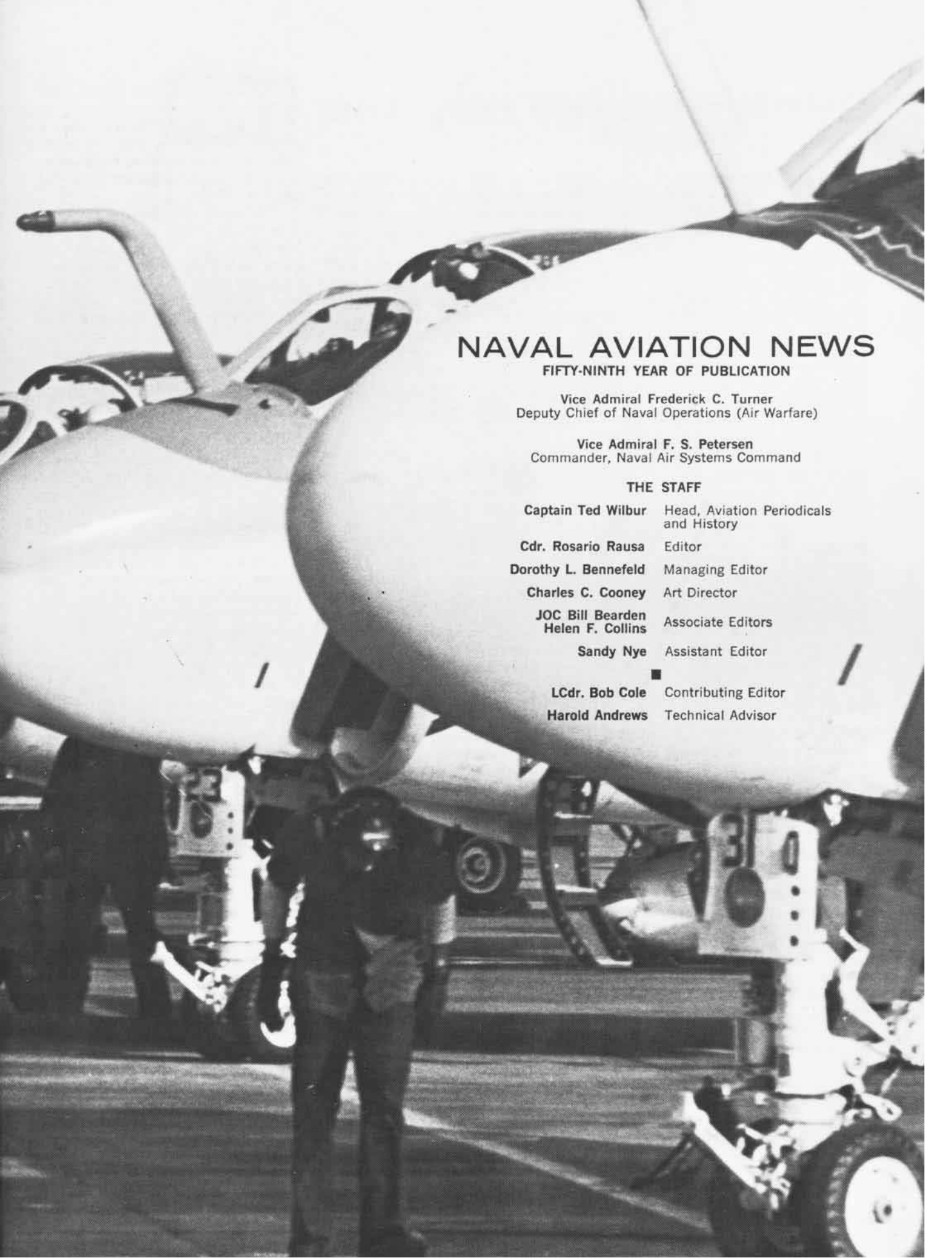

NAVAL AVIATION
NEWS
APRIL 1977

COVERS — JOC Bill Wedertz filmed the Fly Navy Mentor over Pensacola from the rear seat of another recruiting T-34, front. See features beginning on page 8. Back cover, Helicopter Antisubmarine Wing Commander, Captain Warren E. Aut, flew the photo bird while PHC Robert L. Varney filmed formation of representative HS-3s, top of tier to bottom: HC-2, HS-15, HS-11, HS-9, HS-7, HS-5, HS-3 and HS-1. Event marked first time all of wing's squadrons were home in Jacksonville at the same time. Here, VA-128 Intruders are posed for action on NAS Fallon's flight line. PH1 Randy Emmons took this picture as well as those accompanying his story on pages 16-19.



NAVAL AVIATION NEWS

FIFTY-NINTH YEAR OF PUBLICATION

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guest editorial

By JO1 Dale Summers

There are no such things as ghosts, right?

Right.

But wait. Let Summers tell you about the spirit in building 901, Naval Air Reserve Unit, Jacksonville.

Wham, bam, who shot Sam and why am I here? I wish whoever did it was here now, because I'm not so sure he isn't needed.

Just because no less than seven reliable reports have come in doesn't mean I should be sitting here awaiting a major coronary.

"I think it's seasonal — we didn't have any problems all summer and now that it's getting cold again he seems to have returned, or is once again becoming active."

According to YN2 Van Strickland of the NARU personnel office, he received a strange visit while working late on the night of December 15.

At approximately 6 p.m. that night, Strickland was alone in the office sitting at his desk typing when he felt a warm breath on his neck.

A glance over the shoulder proved nothing and he passed it off without further thought. Then came taps on the shoulder.

When he turned to look the only evidence that anyone had been there was the movement of a swinging door. A closer examination disclosed no one in the building.

Strickland recounted an incident that happened earlier in the year.

He had secured the office after preparing the coffee mess for his early arrival the next day. The following morning as he approached the building he noted a light on upstairs in the area of the coffee mess.

There, standing in the window, was a sailor dressed in the old type Navy white uniform complete with Dixie Cup. He figured that since he had to unlock the door the person upstairs had used another entrance.

When he arrived at the mess, the coffee was brewing but there was no one in the building and all other entrances were secure.

Building 901 is a pre-World War II structure that has had strange reports which date back as far as 10 years.

A few years ago when the NARU comptroller was located in that building, Jean Wills, now in the comptroller's office in Hangar 115, reported several instances.

"There was a period of time when every woman fell on the stairs. All who worked in our office, anyway. Perhaps there is an optical illusion or something, but it got to the point that everyone thought they were losing their equilibrium."

Wills went on to add that on numerous occasions, when coming in early, he noted strange noises in the walls and overhead, but passed it off as being rats.

After talking with several of the "old timers" around NARU, I found that approximately 18 years ago the NARU personnel officer, a LCdr. Roberts died only a few moments after suffering a stroke at his desk. This incident, however, has never been associated with any of the strange happenings.

So, here I sit almost gagging on a cup of black coffee. Why? I don't know. The pounding on the wall has got to be the steam pipes or the old building settling in for the winter.

Another member of the reserve personnel office, PN2 Frank Allen, reported an incident in June 1975.

It was approximately 10 p.m. when Allen completed a long day's work, secured the office and was headed down the passageway to the exit.

He noticed a figure at the other end of the passageway and thought it was probably a NARU recruiter working late.

He casually remarked, "What's happening?" No answer. Once again he repeated, "What's happening?" Still no answer, and the figure disappeared around a corner.

Allen switched on the passageway lights for a look that produced nothing. All the offices were secured. Allen also indicated that he distinctly heard footsteps.

The noise is getting louder and for some reason it's beginning to bother me. Wish the old place would settle down.

Only last month, Jo Ann Poe, a civilian in the NARU personnel office, was working alone on Monday when things got to be too much for her.

"The walls were banging, curtains were blowing and all the windows were shut. I just couldn't stand anymore so I went home. It has never happened like that when everyone was around." Poe went on to say that she worked only two hours that Monday.

Strange noises, images, curtains flapping, women falling down stairs — what does it all add up to? During the past year, three falls have occurred . . . all involving women.

When I talked to PN1 "Skip" Skipper of the NARU recruiting department, he assured me that I wouldn't be able to spend the night alone in Building 901 without turning grey and losing 15 pounds. He said, "You just do it, you'll see."

Well here I am, Skip. I must admit though, the little noises and all that's been said are starting to take their toll. I'm even starting to see the unexplainable shadows.

ACC Joe Funderburk, also of NARU recruiting, usually works nights. Funderburk may be the most apprehensive person in NARU about the strange happenings. He says on more than one occasion he has seen unexplainable shadows moving around the building. And sounds, unlike any sounds that come from old buildings, are heard quite frequently.

He stated emphatically, "I don't care what anybody believes, there is something in here! I'm not saying I won't or haven't done it, but I sure don't like being here alone at night."

I really laughed at that — now I can't remember why.

Oh, I'll make it through the night and with any luck I'll lose that 15 pounds.

Well, there it is, first light, and I have survived the challenge. I'll simply collect a few items I brought with me, a Bible, a crucifix, a few pieces of garlic, some incense, and go on home.

Ghosts? Don't you believe it.

(Reprinted from the Jax Air News-Airwinger.)

did you know?

SWATH Ship

Test pilots from the Rotary Wing Aircraft Test Directorate, NATC Patuxent River, achieved a first when Lt. Chuck Womer, LCdr. Jack Costello and ADJAN Danny Cooke landed an SH-2F aboard the 190-ton, stable semi-submerged platform (SSP) *Kaimalino* at Kaneohe Bay, Hawaii. Mr. James Edris was the engineer. The first landing aboard a small water-plane area twin hull (SWATH) type ship is part of a program to evaluate the vessel's suitability for helo operations.

The SWATH program is managed by the Naval Sea Systems Command. *Kaimalino* is the first ocean-going, manned version of a SWATH-type ship. Designed by the Naval Undersea Center and built by the Coast Guard Shipyard at Curtis Bay, Md., the craft was launched in March 1973. It is presently operated by the Undersea Center's Hawaii Laboratory.

Kaimalino measures approximately 89 feet in length and 45 feet across the upper hull. It features reduced motion, increased deck space and the high-speed capabilities of a much larger conventional monohull. Two submerged torpedo-like hulls support a cross structure above water with four streamlined, vertical, surface-piercing struts. Two controllable canard fins and a hull span stabilizing fin, with controllable flaps, provide dynamic stability, damping and control of heave, pitch and roll. Two T-64 gas turbine engines supply the primary propulsion for a design maximum speed of 25 knots.

The actual available deck for the tests measured 30 by 35 feet and was virtually free of obstructions and turbulence. Ship motion in seas up to 10 feet was minimal. The SSP made a complete 360-degree tight turn in eight-foot seas with the helicopter engaged and unchained on deck. Almost no compensation was required by the pilots and it was noted that the SSP actually banked into the turn. The results of the flight tests reflect a dramatic improvement in the environment familiar to Navy shipboard helicopter pilots. If these results can be successfully applied to larger designs, helicopter operations from possible future SWATH-type escort ships will be conducted under conditions that now keep the helicopter in the hangar or tied down.

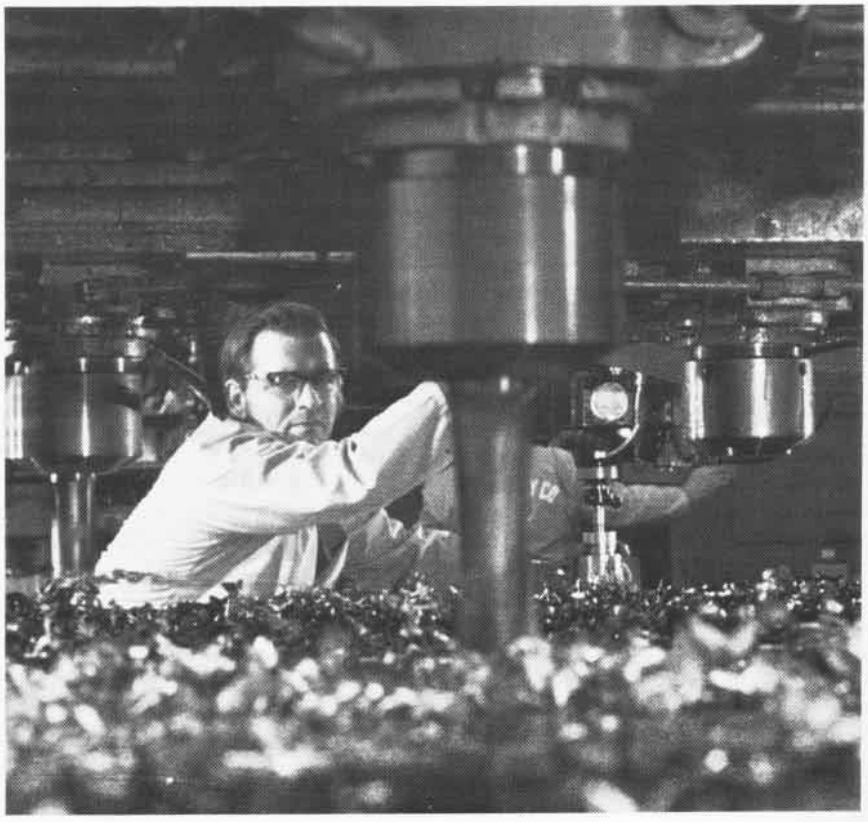
NAVAL AVIATION NEWS did you know?

Human Factors The Human Factors Engineering Branch at the Pacific Missile Test Center, Point Mugu, Calif., is developing and evaluating a number of projects which deal primarily with systems requiring a human/machine interface. The branch is working on 16 such projects to ensure that system designs are compatible with an individual's ability to perform required operational functions.

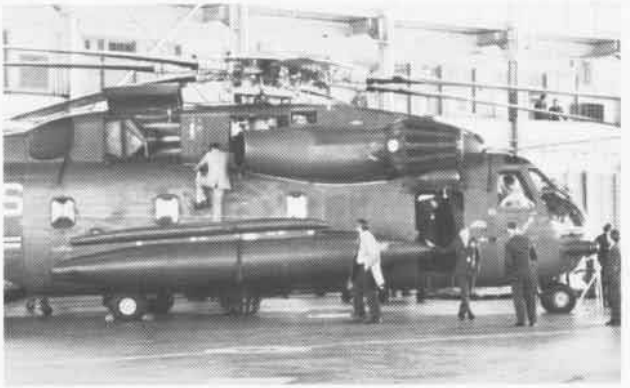
In a controlled laboratory test, the essential conditions of a task are simulated and measurements are taken. To simulate the operator's environment, some of the testing is done inflight. Mathematical models are often made which enable human factors engineers to predict operator performance in situations that have not been tested. This allows engineers to match the system to the human's capabilities. Much of the data and many of the models have been incorporated into a reference manual "Human Engineering Design Criteria for Military Systems, Equipment and Facilities."

One system being developed is a one-third-inch helmet display on a pilot's visor which may soon provide the pilot with aircraft and weapons system data.

F-18 Initial flight hardware for the Navy's new F-18 naval strike fighter went into production in January when metal was cut on a center fuselage bulkhead for the first of 11 full-scale development planes. The work was done by a Northrop Corporation subcontractor, Purkey Company, Inc., North Hollywood, Calif. Prime contractor for development and production of the F-18 is McDonnell Douglas.



CH-53E The Naval Air Test Center, Patuxent River, in March completed BIS trials of the CH-53E — the Free World's largest, most powerful helicopter — on



USS *Iwo Jima* off the Virginia coast. The CH-53E is a growth version of the CH-53D with three turbine engines instead of two. It carries mission loads of 16 tons compared to the D's nine tons, has seven rotor blades instead of six, and can accommodate 56 troops.

Acoustic Chamber In building 513 at the Pacific Missile Test Center a roar of noise fills the Acoustic Test Chamber, reaching a level of 156 decibels, an intensity that can actually burn the skin. Ten-foot-high concrete walls enclose two rectangular 15½x12½-foot chambers and a third pentagonal chamber. The wall surfaces contain and reflect the acoustic energy funneled into the rooms. The chambers provide a testing environment for determining the life span and critical failure points of missile components. *Sparrow, Sidewinder, Harpoon* and *Phoenix* missiles have undergone this testing.

