naval aviation news

SEPTEMBER 1981

An A-7 Corsair fresh out of rework gleams in the morning sun at NAS Cecil Field.

JOC Kirby Harrison

naval aviation news

Sixty-Third Year of Publication

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COVER — Air controllers keep tabs on all traffic in the vicinity of NAS Patuxent River, Md. (Photo by PH2 Kevin Knapp.)

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Published monthly by the Chief of Naval Operations and Naval Air Systems Command in accordance with NavExos P-35. Offices are located in Bldg. 146, Washington Navy Yard, Washington, D.C. 20374. Phone 202-433-4407; Autovon 288-4407. Annual subscription: $18.00, check or money order ($4.50 additional for foreign mailing) direct to Superintendent of Documents, Government Printing Office, Washington, D.C. 20402. Single copy $2.50.

From the

EDITOR'S NOTEBOOK

Back in the early days of aviation there were no laws, federal or otherwise, to govern the operation of aircraft. For one thing, not many people thought the idea of powered flight would ever amount to much. In any case, regulation of air traffic and flight safety were of little concern to the overwhelming majority of earthbound Americans. The sensational mid-air collision had not yet been invented although there were undoubtedly some people who fretted over the possibility that one of the infernal flying contraptions might fall out of the sky and strike a house, a pedestrian or the family cow. But all this was so unlikely that no one wanted to make a federal case of it. There simply were not enough aircraft around to warrant much concern.

World War I brought the aeroplane into sharper focus for most Americans. Even hard-core scoffers had to concede that the flying machine had military application. But with the war over and the world safe for democracy, defense seemed no longer necessary and military aircraft were disposed of in large numbers. Anyone who had an adventurous spirit and a few hundred dollars could buy one.

During the 1920s, barnstorming helped to introduce the airplane to curious Americans across the country. This period also brought with it aerial advertising, crop dusting, the air mail service and some of the first passenger airlines. People resigned themselves to the fact that the airplane was here to stay, for better or for worse. Those who understood the extent of this reality began to think about the necessity of controlling the beast in the public interest.

The need for air traffic control first became apparent in terminal areas where aircraft were frequently required to operate in close proximity to one another. The first air controllers used flags to signal pilots who desired to land or take off. The system worked reasonably well for takeoffs but was less than satisfactory for landings. It did not work at all at night.

Some of the more heavily used airports experimented with light guns in the early 1930s. A green light signalled an O.K. for landing or takeoff while a red light signified hold. It was a good system but was limited to a range of a mile or so. Meanwhile several airports had begun to use radio to do the same job. This system worked even better although it employed low-power transmitters and had range limitations of about 15 miles. More important, it could not monitor the progress of aircraft approaching the terminal area on a point-to-point flight.

En route reports were provided by radio to airline dispatchers on the ground, who notified the air controller in the tower so that he could plan for an airplane's arrival. Messages to the pilot were likewise passed back through the dispatcher. But this system did not control the flow of aircraft en route to big city airports and traffic often bunched up when a number of flights arrived from different points and directions at the same time. This problem was exacerbated with the perfection of reliable instruments which enabled aircraft to fly in all but the worst weather.

In November 1935 a conference of all interested parties, including representatives of the military services, met in Washington with officials of the Bureau of Air Commerce and agreed that a uniform air traffic control system should be established under the direction of the Bureau. But because that organization had no funds to immediately implement the mandate, the airline companies banded together to operate the system until the machinery of government could catch up. In June 1937, the Bureau of Air Commerce took over air traffic control stations at Newark, Chicago and Cleveland and at the same time, some 73 air routes were designated Civil Airways. The federal government was now deeply involved in the business of air traffic control.

Each station had a crew of five and operated 16 hours every day. The system was so successful, however, that it stimulated greater traffic activity and ultimately 24-hour service became the norm.

In the beginning, it was difficult to get all pilots to use the air traffic

(Continued on page 56)

DID YOU KNOW?

