaller mountains in the area of the Executive Committee Range. These topographical features were also made known during yesterday's flight.

SAME DATELINE, SUBJECT:

"Bugs."

Men of VX-6 have taken to collecting bugs. It isn't their idea; perhaps if they proposed it someone might get the wrong impression.

No, entomologists on Operation *Deep Freeze 60* are positive that there are at least two types of airborne insects down here, and one close relative called a mite. One of the bugs is a small gnat-like wingless fly and the other is called a springtail.

Scientists believe their normal method of transportation and distribution is by prevailing winds.

With that idea they strung butterfly-like nets, Mardi Gras colored for easy sighting, on nearly every communications and tie-down wire.

Then they devised two net sleeves on a specially constructed hoist that swings the scoops out of the doors of a single engine UC-1 *Otter*. At least three times a week, weather permitting, the VX-6 flight schedule lists a three hour "bug-run."

You don't have to be parked on an ice cap to rate our "Well done." Your shipmates, ship and squadron are making news every day. Cut us in on it by sending copy and pix to Naval Aviation News, Op 05A5, Navy Department, Washington 25, D.C.

IT'S NEVER DULL ON MOLOKAI

FOOD IS UNLOADED FROM HMR-161 HELICOPTER FOR FIRE-FIGHTING MARINES AT MOLOKAI

TARGET AREA CHECKED FOR POSSIBLE FIRE

By Gunnery Sergeant John McConnell

THERE ARE about 5000 people on the island of Molokai, Hawaii, including six Marines. This band of Leathernecks is the firefighting detachment which operates and protects the Papohaku aerial bombing range on the western end of the "Friendly Isle."

MAG-13 planes from MCAS KANEOHE BAY use the range daily for bombing and rocket practice. The Marines on the ground watch from a safe vantage point to detect brush fires set off by bombing runs. When a fire is discovered the aircraft are signaled to cease target runs, and the firefighters go into action.

Fires must be controlled and extinguished as fast as possible for the target area borders the giant Molokai Ranch holdings where acre upon acre is devoted to raising sugar cane and pineapple. Under the direction of Marine ActSgt. Gene O. Blosky, the firefighters go into action on the spot with an 800-gallon water pumping fire engine, hand extinguishers, shovels, wet burlap bags or whatever's at hand.

Although the bombing runs normally are flown only from 0800 to 1500, the small target detachment has more than once worked well into the night extinguishing brush fires.

In addition to their firefighting chores, the Molokai Marines have the upkeep and repair of the target area on their list of duties. One major chore is repairing the fences bordering the area to keep cattle off the target site. There have been no bovine casualties.

Blosky and his men also try to keep the area free from deer, which are plentiful on Molokai. One of the Marines on fire watch recently counted 138 deer in one herd.

The accuracy of the Leatherneck pilots adds still another task to the Marines on the ground. The bullseye, a stanchion standing about 12-feet high, is in constant need of repair due to direct hits. Encircling the "bull" are strips of corrugated metal which also need regular repair.

Another important job the Marines attend to on the target area is the building of fire breaks. Recently Blosky was able to get the services of a MAG-13 heavy duty operator to work a bulldozer. The fact that the Marines didn't have a bulldozer was only a minor problem. When Pfc. Robert C. Arnold arrived for the job, he and Blosky went to their neighbors on the island—the 13-man Coast Guard Loran detachment—and borrowed one.

By working during all available daylight hours including Saturdays and Sundays, when bombing was not in operation, the pair was able to complete the firebreaks and return the bulldozer.

After duty hours for the Molokai Marines can be described in one word—QUIET. The detachment has no TV set, but the radio is tuned in almost constantly. Much of the spare time is spent at the washing machine, cleaning the red clay out of dungarees.

Blosky, who is the NCOIC of the detachment, is also the cook. He sees that the Marines get at least two hot meals a day. This also goes for the lone sailor on the island. He is responsible for the NAF property and lives in the barracks with the Marines.

Monday through Thursday evenings, movies borrowed from the Coast Guard are shown in a warehouse converted into a theater. A civilian, Tom Kudo, not only volunteers his time to show the films, but uses his own projector.

Liberty runs are made into the somewhat colorful town of Kaunakakai, a l ttle village whose imaginary leader is described in the hula song, "The Cockeyed Mayor of Kaunakakai."

This town has a number of small stores, two movie theaters (one of them an outdoor movie; not a drive-in, it's just outdoors), two bowling alleys and many churches.

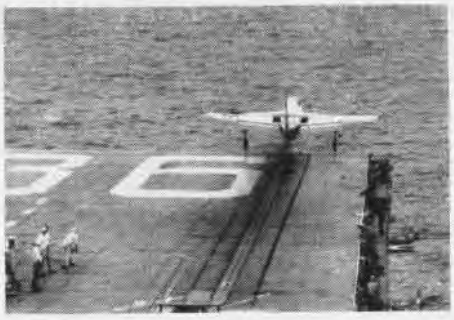
As often as not, the Marines pass up the liberty run for horseshoes or playing with the detachment's mascot, Fifi, a six months-old poi dog. This peppy pooch has only one idiosyncrasy—she refuses to eat "C" rations.

Despite the tranquil life, most of the Marines seem to enjoy the duty on Molokai. According to Sgt. Blosky, only one man complained about it. This happened during the week the firefighting detail was called on to extinguish 47 brush fires in the target area. "I don't mind putting out all these fires," the Marine said, "it's that they happen just when the chow wagon drives up."

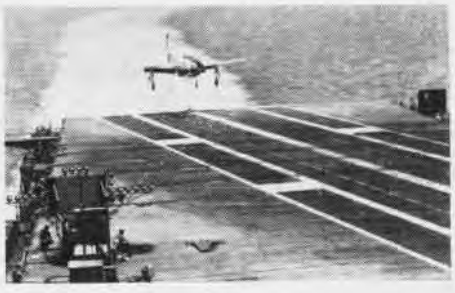
Serving the Molokai detachment with Blosky are ActSgt. Chauncy V. Abbott and Pfc. F. A. Marion both of VMA-212, Cpl. D. L. Starbird and LCpl. E. H. Lutz of VMA-214 and ActCpl. R. N. Alfredson of MABS-13. Blosky is also a member of MABS-13.

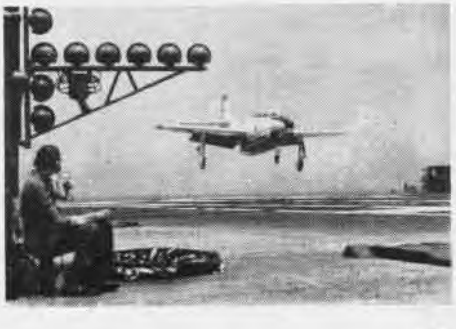
There was a time when fledgling Tigers cut their teeth
80 hours later, the PG (primary graduate) fo
OS2U or SNV. Later still, he flew SNJ's,
that training era of some 17 years a
is the newest bird to join th
American T2J Buckeye; t
of 800 nautical m
dual ejecti

NEW BIRD IN BASIC



on the flying wires of the venerable N3N or N2S. Some
nd himself jockeying the joystick of a speedy (90-knot)
3F's, SBC's (top speed straight down, 400 knots). Since
go, fabulous changes have occurred. Shown on these pages
Basic Training Command flock of jet types—the North
p speed 429 knots, ceiling 40,000 feet plus, range in excess
iles. The Buckeye is the first basic trainer to employ the new
system which an instructor operates from front or back seat.





AWAITING PILOT'S SIGNAL INDICATING READINESS OF HIS RECOVERED AIRCRAFT, LT. SCOTT STANDS READY TO RELAY MESSAGE

FORRESTAL TESTS NEW HELMET

By Bill Ritter, J02

A NEW RADIO helmet is being tested aboard USS *Forrestal*. When perfected, it may see general use aboard all Atlantic Fleet carriers.

Forrestal's Pri-Fly, flight deck officer, assistant flight deck officer, both catapult officers, the arresting gear officer, air bos'n, and the flight deck chief have been furnished helmets. The aircraft handling officer in flight deck control may be added to the list soon.

"It's a tremendous assist in expediting launchings and recoveries because information can be passed readily from forward to aft," summed up Lt. J. H. Scott, flight deck officer. "During night operations it is invaluable. It gives us better control of planes on the flight deck than we ever had before."

By permitting instant transmission of vital information, the helmet eliminates constant running from one end of the 1036-foot flight deck to the other. This factor speeds launches and recoveries of aircraft and it introduces a safety element which was impossible to achieve before the helmet was received and put to use.