Suspended in cylindrical, nylon zippered bags, the missiles are subjected to high energy sound pulsed into the chamber. This reproduces the vibrations which occur during a missile's captive flight. The bags are like a closed-loop air-conditioning system, reproducing the extremes of heat and cold experienced by the missile's guidance and control sections in flight. The acoustic chambers reproduce the flight vibrations at all points, in all directions and at all frequencies in the missiles tested. By projecting the total captive flight experiences of a missile, it is possible to pinpoint those components which require further improvements.

Simulators There is a new flight simulation facility at the Naval Training Equipment Center, Orlando, Fla., which will house two sophisticated flight simulators. The first, a jet aircraft simulator, scheduled for delivery this spring, will be surrounded by a 20-foot dome on which the visual scene will be projected. The second simulator will be for helicopter and VTOL flight. Initially, an SH-2F LAMPS helicopter trainer will be used. The program is designed to improve visual system technology and define performance requirements for future Navy simulators.

Naval Aviation Commandery The Naval Aviation Commandery held its annual get-together in New York on February 7. The Admiral John H. Towers Award was presented to Mr. George Bush, a former Naval Aviator who has served in Congress, in the United Nations and as U.S. envoy in Peking. He also was director of the Central Intelligence Agency. The profit from the meeting, augmented by an amount from the Commandery treasury, was donated to the Naval Aviation Museum in Pensacola.

grampaw pettibone

Good to the Last Drop!

Two pilots were scheduled for a cross-country training flight in a T-39 *Sabreliner*. The flight was to originate at one overseas facility, proceed to another, refuel and return.

ICAO flight plans were filed at home station for both legs with a planned ground time at destination of 3½ hours. The weather forecast for ETA at the original base was 1,500 scattered, 10,000 broken, 3 miles visibility with fog. There were no significant Notams.

The flight to the first destination was routine and departure from there was on schedule. Between the time of departure from home field and from the first destination, a Notam was issued indicating that all navaids were inoperative at the alternate field listed for the final destination. Notams and destination weather — current and forecast — were not checked at the first destination. However, on the return flight, weather updates obtained from mètro stations indicated no significant changes from the original forecast.

Checking in with approach control, the T-39 was assigned an expected clearance time. The *Sabreliner* entered holding at 6,000 feet with 2,000 pounds of fuel remaining. Weather was reported by approach control as ceiling 60 feet, with 500 meters visibility and calm winds.

The pilots called home field metro (a USN facility) on arrival and were advised that the forecaster was outside taking an observation. However, visibility was reported as three miles in fog and decreasing, based on the last observation. Three minutes after entering holding, the T-39 was cleared to 4,000 feet and switched to GCA for an ASR (airport surveillance radar) approach.

The pilot requested a short, minimum fuel approach but normal GCA pattern procedures were followed.

While receiving vectors to final course, the aircraft was directed to break off and return to holding at 4,000 feet because of conflicting traffic.

A civilian DC-9, which had executed a missed approach at a nearby civilian airport, had priority and was directed to the VOR at 3,000 feet to attempt a second approach to the civilian field. One aircraft at a time is allowed below 4,000 feet due to the nonradar environment. (ASR is not approved for use in providing aircraft separation.)

While in holding, the T-39 pilots again contacted metro and were advised the visibility was one mile and decreasing. Twenty minutes after entering holding, the T-39 was cleared for a second approach. Simultaneously, the T-39 reached bingo fuel state for the alternate airport.

Since the civil aircraft had just landed, the pilot in command of the T-39 elected to continue the approach to the nearby civilian airport as a backup in the event of a missed approach. During the approach, visibility was reported as 100 meters. The pilot requested a short pattern and was vectored onto a slightly shortened final. A missed approach due to weather was executed with approximately 1,100 pounds of fuel left.

At this time, due to rapidly deteriorating local weather conditions, the pilot elected not to attempt an approach to the nearby civilian airport. Without declaring an emergency, he requested radar vectors to his alternate at FL 200. Fuel was approximately 600 pounds below squadron requirements, but was within the Natops fuel planning figures for the distance involved.

The aircraft was cleared direct and told to level at 12,000 feet due to conflicting inbound traffic. The pilot requested that his alternate be notified he was coming and asked if the field was open. Approach verified that the field had been notified and that the field was operating normally.

The aircraft commander, in the right seat, was unable to receive any of the alternate airport navaids and declared an emergency. The emergency was acknowledged and the flight was switched to a published approach frequency. Failing contact on this and other published frequencies, the pilot returned to the previous frequency. He was given an unpublished frequency on which radio contact was established and radar vectors given to the airport. The copilot, who had less than 500 hours total flight time, did not maintain the optimum climb and cruise profile. His errors were not noticed by the aircraft commander who was preoccupied with the radios.

As a result, an extra 300-400 pounds of fuel were consumed over published bingo fuel requirements. The fuel warning lights were now on and in the absence of ground navaids, the aircraft commander directed the copilot to fly off airways to the coast in order that a ditching vice a forced landing in mountainous terrain could be made if necessary.

ILLUSTRATED BY Osborn

The alternate airport was sighted at 13 miles and a precautionary flameout approach to it was initiated.

Both engines flamed out due to fuel starvation as the aircraft rolled wings level on final. A successful landing was accomplished, resulting in no damage or injuries. Total time from arrival over the home field VOR to landing at the alternate was approximately 66 minutes.

Grampaw Pettibone says:

Holy Hannah! I'm not sure where to start!?! It is very easy to second guess a lot of aviator activities. However, in this case, the pilot was led down the primrose path by "above minimum weather at home field" given by Navy metro, and the fact that the civilian DC-9 had just landed at a nearby civilian airport.

There are, however, some things the pilot could have and should have done — like checking Notams at his en route stop, declaring an emergency sooner and diverting earlier. The co-pilot didn't help things much, but added to the problem by wastin' fuel in the climb. We were lucky this time!

Ride the Wild Side

A pilot was scheduled for a round-robin instrument training flight in the T-28. He was an experienced aviator with over 4,000 flight hours.

Departure, climb and level-off at 7,000 were normal. The pilot was in and out of clouds, so he turned on pitot heat and adjusted the carburetor air temperature.

He noted ice forming on the wings and canopy. After passing the next checkpoint, he requested a lower altitude from the center. The *Trojan* was cleared to 5,000 feet. Power was reduced and the descent begun. At this time, the ailerons became "heavy" and ice could be seen on their surfaces.

The engine started to vibrate, so the pilot increased rpm. Still in a descent, the aircraft then passed through rain. At this point, the pilot felt a shudder. The aircraft felt as if it were stalling. The flyer pushed the nose over and noted his airspeed at about 130 knots. As soon as forward pressure was applied to the stick, the aircraft rolled and entered a right-hand spin. Opposite rudder and forward stick were applied and the rotation stopped. As the nose was being pulled up, the T-28 again rolled right, out of control. The pilot became completely disoriented.

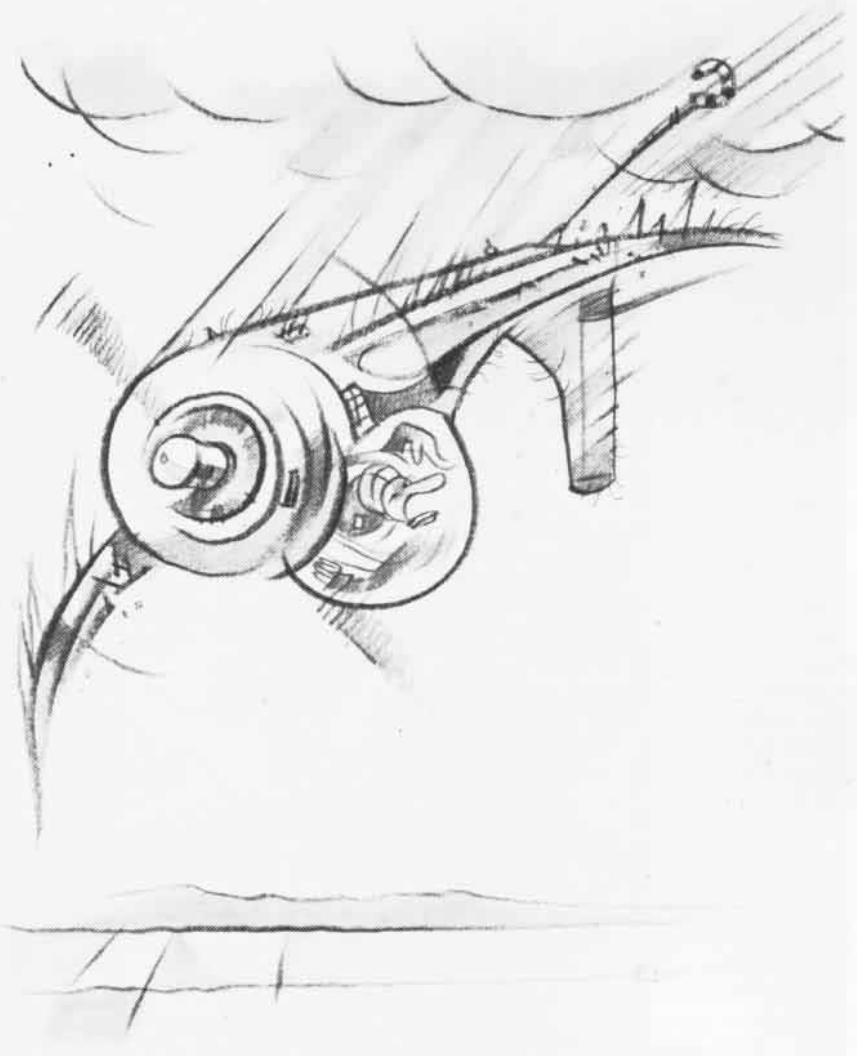
The aircraft broke out of the overcast in a 60 to 70-degree inverted dive at about 3,000 feet. The pilot rolled upright, reduced power to idle, and extended the speed brake. He commenced a pullout but blacked out due to the high G forces.

He next recalls being in the clouds in a rapid climb. He thought he had a malfunctioning attitude gyro. He began partial panel procedures and a gradual descent to VFR conditions below 3,000 feet. The center then cleared the pilot VFR direct to destination. He did not observe ice on the airframe after leveling below the overcast.

The aircraft accelerometers indicated 8 positive G in the front cockpit and 8.5 positive G in the rear cockpit. The apparent cause was ice accumulation on the airframe resulting in stall/spin. The aircraft sustained overstress damage.

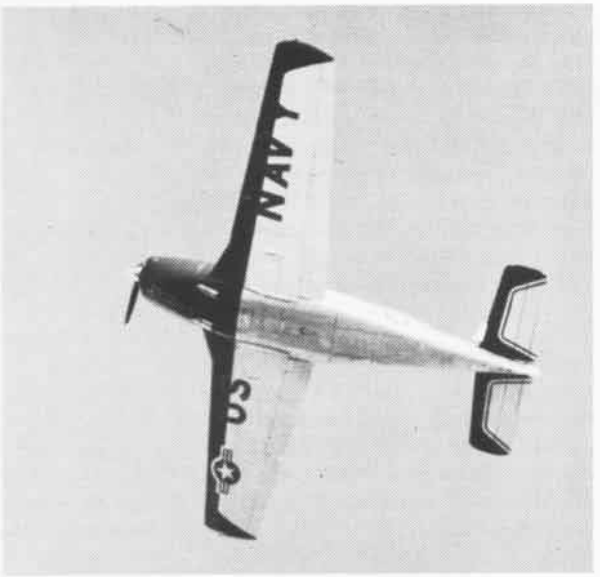
Grampaw Pettibone says:

Holy smokes! This was one wild ride. The interesting thing is that this driver got a weather forecast which did not include ice or turbulence. This is one of the stories which makes interestin' readin' and goes to show you how easy you can get into trouble. Even when you're following the rules! All in all, I would have to say that in view of the circumstances, this gent stayed pretty cool.



FLYING RECRUITERS

Story and Photos by JOCS Bill Wedertz



If you're looking ahead to rotation ashore soon, you might consider one of the Navy's most challenging and rewarding assignments — Recruiting — but with an interesting benefit.

The majority of 131X aviators in recruiting duty function at the Navy Recruiting District (NRD) level as the Officer Programs Officer, responsible for the recruiting of qualified men and women to the various officer programs in all fields.

The very tangible benefit to the 131X aviator assigned to recruiting is that he fills an operational flying billet (DIFOPS). As such, he continues to accumulate months of operational flying time toward ACIP "gate" requirements.

The CruitCom aviator averages 120-160 hours per year in the command's own T-34B "Fly Navy Mentor" in support of aviation officer recruiting. The T-34Bs are utilized to fly aviation officer applicants to check for aeronautical adaptability. Prospective T-34B pilots receive a 10-hour flight refresher training course at NAS Pensacola. It includes ground school on aircraft systems, maintenance and the civilian operating environment.

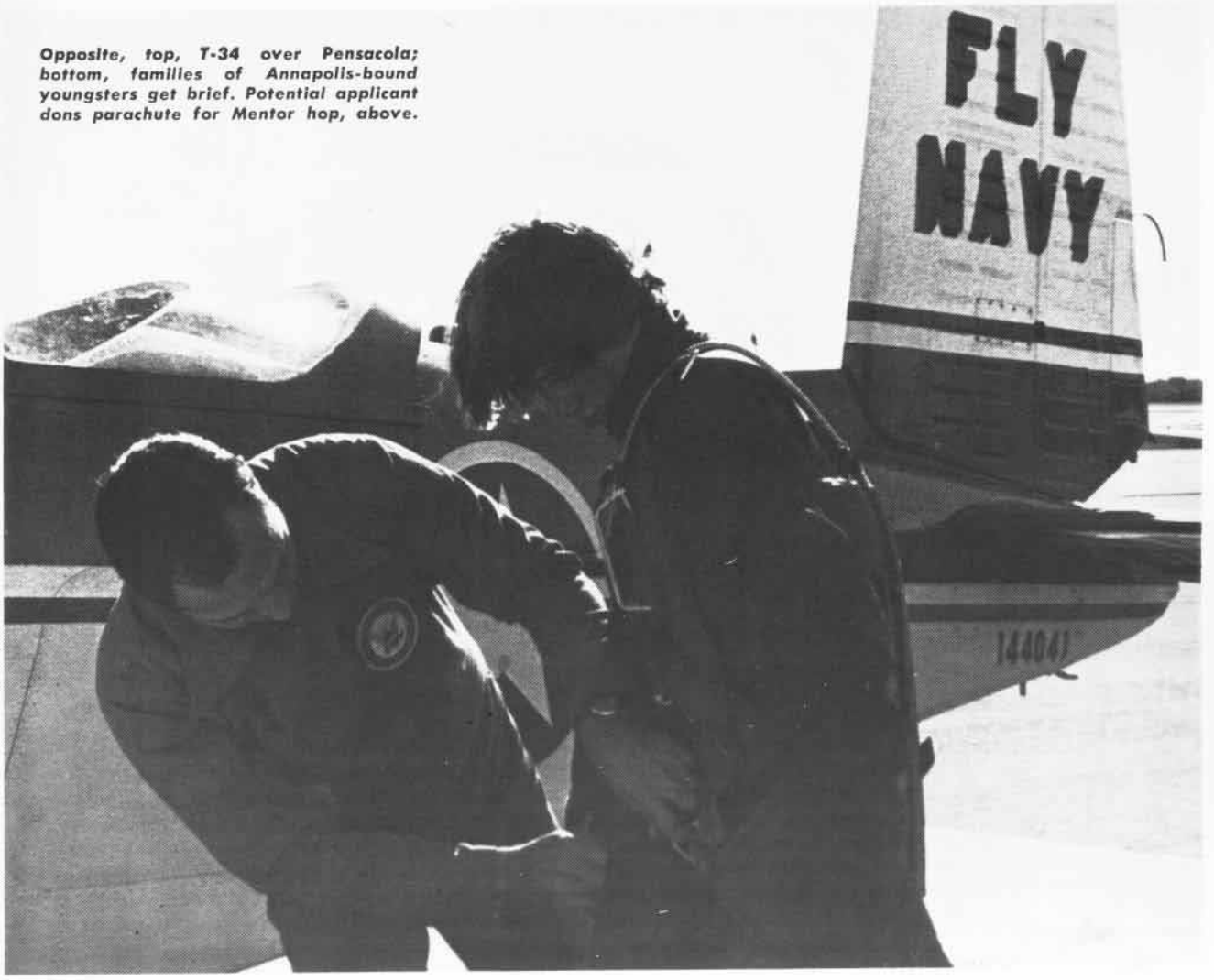

John Burlage

A lieutenant on his first shore tour is generally the senior T-34B pilot at the NRD. He runs the complete T-34B program, including flight operations, maintenance management, safety, Natops and administration. Since the aircraft are maintained by local civilian establishments, the officers assigned have a great deal of responsibility while gaining experience in the world of civil aviation.