AEW Excellence Award

The Airborne Early Warning Excellence Award for 1980 has been given to Norfolk-based VAW-121 as the best *Hawkeye* squadron. The annual Grumman-sponsored award is presented for achievement in operational readiness, safety, retention and for contributions to tactics and weapon systems development. During the competitive cycle, the *Bluetails* deployed to the Western Pacific and Indian Ocean aboard *Eisenhower* for eight and a half months and, after one month at home, left for a two-and-a-half-month deployment to Iceland.

Congratulations on the award included comments from Rear Admiral D. F. Mow, Commander Tactical Wings, Atlantic: "You have proven again that the "Hummer" is a most valuable asset, but without the personnel to maintain the system, you would not have been able to accomplish the mission. You have clearly demonstrated that our most valuable asset is our people."

DOD Awards

Defense Meritorious Service Medals were awarded to the following U.S. Navy personnel held hostage in Iran from November 4, 1979, to January 20, 1981: Commander Don Allen Sharer, Lieutenant Commander Robert Ardo Engelmann and Petty Officer Duane Leonard Gillette.

The Defense Meritorious Service Medal is a Department of Defense award presented to active duty members of the U.S. Armed Forces who distinguish themselves in joint activities by noncombat meritorious achievement or service that is incontestably exceptional and of a magnitude that clearly places an individual above his peers.

Pete Ross Trophy

Marine Attack Squadron 133 is the winner of the Pete Ross Trophy for the period July 1, 1980, through June 30, 1981. The award is presented annually to the Fourth Marine Aircraft Wing squadron with the best safety record. Emphasis is on aviation safety and flight training accomplishments. The award honors Marine First Lieutenant Joseph F. Ross who was killed during a training flight in 1950.

Harpoon

A ceremony on April 7 at San Diego, aboard the guided missile destroyer *Buchanan*, marked the outfitting of the 100th U.S. Navy surface ship with the *Harpoon* antiship missile. *Harpoon* will be fired from surface-to-air launchers on *Buchanan* but can also be launched from antisubmarine rocket launchers or from reusable canisters especially designed for it.

In addition to the 100 destroyers, frigates and cruisers now equipped with *Harpoon*, the versatile missile has been installed on 29 nuclear attack submarines and 43 P-3 aircraft. Engineering work is under way to adapt the missile for the F/A-18 *Hornet* and S-3A *Viking*.

Harpoon, an all-weather missile having a range of over 50 miles, is in its sixth year of production. More than 2,000 missiles have been ordered to date by the U.S. Navy and 12 allied nations, and more than 1,500 have been delivered.

Chemical Warfare Equipment Testing

Men from Mars? No! They are Lieutenant Colonel R. J. Hooton and Major G. R. Keller of Marine Helicopter Attack Squadron 269 during a nuclear, biological, chemical warfare exercise to evaluate currently available equipment. The helicopter in the background is an AH-1T *Cobra* with the tube-launched, optically-tracked, wire-guided weapons system. The scope of a three-day experiment for pilots was to determine the suitability of each piece of equipment in a chemically or biologically contaminated environment. Maintenance and administrative personnel from the squadron performed one day's work in the protective suit and mask to discover which jobs were restricted or prohibited due to the equipment.

Grampaw Pettibone

Night Bingo Boogie

. . . Just another chorus in the sad saga of a truly endangered species – Naval Aviation!

Immediately upon completion of A-7E Cat I replacement pilot training, Lt. Norman Newguy joined his squadron during the peak of the ship's/air-wing's Type III workup training. In the short period of 10 days, he had become highly involved as a member of the air wing team and had flown three day and three night missions in the A-7E *Corsair*.

During the late afternoon of his eleventh day aboard, he launched on a night mission (his fourth). Shortly after rendezvous, Lt. Newguy informed the A-7E flight leader that he had just suffered a PC-2 hydraulic failure and had attempted unsuccessfully to extend the refueling probe. He anchored overhead the ship for 20 minutes, until the flight leader joined up, and proceeded to the assigned Marshall fix at the bottom of the holding pattern. Upon arrival at Marshall, Lt. Newguy was assigned a new holding fix at the top of the pattern in order to recover last.