Another big advantage is the ease with which the helmet facilitates communications between Pri-Fly and flight deck personnel. The pre-helmet system sometimes involved three or four persons relaying messages.

Unavoidable last minute changes such as a drop in wind velocity or a shift in aircraft fuel weight—changes that can affect the catapault launching of a plane—are now passed by use of the helmets directly from Pri-Fly to the catapult officer, insuring that there is no need to delay launches while awaiting the "word."

The versatile radio helmets have proved their usefulness off the flight deck as well. They have been used successfully to coordinate activities during refueling operations at sea and also have seen service by civilian harbor pilots who communicate with each other while bringing *Forrestal* alongside a pier.

On one occasion the helmets were used to direct personnel manning small boats in search operations for an airman lost over the side.

The latest innovation has been to install a microphone which filters out the noise of jets and allows the speaker's voice to come through loud and clear, although he may be standing only a few feet from a jet plane.

The Army-designed helmet weighs three pounds, is painted yellow and powered by batteries. It has an antenna and has added an "outer space" appearance to flight deck personnel.

Lt. E. E. Goodwin, *Forrestal's* Assistant Catapult Officer, expressed the general feeling of the ship's flight deck crew when he said: "I don't see how we ever got along without them."

ASSISTANT CAT OFFICER GETS THE WORD

FLIGHT DECK CPO GUIDES AN F4D ON DECK

BUSY 'STREET' AT NORFOLK

LARGE enough to handle two *Forrestal*-class attack carriers at once is the claim to fame of Pier 12 at Norfolk, Virginia. When the *USS Forrestal* (CVA-59) and the USS *Independence* (CVA-62) tie up to the pier at the same time, the Naval Port Control Office is ready for them. There is more than room enough to handle the needs of these modern leviathans.

Statistics indicate the size of the huge structure. The pier is 150 feet wide and 1307 feet long. Its base consists of 2248 concrete piles 20 inches square, varying in length from 65 to 100 feet. It is estimated the surface, or working area, contains 11,000 cubic yards of concrete.

Three railroad tracks run the length of the pier for the purpose of efficiently supplying ships by train. Special service connections include: 10 connections for fuel oil, five on each side; eight connections for diesel oil, four on each side; eight connections for fresh water, four on each side.

There are 137 guide and curb lights around the pier. Deck fittings for ship handling include 22 extra heavy bollards and 22 42-inch cleats.

All utility piping is housed full length on each side of the pier, about six feet below the surface deck, and is integral with the structure. It can be reached through manholes which line each side of the pier.

The pier has telephone line facilities, and there are several fire alarm installations.

The Naval Port Control Office, established 1 October 1952 under a commanding officer, is a component of the Naval Base. Before that date, it had been designated the Port Director's Office, U.S. Naval Base, Norfolk.

Mission of the Naval Port Control Office is to coordinate under one authority in one location on or near the waterfront all port activities. The Office coordinates arrangements for logistic support and harbor services to any ships under Naval control.

In addition to the Director's Office, the Port Control Office includes two tug offices, stowage spaces, magazines, control of piers, communications center, maintenance force shop, and various kinds of port service craft.

When the big carriers come into Norfolk, the Naval Port Control Office is ready to service them expeditiously on one of its very busiest "streets."

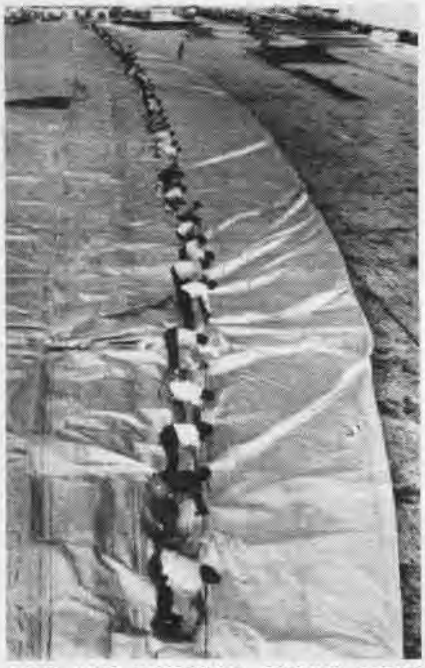
ONE GIGANTIC 'SEWING BEE'

ONE OF THE world's largest—and certainly unique—"sewing bee's" is a daily activity in Litchfield Park, Ariz., near Phoenix.

In Goodyear's wide bay, one-story plant, scores of young women spend eight hours a day cutting, fitting and cementing together huge envelopes of rubberized fabric for U. S. Navy airships. The envelopes have a capacity of some 1,500,000 cubic feet. When inflated with helium, they stretch a block long and tower several stories high.

Nor is the building of airship envelopes a short-term operation. Actual building of ZPG-3W envelopes starts many months before the first sections of fabric are unrolled and spread out on cutting tables at the Litchfield Park plant. While designers and engineers are working on the ship's drawings, the fabric, a combination of synthetic and natural fibers, are being woven in the Goodyear fabric mills at Rockmart, Ga. Every square inch of material undergoes minute inspection before and after applications of special rubberized coatings.

BEARING NAVY INSIGNIA, A HUGE AIRSHIP ENVELOPE RECEIVES THE FINAL TOUCHES



AFTER LAST INSPECTION, FOLDING BEGINS

Upon delivery to the envelope assembly area at the Arizona plant, the fabric is unrolled and cut out according to patterns. The pieces are placed on the floor of the giant assembly building and crews of young women begin the long, exacting job of cementing seams and fitting the pattern together. The cementing operation is done in Arizona because of the dry climate which furnishes temperature and humidity ideal for such work.

Thousands of yards of Neoprene-coated fabric, black on one side and aluminum coated on the other, make up the external envelopes. In addition, hundreds of yards of a lighter fabric must be made for special air ducts and ballonets.

Ballonets, looking like a half an orange, are used in maintaining a constant pressure inside the envelope during flight. They can be filled with air or emptied according to the outside pressure, permitting valuable helium gas to expand or contract without waste.

ENVELOPE IS FED INTO CAR FOR SHIPMENT

As an envelope nears completion, it is partially inflated with air and workers enter through a special opening to complete last minute operations in which holders for the giant radar antennas and other internal equipment are installed. During final inspection every square inch of fabric is checked. By standing in total darkness and looking outward, an inspector can see even the tiniest pinhole.

To handle the 3W model, a larger working area and new loading and shipping facilities were needed.

Folding the giant envelope is a major operation in itself. Workers standing shoulder to shoulder for more than 360 feet, grasp the fabric and pull in unison, until the material is in a neat folded strip stretching its full length, but only about 12 feet wide.

Wrapped in a protective covering of lightweight cotton cloth, the long, narrow envelope is slung on "spreaders" and fed into a giant shipping box the length and width of a flat car.

From Arizona the envelope is sent to Goodyear Aircraft, Akron, Ohio. There final assembly of car, electronic gear and envelope is completed in a 211-foot high airdock, a fitting setting for finishing one of the world's most intriguing jobs.

Weekend Warrior NEWS

BARTU MEN *on active training duty examine an ejection seat at NAMC. The 42 officers represented training units from all over the country.*

COMMANDING OFFICERS *of 16 Reserve Research Companies in 6ND attended second annual conference at NAS Atlanta, conducted by ONR.*

AIRTU 723 Men Get Around

Recognizing the importance of field trips in its training program, Air Intelligence Unit 723, a non-flying Weekend Warrior outfit at NAS GLENVIEW, has travelled over 6000 miles this FY in order to increase combat readiness and proficiency.

Each trip supplements the regular ONI training syllabus. When studying transportation systems, for example, the all-officer group visited a freight classification yard. They were flown to the Naval Photographic Interpretation School for a briefing and familiarization tour. At Stead AFB, Nevada, the men went through a general program on land, sea, arctic and desert survival and rescue techniques.

LCdr. Jack Heim, AIRTU-723 exec, has also lined up exceptional speakers in the area to address the unit. Mr. John Thompson of the Chicago Tribune reported on the Cuban revolution. A discussion of the political situation in Africa and the Middle East was held by Mr. Chesley Manly of the same paper.

"This supplementary program has not only enlivened our training, but has made classroom work more meaningful," commented Cdr. A. J. Baronowski, C. O.

FLYING TIGER *P-40, at Willow Grove for ten years, has been sent to Smithsonian in D.C.*

VR-874 Shares Handclasp

An R5D from NAS SEATTLE'S VR-874, loaded with 8433 pounds of cargo gathered in *Operation Handclasp* for needy people in the Far East, delivered it to San Diego where it was transferred to a U. S. Navy transport.