Without a doubt, there are unique problems associated with operating a T-34B. Lt. Steve Motolenich, a March 1970 graduate of the AOC program, and Lt. Jim Kirkendall, a March 1968 graduate of the NROTC program at Auburn, tell about their experiences at NRD Miami.

"Problems, sure," Kirkendall says, "like when you need a quart of oil or

Opposite, top, T-34 over Pensacola; bottom, families of Annapolis-bound youngsters get brief. Potential applicant dons parachute for Mentor hop, above.



20 gallons of gas. Most of the time we don't have much difficulty with civilian airfields. We have our real problems on Navy installations."

Motolenich picks up. "It's tough to convince the fuel truck to come out to deliver that 20 gallons of gas. One guy told me recently he couldn't come for that amount, that the minimum was 100 gallons. So, I said, 'OK, we need 100 gallons.' The fuel truck arrived and at the 20-gallon mark the aircraft was full. I just sort of shrugged my shoulders," he says with a laugh.

The duo also takes a bit of kidding from people, particularly when they visit a naval air station. Kirkendall amplifies: "We get a lot of comments, particularly from the line crews, things like, 'Hey, did you get that for Christmas? Can I have one, too?' "

No matter what people say, Lieutenants Motolenich and Kirkendall are in complete agreement: It is a "fun" plane. And it is much like having your own aircraft. Most of the filing of flight plans is done by phone. "It is a tough challenge," says Motolenich, "because you work under two sets of regulations, Navy Natops and civilian FAR regs."

"But," says Kirkendall, "it provides you, as the T-34 officer, with unlimited flying opportunities. Some of the most fun is when we take applicants for a ride; it brings back that original thrill we all had when we first made a commitment to flying."

As to the T-34's mission in support of recruiting, Rear Admiral Robert B. McClinton, former Commander, Navy Recruiting Command, recently made these comments: "I feel very positive about the real values of the T-34B program — it's a winner — an important tool for conviction. The professionalism of the whole procedure [of the T-34 flights] stresses the professionalism of the Navy as a whole."

Over 100 131X DIFOPS billets are available in the Navy Recruiting Command at one of the 43 T-34B operating districts throughout CONUS for officers who have established records of outstanding performance during fleet tours. Normal tours are two to three years. The duty preference card is the principal means of requesting assignment to the Recruiting Command, but an informal chat with your detailer can also provide current information on these billets.

Recruiting

Recruiters review records, far left. Student gets final brief before T-34 ride, left. Below, recruiter answers questions about the Navy.

Indiana Style . .

Story and Photos by JOC John D. Burlage

(T-34B aviators are not the only Naval Aviators or Group IX personnel assigned to recruiting. JOC John Burlage, of the Navy Recruiting District, Indianapolis public affairs office and former NANews staffer, gives us a full report on the Naval Aviation community in and around Indianapolis.)

Meet a Naval Aviation detachment in Indiana: Three Naval Aviators and 10 Group IX (aviation) enlisted men assigned to the Navy Recruiting District, Indianapolis.

The Indianapolis group is composed of Commander (captain selectee) James A. Barnes, the district's commanding officer, Lieutenants Jon F. Silverberg and Peter C. King, AMCS George F. Waters, Jr., AEC Richard A. White, ADJC Leonard B. Hall, AT1 James M. Davidson, ADJ2 Keith N. Adams, PR2 John S. Arthur, AMS2 Russell L. Fleehearty, AO2 Michael A. Strange, ABE2 Eurious C. White and AT2 James E. White.

They work from district headquarters in Indianapolis or from recruiting stations in Indianapolis, Danville, Kokomo and Terre Haute.

Recruiting is a tough job which makes its own unique demands on those assigned to it. It's purely production-oriented: You get people to join the Navy. It's quality-conscious: Doctors, math majors and high school graduates are prime targets. It's self-perpetuating: Goals met this month will be replaced by more goals for next month. It's self-sustaining: The recruiter who makes his goals can look forward to a good tour; if he doesn't, he can be in big trouble. It's self-rewarding: Although the command rewards achievers, most individuals who succeed in the business do so because they realize the value of recruiting.

There are several comments which can be made about the effect a recruiting assignment has on a Navy man, aviator or not. Cdr. Barnes, a 20-year veteran of patrol squadron assignments and a tour aboard an aircraft carrier, is undoubtedly closest to the nitty-gritty of enlisted recruiting.

He says, speaking of the enlisted man or woman, "A tour in recruiting is like nothing he or she will ever have anywhere else. That's because it may represent the purest form of independent duty. It's possible for an individual in recruiting to discover he's the only Navy in the whole town. And even if he isn't, the nature of the game forces him to operate independently most of the time.

"We do have people reporting aboard who find this a very difficult adjustment to make — because they don't have the chief standing by to tell them what to do — and yet they

survive. Those who can make the change find recruiting a rewarding tour."

Russ Fleehearty echoes his C.O.'s sentiments. His tours, until he became a recruiter in August 1975, were in the West Coast fighter squadron community. He has made three West-Pac deployments, one of them in the Japan-based *Midway*.

"I had a pretty tough time getting started," he admits. "I found I was relying on the chief to make decisions I should make, and I had to learn to get away from that. When I started thinking more independently, the chief was able to give me more freedom in the field — and it's on those itinerary runs that you make or break it.

"I'm finding I enjoy recruiting more and more all the time. I won't deny I miss working around aircraft and that it's hard to adapt from hustling around the flight deck to flying a desk part of the time, but I get the same feeling of success from enlisting a good man or woman that I used to get when I'd see one of my aircraft launched."

Itinerary runs represent one way a recruiter assigned to a two or three man station — as is Fleehearty — still maintains an independent operation. Responsible for specific areas in his station's territory, he must maintain rapport with civilian "centers of influence" — from a town barber to a high school counselor — while he restocks literature racks and, most importantly, makes those vital contacts with recruitable young people.

There is a story that back in the

Recruiters use air shows to enhance Navy image. Top, British Vulcan wings by at Dayton Air Fair. Above, recruiters Jim Davidson, Mike Strage and Dick White have "quarterdecks" in their office.

good old BZD (before zero draft) days, a recruiter could unlock the door to his office in the morning, turn to the line of young persons already waiting and announce: "All right, I'll take the first five in line. The rest of you come back tomorrow."

Those days, if they ever really existed, are gone. Today's recruiter must take his skill and training in selling the Navy to his prospects. If there is one single place he's most apt to find the kind of quality young person he seeks, it's in the high school junior and senior classes.

Working with counselors and teachers to obtain referrals is one way he gets the names of those he might be able to get to Go Navy. But his involvement with the school scene doesn't end there. It's common for recruiters to man display tables in school cafeterias during lunch hours and even more common for recruiters to participate in such evolutions as "career days."

The return to school can be a shock to some recruiters, especially if they've been away from the academic atmosphere more than, say, 10 years. But they adapt.

"My first school talk was before about 650 students sitting in an auditorium and I was scared to death," is the comment of Jim Davidson, another patrol squadron crewman whose last tour before recruiting was at Naval Air Station, Cubi Point in the Philippines. "The talk itself didn't bother me, because I'd been an instructor. Answering questions was hard, because I was new to recruiting.

"But I've since found that most students are receptive to what you're telling them, if they feel you're telling it straight. Now I look forward to going into a school."

An enlisted recruiter spends a lot of time on campus, but officer recruiters spend more. Campus recruiting is their bread and butter.

Lt. Silverberg runs a campus visitation schedule, with Lt. King and three surface officers, which almost equals the time spent in the halls of learning by the students themselves. Flying the T-34B to nearby airports where they use it to give students a taste of Naval Aviation during indoctrination flights, they average about two weeks each month at such Indiana educational institutions as Purdue, Notre Dame, Indiana University, DePauw, Tri-State College, Ball State and the Rose-Hulman Institute of Technology.

The two lieutenants represent two ways of becoming a Navy officer and two types of Navy flying. Silverberg got into the Navy by way of the University of Minnesota's NROTC program. The majority of his 2,000 flight hours were accumulated in the cockpit of the A-7 *Corsair II* — many in Southeast Asia action. King's 1,300 hours in the air have been in the C-130 *Hercules*, working his way up to aircraft commander while he flew both Arctic and Antarctic support missions. He is a Naval Academy graduate.

Lt. Silverberg has an appropriate — if short — description of a Naval Aviator's duties in a recruiting district:

"Pete King and I are Navy Air in Indiana."

What was intended to be a demonstration of the wry wit for which Silverberg is noted actually pretty well pegs both him and King. The T-34B may not be the Navy's most impressive aircraft but, in Indiana, the fact that they fly it marks the two lieutenants as all-knowing representatives of their side of the Navy. They may enjoy the notoriety, but it causes them some problems.

"The civilian community around here thinks of the T-34 as a high-performance airplane," Silverberg says. "Civilians find it pretty impressive.

"Because we fly a Navy airplane and because we wear the wings, civilians think we have all the answers to their questions about Naval Aviation — and, surprisingly, they have plenty of questions. If there's an aircraft accident, like the F-14 loss off *John F. Kennedy* last year, people expect us to be able to tell them all about it. It's hard to explain that we don't know much more about a situation than they do."

Their image in Indiana aside, Silverberg and King are unabashed in their efforts to get themselves and the Navy's officer program known. Campus visits with the T-34 are the most visible way to do the job, but there's more to it.

"We used to practice what's been called the 'fruit stand approach.' We'd set up somewhere on campus and wait for people to come up to us," Silverberg says, "but we don't like to work that way. We find it much more effective to reach people individually.

"To do that, we need names — and we get them from many sources. Once we have a name, we send a letter of introduction, describing ourselves and what we have to offer. Then we follow up with a phone call or a personal contact."

Cdr. James Barnes, above, is C.O. of Indianapolis NRD. Lt. Don Silverberg gives passenger a look at Lafayette, Ind.

King further pinpoints the approach needed to find and recruit potential Navy officers:

"One major difference between officer and enlisted recruiting is the use of name lists. It used to be that we'd send everyone on the list a letter.

"That doesn't work anymore. Now we must concern ourselves with a person's academic background, especially his math qualifications. He may be headed for his degree, but if his courses haven't been the right ones there's no sense in wasting his or our time. We're not going to be able to help him."

The approach to the academic background is perhaps the sharpest split between officer and enlisted recruiting, for a very simple reason: The further training most officer applicants receive after they've been accepted by the Navy is geared very specifically toward a definite end product — such as a Naval Aviator. It's often easier to use motivation and a good general high school background to place future enlisted persons in most training programs short of such specialties as advanced electronics or nuclear power.

One of the most experienced recruiters in the Indianapolis district, when it comes to making the most of an applicant's motivation and background, is Len Hoel. He not only works with applicants to help them get off to the right start in the Navy, but he also assists them in understanding the importance of the tests they must pass before they can get in the Navy.

Lt. Silverberg uses car hood to check papers for man he's about to enlist on Purdue campus. Below, he gives the word to prospects at an air show. Opposite, recruiting T-34 over Florida coast.

Before he became a recruiter in January 1972, Hoel's aviation background was garnered by duty in VP and ASW squadrons and on an aircraft carrier. At the time he made the following comments, he was scheduled to return to sea — and aviation duty.

"Strangely, most potential recruits I've talked with are very worried about their ability to pass the mental examination they must take — more than they are about the physical exam or recruit training.

"Part of the methods we use to familiarize an applicant with what he can expect when he takes the exam is an enlistment screening test, but many applicants still need some 'shoring up' before they can take the real thing. I think it's an important part of my job as a recruiter to help an applicant get in the best possible frame of mind for the test."

Len personally feels his aviation background didn't do much to prepare him for what he has faced as a recruiter, except that his experience enables him to speak with authority about Navy life. Even so, being an ADJ does tend to color his approach to an individual he thinks might be geared for an aviation rating.

"I'll admit I like to discuss aviation with applicants, because of my personal background. I believe it's the best duty in the Navy — the work, the travel, the chance to get into a variety of situations — and I've been accused of enlisting more airedales than any other recruiter in the district.

"That's not really true, though. Nobody has to worry about being railroaded into any kind of duty he isn't geared to. We have classifiers here to discuss specific programs based on the applicant's capabilities and desires. My job is to sell the Navy, and that's what I love to do."

Len's attitude toward recruiting seems, at the outset, to conflict with a devotion toward aviation, but he explains it this way:

"I think this recruiting duty is fantastic. I'd just about extend for another nine years here if I could. But I also like to work on jet engines, to be around aircraft. I want to return to that kind of duty when my tour here is up. Even so, I'll jump at the chance to become a recruiter again when the time comes for me to return to shore duty."

Bill Wedertz

Intruders in the Desert

Story and Photos by PH1 Randy Emmons

It was dark when the maintenance crew of Attack Squadron 128 landed at NAS Fallon, Nev., an hour and a half after leaving NAS Whidbey Island, Wash., where the readiness training squadron is permanently assigned. The detachment was on a two-week deployment to support the squadron's A-6E *Intruders* which had flown down earlier.

After checking in, part of the crew headed for the hangar to take care of any problems and square away the work spaces. They joked and laughed and blew in their hands as they ran in and out of

the desert cold, filling the shelves (left).

On the flight line, flickering lights pinpointed the men walking down the row of aircraft, making sure the A-6s were ready for the morning flight.

When the sun rose the next day, maintenance personnel were already on the line (above), preparing the planes for bombing missions. First launch was at 0730.

Other personnel were briefing, tending to the *Intruders* and loading the 25-pound practice bombs (left to right, below).

Only daylight bombing runs were made the first two days to familiarize the pilots and bombardier navigators with the range. After that, training included night sorties.

The routine was the same over and over: load bombs, brief, drop bombs, work off gripes, refuel and start again as the planes were turned around for succeeding hops (right and below).

With the A-6s parked on the line, the flight crews headed for the transient spaces and debrief (opposite page). The days were long for the men and women of VA-128.

The unit trains flight crews and maintenance personnel for Attack Squadrons 52, 95, 115, 145, 165 and 196. Every three months, the squadron sends a detachment to Fallon or El Centro to train A-6E aircrews in visual dive bombing and other tactics.

Commander V. F. Westfall leads the *Golden Intruders.*

PBM

Never achieving the popularity of the PBY *Catalina* (*NANews*, June 1972), Martin's PBM *Mariner* offered considerably greater military capability at the expense of increased complexity. Unlike the PBY, which had relatively few problems in service, the PBM suffered from a number of problems, many of them related to the engine. These were finally overcome when the more powerful P&W R-2800s replaced the Wright R-2600s in 1944.

The Navy contracted for the XPBM-1 in June 1937. Prior to this time, Martin had flown a quarter scale, piloted "flying model," the Martin 162A, to explore hydrodynamic and aerodynamic characteristics. The XPBM-1 first flew early in 1939 but, in spite of the testing with the 162A, experienced problems both on the water and in flight. Gull wings, twin tails and retractable tip floats were its most distinguishing features. Hull redesign in 1940 and addition of dihedral to the horizontal tail, resulting in the vertical surfaces being canted inward, were major changes introduced to correct the problems in the XPBM-1. They were incorporated in the 20 PBM-1s which followed. The first of the 1s to enter the fleet was assigned to VP-55 in September 1940.

Along with the PBM-1s, one XPBM-2 was ordered—modified to be a catapult-launched long-range patrol seaplane. While tests were satisfactory, the concept was not pursued.

The next service aircraft were the 3 series, delivered from 1942 through mid-1944. Initially delivered as PBM-3s, they featured improved armament and engines, and could be easily recognized by the fixed wing-tip floats replacing the retractable floats of the 1s. Many of the early 3 series were converted to unarmed 3R transports, while 3C patrol planes went to fleet squadrons, followed by stripped 3S ASW versions and, finally, 3Ds with improved R-2600 engines. Radar had been added in a large radome behind the cabin, starting with the 3Cs. Improved versions of radar were used as they became available.