I did as well as I could!

Lt. Newguy reported in Marshall with a fuel state of 5,900 pounds and was assigned an approach "pushover" time of 1901. Marshall broadcast the primary divert field bearing 272 degrees at 130 nm. A-7 bingo fuel was given as 2,400 pounds. At that time, several pilots informed Marshall that there were abnormally high headwinds at altitude and that bingo fuel requirements would have to be raised. Specifically, winds were 280 degrees at 60-80 knots at 10,000 feet and 110 knots at 20,000 feet.

The A-7 flight leader informed Marshall that they should recover his ailing wingman first. In the event a bingo was required, his wingman would be committed to a dirty configuration bingo with high headwinds. (Once the gear and flaps are blown down, they cannot be raised while airborne.) His request was denied and it was reiterated that his wingman would recover last. (It was policy aboard this carrier to recover PC-2 failures last to avoid fouling the deck.)

The required fuel for the 130-nm dirty bingo, considering 100-knot headwinds and a drag count of 100, was calculated from the Natops manual by air ops and squadron reps to be 4,200 pounds. They calculated the A-7 would arrive "on the ball" at bingo-plus-one fuel state.

The pilot commenced his approach, lowered the gear and flaps by the emergency extension system, and arrived on the ball at 3/4 nm with a fuel state of 4,200 pounds. He subsequently boltered.

The LSO was totally unaware that the A-7 was at bingo fuel or that he had a PC-2 failure.

Following the bolter, the pilot heard "Signal bingo, flaps up, hook up, climb, pigeons 272/131!" The pilot switched to departure control and stated that he was unable to raise his flaps. He was then directed by the squadron carrier air traffic control center rep to climb to 25,000 feet, commence an idle descent at 35 nm from the divert field and execute an arrested landing. He was told he would have about 1,200 pounds of gravy (fuel) remaining.

The pilot climbed out on the bingo profile as instructed but was unable to get above 22,000 feet. The readout on the tactical computer showed the

ILLUSTRATED BY Osborn

winds to be 120 knots on the nose, so he commenced a descent to 19,500 feet and continued inbound toward the divert field.

After switching to CIC control frequency, no transmission of assist or concern was made for the next 24 minutes. The pilot then called CIC to inform them that he was 82 nm from the field, at 19,500 feet with a fuel state of 1,800 pounds.

The squadron CIC rep then asked the pilot if he was able to make it to the divert field. The pilot replied that he was now 70 nm, 19,500 feet, with 1,400 pounds of fuel. After a short pause, the rep stated, ". . . you don't have enough gas to get to the field." This was the first realization by anyone on the ship that the aircraft was *in extremis*.

An airborne E-2C reminded CIC that a closer in-line-of-flight airfield was closed. The A-7 pilot rogered and stated he was pressing on, and switched to center which had already observed his emergency IFF squawk. Two minutes later, the ship initiated efforts through the E-2C to open the closed field.

At 1959 the pilot descended out of 19,500 feet in search of lesser winds. At 2004 the ship broadcast an order for the pilot to land at the airfield, whether closed or not, using his taxi light.

At 2005 a tacan lock-on to the field was obtained at 28 nm. The pilot continued his idle descent and arrived at 1,200 feet and 4 nm southeast of the airfield.

At 2016 the pilot reported the field in sight, fuel state was zero on the digital totalizer, with 200 pounds showing on the main needle. At 2017 the engine flamed out. The pilot safely ejected at 900 feet MSL. The aircraft continued ahead and impacted the water .9 nm from the approach end of the runway.

Grampaw Pettibone says,

Holy jumpin' Jehoshaphat! This gas-war-at-sea fandango is enough to jack your jaws! There were more contributors present in this tacair tap dance than at a good Navy Relief Ball.

This inexperienced fleet readiness squadron graduate checked into the squadron with less than above average night CQ/flight grades. Old Gramps has the perception that this young feller was thrown into a fast moving road show with minimum supervision. On his ninth day aboard he did not fly.