The civilian project in Seattle was part of the People-to-People Program. The donations of clothing and household goods will be distributed by missionaries of all faiths to refugees from Communism in the Orient.

LECTURE *on desert snakes was given at Stead AFB Survival School to AIRTU 723 officers.*

NAS SEATTLE'S *Roy Thorsvik, AK2, checks the cargo collected for "Operation Handclasp."*

VP-661 MEN *from Anacostia played Santa Claus to Cadiz orphans during Rota, Spain, cruise.*

'SMALL SCALE', BIG RESERVE EFFORT

FRESH *from sub-hunting in Hawaii, LosAl reserve helicopter men turned out with spirit.*

HANGAR BRIEFING *at Island "Y" was a far cry from the conventional ready room rundown as far as facilities were concerned. However, there was no improvisation in passing the straight word.*

SHUTTLING RSD's *"juiced" the fleet of HSS craft. Fuel transfer was made with simple pump set-up.*

NAVAL AIR Reservists and their aircraft from NAS OAKLAND, SEATTLE, DALLAS and OLATHE, swarmed to NAS LOS ALAMITOS, for a three-day ASW exercise, provocatively labeled *Small Scale*.

Some of the more unusual aspects of the operation included: use of off-shore islands as bases for aircraft operations, introduction of the technique of fueling helicopters from RSD's, conversion of a transport into a "flying hotel" for the berthing of flight crews, and breaking out of a field galley for the feeding of the island-hoppers.

"Success in a concerted exercise," commented Cdr. B. R. Otto, coordinator of the operation, "must be measured in the personal improvement of each man in throwing the switch at the right time." Based on this criterion, every pilot and aircrewman who participated in it felt that *Small Scale* was a large success.

HOP-SCOTCHING *the California coastal area, Grumman S2F Trackers relentlessly searched for subs around the clock.*

FARTHER OUT *at sea, the long-range Lockheed P2V Neptunes patrolled the operating areas. Crews worked tirelessly with precision-like efficiency.*

ISLAND "X" *was officially annexed by Naval Air Reservists as an offshore base for S2F and HSS sub-hunting operations.*

RIGGED FOR REST, *an R5D transport provided first-class bunking accommodations on Island "Y" for flight and ground crews in need of shut-eye.*

BRIEFING OFFICER, *Lt. Robert Buzzard, Los-Al AIRTU, got much credit for the success.*

EVERYTHING *from APC's to APU's was hauled by R5D's for logistic support of the troops.*

GROUND CREWMAN *grabs a brief moment of relaxation before another round of hard work.*

"MY MOTHER *should learn to cook ham like this," said one Weekend Warrior. Entire food service, including water for cooking, was flown to Island "X."*

RESERVISTS, *dubiously trying G.I. field rations for first time, found them very tastily prepared by Los Alamitos cooks.*

LET'S LOOK AT THE RECORD

Transition No Bar to Safety

VA-52 Wins Award, Awaits Another

Attack Squadron 52, member of CVG-5, based at NAS MIRAMAR, winner of the ComNavAirPac Quarterly Safety Award for the second quarter of calendar year 1959, logged 970 accident-free hours. The squadron now awaits another award for the 1810 accident-free hours flown during the third quarter.

VA-52, formerly VF-44, was redesignated a prop attack squadron on 23 February 1959 and began the task of transitioning from F9F-8 *Cougars* to AD-6 *Skyraiders*.

In the six months period of intensive training that followed, VA-52 practiced conventional and nuclear weapons delivery, instrument training, night flying and carrier qualifications. But despite the problems of transition, the record of 2790 accident-free hours which include 955 carrier landings (trials) was made.

VA-52 heads for the West Pacific on 1 March. Commanding Officer of the attack squadron is Cdr. A. S. Taddeo.

Japan Honors Navy Capt.

Praised for Assistance to JMSDF

Capt. Harold W. McDonald has been presented the "Third Order of Sacred Treasure" by VAdm. Mitsugu Ihara, Chief of the Japanese Maritime Staff. Present at the ceremony held in Admiral Ihara's office was RAdm. William M. Nation, Commander Fleet Air, Japan.

The decoration was given in the name of His Majesty, the Emperor, in appreciation of Capt. McDonald's aeronautical technical assistance and friendship to the Japanese Military Self Defense Force during his two-years' service in Japan.

It is one of the highest military honors a U.S. Navy officer can receive from Japan's Imperial Government.

MCDONALD (L) WEARS NEW DECORATION

Safe Flight with ATU-501

Flies 40,000 Accident-Free Hours

Advanced Training Unit 501 of NAS CORPUS CHRISTI marked a milestone in the safety record of P2V *Neptunes* on 15 October. Operating P2V-2's, -3's, -4's, and -6's, instructors and students flew two years and 40,000 hours without a major or minor aircraft accident. During this period approximately 30 instructors were awarded certificates for 1000 hours of accident-free flying while in the Training Command.

This Naval Air Training Command Unit started its record in 1957 as ATU-614 at NAS HUTCHINSON, Kansas. In April 1958, ATU-614 was transferred to Corpus Christi, where it was combined with ATU-501.

ATU-501 is a navigational training unit commanded by Cdr. P. G. Marquart. Cdr. J. D. Serrill, Jr., is Safety Officer. Under their leadership, ATU-501 received the 1959 CNO Safety Award.

VF-213 'Black Lions' Score

Ten Pilots Make High Landing Mark

Aboard the USS *Lexington*, operating with the Seventh Fleet in the western Pacific, 10 pilots of VF-213 have been designated "Centurions" after obtaining their 100th carrier landing since departing the United States. The race for the coveted "100" was so close that the 10 Black Lions joined the Century Club within one week of the beginning of air operations.

Fighting 213, a squadron of Carrier Air Group 21, is flying the F4D-1 *Skyray*. Over one quarter of the 1000 landings logged by the Centurions were made at night.

Centurions are LCdr. M. D. J. Turley, Lts. R. F. Noll, D. E. White, R. B. Stothard, B. L. Munger, J. C. Weaver, and Ltjgs. J. T. Fruitticher, W. J. Pfister, V. L. Noblitt, and A. F. Vohden. Commanding Officer of VF-213 is LCdr. Turley.

Training Squadron Excels

Safety Record reaches 20,000 Hours

When a T-28 piloted by 2nd Lt. Ary L. de Vries touched the ground at NAAS WHITING FIELD one afternoon in November, Squadron Two of Basic Training Group Three officially became the proud possessor of a record of 20,000 accident-free hours of flying time.

Maj. Robert M. Fraser, Jr., squadron leader, was on hand to congratulate Lt. de Vries when he landed. Also on hand to applaud were Capt. Wilber R. Limbach, squadron safety officer; Lt. E. A. Morse, maintenance officer; and James A. Allen, Airman, who is the plane captain of the T-28 which flew the 20,000th accident-free hour.

Awards Made to Navigators

Receive 'Ole Navigator' Title

Four aerial navigators for VP-24 have been awarded "Wise Ole Navigator" certificates after navigating 1000 "lost-free" hours in P2V-5F *Neptunes*.

Ltjg. Lloyd E. Robinson and Ltjg. James H. Taylor passed their thousandth hour while navigating on tactical missions in high latitudes across the Norwegian Sea out of Keflavik, Iceland, where part of the squadron was deployed recently. Ltjg. William R. Atchinson and Ltjg. James Oleson broke the mark while returning from a five-month deployment to the islands of Malta and Sicily, where six squadron aircraft were deployed.

Cdr. R. J. Wooten, VR-24 C.O., gave the navigators their certificates.

CDR. WOOTEN (L) AND AWARD WINNERS

UPPER AIR PROBED AT MUGU

READY-TO-FIRE *Arcas is loaded into launcher by J. J. Stahl, AO2, and I.O. Teeter, GF1.*

HIGH ALTITUDE *weather chart is compiled by LCdr. W. E. Hubert and B. D. Francher, AG2.*

ARCAS *instrument package is inspected by LCdr. C. L. Armstrong and Mr. C. D. Mumper.*

SEVEN-POUND *nose cone is attached to Arcas meteorological rocket before it is launched.*

As one of six scheduled meteorological rocket network stations, the Naval Missile Center at Point Mugu gathers atmospheric wind, temperature, and density data as well as other types of information to altitudes more than twice those reached by conventional weather balloons. *Arcas* and *Loki* rockets are reaching nearly 240,000 feet. Experts believe winds and temperatures above 100,000 feet effect surface weather changes and that rocket observations might improve surface weather predictions in the future.