With the R-2800 engine, the subsequent PBM-5 series was destined for service long after WW II. Initial 5s were followed by 5Es with improved radar, and in the postwar period a limited number of 5Gs were delivered with a new radar in a teardrop radome. A prototype amphibian version of the 5 was proposed in April 1944, but was not flown until December 1945. Thirty-six were produced before production stopped in 1949. Up to that time, 1,366 *Mariners* had been built.

Improvements in the 5 series led to ASW PBM-5S conversions starting late in 1949, while the 5As were converted to unarmed transports. Both models served worldwide well into the Fifties, the 5Ss being supplanted by 5S2s with updated equipment, before the last fleet squadron, VP-50, relinquished its for P5M *Marlins* in June 1956. Individual *Mariners* continued in Navy service to meet special needs for a few more years, the last one flying being a hydro-ski test aircraft. *Mariners* were also transferred and served with the Coast Guard and several foreign countries.

Mariner

PBM-1

-3C

XPBM-1

-3

PBM-5E

-5A

PBM-5

Span		118'
Length	1	77'2"
	3, 5	79'10"
Height	1, 3, 5	27'6"
	5A	29'
Power plant		
1	Wright R-2600-6	1,600 hp
3, 3S	Wright R-2600-12	1,700 hp
3D	Wright R-2600-22	1,900 hp
5	P&W R-2800-22/34	2,100 hp
5A	P&W R-2800-34	2,100 hp
Max speed	1	205 mph
	3S	209 mph
	3D	202 mph
	5	238 mph
	5A	221 mph
Service ceiling	1	19,500'
	3S	17,600'
	3D	20,800'
	5	21,000'
	5A	20,100'
Range	1	4,050 miles
	3S	3,530 miles
	3D	3,000 miles
	5	2,800 miles
	5A	2,180 miles
Crew	1 and 3S	7
	3D, 5, 5A	9

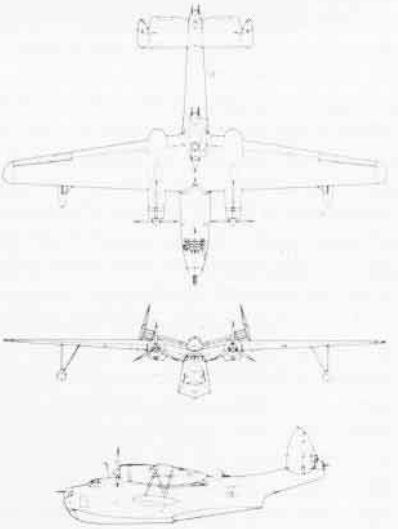
Armament

1 five .50 and one .30 machine guns, up to six 1,000-lb. bombs and two torpedoes

3S four .50 machine guns, up to eight 1,600-lb. bombs and 2 torpedoes

3D, 5 eight .50 machine guns, up to eight 1,600-lb. bombs and two torpeodoes

5A six .50 machine guns, up to eight 1,000-lb. bombs



Osborn

Robert Osborn has been designated an Honorary Naval Aviator, the 12th individual to receive the accolade. Vice Admiral Frederick C. Turner, DCNO(Air Warfare), made the presentation during a Naval Aviators' luncheon held at Fort Myer, Va., on January 21. Nearly 200 people attended the affair. Five of the 10 former Gramps "writers," whose prose has accompanied Mr. Osborn's illustrations, were also on hand.

Mr. Osborn draws Grampaw Pettibone, the central character in an aviation safety feature which has appeared in Naval Aviation News since 1943. An eminent artist and satirist, Mr. Osborn's works have appeared in many leading publications.

"Dilbert the Pilot" and "Spoiler the Mechanic" are also Osborn creations. They first appeared on training posters during World War II. The artist completed more than 1,000 such illustrations which were displayed in ready rooms, aboard ships and in air station hangars.

Mr. Osborn made the following remarks upon accepting his Wings of Gold.

It, of course, gives one great pleasure to be here and to receive this exceptional honor.

You can be sure that I am deeply touched that you wanted to give it to me . . . that you thought that I was worthy of it.

I am grateful and I thank you for it.

You must understand that for me this has been a *long* (34 years!) and *fruitful* relationship with a dedicated organization. I want you all to know that I have been pleased and proud to be connected with Naval Aviation.

I don't say this to be *polite* — your branch has always seemed to me the most exacting, the most elite, and I know that you have been endlessly concerned with excellence. Excellence of personnel, of their various abilities and in the equipment they were called upon to maintain and use.

The submariners would probably feel, justifiably, that their branch was equally dedicated to excellence. I can't say. My only experience with them was out of New London, and 200 feet down we hit something. The whole boat shuddered and the Captain, no less, screamed, "What was that?" We never knew, but I was glad to get to shore and fresh air.

To tell a bit about what it was like starting out in the Naval Reserve. I had seen Mussolini in Italy—a ludicrous bombast, and also had seen and heard Hitler. I can asure you that *he* was frightening. In 1940, the Royal Canadian Air Force turned me down or at least said that I could be a "bat boy" for some young pilot, and they suggested that it would be more helpful if tomatoes, for their liquids and vitamins, were raised and sent to beset London.

So, back in Salisbury, Conn., the local women and men raised and canned 14 tons of tomatoes by hand and sent them off and they didn't get sunk crossing the Atlantic. Then the Japanese attacked. Two days later I tried to enlist as a seaman; I didn't know you could be an officer. The Navy shunted me from New York to New Haven, to Poughkeepsie and even to our local country post office. And then an ex-WW II Naval Aviator, one Bill Agar, told me to go to BuAer. And right off the bat, things started happening.

A bright lieutenant commander sent me to Captain Louis de Florez in Special Devices and to Commander Artie Doyle. Both seemed to see possibilities and Artie started papers through New York at once. One month later I was in Washington, a lieutenant with a wonderful left-handed salute that would flummux any regular Navy man I encountered. Two hours after I reported for duty, Admiral [Ernest] King phoned down to ask Artie Doyle if he had an artist who could color a map. And Artie said, "Why certainly, sir, we have an artist who can color maps." And I was dispatched two flights up, given a box of kids' Crayolas and told to color each country a different color on a map 8 feet by 22 feet which covered one wall of King's office. Incidentally, when he looked at you with those cold and piercing eyes, he froze your giblets . . . so I worked diligently that first day thinking I might finish the job by the time the war was over.

When I got back down to Training, Artie said, "Just do it tomorrow and I'll find a young replacement." Incidentally, things were in such confusion in those early days that Arthur Radford and Artie Doyle, working in

To Robert Osborn

From The People of Naval Aviation

In recognition of your unprecedented service to Naval Aviation, you are hereby designated an Honorary Naval Aviator.

Your skilled pen and abiding interest in safety have given us three of Naval Aviation's most fascinating characters -- Dilbert the Pilot, Spoiler the Mechanic and the Master Sage himself, Grampaw Pettibone.

We laugh at them.

We learn from them.

Naval Aviation is a safer profession because of them and, most importantly, because of you.

On behalf of all of us in the flying Navy, past, present and future, I salute you!

VAdm. Frederick C. Turner, USN
Deputy Chief of Naval Operations
(Air Warfare)

January 21, 1977

Honorary Naval Aviator

VAdm. Turner presents Gold Wings plaque to Osborn. VAdm. F. S. Petersen, Commander, Naval Air Systems Command, is at artist's left.

a small room, had old wooden desks with the two lower drawers extended and they sat on boards placed across the drawers. What was great was that there was plenty of humor and joking even when things looked mighty bleak after that heinous attack on Pearl Harbor. And Artie Doyle was one of the funniest, most wonderful, imaginative Irishmen you could meet. It was he who decided I should be run through a very quick simulated flight training program with various able teachers doing the instruction *and* flying.

I fly as poorly as I drive. I would never have made it solo to the end of any runway.

It was Artie Doyle who started "Dilbert" on his way. Without any hesitation, or checking, or red tape, we two, sitting on a desk top, decided what was needed, what he'd be like. In 15 minutes we cooked him up and Artie named him "Dilbert Groundloop."

To me, one of the truly remarkable things about Naval Aviation has always been its willingness to experiment, to decide on a plan and get it going, to create as it went along and, once underway, to not interfere or stultify the effort. This certainly is true as far as I was concerned.

Compared to private *business* — and I've seen quite a lot of it — you men are far superior in your ingenuity and imagination. You show a truly creative, free-wheeling, lively attitude toward the work in hand or projected.

And I suspect that the difference between you and the business men is that you are not working to make *money* for *yourselves* but for a common and worthy goal which is beyond you as individuals. And I can tell you that it shows at every turn

Osborn

and in every consideration. And you don't look timid or cautious. You seem much more like my idea of what American *enterprise* is.

And now to Grampaw Pettibone. Commander Seth Warner invented him. Pure and simple. It was Seth's idea, full blown from the very start. He was in charge of assessment of accidents. He was the one person in all Naval Aviation assigned to it at that time, 1943.

He was a quiet, very modest Naval Aviator who had started in Curtiss hydroplanes. He was tall, lean and had a quiet humor.

When he proposed this ancient pilot as a teacher, I, dumbly, didn't think it would work. But we started and you can see what happened.

There have been 10 Gramps writers so far and a surprising number have flown in for this gathering. They have been an extraordinary group to work with. Each man was a very interesting individual and all were true professionals. And what was marvelous was that the Navy, probably because it is elite, had such knowledgeable aviators who could *write* as well as they could fly.

Ex-Gramps writers on board for the occasion were, left to right, Don Maunder, No. 9, Nick Pacalo, No. 10, Warren Johnston, No. 5, Ollie Ortman, No. 6, Mr. Osborn, and Andy Bright, No. 2. Also pictured is Captain Mark Perrault, CNO Aviation Safety Coordinator.

Before I end, I would like to speak of two remarkable women who certainly made strong contributions. Joy Bright Hancock in those early dark days was a sprightly help to all of us in Training Literature. And then there was rare Izetta Winter Robb. *She* ought to be made an Honorary Naval Aviator! For all the effort, the accomplishments and the contributions to the common purpose *that* modest and decent soul has made.

I could speak of many more contributors from all the helpful, sharp Chiefs to Edward Steichen, that great photographer (whom the Army turned down, even though he had been instrumental in developing their aerial photography in WW I). You can see what I mean about the Navy being the best. It took Steichen in as soon as he volunteered! I was lucky enough to have a desk next to him throughout the war.

And Min Miller, who was regular Navy, shepherded all of us totally irregular writers and artists very well and encouraged us to do better.

Finally, what so many of you have put in is a serious, intelligent and endless effort to decrease, and in some cases *stop*, the needless destruction of men, planes, and all manner of equipment.

As one looks at the present casualty figures of Navy men and Navy planes, one can feel that an *honest* job is being done, and an *honest* effort is being made by all of you.

Thank you.

GRAMPS #10

Commander Nick Pacalo was the Grampaw Pettibone writer from July 1971 to January 1977. This was a volunteer task performed in addition to his regular responsibilities in the Aviation Safety Coordinator's office of DCNO(Air Warfare). He is a graduate of Aviation Safety Officer's School and is nearing completion of an MS in Safety Management from the University of Southern California. He has over 4,500 hours in VR/VP/VS aircraft. Normally, the monthly feature is written on weekends or after normal working hours. It has been welcome work, however. His joint efforts with Robert Osborn, who has drawn Gramps since the old sage's inception in 1943, have been rewarding. *Naval Aviation News* asked Nick about his experiences as Gramps #10.

What are your feelings about Robert Osborn?

He's a genius with a brush. I've been in awe of his skills from the start of our "partnership." It's been most gratifying to have shared the *Gramps* podium with him these past five and a half years.

Mr. Osborn has an uncanny ability to take a story of any length and reduce it into a single, lucid drawing. He amazes me.

What has the Gramps experience meant to you?

It's been the greatest in my military career, a zenith, so to speak. I can't imagine any assignment topping it. Anyone who writes Gramps has a wonderful opportunity to contribute

to improving aviation safety through object lessons.

It's satisfying to know that the overall aviation accident rate has been substantially reduced in the past decade or so and that you may have played a role, minor to be sure, in achieving the reduction.

There has also been reduction in those types of mishaps caused by blatant disregard of Natops and established flying procedures. Those in leadership positions have taken a hard line against flat-hatters, for example. This helps greatly.

How difficult is it to write Gramps?

When I started I'd spend 10 to 12 hours per story. At the end, I could do one in one and a half hours. The most difficult part is editing down to only the essential details of an accident report.

How did you select one mishap over another for publication?

I tried to pick those which would provide the best object lesson for the reader — ones he could learn from. Secondary, choices were based on their value as "good reading."

Has Gramps been criticized often?

I've had a few calls and letters. Some say we've been too harsh. Others assert we told the story incorrectly. For the most part, the column is well received. We have no intention of singling out a particular individual and holding him up to ridicule. Our only goal is to describe mishaps and what caused them in a way that might help all of us in the flying community prevent them from reoccurring.

I once wrote that a flyer ejected from his plane and landed on the ground without incident. Shortly after the magazine was on the streets, that flyer called me. "I take exception," he said. "It may seem like ejecting and landing on the ground was without incident to you. I'd say punching out into the wild blue, even if everything works as advertised, is full of incidents!"

Would you describe your relationship with Mr. Osborn?

We never met face to face until the ceremony in January when he was designated an Honorary Naval Aviator. We corresponded often through the years, though. We never had an argument, debate, misunderstanding, conflict: it was strictly a placid, easy-going relationship from the outset. All smiles and contentment.

What advice do you have for Gramps #11?

It's important to sympathize with the flyers involved in a mishap and to give credit where it's due. Guard against becoming too callous, even if you see mistakes repeated time after time. Remember that the bottom line is: There are no new accidents, no new casual factors. Human error prevails, be it the pilot in the cockpit who skips the checklist, the GCA or tower controller who loses concentration at the wrong time, the maintenance type who, in a rush, forgets to follow an MRC card, or an engineer at the manufacturing plant who had a disagreement with his supervisor and makes a subsequent design error.

Seek advice when necessary. I'm primarily a VR/VP type. If a tactical air mishap was the subject and questions arose, I sought out one of the many professionals in the DCNO (Air Warfare) offices.

Anything else?

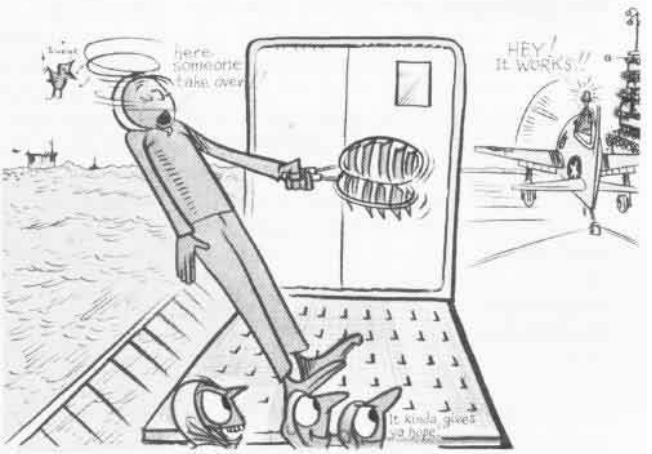
A Gramps should be a Naval Aviator or Naval Flight Officer with extensive flying experience. He must be able to write clearly and accurately. Imagination helps. The more dramatically you can make your point, the better. Titles are important. A catchy title lures the reader directly into the story. Finally, an aviation safety background is desired.