On the tenth day aboard, he stood a day-long duty watch. Later that evening, he flew a surface ship surveillance mission, recovering at 0130. After five hours of sleep, he briefed and launched on a mid-morning CAP mission. Upon return he ate lunch, briefed and launched on the ill-fated war-at-sea mission. (Fatigue was not considered to be a factor. Hmmm. Can you believe this?)

Three days previous to the mishap, he had been counseled by the commanding officer about his fuel management techniques. Yet this young lad was launched, without escort, on a night dirty bingo, with a PC-2 failure, over a 130-nm stretch of open ocean with 100-knot headwinds, and then was not monitored en route for nearly 24 minutes.

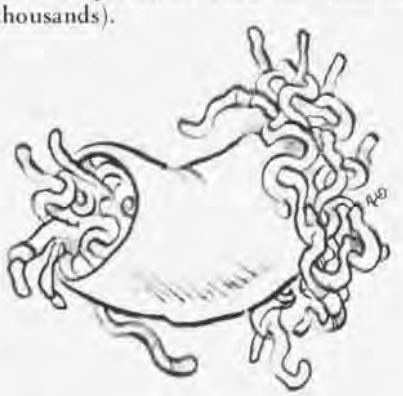
It appears to Old Gramps that while this performer was exiting stage left, the rest of the cast was taking 5 — 25 to be exact. This leaves me angrily cold, gents, but not nearly as cold as it left this pilot. Old Singed Whiskers just can't believe that the LSO was not informed of this pilot's problem. He could have saved the day, and perhaps the aircraft. Even worse was the inability of anyone involved to determine an accurate bingo fuel requirement. We've only been bingoing A-7s for nearly 16 years. Now that we're about to start phasing them out, we decide we don't know how to read the charts! From the profile data passed to the pilot, it appears that the "gear down (flaps up)" column, vice "gear down, 40-percent flaps down" column, was erroneously used in calculating the bingo profile. The mishap board stated it learned, in discussion with a contractor tech rep, that the flaps can't be raised with a PC-2 failure. Great balls o' fire! This has been a fact since the initial introduction of the A-7A some 16 years ago. It is difficult to imagine that aviators as experienced as mishap board members, and perhaps air ops/squadron reps, did not know this fact. This could explain why the "gear down (flaps up)" bingo fuel column was used.

Poor Lt. Newguy did not have 1,200 pounds of gravy but was in fact *short* 1,600 pounds from the very start. The only option he had on his first night bingo was figuring out the best place to go swimming.

A lot of concern was voiced over the possibility of today's positive control training environment. In this case, I have a lot more concern over the quality of the information this positive control team was putting out. This pilot did exactly as directed except he failed miserably when ordered to make an arrested landing at the closed/open field.

Gang, this fiasco points out a well-documented, but obviously not respected, fact that a dirty night bingo is an emergency looking for a place to happen. Naval Safety Center data shows that since CY 1975, three percent of all bingos have resulted in a mishap, 21 percent of all A-7 PC-2 failure bingos resulted in mishaps (some fatalities), and 29 percent of all night dirty bingos have terminated with a mishap. This data includes aviators of varied experience levels from Lt. Norman Newguy to Charlie Commander.

Old Sagebrush Face feels very strongly that we literally pushed this lad in over his head and, to add insult to injury, I'll be danged if we didn't try to tack the bad reviews on this young understudy's stage door. The billing on this marquee should have read "Supervision, Lack of" (cast of thousands).



COOPERATION COORDINATION CONTROL

By Commander Charles R. Samuelson

Part of the "common system" of communications, navigation and radar equipment involved in the Federal Aviation Administration (FAA) function is provided by the Department of Defense and, in many instances, U.S. Navy facilities.

The FAA, a major agency of the Department of Transportation, is responsible for the promotion, regulation and safety of civil aviation and for insuring the safe, efficient use of the National Airspace System shared by civil and military aircraft.