During the initial launches, Army Signal Missile Support Agency technicians assisted the Pacific Missile Range crews. As of January 1, PMR's range operation department began the launches unassisted.

Three other stations are now in operation: Fort Churchill, Canada; White Sands, N. M.; and Fort Greeley, Alaska. Wallops Island, Va., and Cape Canaveral will join the network later.

The *Arcas* is a solid propellant, single stage, end-burning missile. Fired from a closed breech launcher, it develops 350 pounds of thrust and reaches 200,000 feet altitude in 130 seconds.

Arcas carries a three-pound instrument package contained in a 7-pound nose cone. After reaching maximum altitude, an explosive charge separates the cone from its rocket vehicle. A parachute opens and lowers the package which contains a small radio to transmit changes in temperature, air pressure and humidity during descent. Radar tracks the parachute's drift to determine wind direction and speed.

Loki consists of a booster with propellant and dart. Two types are being used only for observing wind movement. The first type develops 3400 pounds of thrust and burns out in .8 second. The dart separates from the booster and continues on, unpropelled, reaching 120,000 feet in 70 seconds. An 8-foot parachute then opens and returns the dart slowly to earth.

The second type of *Loki* carries five pounds more propellant and develops 2028 pounds of thrust for 1.8 seconds. After separating from its booster, the dart climbs to 220,000 feet where it drops hair-fine metal strips whose direction can be tracked by radar.

AT BLAST-OFF, *Arcas rocket is fired at 88° angle. It reaches 200,000 feet in seconds.*

TWO-SEAT VERSION OF ENGLISH ELECTRIC LIGHTNING FIGHTER IS USED AS TRAINER

SHORT VTOL IN LONGEST HOVERING FLIGHT

DESIGNS WITH DISTINCTION

Current British designs give to her aircraft power and distinction. Whether it is the fast low-attack Blackburn N.A.39, the Armstrong Whitley 'Argosy,' or the latest Short VTOL, style and imagination are apparent. British aircraft builders have designed various kinds of manned aircraft for national defense in terms of the necessity for flexibility and mobility.

BRITISH MINISTRY OF DEFENSE IS CERTAIN THAT THE N.A. 39 IN LOW-LEVEL ATTACK ROLE IS ONE OF BEST AIRCRAFT IN THE WORLD

AN AVRO VULCAN 2 BOMBER FLIES AT HIGH ALTITUDE. BOTH VULCAN AND VICTOR WILL CARRY THE 'BLUE STEEL' STAND-OFF BOMB

SALVO OF EIGHT ROCKET PROJECTILES HAS JUST BEEN FIRED BY 807 ROYAL NAVAL SQUADRON VICKERS SUPERMARINE SCIMITAR

ARMSTRONG WHITWORTH ARGOSY, A FREIGHTER COACH, HAS BEEN DESCRIBED AS 'USHERING IN A NEW ERA OF FLYING WITHOUT FRILLS'

MARINE JET BASE NOW READY

THIS FBU *Crusader, belonging to VMF-235, represents the formidable power of this type of aircraft and others now gathered at Beaufort.*

A NEWLY CONSTRUCTED Marine jet air base between Charleston, S. C., and Savannah, Ga., is now ready. Marine Corps Auxiliary Air Station, Beaufort, S. C., recently accepted the last building in the construction program begun in 1954. Commanding Officer is Col. John G. Walsh, Jr.

A temporary Naval Air Station in WW II, the property was sold to the county of Beaufort in 1948. A variety of activities—a marina restaurant, seafood freezer plant, alcoholics rehabilitation center and a crop-dusting service—replaced the flight activities of the war years.

Then in 1952, money was appropriated and an engineering firm assigned to produce a master development plan for the proposed Marine air base.

On the more than 4700 acres, there were some 60 buildings, all of which were bought and destroyed. The first construction project involved extending and rehabilitating the runways.

Plans were made and construction was started on a high speed refueling system for jet aircraft. With a storage capacity of more than a million gallons of jet fuel, the system is capable of refueling eight supersonic jet fighter aircraft in four minutes.

Barracks, housing 2500 men, and a mess hall capable of feeding 1000 men at a sitting, were constructed.

Electrical installations required 25 miles of primary distribution lines, three miles of street lighting, a fire alarm system, aircraft control systems, runway and taxiway lighting, an optical landing system, and an approach lighting system. Steam heat and hot water for the entire base are provided by a central steam heating plant, connected to the various buildings with some 11 miles of underground pipe.

To house married Marines, a contract was let for 1100 units of Capehart housing. Called Laurel Bay, it is located four miles from the main base on the banks of the Broad River. Completely air-conditioned, with automatic kitchens, patios and a choice of eight floor plans, the houses are privately financed.

First to arrive at the new station was Marine Air Base Squadron 32 and Headquarters and Maintenance Squadron 32. Shortly thereafter VMF-122 became the first fighter squadron to call the expanding base "home." Soon after arrival, the squadron received the F8U-1 *Crusaders.*

VMF-235 reported in from Cherry Point, VMF-312 came after a cruise in the Mediterranean, and VMF-333 arrived from Miami.

Marine Air Group 32 built up strength for its mission of providing "maximum effectiveness of attached squadrons in the execution of offensive and defensive air operation in the support of the Fleet Marine Force."

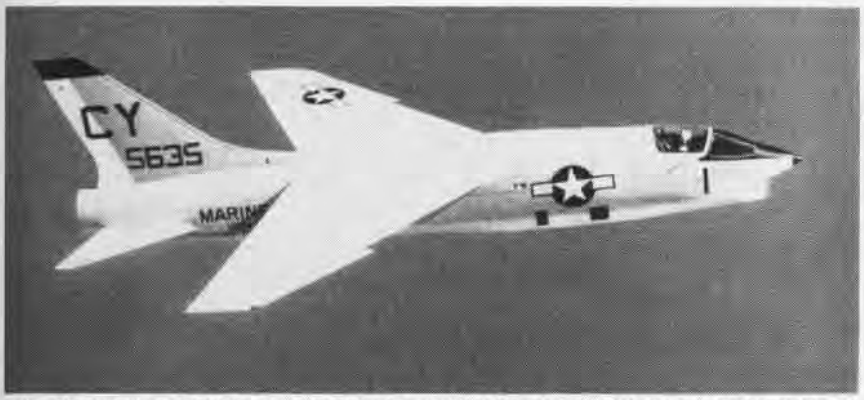
Two radar control squadrons arrived: Marine Air Control Squadrons Five and Eight. The latter set up shop on nearby Parris Island.

Additional aircraft and Marines arrived in October 1959 with the recommissioning of VMA-331. This veteran attack unit flies the A4D *Skyhawk.*

With construction completed, except for minor projects, the Marines are ready for a tour of "good" duty.

THE CONSTRUCTION *of the Marine jet air base at Beaufort, South Carolina, now designated as Marine Corps Auxiliary Air Station, has involved more than 2700 men for more than five years.*

DUAL MISSION COMPLETED



ONE OF THE FAST PHOTO AIRCRAFT THAT HELPS VMCJ-2 ACCOMPLISH A DUAL MISSION

By Pfc. R. J. Wright, USMC

THE EYES and ears of the Second Marine Aircraft Wing are compactly contained in the "fastest" squadron at MCAS CHERRY POINT—Marine Composite Reconnaissance Squadron Two.

Because of the twofold nature of its mission, the unit is, for all practical purposes, divided into two departments: photographic reconnaissance and electronics countermeasures. They work separately or together, depending upon the mission.

The F8U-1P *Crusader* and the F9F-8P *Cougar* are used by the photographic segment of the squadron. The electronic-countermeasures section uses the F3D-2Q *Skyknight*.

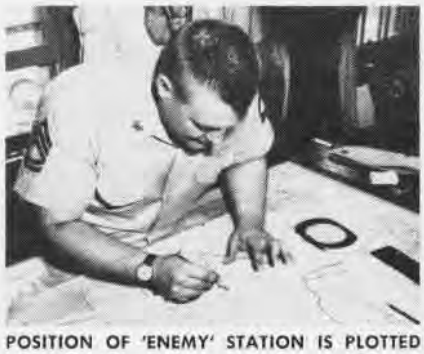
When a pilot checks into VMCJ-2 for duty, he attends briefings, studies the capabilities and limitations of his aircraft and cameras, and practices constantly to attain the flying skill necessary for photo-reconnaissance.