Eleven others have been designated Honorary Naval Aviators by DCNO(Air Warfare) in the past. Their names and a brief summary of why they were selected follows:

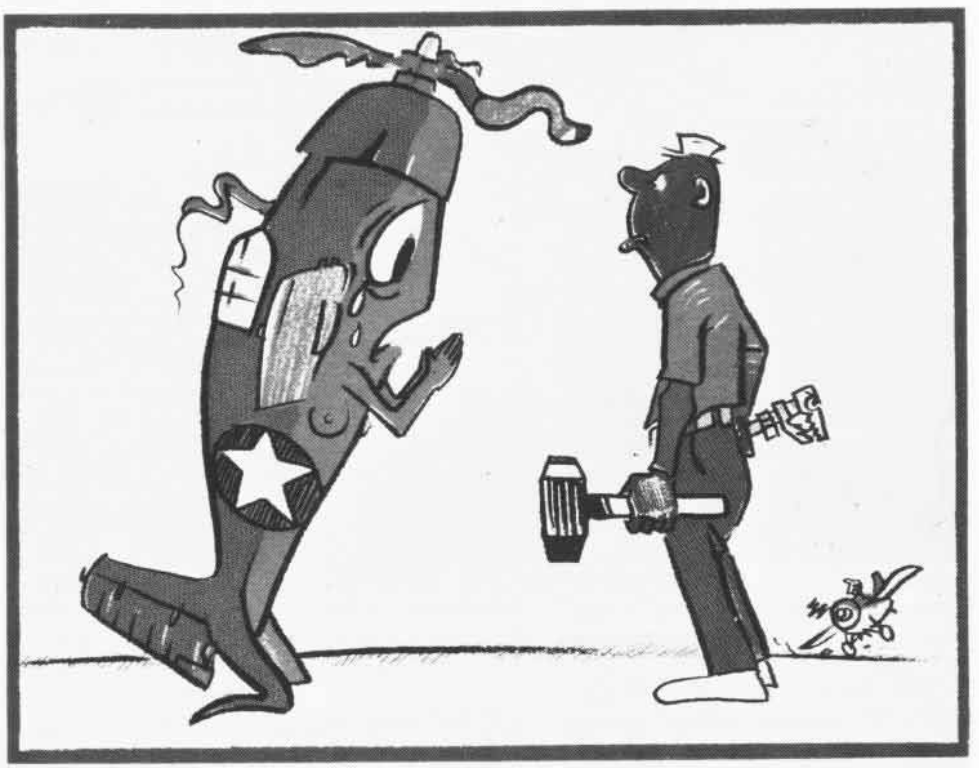
1. Capt. Richard (Dick) Schram	"The Flying Professor," a stunt pilot. For outstanding contributions to aviation.
2. Sgt. Clifford Iknokinok and 3. Sgt. Willis Walunga	Alaskan National Guard. For their gallant rescue of 11 Navy men, shot down by Soviet MiGs over international waters, Bering Strait, Alaska.
4. Dr. H. J. Schaefer and 5. Dr. Dietrich E. Beischer	Scientists. For outstanding contributions to aerospace research.
6. Mr. Trubee Davison	Served as Assistant Secretary of War for Air for six years in late 20s to early 30s. For 50 years of outstanding contributions to aviation. Organized First Yale Unit, 1916.
7. Jackie Cooper	Actor. For his activities in the Navy's public affairs program and for recruiting and promoting efforts since WW II.
8. VAdm. Hyman C. Rickover	For vigorous support of Naval Aviation and for achieving great advancements in propulsion of aircraft carriers.
9. Mr. John Warner	Former Secretary of the Navy. For his outstanding support of Naval Aviation.
10. Mr. R. G. Smith	McDonnell Douglas Corp. artist and designer. For outstanding contributions to Naval Aviation art through his paintings and illustrations.
11. Mr. Jay R. Beasley	Lockheed Aircraft pilot and instructor. Cited for his contributions to Naval Aviation as "Mr. P-3 Orion."

Osborn Sampler

Instead of FACING forward when he pulls the chocks Spoiler makes both ends meet.

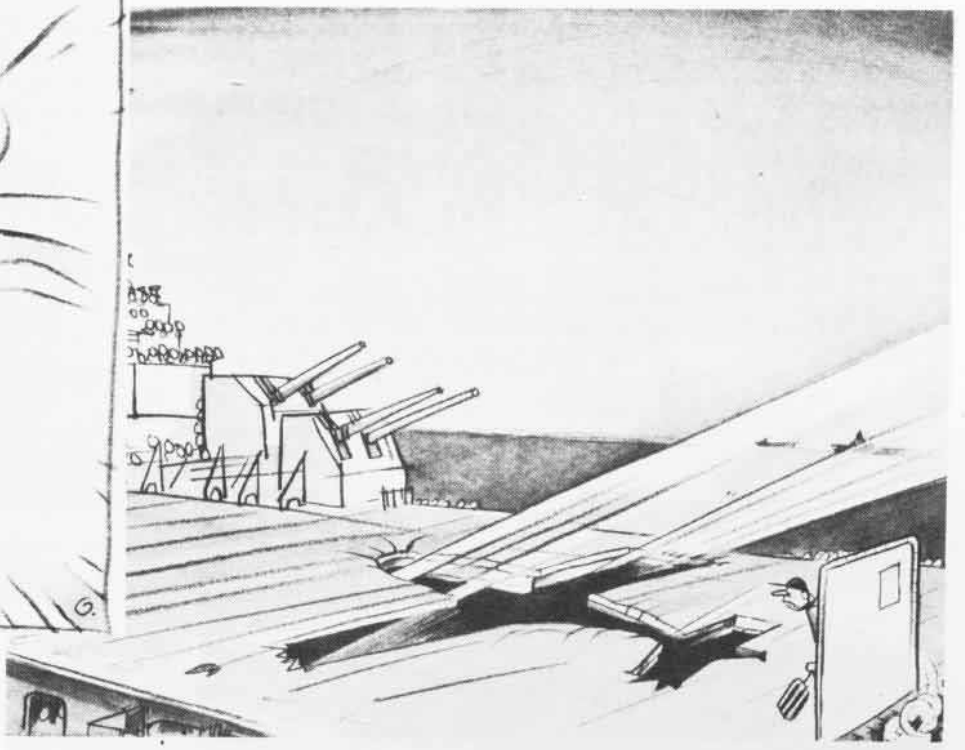


The fainting! The yells of joy! The crew's pride when Dilbert begins to apply the tips the L.S.O. gives him about landings!

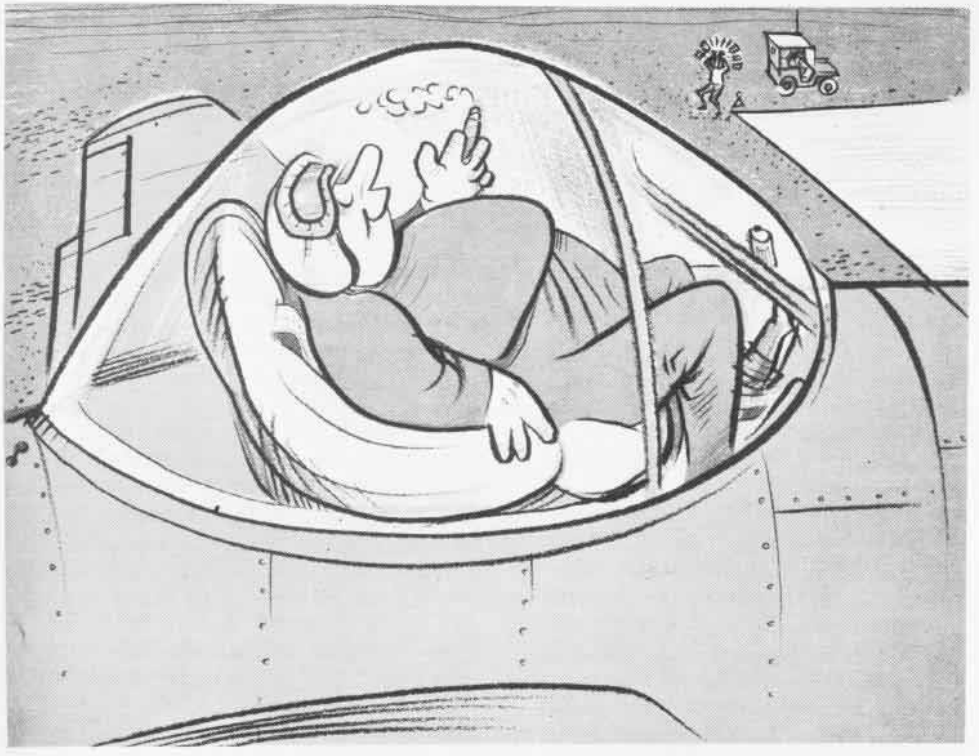


Spoiler was hell on planes!

A close up of Gramps.



Dil really dives for the deck!



More accidents happen landing than any other place — but Dilbert still comes in fat, dumb and happy!

PEOPLE PLANES AND PLACES

The TARs and SARs of HS-75 in their SH-3s recently flew mercy missions along the New Jersey shore in an effort to save the lives of thousands of ducks and geese. The timid fowl were freezing and starving to death because they refused to come near the shore where Samaritans placed feed for them. In all, five missions were flown and seven tons of cracked corn were air dropped. The corn was donated by concerned shore area citizens.

The Navy's transition from E-2B to E-2C *Hawkeyes* will reach another milestone this spring with the first WestPac deployment of an E-2C squadron, VAW-126. The squadron, part of CAEWW-12 homeported in Norfolk, will deploy in *Constellation*. Another Norfolk-based E-2C squadron, VAW-122 will deploy in the summer of 1978.

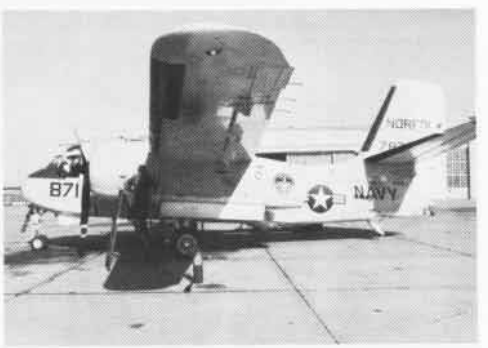
The Navy is thinking about giving every pilot a backseat driver. The idea, known as the ground proximity warning system, was recently evaluated at NATC Patuxent River. The warning of impending disaster wouldn't come from a soft, feminine voice such as the commercial airlines use, but from a synthesized voice in a small computer inside the airplane. It would sound a "whoop-whoop, pull up, pull up" and repeat it with more volume as a situation worsens.

It's not unusual for reservists to travel long distances to put in their required monthly drill time. Cdr. Jim Boling probably holds the record. He travels 6,400-plus miles, an 18½-hour one-way trip, to perform his reserve drills at NAS South Weymouth, Mass. Cdr. Boling is presently a pilot with Iran Air out of Tehran.

An Air Force HH-53C *Jolly Green Giant* from Kadena AFB, Okinawa, lands aboard *Vancouver* some 50 miles at sea. In a two-day evolution, 10 USAF pilots of the

33rd Aerospace Rescue and Recovery Service became ship-landing qualified when they made over 50 landings.

The last NAS Norfolk proficiency aircraft, an S-2 *Tracker*, was recently ferried by VRF-31 to Davis-Monthan AFB in Tucson, Ariz., for long-term storage. The Tucson base is known for its low humidi-



ty. Aircraft are stored there for safekeeping in the event their services are required again.

An NAS Whidbey Island-based CH-46 recently became the delivery room for twin girls. The helo was on a routine training mission when it was diverted to transport a patient, undergoing premature labor, from NAS Whidbey Island to Madigan Army Hospital at Fort Lewis, Wash. Poor weather conditions delayed the flight and the twins were delivered en route by the doctor and corpsman who accompanied the patient. At last report, all three were doing well.

Twelve Marine Corps AV-8A *Harriers*, deployed on *Roosevelt*, made a 5,000-mile trip recently aboard *Guam* to Kenya, where they put on a spectacular aerial demonstration over Nairobi. The VMF-231 jets, led by Lt. Col. John Tyler, were there at the invitation of the Kenyan government to highlight observance of Kenya's 13th year of independence. The *Harriers* then rejoined *Roosevelt*, on her 20th Med deployment.

VPs 1 and 17, Barbers Point, recently combined their efforts to restore the UHF communications capability of USS *Davidson* (FF-1045), which was able to receive but not transmit. When asked for help, Capt. H. Gray, ComPatWing-2, tasked the two squadrons with the air delivery of a radio. AO1 L. C. Barry and AO2 J. A. Behr, VP-1, constructed a container suitable for an airdrop. The radio parts were packed in styrofoam and a parachute was attached. Crew 4 of VP-17 was to deliver the package.

Arriving on station, the aircrew directed the ship to alter heading into the wind and reduce speed. Under the direction of Ltjg. C. Tvahur, the aircraft began a series of passes and dropped a smoke marker to approximate the proposed splash point. The package was dropped on the third and final pass. Forty minutes later, two-way communication with *Davidson* was reestablished and Crew 4 headed home for Barbers Point.

The Nueces County (California) bloodmobile rolled up to VT-31's hangar on its trimonthly visit. Squadron personnel and their dependents began lining up. Every ounce of blood donated is earmarked for 11-year-old Andy Matthews, a Corpus Christi youth afflicted with hemophilia since birth. A derivative of the blood he receives every three months keeps him the active boy that he is. The unique contribution has been going on for nearly three years.

Eight *Enterprise* crew members have graduated from what is believed to be first emergency technician course given afloat. The new EMTs completed a 70-hour course in how to deal with major medical situations, from cardiopulmonary arrest to simple dislocations. The concept behind the emergency medical technicians program is that proper medical care must be started at the scene of an accident to save lives. LCdr. Stephen N. Etheredge, ship's surgeon and instructor of the course, trained EMTs and paramedics in Seattle, Wash.

This afterburner view was photographed by AE1 Dennis Taklo of VFP-63

Det 3 as one of the Det's RF-8G *Crusaders* took off from NAS Miramar.

Point Mugu has been selected as the home base of newly commissioned HAL-5. Cdr. P. W. Womble is its first C.O. Plans call for 23 officers and 91 enlisted personnel to man the squadron. The only other Navy attack helicopter squadron is HAL-4 in Norfolk. HAL-5's mission is to provide close air support to units such as Special Warfare Group One, SEALS, UDT and Coastal Riverine Forces. HAL-5 is the third Naval Air Reserve Force squadron to be based at the Point Mugu complex. The others are VA-305 and VP-65.

The Marine Corps' oldest squadron, HAMS-11 celebrated its 55th anniversary in December. The unit is commanded by Lt. Col. D. G. Drewelow and has been home-based at El Toro since 1971.

Squadron honors and records: VT-26, Beeville, received a Meritorious Unit Commendation for its service in conducting jet pilot training from July 1, 1973, to December 31, 1975. During that time, the squadron completed more than 68,322 accident-free flight hours and 1,997 carrier arrested landings, and graduated 441 student Naval Aviators to advanced flight training.

The *Hukkers* of VS-28 have received their 14th consecutive award for accident-free flying, from September 1962 to September 1976.

VC-5 has been presented the ComNavAirPac Aviation Safety Award for FY 1976.

Three VA-56 pilots, flying the A-7A *Corsair II*, became triple centurions during one tour aboard *Midway*. They are LCdr. Will Trafton, Lt. Dick Seebald and Lt. John Wood.

Midway has been awarded the Navy Unit Commendation for performance during Operation *Frequent Wind*, the evacuation of South Vietnam in April 1975.

As they complete their seventh consecutive accident-free year with over 8,200 flight hours, the *Peacemakers* of RVAH-7 spell out their numerical accomplishment for an RA-5C *Vigilante* squadron: 7 for 7 in 77.

VA-37 has passed the 27,000th accident-free flight hour in the A-7.

Cdr. P. L. Lawrence, C.O. of VP-8, has passed the 5,000-flight-hour mark, without incident, while piloting 16 different aircraft.

VT-22 has completed more than 10,000 hours of accident-free flying.

Cdr. J. D. Taylor, CVW-3, has completed his 1,000th flight hour in the A-7.

LCdr. Ed Johnson of VS-22 has become an S-3A centurion aboard *Saratoga*.

The *Sidewinders* of VA-86 aboard *Nimitz* recently won both squadron and individual honors in the recent CVW-8 bombing derby.

The *Screaming Eagles* of VF-51 aboard

Roosevelt have passed 10,000 hours of accident-free flight operations.

Ltjg. G. R. Banta, MSC, has been named Navy Aerospace Physiologist of the Year.

Changes of Command:

VA-15: Cdr. Kelvin W. Huehn relieved Cdr. Gordy Evans.

VA-34: Cdr. Robert H. Byng relieved Cdr. Gary F. Wheatley.