In order to carry out these mandates of Congress, the FAA provides to airspace users the most advanced air traffic control and air navigation systems in the world. The agency is also empowered to establish and enforce regulations and standards which govern:

- Use of the National Airspace System.
- Licensing of all civilian pilots.
- Certification of all civil aircraft and airports.
- Prevention of criminal acts such as sabotage and air privacy.
- Compatible use of aircraft with environmental regulations.
- Engineering development and procurement of new technology and aviation-related products to keep the system in line with the nation's needs.

To accomplish these gigantic tasks, the FAA maintains a worldwide work force of approximately 55,000 highly skilled persons. About 50 percent of these individuals are involved in some aspect of air traffic control and roughly 15 percent are electronic engineers and technicians who develop, install and maintain the communications, navigation and radar systems operated by the agency. The remainder of the employees are involved in licensing, inspecting or the myriad of administrative, logistical and training functions performed by the FAA.

To ensure continuity, coordination, currency and standardization, the FAA has established Air Traffic Representative positions at major naval air stations and with the staffs of the two major fleets. These individuals provide valuable services to the Naval Aviation community by being "on site," hence instantly available for regulation interpretation, operator certification, interface with FAA officials' airspace and route planning, or advice on any FAA related matter.

The Navy Department, in turn, has personnel assigned to working level positions within the FAA organization. Six officers, five Navy and one Marine, are attached to FAA headquarters in Washington, D.C. These billets, traditionally held by pilots, have in recent years been adjusted to include limited duty officers, two Navy and one Marine, who have progressed up through the air controller ranks. These three individuals are assigned to the Air Traffic Service of the FAA and are integrated into the various branches where they function as specialists alongside their FAA contemporaries. The three remaining positions are held by Naval Aviators and are located in the Systems Research

and Development Service, the Airway Facilities Service, and on the staff of the Associate Administrator for Air Traffic and Airway Facilities, respectively. They are assigned various projects and tasks which take advantage of their management and technical skills. Additionally, the Navy maintains an officer on the staff of the director of the Air Traffic Service to provide direct liaison between the FAA and the Chief of Naval Operations.

Nationally, the FAA is organized into regions which are responsible for daily operations within their respective boundaries. Personnel from the Navy Department are assigned to those regions in which the majority of Naval Aviation activity occurs. To this end a Naval Aviator who is a commander and a Senior Chief Air Controlman are assigned to FAA regional headquarters in the Eastern Region, New York City; the Southern Region, Atlanta; the Southwest Region, Fort Worth; the Western Region, Los Angeles; and the Pacific Region, Honolulu. The Marine Corps has assigned a lieutenant colonel aviator to the Southern and Western Regions to coordinate Marine Corps-related matters.

All of the Navy/FAA activities are coordinated through the Airspace, Airfields, and ATC Branch (OP-513) directly under the Aviation Programs Division (OP-51) of the Office of the Deputy Chief of Naval Operations (Air Warfare). Headquarters Marine Corps through the Aviation Plans, Policy and Requirements Division coordinates with its personnel in the FAA.

Many, if not all, of these positions are unknown to the average individual associated with Naval or Marine Aviation. Normal association with the FAA usually consists of military pilots contacting Air Route Traffic Control Centers, Flight Service Stations (FSS) and Approach Control Facilities. For those who are private pilots, contacts with the FAA might be with the General Aviation District Office for licensing or with FSS for route briefings. Those who are working for or with the FAA play an important part in the smooth operation of the National Airspace System by doing their part to eliminate and solve problems to provide better service to the users.