Given a map and a set of coordinate points, he must fly to the target area, locate and film his objective and return to base using a minimum amount of fuel and film. Upon completion of his course, the new photo-pilot has made a *minimum* of 24 training hops. The average trainee makes many times that number of flights.

There are seven basic types of cameras used by VMCJ-2, but by varying the focal length and type of magazine used in each camera, the Photo Installation Section can come up with the equivalent of 15 camera types. Cameras vary from the light six-pound pieces to giant 101-pounders. They produce negatives varying in size from 2¼ inches square to those 9x18 inches.

The Airborne Electronics Operators who work with VMCJ-2's sensitive electro-magnetic receiving instruments are also highly trained specialists. The equipment mounted in the cockpit of the F3D includes a sensitive electromagnetic signal receiver and a signal "analyzer." The signals reveal the approximate size, type, and range of the transmitter which has sent the signal.

Should an enemy radar station operate on the coast of North Carolina, VMCJ-2 might easily find itself with orders to "render the transmitting station inoperable." Immediately the ECM would begin to plot a course, in as straight a line as possible, between two points at opposite ends of the coastline.



POSITION OF 'ENEMY' STATION IS PLOTTED

Within minutes a *Skyknight* would be in the air to fly this course. As soon as the ECM operator picked up the radar station's signal with his electromagnetic receiver, he would plot the position of his aircraft and record the direction from which the radar signal is coming. He continues to do this throughout the flight.

Upon his return to Cherry Point, the AEO logs his information and plots the position of the transmitter. From each of the "cuts" recorded during his flight, he draws on his map a straight line in the direction from which his notes show the signal originated. Intersecting lines mark the approximate location of the station.

The photo section is then called upon to pinpoint the station's position more accurately. After being briefed on the mission, the pilot takes off and flies over the assigned flight lines while his cameras record their story.

He is met by the crew from Photo Installation which rushes the film to the lab for processing. Completed negatives are returned to the Operations Section. Now the target can be pinpointed, for even well hidden or camouflaged objects can be found by the all-seeing eye of the camera lens.

Now the ECM section goes back to work. They may either jam the enemy station by sending out opposing radio waves on the same wave length and frequency as that of the station, or block the signal with chaff, tin or aluminum scrapings which reflect the signal before it can reach its real objective.

With the information gathered, armed attack units can move in to destroy the target efficiently.

Constant practice and training make VMCJ-2 ready when and where needed.

AERIAL FILM GETS QUICK VISUAL CHECK

SERVICE WOMEN GET 'SHOT'

By Act. Gy. Sgt. W. J. Morris

ANOTHER part of the so-called "man's world" has been invaded. At MCAS CHERRY POINT, seven young women, two of them Navy Nurses, the rest Women Marines, completed an ejection seat check-out. They were the first all-female group to do this, according to the Aviation Physiology Training Section at the station hospital.

Participating were LCdr. Rita Rein, LCdr. Margaret Leggett, both members of the hospital nursing staff; Pvt. Kay McElroy, Pvt. Bonnie Souron, Pfc. Jessie Young, LCpl. Roberta Nickels, and Pfc. Marian Heglin, all members of Women Marine Detachment Two. Certification of this check-out is needed by personnel within the command structures at Cherry Point in order for them to be authorized to ride in jet aircraft.

Before their ejection seat stint, the women went through the low pressure chamber. They were taken from sea level conditions to those of 30,000 feet. At this upper simulated atmosphere, there is a hypoxia (oxygen shortage) demonstration. One of the group was briefed before "take-off" to remove her oxygen mask and perform simple tasks until she showed the obvious early signs of hypoxia: dizziness, incoherence and uncertainty of motion.

Then there was a "free fall" to the simulated altitude of 20,000 feet at the rate of 15,000 feet per minute. At this point, all participants performed a brief hypoxia test of their own. The chamber altitude was then reduced, at the rate of 5000 feet per minute, to sea level.

Before the women climbed aboard the ejection seat trainer, Ens. Charles C. Cole, officer in charge of Aviation Physiology Training Unit, delivered a lecture on the precautions they were to take and explained the trainer in detail.

The ejection seat training program given the women was identical to that given pilots and aircrewmen. Pilots must check-out in the seat once every two years.

"Once the cartridge is fired," Ens. Cole told the women, "you will accelerate from zero miles-per-hour in the seat up the guide rail of the trainer to 45 mph in just a fraction of a second.

NAVY NURSE REACHES MIDPOINT IN TEST

"This will give an 18½ G force on your body but this happens so fast and is of such short duration you will not feel a thing, even when you're boosted upward."

After the cartridge is triggered by the individual pulling the face curtain, the seat rises approximately eight feet along the vertical guide rail. The gas from the exploding cartridge is expended and a safety device takes over to allow the seat to return slowly to its original position and another firing.

After the women checked out and received their certificates of successful completion of the training, they compared notes on their "invasion" of one more front in this so-called man's world. They decided it wasn't so bad, in fact, it was "kind of fun."

WOMEN MARINES TRY PRESSURE CHAMBER

VA-115 Sets Fast Pace

Participates in Eleven Exercises

The *Chargers* of VA-115 have returned from the Far East claiming new records as the "most flying" attack carrier squadron in the Pacific. In seven months of operations from the USS *Shangri La*, CVA-38, the veteran AD squadron, under the command of Cdr. R. L. Bothwell, flew over 3500 hours of combat-simulated air support and air strike missions. This set a Seventh Fleet flying record for "prop" plane attack carrier squadrons, even exceeding the previous modern record for squadrons with more aircraft.

VA-115 flew in 11 fleet exercises, ranging the Pacific from *Saddle-Up* over North Borneo to *Tall Dog* over Japan. During operation *Sea Turtle* the squadron—with 10 aircraft—flew 81 hours of close air support over South Korea in a single day.

The *Chargers* concentrated throughout the cruise on precise delivery of weapons. Of the 1618 flight sorties, 736 culminated in target attacks as the squadron dropped over 2000 bombs and fired over 4600 rockets to maintain peak combat efficiency.

Red Devils Are Real Hot

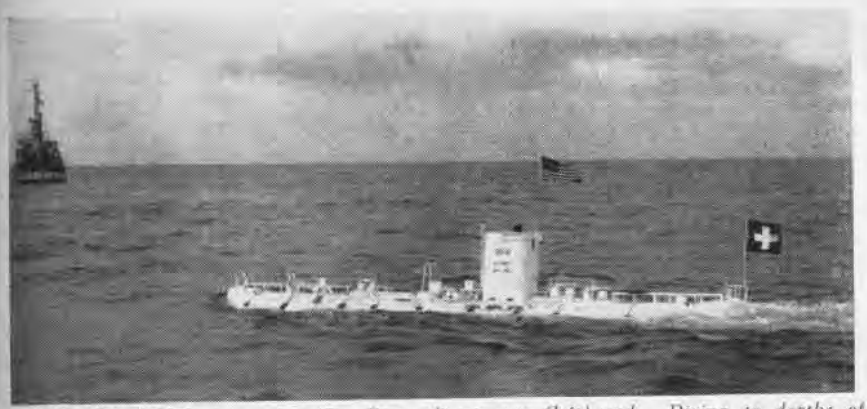
C.O.'s Fiery Props Boost Morale

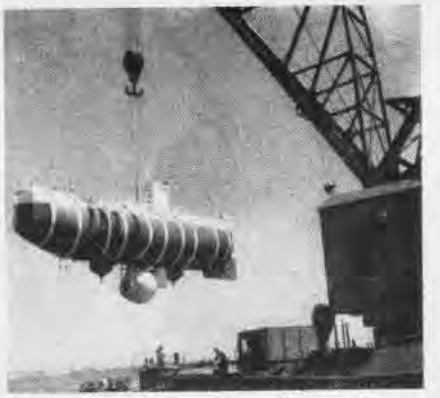
While never a dispirited outfit, the *Red Devils* of VMF-232 at MCAS KANOEHE BAY, Hawaii, are setting a faster pace than usual these days.

It's all because LtCol. Louis H. Steman, the commanding officer of the squadron, takes his job of leadin' demon so seriously. He wears a flaming red flight suit, carries a trident and drives a bright red Buick convertible. Dubbed "Red One," he is apt to appear anywhere in the hangar repair area or on the flight line. An appreciative pat-on-the-back, or a friendly prod or two mark his progress.

The car, which will be passed on to Col. Steman's successors, is also used to reward the enlisted man selected as VMF-232 Marine of the Month. With a full tank of gas, it is turned over to the outstanding Leatherneck for the leisure hour pursuit of his choosing.