VA-72: Cdr. Patrick M. Commons relieved Cdr. Robert F. Brennock.

VA-87: Cdr. W. J. Catlett relieved Cdr. John D. Rasmussen.

VA-155: Cdr. R. C. Kaup relieved Cdr. R. D. Miller.

VA-192: Cdr. Joseph D. Cole relieved Cdr. G. R. Goldenstein.

VF-14: Cdr. Francis J. Dougherty relieved Cdr. Carlton L. Lavinder, Jr.

VF-31: Cdr. James B. Best relieved Cdr. William L. Dwyer.

VP-40: Cdr. Thomas J. Leshko relieved Cdr. Ernest V. Haag.

VR-52: Capt. Byron E. Batthauer relieved Capt. Harry W. Boggs.

VT-2: Cdr. John K. Taylor relieved Cdr. Dwight E. Hahn.

RVAH-7: Cdr. David R. Sharp relieved Cdr. Robert E. Gasser.

HS-5: Cdr. Roger P. Murray relieved Cdr. David P. Fisher.

NAS Cecil Field: Capt. Harold N. Wellman relieved Capt. Paul T. Gillcrist.

NATC Patuxent River engineers have a problem. Because there aren't enough airplanes to provide one for each pet project, and hundreds are always under way, the projects are piggy-backed. This causes one aircraft to be involved in several missions during a single flight. When an airplane is placed in a down status, there's a wild scramble to juggle, overlap, stretch and bend all the projects assigned to that aircraft so they can fit into the schedules of other aircraft.

Some shops are working to alleviate this problem. One, the DC primary power lab, has whipped the problem entirely. The lab uses a jet engine simulator for test and evaluation of all aircraft — starting and power — generating systems. Thousands of man-hours and flight hours are saved annually by using the simulator rather than an aircraft or even an aircraft engine. And, since it's easier to abort a simulator start than an actual aircraft engine start, safety is enhanced.

Plane captain AMSAA Lamark Linthacum, VA-165, was credited with averting a possible disaster when he noted fuel leaking from the starboard engine door of a squadron A-6 *Intruder* after hot refueling at the fuel pits. His alertness made prompt corrective action possible.

While testing the YSH-3J LAMPS MK-III helicopter aboard *USS Mount Baker* recently, 140 miles east of Florida, the test team was requested to medevac a seriously ill ship's crewman to the nearest hospital for immediate surgery. LCdr. Bob Hanke of VX-1 and his crew, LCdr. Wright, NATC, AX3 Blevins, NADC, and HM3 Moore, ship's company, flew the patient to Patrick AFB, Fla., where a waiting ambulance rushed the patient to the AFB hospital. This quick action is credited with saving the man's life.

On a similar occasion, an A-4 crew from VC-8 in Puerto Rico flew to Homestead AFB, Fla., for vitally needed medicine not available on the island. LCdr. Bob Johnson and Ltjg. Larry Booth flew the 2,000-mile round trip in five hours.

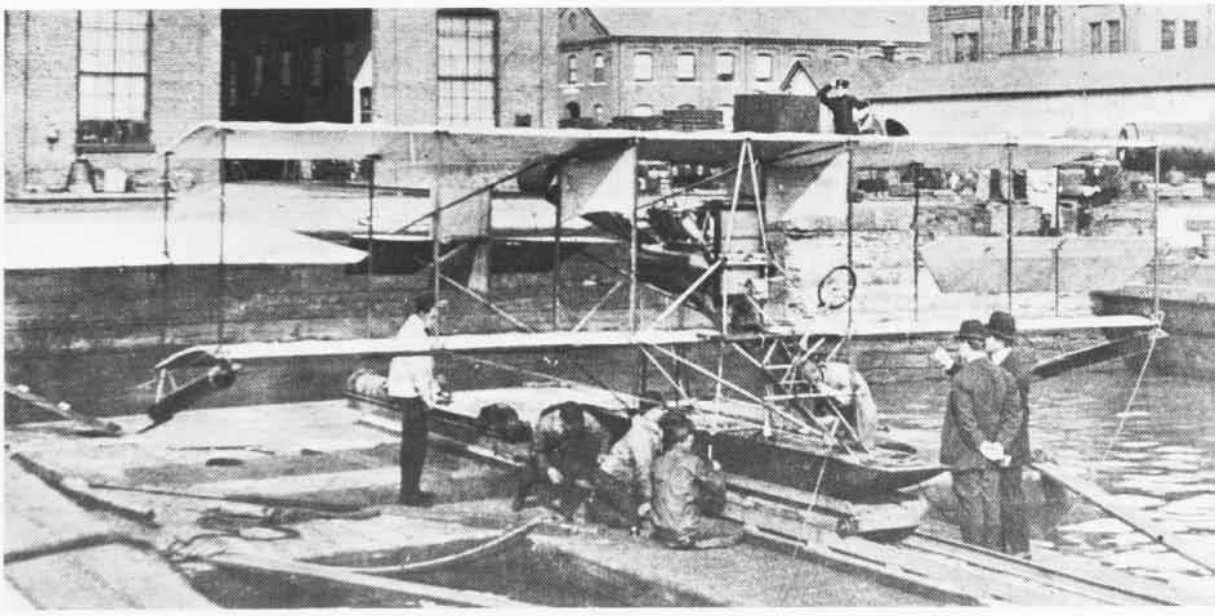
At Sea With The Carriers

Saratoga: Capt. J. S. Disher, ComFitWing-1, and LCdr. Speedy Seay, X.O., VF-101, NAS Oceana, were in the first F-14 to trap onboard, December 10. VF-101 was carqualling.

Roosevelt: The capabilities of V/STOL aircraft were highlighted in November when two *Harriers*, piloted by Captains

John R. Dempsey and John K. Lizzo of VMA-231, made their landing approach from *FDR*'s bow and landed facing the ship's stern.

Enterprise: Big E celebrated her 15th birthday last November. She has earned six Battle Es, made 10 deployments, sailed around the world and been refueled only twice. *Enterprise* paid a November visit to Hobart, Tasmania, whose people welcomed the ship and her crew and dubbed her Tasmania's fifth largest city.



DICK RICHARDSON

In April 1912, Holden C. Richardson was on temporary duty with the Navy's aviation unit at North Island, Calif. A young lieutenant, he was there at the behest of the Director of Naval Aeronautics, Captain W. I. Chambers, to study the questions surrounding the operations of aircraft from water.

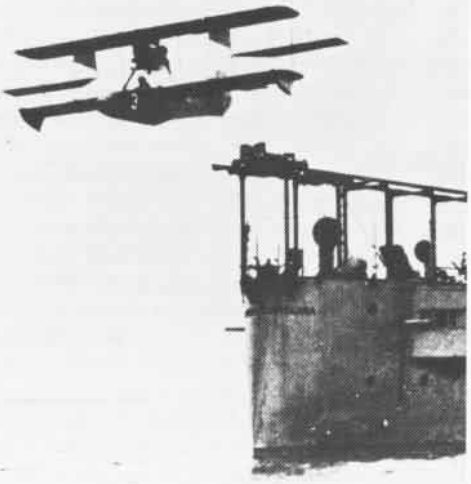
Richardson was fit for the task; he had an analytic mind and a keen understanding — for his day — of aerodynamic and hydrodynamic laws, and he was determined to see them applied in a systematic manner compatible with his engineering training and outlook. His approach was badly needed, but it often ran counter to the trial-and-error method so popular in those early years of aviation.

This conflict was sufficiently frequent and irritating to cause Richardson to comment on it in one of his letters to Chambers. "I talked the question of indicators over with Kearny," he wrote, "and got some interesting views of a practical flyer who scorns science." Apparently Kearny was an individual who believed a flyer who had to depend on an instrument to tell him how to fly had no business in an airplane. Richardson could find very little validity in this attitude and expressed his disdain by observing ". . . natural born flyers probably exist, about as much as natural born gunpointers, and real natural born flyers are not due for a generation or two."

These comments were typical of Richardson and his approach to aeronautics. He was an engineer and convinced that systematic test evaluation would bring vast benefits to man's efforts to fly. He was one of that handful of early aviators who presided over the Navy's entrance into the world of aviation, but his interests and contributions were largely in the technical aspects of aircraft rather than in flying them. Even before the Navy acquired its first aircraft, he had begun studying the difficulties facing heavier-than-air flight and testing his ideas with practical experiments. His distinguished career as an aviator and aeronautical engineer spanned four decades and, at the time of his death, his name was almost legendary in Naval Aviation.

As the Navy's first engineering test pilot, Richardson pioneered in nearly all areas of aeronautics, especially in the testing and design of seaplane floats and flying boat hulls. His work with models and wind tunnels, begun very early in these areas, made him an authority recognized throughout the world. He was an original member and first secretary of the National Advisory Committee for Aeronautics which was the forerunner of NASA. But these were not all of his achievements. Throughout his career he never deviated from his fundamental belief that cut-and-try experiments must give way to the engineer's technique. His conviction left a permanent stamp on Naval Aviation.

Initially it may seem that Richardson's position in naval aeronautics is obvious, but such is not the case. Everyone recognizes him in their summaries of the subject, and all students of aviation history know his name; but his activities are inadequately delineated and his exact accomplishments remain vague. But he must have been more than just another early Navy pilot. Merely being a designer of flying boats would hardly merit his frequent consideration for acceptance into the Aviation Hall of Fame (although he has not yet been selected). Something about him commanded the enduring respect of his



By William J. Armstrong,
Assistant Historian,
NavAirSysCom

Far left, A-3 before first successful catapult launch. Center, Richardson in 1912. Left, Mustin flies AB-2 from North Carolina, signaling first catapult launch from a ship.

His Life in Aeronautics

colleagues, placed him among Naval Aviation's greats, and led Vice Admiral Patrick Bellinger to remark, "Dick Richardson . . . did more for Naval Aviation and got less credit for it than any one I know."

Born in 1878 in the grim, little coal mining town of Shamokin, Pa., Richardson lived there until 1897 when he won a competitive appointment to the Naval Academy. He finished at the Academy in 1901 and spent the next two years at sea as a midshipman to fulfill requirements. He received an ensign's commission in June 1903.

By then, Richardson's noticeable engineering talent caused his superiors to consider him for further education. In 1904, they made him a lieutenant junior grade and Assistant Naval Constructor with orders to proceed to MIT for advanced study. Three years later, he had attained his B.S. and M.S. in engineering, and reported to Newport News as Assistant Superintending Constructor.

At Newport News he began to apply his interest in aeronautics and hydrodynamics. Shortly after his arrival there he made an ascent in a captive spherical balloon. The next year he built a box kite and a canvas canoe, trivial activities compared to what was to come. In 1909, he fitted hydrovane blades to his canoe which could then plane-in-tow at five knots. His success convinced him that he should pursue this field.

That same year, he left Newport News and was reassigned to the Philadelphia Navy Yard. There he undertook more experiments in aeronautics and hydrodynamics.

In 1910, Richardson obtained permission to construct a glider in the boat shop of the Yard. Built without front elevators, it was designed to be launched from bicycle wheels. These proved incapable of withstanding the stress involved, however. After correcting that flaw, he made arrangements with his colleague, Henry Mustin, to tow the glider to takeoff. On a January day in 1911, with Mustin driving his own automobile and Richardson in tow in the glider, the craft actually achieved 35 feet of altitude. At that point, Mustin was nearly in the trees at the end of the field and Richardson cast off the tow line. The glider promptly crashed. It was damaged beyond repair, and Richardson, unhurt, returned to hydrodynamics.

The center of attention this time was a dinghy he equipped with hydrovanes. He was familiar with the work done in this area by the Italian Forlanini and loosely based the vanes' arrangement on it. In tow by a motor boat, the little craft was subject to "controlled action" by the operator, at speeds of six to eight knots. These results were encouraging.

These efforts with the dinghy and glider brought Richardson to the attention of Capt. Chambers who saw an opportunity to involve a promising young engineer in Naval Aviation. Richardson was equally enthusiastic. Thus far, his aeronautic efforts had been unofficial and carried out during off duty hours. He now saw a chance to devote full energies to this field of interest.

Correspondence between the two officers began in the late summer of 1911 and clearly reflected Richard-

For the sake of precision we should explain that all aircraft that operate from water are properly called seaplanes; those with floats or pontoons are known as float-seaplanes or pontoon planes and occasionally other terms. Those aircraft with fuselage resting in the water are known as flying boats. In this article flying boats are so referred to, but all other seaplanes are referred to as seaplanes.

son's extensive research. He was familiar with the history of aviation and the work which others were doing. He knew of their successes and failures. His own theories were grounded on a substantial understanding of the available data. His experiments were well founded and clearly fruitful.

Among some of his earliest observations on seaplaning — this one in 1911 — was the advisability of a single central pontoon complemented by auxiliary pontoons for lateral stability. He never deviated from that conclusion during his long experience with seaplanes and flying boats. Fifteen years later, in 1926, he wrote, "A controversy as to the merits of twin vs central floats has been waging since seaplanes came into existence and is still running strong." By 1926, however, he had begun to witness the practical justification of his position. Never doubting that twin-float seaplanes were successful, he based his defense of the central float arrangement primarily on the question of strength. "This becomes increasingly evident," he observed, "as the size increases and the racking forces between large floats becomes excessive." To him the physical space between twin floats always seemed to be a source of weakness. He frequently pointed out that there was less stress on a bridge when a load passed over its piers than when over the middle of the spans.

He also thought that all float or hull sections in the water should have a V bottom. This configuration, he reasoned, would reduce pounding and the shock of landing. This was the case, he argued, because the V kept displacement uniform and tended to eliminate the usual shocks when the hull hit the water. His view was sound. The V-bottom shape, for hulls or pontoons, proved markedly effective in achieving what he thought it would.

Early in 1912, Chambers arranged for Richardson to come to Washington, D.C., and spend some time working with David Taylor and William McEntee at the Model Basin at the Navy Yard. While there, he elaborated upon his theories and developed some new ones. Chambers soon gave him the opportunity to test those ideas.

In January, the Naval Aviation Camp moved from its location at Greenbury Point, Md., to North Island, Calif. This shift was to be only temporary and, with summer, the flyers would be back on the Severn. However, the weeks to be spent on the West Coast were important enough to warrant assigning several people there, among them T. G. Ellyson, John Towers, Victor Herbster and John Rodgers. Richardson joined them in February and devoted the next three months to two major pursuits.

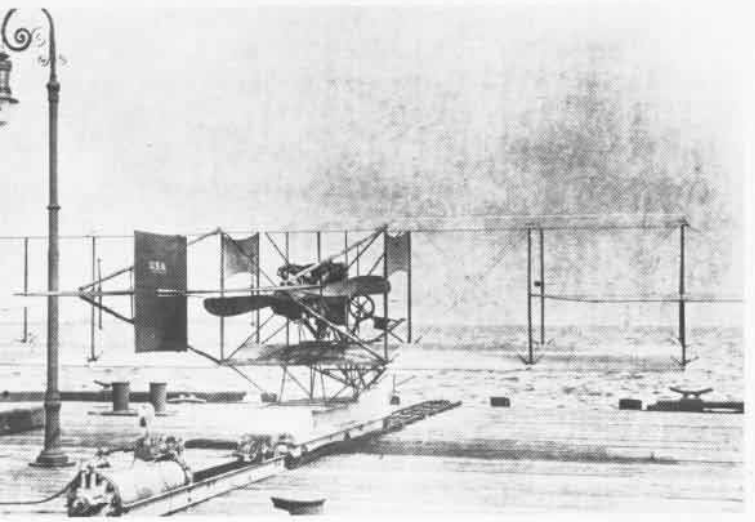
Primarily he tested pontoons of his and McEntee's design, but he soon decided that his efforts would be greatly facilitated if he knew how to fly. Glenn Curtiss was instructing several students at the time and Richardson could have joined them. However, he would have been only one among several and confronted with slow progress. To avoid this, the interested parties placed his training in Ellyson's hands with the understanding that it be conducted in early morning and late afternoon hours.