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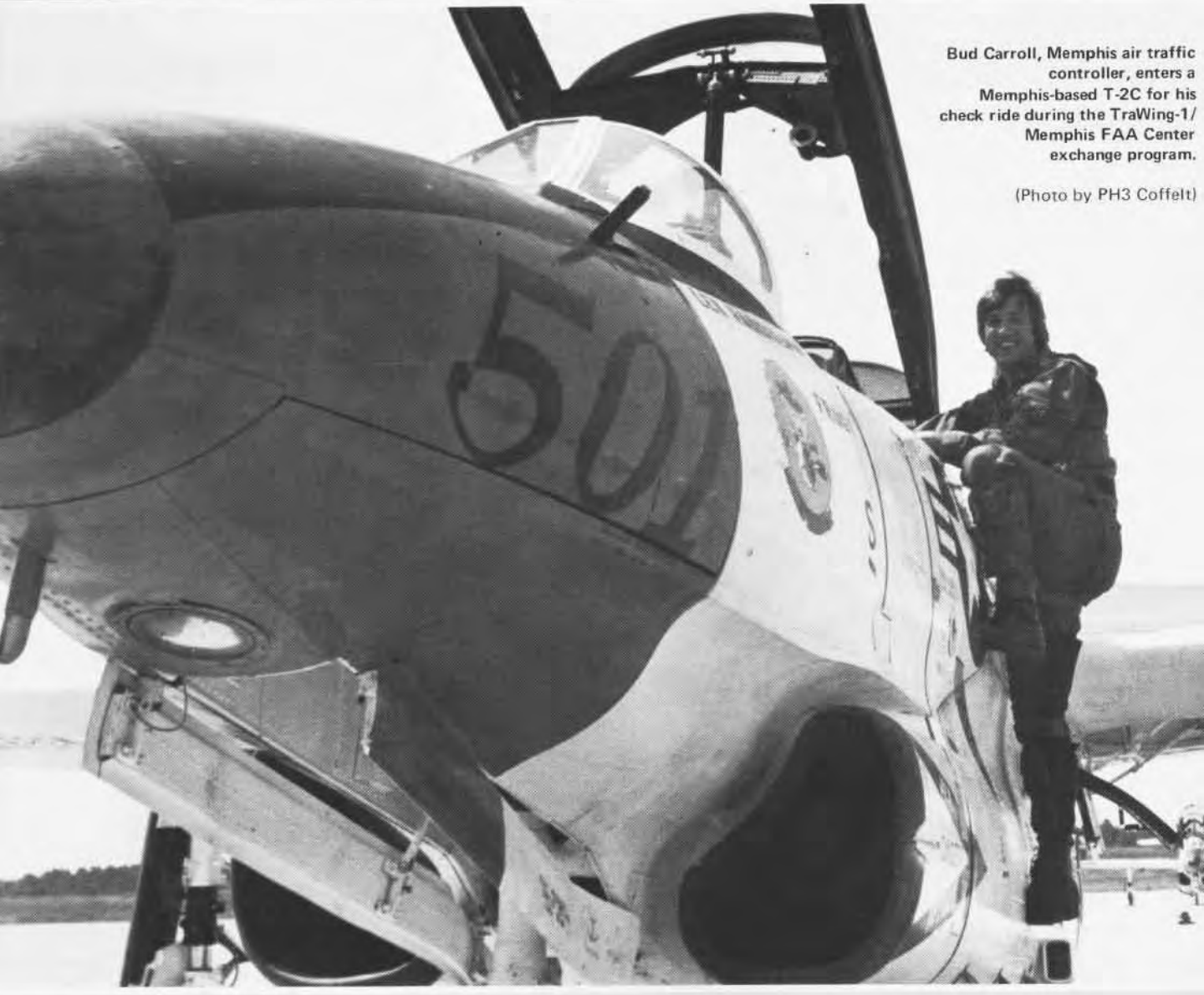
*A proposal for reorgnization under consideration for late 1981 will result in regional changes. For further information contact Cdr. Charles Samuelson, FAA Liaison, at the address/phone listed above.

Seeing the problem From a Different Perspective



Bud Carroll, Memphis air traffic controller, enters a Memphis-based T-2C for his check ride during the TraWing-1/ Memphis FAA Center exchange program.

(Photo by PH3 Coffelt)

By Ensign Robin A. Davidson

Flight instructors from VT-9 and VT-19 get a demonstration from an FAA air controller.