Stemen's screamin' demons fly and maintain the supersonic F8U *Crusader*, and pride themselves on being the hottest squadron in the 1st Marine Brigade's MAG-13. They were #1 day fighters in the 1959 Air Weapons Meet.





BATHYSCAPH TRIESTE *is towed to San Diego diving area (left) and lifted from water by floating crane (right). Designed and built by Auguste and Jacques Piccard, the deep diving craft was loaded aboard freighter Santa Maria to be taken to Marianas Islands for a three-months series of tests by Navy Electronics Lab scientists. Diving to depths of 30,000 feet, Trieste will conduct studies on undersea life, light and sound, and the probable effects of deep currents on sub-surface navigation. In addition, the bathyscaph team will gather underwater data for new ship construction and the operation and upkeep of deep-sea submersibles during tests.*

BHR Returns to WestPac
ComCarDiv-3, CVG-19 Embarked

USS *Bon Homme Richard*, with Commander Carrier Division Three and Carrier Air Group 19 embarked, has deployed for a tour with the Seventh Fleet.

En route from Alameda to Honolulu the attack carrier observed her 15th anniversary.

Since returning from her last tour in WestPac the *Bonnie Dick* has been conducting flight operations off the coast of Northern California in training to resume her place in the Seventh Fleet.

Air Group 19 is comprised of VF-191, VA-192, VA-195, VA-196, VAH-4, VCP-63 and VAW-11, all of which are based permanently at NAS MOFFETT FIELD when not deployed.

TWO NEW *Sikorsky S-58 helicopters (left) arrive at Coast Guard Air Detachment, New Orleans, to replace smaller S-55's (right) in Search and Rescue Operations. New 'copters have longer range, better navigation gear.*

MEN OF HU-2 GET DIVERSE ASSIGNMENTS

HU-2 Detachments Deploy
Groups Leave for Pole and Persia

"Dress Blues and Tennis Shoes" might well have been the uniform prescribed by Helicopter Utility Squadron Two at Lakehurst when the squadron sent, simultaneously, detachments to the South Pole and the Persian Gulf.

Detachment 76 left for the Persian Gulf, with its 120-degree temperatures, to conduct support flights for a hydographic survey. The Antarctic Detachment, supporting Operation *Deep Freeze*, can expect sub-zero flying weather as pilots fly base utility missions and support trail parties on the icecap.

Both groups will fly HO4S helicopters. The Antarctic detachment also will employ the smaller Bell HUL's.

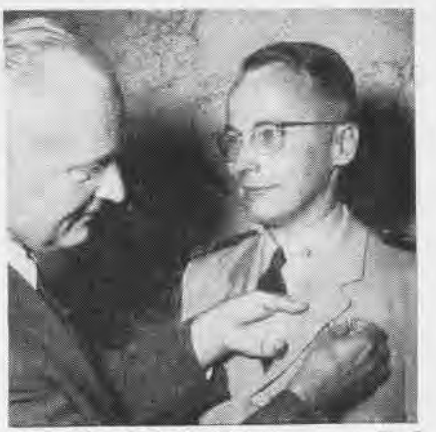
Aerojet Scientist Honored
Award for Solid Propellant Work

Dr. Ernest R. Roberts of Aerojet-General's Solid Rocket Plant has received the coveted C. N. Hickman Award for 1959 for his work in the field of solid propellant rocket motors.

In his 12 years with Aerojet, Dr. Roberts has been a participant in and an eyewitness of one of the most important success stories in the rocket field. During that time, scientists have broadened the scope of solid propellants from limited use in small JATO units to the current status of highly feasible powerplants for huge missiles of intercontinental ranges.

Dr. Roberts is Manager, Research and Development, at Aerojet's Solid Rocket Plant near Sacramento, California. Under his direction, Aerojet engineers have made vital advances that helped make possible the Navy *Polaris* Fleet Ballistic Missile and the Air Force *Minuteman* ICBM.

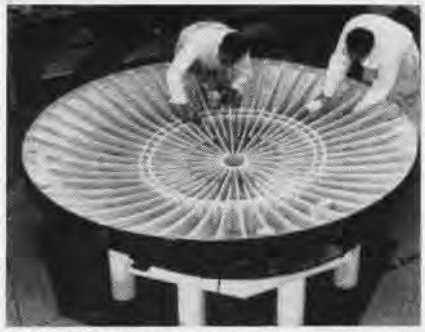
The American Rocket Society presented Dr. Roberts the award at the Society's Honors Night Dinner in Washington, D. C., on November 18th.



ASST. SECNAV *J. H. Wakelin presents U. S. Navy commendation ribbon and medal pendant with citation to Cdr. Paul H. Backus for his leadership in ballistic missile research and his heading of Polaris program.*

ONE OF VCP-61'S *new A3D-2P Skywarrior reconnaissance planes taxis into position at NAS Agana, Guam. In background is an AJ-2P Savage, the photo workhorse of the Navy which is now being replaced by the Douglas jets.*

LCOL. L. L. HERZOG, *VMF-334 C.O. pins Navy "Wings of Gold" on 1st Lt. W. P. Lemmon, Jr., USAF, an exchange pilot for 17 months. He logged 425 flight hours and qualified in some 10 different Marine Corps aircraft.*



THIS PLASTIC *radar reflector, which weighs only 325 pounds, is able to withstand shock loads of up to 160,000 pounds. Republic Aviation designed it for operation with Tartar missile installations aboard Navy ships.*

Students See CIC School

29 Nations Represented by Group

Naval Officers from 29 nations toured the CIC school at Glynco, accompanied by staff members of the Naval War College where they are enrolled.

The tour was part of the foreign officers' orientation aimed at giving them a better understanding of the U.S. Navy and its methods and techniques of warfare.

Capt. A. C. Borg, Commanding Officer of the CIC School, was host to the group while they visited the school.

Bulova Makes Corvus Part

It Will Improve Handling Safety

Should the Navy's *Corvus* air-to-surface missile perform "like a fine watch" it wouldn't be too surprising —one of its key components is being developed by the Bulova Watch Company Laboratories under a sub-contract from Temco Aircraft Corporation.

Bulova has been working the past year on a warhead safety and arming device for *Corvus*. The mechanism is designed to prevent explosion of the warhead during handling, storage, training exercises and launching.

The mechanism also will serve a purpose during the missile's flight.

One Landing: 2 Milestones

Oriskany and Tuttle Star Together

When Cdr. James F. Tuttle, commanding officer of VF-141, eased his F3H *Demon* into the groove and set it down on the USS *Oriskany's* flight deck, it was a double record.

It marked *Oriskany's* 41,000 landing and Cdr. Tuttle's 600th.

Besides *Oriskany's* 41,000th landing marking his 600th, it was Cdr. Tuttle's 234th in jets, his 11th on canted decks. The *Oriskany* was also the 27th carrier from which he has flown.

CDR. A. C. NEUMANN, *Public Works Officer at Fleet Activities, Yokosuka, Japan, presents a safety plaque to Kenichi Suzuki. Maintenance Machine Shop earned the award in competition with 23 other Public Works shops.*

NAVY CHIEF *John R. Cetanyan puts final touches on combination tool box rack and technical library he devised for VR-8's electrical shop at NAS Moffett Field. His co-workers think it is the only such library in the Navy.*

NAS Licks Power Problem

Alameda Pipes Current to Runway

The Operations Department at NAS ALAMEDA has built its own power plant in the immediate area of the duty runway. A 24-volt receptacle, furnishing commercial power, has been installed at the alert watch position in the center of the field.

The power tap-off has been made from the runway lights' power source, fed through a rectifier and stepped down from 220 to 24 volts. A breakaway type jumper is led from the 24-volt receptacle to the external power receptacle of the alert crash truck.

Thus it is possible to provide both a two-way radio equipped crash vehicle and to provide dependable service at a savings in operating cost.

In the past, extended use of truck-mounted auxiliary power units resulted in expensive maintenance costs and excessive time out of service because of breakdowns and/or overheats. The practice of keeping the alert vehicle's engine operating proved unwarranted economically and led to spark plug fouling. By using the external power source, two-way radio communications are maintained and truck batteries are maintained in a fully-charged state.

By maintaining a "field alert," one vehicle is on the spot at all times and dead batteries are a thing of the past at Naval Air Station, Alameda.

Freitag Reports to BuWeps

Original Staff Member of PMR

Usually a ship or station has many plank-owners, but the Navy's Pacific Missile Range had only one—Cdr. Robert F. Freitag. A little more than two years ago, he was the only person

on the staff of an organization that now employs thousands and stretches two-thirds of the way across the Pacific Ocean.