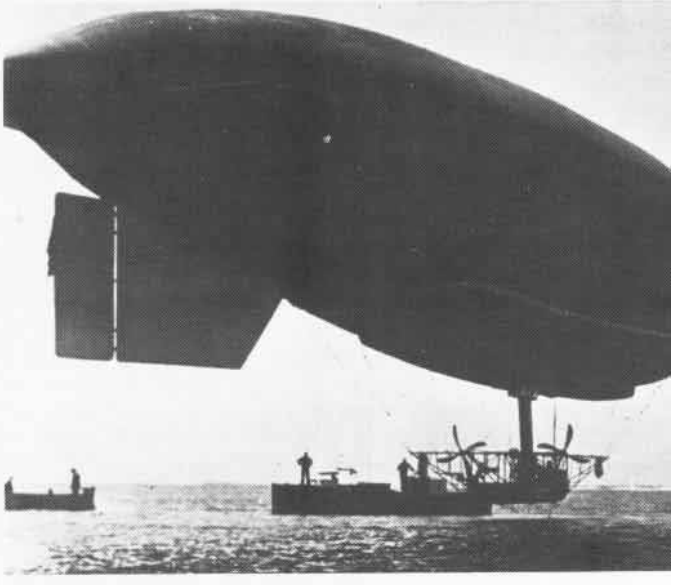
All went smoothly at first. Richardson made his ground runs and got the craft in the air a few times with no trouble. After about 10 days, a near disaster struck. Late one March afternoon, Richardson accompanied his instructor to the trial grounds for the usual session. Ellyson was uneasy about conditions. Before sending his student out, he decided to make a trial run to test the air. Horrified, Richardson watched from the ground as Ellyson crashed the Curtiss A-2. The pilot was injured, the aircraft damaged. Neither flew again at North Island that season.

Richardson was disturbed by the accident. He was eager to pursue his training and had stewed all day because of the possibility that weather would preclude his flying. He felt that his enthusiasm had prompted Ellyson into making a flight he otherwise would have avoided. Nevertheless, Richardson's determination was unabated. He continued his training, this time under John Towers.

Again things went well until late April when Richardson learned first

A-1 waits on cat by Severn River, below. DN-1 approaches its floating hangar, middle. Far right, NC-3 rides the rough waves, Azores.





hand the dangers of landing a seaplane on water. At the end of a practice flight, he brought the A-1 in for a landing and skidded strongly to the right with a bit too much speed. A puff of crosswind hit the craft, the right wing caught the water "and the machine took a header." About two minutes passed before Richardson's 200-pound bulk bobbed to the surface. He was unhurt but the craft sustained extensive damage.

Although he was the Navy's first engineering test pilot, Richardson did not receive his designation — #13 — until 1915. It was slow in coming partly because he was a naval constructor and had duties that frequently took him from aviation training. At that, the designation's date and number are a little misleading. As a Naval Aviator he was the fifth to report to aviation, in February 1912. On April 22 of that year, he became the fifth to solo. In October he passed the Aero Club test, achieved by only four Naval Aviators before him. Adm. Bellinger summed up the situation when he wrote, "Dick Richardson . . . is listed as Naval Aviator #13 whereas he should have had a designation at least ahead of mine, which is #8."

This is all quite true, but Richardson had not gone to North Island that spring primarily to learn flying. Above all, he wanted to test pontoons. He did a large amount of work with seaplanes, but the results were disappointing. When he left California in May he was eager to get back to the Model Basin and resume his experiments.

In Washington, he learned that he was not to devote full time to perfecting pontoons for seaplanes. A different problem had become more urgent — the development of an effective catapult for launching aircraft from aboard ship. Catapults were nothing new. The Wrights and Chanute had worked with them, and Langley had used a coiled spring to drive his aerodrome from its barge in the Potomac River. But these endeavors had enjoyed only limited success.

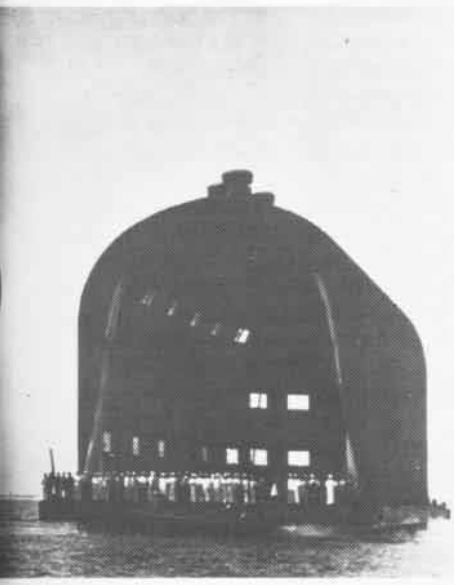
Capt. Chambers had toyed with the catapult idea for a long time. Late in 1911 he set about designing such a device. By the summer of 1912, his design plan was complete. He envisioned a rectangular car mounted upon a double track that extended for about 30 feet, to the edge of the launching surface. The aircraft's central float would rest upon the car. The release of compressed air would drive the car to the end of the track where the aircraft, with engine at full power, would take to the air as the car dropped into the water. The major problem was to attain sufficient speed by the end of the track. At full power the aircraft engine could do only so much. The rest was up to the catapult. Richardson computed the amount of thrust needed to get the plane airborne. It became a question of applying this much thrust with the catapult.

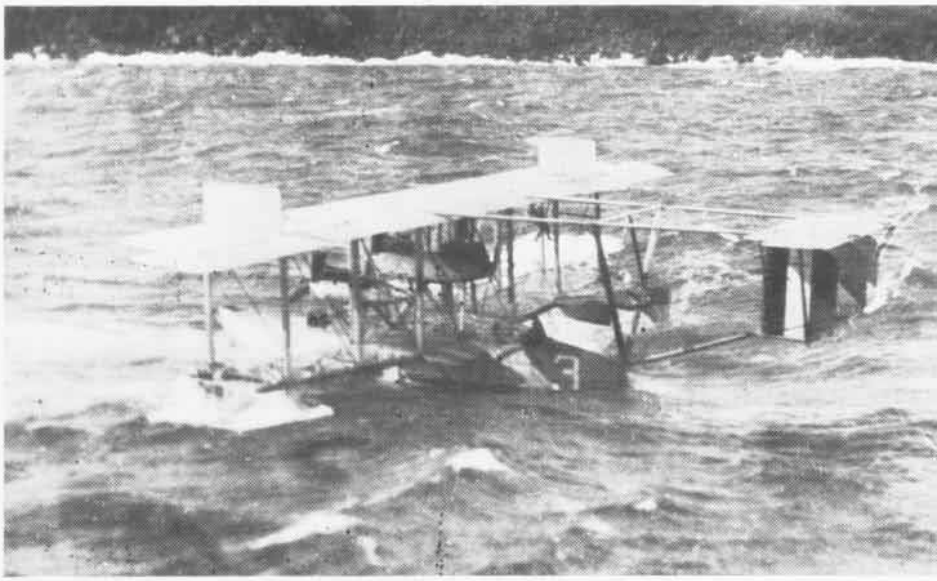
To provide the needed energy, Richardson and Chambers decided upon a quick acting release valve that would allow a free flow of air from the compressor's reservoir, sustaining the pressure on the car down the track. They proceeded to build such a catapult at the Washington Navy Yard.

In mid-June it was finished and moved to the Naval Academy for installation on the Santee Dock. Dead load tests were sufficiently encouraging. An actual launch would follow. By the end of July, Lt. Ellyson, recovered from his springtime crash, was entertaining the idea of flying the A-1 off the catapult. On the 31st, the Curtiss *Triad* was mounted on the car. Ellyson climbed onto the seat.

The launch was a total failure. The release valve applied too much thrust too suddenly, carrying the car off with a mean jerk, whiplashing the pilot as it shot forward. The plane's nose reared wildly into the air halfway down the track. Ellyson rode the A-1 on a crazy spiral into the Severn River.

Fortunately, the plane suffered only minor damage. Ellyson was unharmed. The catapult was returned to the Navy Yard for further study. Richardson recognized the problem as two-fold. Some kind of mechanism was needed to hold the aircraft to the car until it reached the end of the track. Correcting this was not difficult. More serious was the jerk with





which the release valve started the car. Richardson redesigned the release mechanism. He fitted a new head into the plunger end of the cylinder and equipped it with a rotary valve operated by a cam. This arrangement, he reasoned, would greatly reduce the shock of starting but still provide ample speed for launch. He was correct.

In November, he set up the catapult on a barge at the Navy Yard and then moved the barge to the Anacostia River. The device was the same as the one used in July except for the improved release valve, and fittings to keep the plane on the car. This time, Ellyson would pilot a new Curtiss seaplane, the A-3. The car and aircraft moved smoothly down the track and parted as Ellyson flew easily away. The car dropped into the water. The dream of a functional catapult with the potential of launching aircraft from aboard ship had become a reality.

This success was exhilarating, but it did not erase the memory of the pontoons' poor performance at North Island, a nagging reminder of the work yet to be done.

It must be remembered that in 1912 the operation of aircraft from water was not a well-developed science, if indeed it was a science at all. Very few engineers were working in this area and much of what they were doing was of the trial-and-error method. Within the Navy, the systematic work was in the hands of three people: David Taylor, William McEntee and Richardson. Their work was almost entirely in the pioneer stage. Failure was expected along with success.

In his assessment of the North Island experience, Richardson admitted disappointment with the "wedge stern" pontoon. Also, the hydrovane blades failed to measure up to expectations. But these were only two manifestations of the unsolved problems; many more existed.

From late 1912 until 1916, Richardson worked at the Model Basin attempting to perfect seaplane floats and flying boat hulls. The results were invaluable and the techniques used were as untried as the concepts being tested.

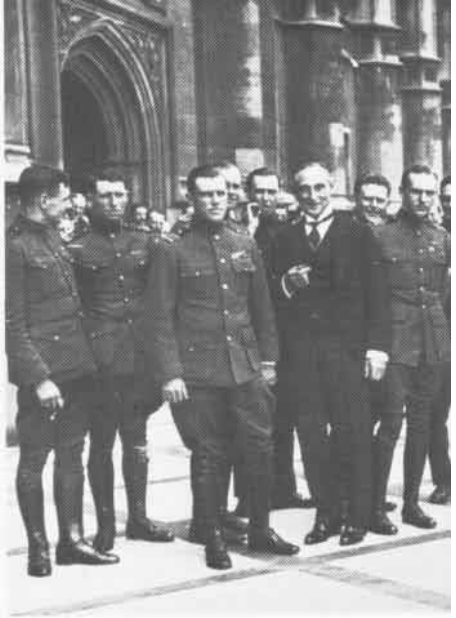
Richardson and McEntee conducted experiments with nearly every feasible type of float and flying boat hull. The main problems they examined included suction, pounding and control. Of these, suction was the most important.

To overcome suction, ventilated steps were built into the bottoms of floats and flying boat hulls. The step broke the suction and allowed the craft to "plane" and rise from the water. The number of steps, and their location, was a subject of contention. Richardson's work confirmed that the step should be shallow, but it had to be near the center of gravity to prevent nosing and a change of balance.

The shape of the float bottom was also important. Richardson found that tests repeatedly confirmed the V-bottom shape as the optimum design for that area of the float.

The main difficulty was the large plume of spray it cast up over the aircraft. In a crosswind, navigation with the V-bottom float could become quite uncomfortable. By introducing hollow lines at the bow, the V-bottom ceased to produce the cascading spray. The V-bottom also possessed what Richardson called ". . . remarkable shock absorbing qualities." This was desirable in the case of a bad landing or when working in rough water.

Finally, after several years of tests, Richardson was able to say that the best form of flying boat hull was the hollow V-bottom with a single ventilated step whose tail rose abaft at an eight degree angle to the bottom of a float, just forward of the step. This type had enough buoyancy abaft the step to eliminate the need of tail floats for stability. The step's ventilation caused the water rushing under the float to form an inverted waterfall at the step. This waterfall then moved abaft the step as speed increased. Then it passed clear of the tail when planing was achieved. This was the point of maximum resistance byond which the float planed on its step because the inclined tail was above the water. This enabled the pilot to vary the trim without returning the tail of the float to the water. As the aircraft neared flying speed, planing power increased forward of the step. The area of the float in the water decreased and resistance was reduced until it was eliminated and the plane became airborne.



The tests which Richardson conducted were not with real aircraft. In the model basin he used models of floats and hulls to simulate actual planes. Test results were surprisingly accurate, but involved an elaborate system of calculations and novel apparatus.

As the models were towed in the water, their form depicted what a full-scale float of the same proportions would do on an actual aircraft. However, a means had to be devised to simulate the lifting force of the aircraft's wings, which would change the load on the float as speed increased.

At first, Richardson counterweighted the float to make its weight on the water the same as it would be under the wings' lift. This system was usable but was improved by the addition of an inclined vane submerged in the water. A system of pulleys allowed it to exert a lifting power proportional to that of the wings, with speed taken into account.

Richardson was one of the earliest engineers to apply model-basin testing to aviation. He was also designer of one of the first U.S. Government-built aircraft — the 82-A — and supervised its construction at the Washington Navy Yard in 1915-1916. A float seaplane, it had a central float and one supporting float on each side. They were arranged in a centralized group to minimize stress on the wing structure and furnish initial stability. This helped eliminate the instability characteristic of other three-

NC crews met dignitaries in England after journey. Note Prince of Wales, center, Winston Churchill, far right.

float arrangements wherein lateral floats were positioned on the wing tips.

Concurrently with the design and construction of the 82-A, Richardson devoted time to the catapult question, which still needed attention. The successful launch in November 1912 was certainly a step in the right direction. But how was the device to be adapted to shipboard operation?

During 1913 Richardson attempted to design a catapult that would meet the requirements. In January 1914 he completed the basic device. It was comprised of a launching car attached by wire to a piston moved by compressed air. The arrangement was such that the car moved at a speed and distance seven times greater than the piston. There were clamps to hold the aircraft to the car until the point of release. Auxiliary air flasks regulated the speed. The device was moved to Pensacola for tests shortly after it was completed, but was not used for over a year.

In the spring of 1915 Richardson finally arrived at Pensacola and installed his catapult on a coal barge. He conducted tests with dead loads and eventually decided the device would launch an aircraft. On April 16, Lt. Bellinger rode the AB-2 (C2) flying boat down the launch track and flew safely away.

Throughout that summer, more successful launches took place from the barge. Ultimately, the catapult was moved onto USS *North Carolina*. On November 5, LCdr. Mustin flew the AB-2 off the catapult in the first such launch from aboard a ship. *North Carolina* was underway at the time.

Working with catapults, hull shapes and other projects, Richardson increased his understanding of the day's technology. How much of this knowledge was his own and how much he derived from others is impossible to determine.

Richardson stayed on at the Model Basin until mid-1916 when he left for a new assignment at NAS Pensacola. By the time he left Washington, he had assisted in designing the wind tunnel at the Navy Yard, supervised the construction of the floating dirigible hangar used at Pensacola, and had drawn up the specifications for the Navy's first lighter-than-air airship, the DN-1. He had also become first Secretary of the National Advisory Committee for Aeronautics and the Smithsonian Institution had begun to publish his essays on "Hydromechanic Experiments with Flying Boat Hulls." He had emerged as a recognized authority on the subject but, to use one of his favorite phrases, "It ain't all honey and it ain't all jam."

About this time, Lt. Richard C. Saufley was in charge of the school at NAS Pensacola. He was an aggressive young officer and commanded the respect of students and colleagues alike. He thought it a good idea to expose students to structural theory and arranged for Richardson to lecture them. Word of this soon got out. Lt. Saufley found a class of rebellious students on his hands. They had no interest in those strange graphs filled with tiny figures and curved lines, to say nothing of those endless tables of numbers and equations, for which Richardson had become so famous. However, others were more appreciative of his expertise.

With the entry of the United States into WW I, the nation's defense posture changed radically. Developments which had only been dreamed of suddenly became realities. The Navy gained from its share of the new opportunities, and Naval Aviation came through reasonably well. (On April 6, 1917, the Navy's air power amounted to 45 seaplanes, 6 flying boats, 3 landplanes, and 1 lighter-than-air airship. By November 11, 1918, the tally stood at 695 seaplanes, 1,170 flying boats, 242 landplanes and 15 lighter-than-air craft.)