On 17 September 1957, Cdr. Freitag reported to NAMTC Point Mugu as "Pacific Missile Range Officer." Of his work there, RAdm. Jack P. Monroe, PMR commander, says, "Cdr. Freitag is the prime architect of the Pacific Missile Range. He is more responsible than any other single officer for its formation."

On 1 December he reported to the newly formed Bureau of Naval Weapons as Astronautics Officer. He will head the Navy's research and development program for satellites and space systems.

Cdr. Freitag has been continuously assigned to duty with the Navy's missile, rocket, or space programs since 1945. At the close of WW II, he was given the mission of gathering German guided missile secrets. Since then he has had duty at BuAer and Cape Canaveral. In 1955, he became the first head of the Bureau of Aeronautics' Ballistic Missile Branch.

Twin Brothers Reunited

Terry Visits Jerry on Saratoga

Seamen Jerry and Terry Truesdale, identical twins, were reunited aboard the attack carrier *Saratoga* in the Mediterranean when the provision ship *Denebola* came alongside the carrier to transfer 300 tons of supplies.

Saratoga had just completed transit through the straits of Messina and was enroute to Barcelona, Spain, when *Denebola* came alongside.

As net after net of foodstuffs and supplies were passed, the two brothers

TERRY (L) AND JERRY ENJOYED THE VISIT

looked across the 120 feet of sea separating their ships and waved to each other. Then, when all stores were transferred, lines were rigged for high-lining personnel between ships. Jerry was told that his brother was to be the first of five men to come aboard the carrier for a short visit.

USS RANGER, *sailing under the Golden Gate Bridge, took wives and children of officers and men out for a day at sea. "Those who stay behind" (usually) had a real treat when CVG-9 pilots put on a spectacular air show.*

BTG-3 Unit Tops in Safety

Sqdn. 5 Flies 15,000 Safe Hours

Squadron Five of Basic Training Group Three, NAAS Whiting Field, has passed the 15,000-hour mark in accident free instruction flight.

First Lts. B. E. Getzman and E. E. York reached the goal while on a two-plane basic formation syllabus flight with their students, NavCad G. O. Burgess and Ens. G. M. Taylor.

Squadron Five has 19 instructors and 22 T-28 aircraft. Approximately half its instructors are Marines.

Lt. E. H. Prange, squadron leader, attributed the 15,000 hour achievement to the effective safety program conducted at BTG-3 and to the full cooperation of instructors, students, maintenance personnel and squadron linemen.

Fleet Changes Announced

Essex Becomes Support Carrier

The antisubmarine warfare support aircraft carrier, USS *Tarawa,* was inactivated in January. USS *Essex* has been redesignated a support carrier to take the place of the *Tarawa.*

The USS *Shangri La* will leave the west coast in April reporting to the Atlantic Fleet in May to replace the *Essex* as an attack carrier. Home port for the *Shangri La* will be Mayport, Florida.

The three-way move is part of the Navy's planned rotation and modernization program for its ASW and attack carrier forces. All three ships are of the 27,000-ton *Essex* class.

The *Essex* will return from deployment with the Sixth Fleet in March. She will undergo refresher training and report to the Atlantic Fleet.

NAVAL AIDE *to the President, Capt. E. P. Aurand, center, discusses his flight in a T2J trainer with G. R. Gehrkens, chief engineer at North American's Columbus plant, and F. G. Compton, NAA director, plans and programs.*

CDR. C. R. HAKE, *Chief Engineer of USS Oriskany, recently took required flight ejection and altitude chamber tests. Here he receives a replica of his "wings" from Capt. James Mahan Wright, commanding officer, CVA-34.*

THREE S2F *antisubmarine aircraft stand on the runway of NAF Oppama, awaiting final tests before transfer to the Japanese Maritime Self-Defense Force. Forty-three planes have been turned over since April 1957.*

ROCKET STAND OPERATIONAL

A NEW ROCKET engine static test complex that can accommodate rocket engines capable of a million pounds thrust, and which strives for 400 per cent greater testing accuracy than ever before achieved, has been completed at the Naval Ordnance Test Station, China Lake.

The test complex was built primarily to test solid propellant rocket engines, both current and future, of the *Polaris*.

The complex cost $650,000 and is now ready for firings. Propulsion systems being produced by government contractors will be evaluated to make sure Navy specifications are met.

Propulsion characteristics can be analyzed to within .25 per cent error. The greatest accuracy previously achieved came within one per cent error.

Data recording and assessment equipment is of the most modern variety, employing new concepts and techniques.

The test stand is designed to handle rockets with an average thrust of 1,000,000 pounds and a peak thrust of 10,000,000 pounds.

The test facility will be made available to other military services on an "as available" basis, not to interfere with the priority *Polaris* program. It was built for the Special Projects Office of the Bureau of Ordnance.

The facility was designed with an eye to the future to accommodate propulsion systems which have not yet come into existence. The test bay is 35 feet long, 30 feet wide, and can accommodate a rocket engine larger than six feet in diameter, 30 feet in length, and weighing up to 50 tons.

The firing control and instrumentation building is a quarter-mile away, buried deep in a hillside 37 feet higher than the test stand. Housed within this building are both analog and digital recording equipment capable of the .25 per cent accuracies. Digital equipment will sample and record rocket engine performance at a rate of 12,500 samples per second.

The test engine is first brought into a conditioning building where the atmospheric conditions, temperature, humidity, etc., are made to order to meet the flying weather anticipated by *Polaris*. This building also serves as a stowage magazine and can maintain a constant temperature of plus or minus three degrees F. in the range from 70 to 110 degrees F. throughout the year.

From here the engine is trucked to the firing stand where it is bolted down horizontally to a steel platform. The nose of the engine is pushed up against instrumentation which in turn is pushing against 12 inches of solid steel armor plate mounted on a concrete block 13 feet thick and 13 feet high.

A metal shed that covers the test stand completely during pre-firing preparation maintains temperature conditioning of the missile motor. Mounted on rails, the building is moved away from the rocket and stand a few minutes before firing.

The test site was selected carefully between ranges of the Argus Mountains so that test blasts would not be offensive to the residents of China Lake and Indian Wells Valley 14 miles to the west, or Trona 11 miles east.

The entire test complex was planned with a view to keeping the operation modern, flexible and economical to operate, capable of meeting any propulsion demands for years to come.

THIS MIRROR REFLECTION *of a Second Marine Aircraft Wing pilot about to touch down after following the silent direction of the mirror landing device was caught during a special day-and-a-half training course at NAS Oceana, Va. Two mirror landing signal officers from each tactical squadron of the Second Wing attended the course. In the picture, vertical banks of light on each side of the mirror are the red wave-off signals controlled by the mirror LSO. The concave structure of the mirror gives the airplane's reflection a decidedly outer space look.*

Flying Club Successful

Celebrates its Second Anniversary

Two years ago a group of "air-minded" civilian and military personnel in the Bureau of Aeronautics formed a flying club. The members of the club range from student pilots to civilians with Private and Commercial Certificates and Naval Aviators who enjoy flying small light planes.

W. W. Niskanen, a senior civilian in the Aircraft Division, is chief instructor for the club. He has been active in private flying since 1946. John P. Lacy, Assistant Counsel in the Bureau, formerly a Naval Aviator, is the club's legal advisor.

Twenty-two members share in the assets of the club, which consist of two airplanes, a *Piper Cub* and a *Taylorcraft*, and a comfortable maintenance fund. Plans for the future include a four-place airplane which licensed members can use to take their families and friends on trips.

W. H. O'Donnell is club president.

ROCK 'N ROLL FOR RESEARCH

SIMULATION devices have become more useful in recent years chiefly because of the advent of the practical electronic analog computer. This equipment permits different dynamics, representing anything from helicopters to horseflies, to be simulated provided the motion can be expressed mathematically. With this fundamental tool, machines can provide a realism impossible 10 years ago. The Army Navy Instrumentation Program, ANIP, now has such a tool and a machine capable of reproducing motions of flight vehicles for the special study of the most complex machine of them all—man.

In order to examine closely the reactions of pilots flying radically new all-weather instruments and controls, it is necessary to conduct precise experiments and to accumulate large amounts of data. Franklin Institute under contract to Bell Helicopter Corporation has built a flight simulator primarily for the human engineering tests required by ANIP.

Owing to the problems associated with flight safety, weather and weight limitations of the helicopter, studies of human performance in the actual machine proved difficult. Therefore, a ground-based device to produce a realistic cockpit environment was designed and constructed.