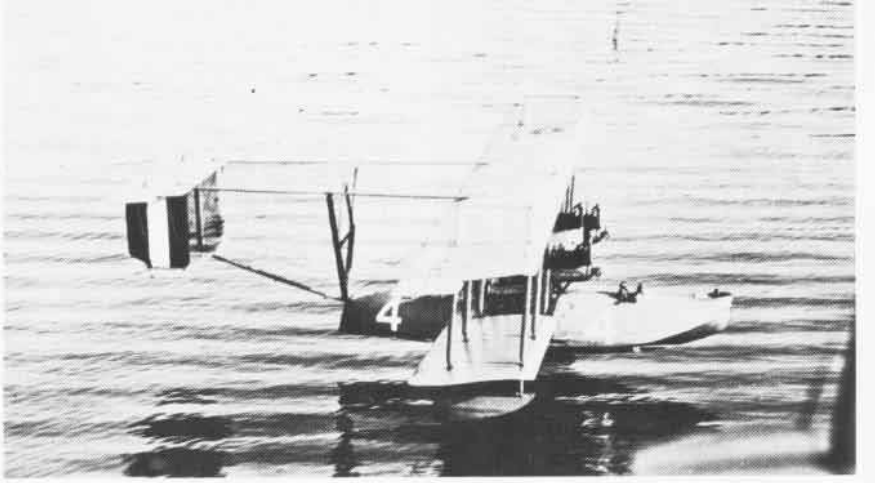
Throughout the war, Richardson divided his time between Pensacola and the Curtiss plant at Buffalo, N.Y., where he was Naval Inspector. He also had occasional responsibilities at the Naval Aircraft Factory, Philadelphia. While performing these duties, he shared in the development or modification and production of many fine aircraft which the Navy accepted before the Armistice.

In late summer 1917, the Navy took an interest in building large flying boats for antisubmarine warfare. Known as the Curtiss NCs, they were designed for transAtlantic ferrying but were not completed in time for service in WW I. The idea did not end with the Armistice. The possibility of an airplane able to cross the Atlantic was too intriguing to let die. The Navy pursued the project with enthusiasm.

The NC-1 was built at the Curtiss plant in Garden City, L.I., with Navy and Curtiss engineers cooperating. Navy engineers were G. C. Westervelt, J. C. Hunsaker and Richardson. Richardson's main duties concerned the craft's hull which was based on an existing Curtiss design. He and Curtiss engineer W. L. Gilmore agreed the hull needed some redesigning but beyond that point they were not always in agreement.

The result was a radical departure from established practice. Misgivings existed about its capabilities. Doubts grew to the point where the people who had confidence in the design were in a minority. Commander Westervelt wrote, "I know of no one, outside the immediate personnel engaged . . . who expressed unqualified confidence. . . . I, however, regarded, and still regard, Cdr. Richardson as the leading authority of the world on airplane boats and flying boat hulls, and the fact that the design of the NC hull had been under his supervision . . . was sufficient for me."

As it finally developed, three NCs



were used for the transAtlantic flight, and for the most part the foreboding about their hulls proved unfounded. By May 1919, NCs 1, 3 and 4 were assembled at NAS Rockaway and were ready for the flight. The commander of 3, and of the squadron, was Cdr. John Towers. Richardson was copilot of 3.

The flight plan involved five stages: Rockaway to Halifax, Trepassy Bay, the Azores, Lisbon, and on to Plymouth, England. All three left Rockaway at two o'clock in the afternoon on May 8, but trouble developed for 4 and forced it to land off NAS Chatham. The other two NCs went on to Halifax to wait until 4 was repaired. They all left Halifax around midday of the 10th. This time both 3 and 4 had problems and all three craft did not assemble at Trepassy Bay until the 15th. The next day they left Trepassy around 10 o'clock at night.

The line of flight from Trepassy to the Azores was marked by a string of 21 destroyers positioned near the course. Richardson and Lt. David H. McCulloch took half-hour turns as pilots in 3, but the air was so rough that they both had to constantly stand by and assist each other. In exceptionally rough air, which was frequently the case, both were forced to man the controls. During the night, conditions deteriorated. Hardly any stars could be seen, the horizon was obscure, salt spray grounded out the running lights, and it was hard to read the instruments. A heavy cloud cover and frequent squalls caused 3 to lose sight of the destroyers and wander southward.

By mid-morning of the 17th, Cdr. Towers expressed his fear that they were off course. Around one in the afternoon, he asked Richardson and McCulloch if it was possible to land in order to get a radio compass bearing. The water was very rough, but when they dropped to 500 feet it appeared that a safe landing could be made. As they approached the water, they realized too late that the seas were running too high. "We struck the first crest rather hard," Richardson wrote, "and then found a long, deep hollow ahead. We dropped into this and 'zoomed' to the crest, troughing easily and expecting to stick to the surface, but the swell dropped from under us sharply and sat us down very hard on top of the next crest, making contact forward of the step almost under the pilot's heels." The landing was successful, but the aircraft was badly damaged. "We were surprised and chagrined," Richardson wrote, "to find the forward engine struts buckled like a bulldog's legs." This and other damage made the resumption of flight impossible.

"As we sized up the situation," Richardson quipped, "we realized that the Atlantic Ocean was very large and we were very small." They had been in the air for 15 hours and had covered about 1,200 miles, but they were 200 miles from Ponta Delgada in the Azores. They were unable to fly and the NC was hardly built for prolonged sea voyages. Nevertheless, they had no choice but to "sail" their craft toward Ponta Delgada through seas running, at times, 35 feet high. On the evening of the 19th, they blew backwards into the harbor.

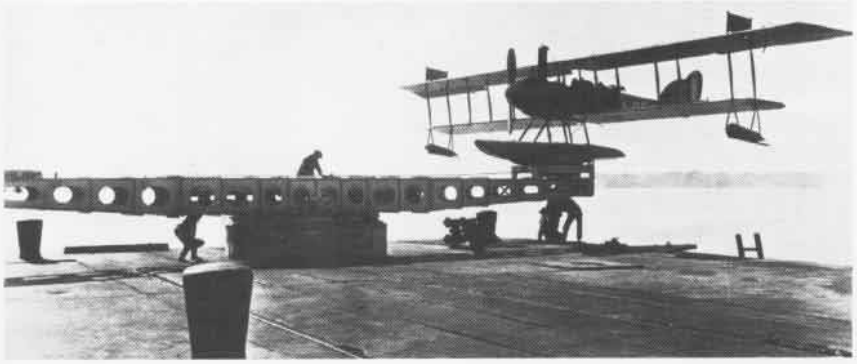
NC-1, commanded by LCdr. Patrick Bellinger, suffered a fate similar to 3. It was forced to land, sustained damage precluding flight, and began to "sail" for shore. It was sighted by the Greek vessel *Ionia* and taken in tow. Eventually it broke up and sank. NC-4, under LCdr. Albert C. Read, was the only NC to complete the flight. It went on to Lisbon and later landed at Plymouth on May 31.

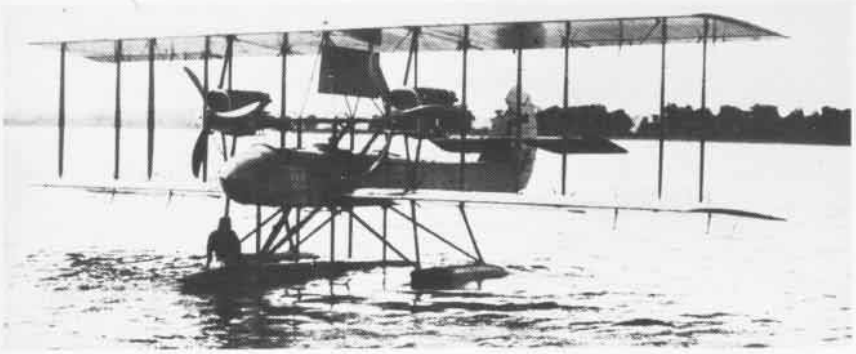
Naturally the crew of 3 was disappointed at being unable to finish the flight. But the long battle in the water, and the sense of achievement it fostered, made a lasting impression. Comparing his companions' experience with that of the NC-4 crew, Richardson liked to say "I think we had more fun." Much of the remaining sting of failure was salved by a string of ceremonies — for all three NC crews — that ran from the Azores through Europe and back to the United States.

History can see the success of NC-4 as the ultimate justification of the distressing experience at North Island seven years earlier. But it was not the culmination of Richardson's career. He spent much of the next decade designing and testing Naval Aviation projects. However, he freely admitted that his "big moments" had come and gone with the flight of the NCs. At that point, his reputation was solidly established and he might have coasted easily into calm retirement. But Dick Richardson was too dynamic an individual ever to wear well the status of a museum piece. It was easy for him to work hard at avoiding it throughout the remaining 40 years of his life.

From 1919 to 1923, he was Chief Engineer at the Naval Aircraft Factory. While there, he turned again to the catapult problem to see what might be done to make the device more effective and convenient. His answer was the turntable catapult which was capable of rotating on a turret and launching a plane in most directions without turning the ship. He built this device at the Philadelphia Navy Yard and conducted its first successful test on October 26, 1921. That day, he piloted the N-9 off the catapult on a pier at the Yard. Nine years earlier he had given the Navy a workable catapult. Now he had produced one that was adaptable to all capital ships.

In addition to the catapult, he assisted in the design of *Shenandoah*, the Navy's first rigid lighter-than-air airship. He developed experimental metal floats which he had long considered preferable to wood. Eventu-





Opposite, NC-4 lands. Top to bottom: O2U launches from turntable catapult; N-9 poised on Richardson's turntable catapult at Naval Aircraft Factory; Richardson rides float of his 82A in Anacostia River, 1916; Richardson, in his 70s, posed by commemorative plaque in Washington, D. C.

ally, he would help spearhead the general adaptation of metal for use in naval aircraft.

He left Philadelphia in 1923 and became head of the Design Branch of BuAer's Material Division. Upon retirement in 1929 he could look back upon years during which many of his ideas were accepted. He knew that Naval Aviation had profited greatly from his endeavors. Above all, he knew that his lifelong devotion to a method of systematic test and evaluation, with a complete adherence to engineering principles, was at last the established order.

Following his retirement, Capt. Richardson accepted a position as engineering consultant with Allied Motor Industries' Great Lakes Aircraft Corporation. His separation from the Navy was short lived. In 1936, he was recalled to active duty as a consultant in patent work with occasional engineering responsibilities. He remained on active duty until 1946 when age forced his second retirement. In later years, Captain Dick could be found daily at a desk in the Main Navy Complex in Washington, D.C. There he occupied himself with the design drawings of a later generation of engineers and worked on historical matters. He died on September 2, 1960, at the age of 81.

Much of the work Richardson did no longer has a place in the Navy. Seaplanes, flying boats, and even the turntable catapult have become obsolete in an age of giant aircraft carriers. He was a vital part of Naval Aviation in its embryonic age. He left it in the forefront of research and development. He witnessed startling technological advances and initiated many of his own. He was a man for his time.

NAVAL AVIATION NEWS letters

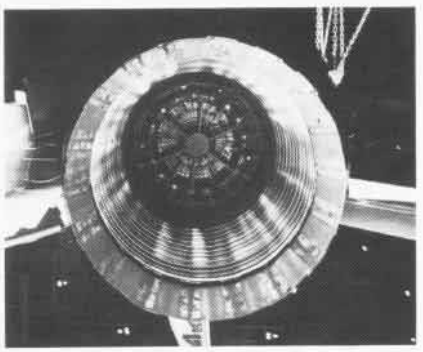
Reunion

The Battle of the Coral Sea Association will hold its 8th Annual Reunion May 6-8 in Washington, D.C. For more information write Box 1172, Rockville, Md. 20850.

Hot Cat

During our last deployment in *Constellation* the idea for this photo was suggested during a discussion on jet blast on the flight deck.

Caption the F-14 tailpipe "My tail is



hotter than yours." This refers to the fact that the gases coming out of the tailpipe can be in excess of 1,900 degrees, if the aircraft is in burner.

R. E. Kulczynski, Ens.
PAO VA-165

SNJs

I recently purchased the remains of four ex-Navy aircraft and am curious about their past service histories. I hope pilots or former pilots who might have flown these aircraft back in the late 40s and early 50s will drop me a note on where the aircraft were based.

Aircraft type and BuNos are SNJ-4 27694 and 51643 and SNJ-5 90847 and 91409. It is planned to restore at least one of these.

Comments from your readers will be appreciated.

R. A. Houx
606 Patricia
San Antonio, Texas 78216

Enough Already! ! !

Every time I pick up a Navy publication it seems that picture of the Kaman Tech Rep that you have on page 26 of your December 1976 edition is there. But there's one problem: that gentleman pictured on the H-2 rotorhead is not Mr. Bob Belisle at all, but Mr. Norm Myers. And while they both are from Kaman Aerospace Corporation, and both have contributed greatly to the LAMPS program, I doubt that they want to exchange identities! Besides, Bob doesn't like to climb as high as an H-2 rotorhead during his declining years (only kidding, Bob!).

Mariner G. Cox, LCdr.
ASW Training Officer
FASOTraGruLant
NAS Norfolk, Va. 23511

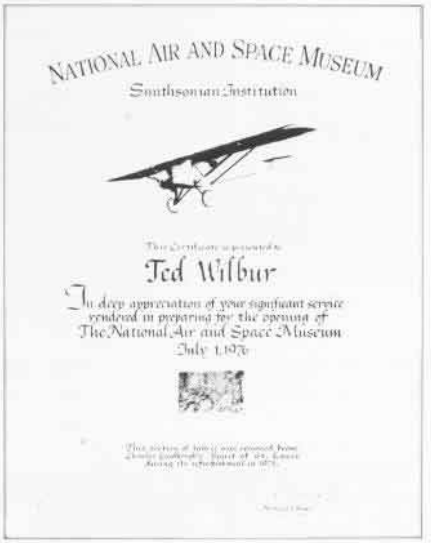
Oops!

We, the corrosion control technicians of VA-122, feel fortunate that one of our team efforts was selected for publication in your Bicentennial aircraft article. We appreciate the publicity, and this brings me to the heart of the matter. The T-39D on page 19 of the December 1976 issue is assigned to VA-122 versus NAS Lemoore.

AMH1 E. G. Robbins
VA-122
NAS Lemoore, Calif. 93245

Kudos

As you know, the Gallery of Sea-Air Operations is one of our most popular and successful exhibits. This certificate is in recognition of your many



hours of work contributing to that success.

Donald S. Lopez
Assistant Director, Aeronautics
National Air and Space Museum
Smithsonian Institution
Washington, D.C. 20560

VS-23

Not to detract from VS-37's fine record, I must point out that the first squadron to deploy with S-2s was VS-23 aboard USS *Princeton* in late 1954.

Raymond G. Fox, Jr., Cdr.
Naval Training Equipment Center
Orlando, Fla. 32813

Retirement

In December, Miss Irene Jensen retired after 36 years of federal service.

For the past 14 years, Miss Jensen had been an employee of the Aircraft Programs Branch, DCNO(Air Warfare). Prior to that, she had been employed in BuAer and DCNO(Air).

Vice Admiral Frederick C. Turner, DCNO(Air Warfare) cited Miss Jensen for her "distinctive career with Naval Aviation."

Reunion

A reunion of all past and present *Blacksheep* officers of VMA-214 will be held at the Marriott Hotel, Newport Beach, Calif., April 30, 1977. For information write Reunion, VMA-214, MCAS El Toro, Santa Ana, Calif. 92709, or call (714) 559-3756.

Published monthly by the Chief of Naval Operations and Naval Air Systems Command in accordance with NavExos P-35. Offices: 801 N. Randolph St., Arlington, Va. 22203. Phone: 202-692-4819, autovon: 222-4819. Annual subscription: $12.85, check or money order ($3.25 additional for foreign mailing) sent direct to Superintendent of Documents, Government Printing Office, Washington, D.C. 20402. Single copy is $1.25 from the same address.

Reconnaissance Attack Squadron 7 and its RA-5Cs are based at NAS Key West. Stationed at NAS Jacksonville, Patrol Squadron 24 carries out its mission with the P-3C. Fleet Logistic Support Squadron 52 Det Detroit flies C-118Bs. NAS Miramar is home for Carrier Airborne Early Warning Squadron 117 and its E-2Bs.

NAVAL AVIATION NEWS