This simulator can reproduce the motion, sound, vibration, and general cockpit arrangement of most existing helicopters. However, present experiments are concerned with simulation of the special Bell HTL-7, called the RH-1 (*Naval Aviation News*, December 1959), which has the revolutionary new type of display system. The cockpit of the RH-1 is interchangeable between the aircraft and the moving platform of the simulator in order to facilitate the research. Another cockpit is set up to investigate navigational displays of advanced design.

The pilot actually flies as though he were in a real helicopter under instrument conditions. A computer accepts the control movements from the pilot and then calculates responses which cause the moving platform to react like a helicopter in flight. Pitch, roll, yaw and vertical velocities are represented. A display generator, also driven by the computed responses, gives visual information about attitude, velocity and altitude. Standard flight instruments are used only to aid in checking the equations of motion and to provide a few precise bits of data, such as manifold pressure and rotor speed.

SIMULATOR PRODUCES HELICOPTER MOTION, SOUND, VIBRATION

Bell has intentionally gone to great lengths to create the illusion of vehicle realism for ANIP. With this simulator, operational since June 1959, new controls and instruments can be evaluated before inclusion in a helicopter. Thus, much time and effort is saved in the ANIP project of finding the best man-machine combinations.

DYNAMIC DANCE OF FEW FEET REFLECTS DRASTIC ALTITUDE SHIFT

COMPLICATED EQUIPMENT CREATES REALISM AND CHECKS RESULTS

LETTERS

SIRS:

I was very sad on reading Grampaw Pettibone's account of the P5M-2 being backed into the seawall because this story could have had another ending *if* the pilots had been checked out completely on the 'lost AC power' while in reverse.

I realize you must get all types of letters but this is the *tested* method VP-50 stationed at NAS WHIDBEY ISLAND used:

On final approach to the buoy, the SYNC lever is placed in the DEC RPM (this takes off spring load from pilot valve). If the electric driven feather pump operates correctly, nothing happens, but if some unforeseen electrical AC power failure does happen, you are set up. The use of 1400 to 1800 RPM on the engine will make the 'fly weights' in the governor pull up the pilot valve and the propeller will unreverse without the use of electric power.

JAMES T. HAYES, AD1

NAS WHIDBEY ISLAND

SIRS:

Lt. Al Da Rodda's article on BTG-9 in the November NANEWS was interesting; but since Al relieved me as Student Control/PI Officer in July 1957 (when BTG-9 was ATU-206), I feel obliged to "gig" him on a slight inaccuracy. Correctly, the "Thang" (runway portable tower) was not "a BTG-9 innovation," but was designed and built by ATU-206 under the able supervision of Lt. J. H. Scott (now *Forrestal's* Flight Deck Officer). Construction began in October 1956, and the "Thang" was placed in service in January 1957 some 18 months before BTG-9 was established.

To give credit where due, Lt. Scott and the men of the ATU-206 structures and electronics divisions worked right through the '57 Christmas holiday leave period to effect completion of the "Thang."

Incidentally, a friendly "gig" also to ye editor, who ran a full page spread on the "Thang" in the June '57 issue of NANews.

W. F. FOSTER, LT.
USS Forrestal

¶ Uncle! What ye write is true. Read the rest of the June 1957 with great interest.

LEXINGTON LANDINGS CHECK

"*Lexington* Cake Cutters: Anyone having made a thousandth landing aboard the *Lex* since 1955 recommissioning, please send us your name, squadron and number landing, so we may emboss your name in gold for Posterity!" Mail information to Air Boss, USS *Lexington*, FPO, San Francisco, California.

LEXINGTON LANDINGS CHECK

AUDACIOUS AUTHOR! *The unusual forces at work during an inverted spin are obvious in this picture of Lt. Park, who wrote the "FIIG" story on page 6—but think of Lieutenant Lee Holland who took the upside-down picture!*

Holiday Transfer Effected
Multi-Engine Training at Whiting

Multi-Engine Training Group has moved from NAS Pensacola to NAAS WHITING FIELD, Florida. This move has been made necessary because of the increasing emphasis on jet training for Naval Aviators in Basic Flight Training.

The transfer was to allow maximum uninterrupted basic jet training at fields capable of their operation. Since the move was made during the Christmas holidays, it involved no loss of student flight instruction hours.

Sixty METG flight instructors, 104 students and numerous support and maintenance personnel, and 32 SNB-type aircraft were in the transfer.

VF-124 Claims a New First
Pilots use F9F-8T Aboard Ranger

VF-124, based at NAS MOFFETT FIELD, claims to be the first operational squadron to take the F9F-8T *Cougar* aboard a carrier. Ten F9F pilots deployed on the USS *Ranger* for qualifications with 28 F8U pilots during the last week in October.

For several of the pilots it was their first time aboard ship in a jet aircraft. The first to launch was USAF exchange pilot, Capt. Wallace McCafferty, in an F9F-8T, who remarked upon seeing the carrier's deck, "It's missing about 7000 feet."

The squadron detachment, led by the F8U training officer, accounted for a total of 527 landings, all safely, without so much as a blown tire.

A3D Lifts at 84,000 Pounds
Takes Off from USS Independence

A Navy A3D-2 *Skywarrior* has set what is believed to be a new record for a carrier-based aircraft by taking off from an aircraft carrier deck at a gross weight of 84,000 lbs.

The demonstration was recently made during carrier suitability trials aboard USS *Independence*. Equipped with the new cambered leading edge wing, the tanker version of the famed Douglas jet attack bomber made three take-offs at the 84,000 lb. mark.

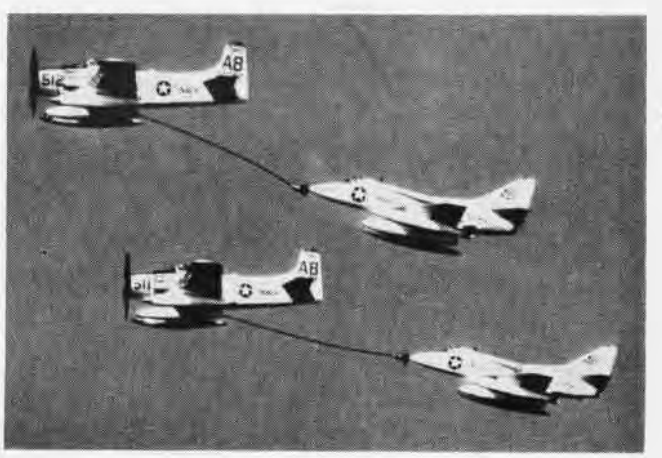
Minimum airspeed at lift-off from the deck was approximately 143 knots. The tests were performed to show the capability of launching at that weight with no wind required other than that generated by the forward motion of the Navy's newest carrier.

LAST BANSHEE *salutes good-bye! Ltjg. E. C. Quandt taxies the last F2H-4 Banshee in the Atlantic Fleet as it is "piped over the side" with full honors by FJ-3 Furies of Utility Squadron Two at NAS Quonset Point. VU-2 received four Banshees upon the decommissioning of VF(AW)-4. The Banshees provided jet utility services in the Narragansett Bay area until relieved by Furies.*

VA-15

SQUADRON INSIGNIA

Valiant Valions of VA-15 have seen 18 years of valorous service, ten of them in the versatile Skyraider. Aircraft of the attack squadron have snagged arresting wires on 15 carriers, during its long and varied career. Latest in the line is USS Franklin D. Roosevelt (CVA-42). With Carrier Air Group One embarked, it is due to return soon from a Mediterranean deployment. Led by Cdr. Joseph Patterson, Jr., VA-15 pilots currently fly the AD-6. The snarling lion riding the torpedo on the patch gives rise to the nickname, and serves as a reminder of the outfit's first designation as Torpedo Squadron Four aboard the USS Ranger (CV-4).



NAVY ON THE RESEARCH FRONT

Where research forges ahead, Navy is there. Naval Aviation and the research it supports are fully reported in Naval Aviation News. One of the most spectacular, and one of the last, frontiers today is Antarctica where Operation Deep Freeze, now in its fifth season, is making incalculable contributions to the advancement of knowledge. Shown above, Lt. Darold L. Reckling, pilot of the R7V Super Constellation, is greeted by Capt. William H. Munson (center), commanding officer of Navy's VX-6 air squadron. Mr. Arthur Barber (right), Lockheed Aircraft representative, was a passenger on the flight from Christchurch, New Zealand. Official flight time was eight hours, 20 minutes, something of a record for a jaunt that normally requires nine to 10 hours.

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