One of the most unique close-working relationships has to be between the aviator and the air traffic controller. From takeoff to landing, a pilot is guided by a nameless, faceless voice from far away. Similarly, the controller must rely upon the skills of a perfect stranger, piloting the small blip on his radar screen, to maneuver as directed, safely and efficiently. Cooperation between these two groups of professionals, who seldom meet face to face, is vital to the safe use of this country's airspace.

Over the past several years, the FAA has taken steps to improve the working relationship between controllers and the aviation community. In terminal areas where military bases are located, the FAA has established air traffic representative positions at major air bases to act as on-site advisors and liaison between the FAA and the military. The military, in turn, has personnel assigned to working-level positions within the FAA organization.

In addition, the FAA and commercial airlines have established an exchange indoctrination program. This program allows airline pilots to spend a day at an air route traffic control center to observe and be briefed on the center's operation. It also allows for FAA controllers to take a certain number of flights with the commercial carriers and observe how pilots work in the cockpit. Recently, the FAA has extended this exchange indoctrination to military pilots.

In 1980, Training Air Wing One at NAS Meridian, Miss., and the Air Route Traffic Control Center, Memphis began such an exchange indoctrination program. The goal of the program is to have each training squadron's executive officer, operations officer and flight instructors attend the one-day briefing at Memphis Center. Likewise, the Memphis controllers will spend a day at NAS Meridian, becoming familiar with the unique mission of Naval Aviation training.

"I had no idea what they do," says Bud Carroll, an air traffic control specialist from Memphis Center. Carroll and John Thompson, south area specialist at Memphis Center, were the first controllers to visit the air wing last year under the exchange program. The two men were briefed on the different types of training missions flown by the wing and participated in two missions, observing from the back seat of a jet in flight. In addition, they actually flew missions from the flight simulators.

Lieutenant Commander Sam Shilling, TraWing-1's A-4 standardization officer, coordinates the Navy's half of the Memphis exchange program. "When the controllers come to Meridian, we try to help them to better understand the unique problems we face in training Naval Aviators, as well as the constraints under which we have to operate."

Memphis Center has been working on a military exchange program for two years. They began with Columbus, Blytheville and Little Rock Air Force Bases, eventually extending the program to NAS Meridian at the suggestion of TraWing-1.

"The exchange program develops empathy in the controllers for military pilots," observes Felton Lancaster, Deputy Chief of the Memphis Air Route Traffic Control Center. "Telling an instructor pilot, for example, to operate in a different area could mess up his whole flight plan. It helps for a controller to realize this. After all, we are a service organization."

"I recommend the program to everybody," says controller Carroll after coming to Meridian. "It helped me appreciate the kind of things the Navy does during training missions."

Pilot briefings at Memphis Center are prepared and conducted by John Thompson. As south area specialist, he has had much experience with training flights from Meridian. The first thing Thompson emphasizes in his briefing is safety as the primary concern of the controller. Thompson then gives an overview of Memphis Center's operations and illustrates the big picture of what a controller faces when handling all the different kinds of traffic, including military. Then, the Meridian aviators have an opportunity to visit the control room and observe the controllers at work, paying special attention to military operations.

"We talk to Memphis Center all the time," says Lieutenant Tom St. Denis, a VT-9 flight instructor who recently attended the Memphis briefings. "It really helps to visualize what is happening on the other end."

Ensign Pete Romaneski, VT-19 flight instructor, also praises the program and adds, "It really helped me from the standpoint of safety awareness."

The exchange program between Memphis Center and TraWing-1 is an example of improved cooperation through mutual understanding. Training Air Wing One was the first Navy flight training command to participate in the program. The FAA hopes to expand this program to all military air bases eventually. Although pilots and controllers will undoubtably remain unseen by one another for the most part, the exchange program opens a communication line which is building a more solid relationship of understanding and respect.

ATC Patuxent River

By Bill Frierson

There are very few "routine" operations for air traffic controllers at the Patuxent River Naval Air Station in Maryland. Not only is every conceivable type and configuration of Navy aircraft involved in test projects at the home of the Naval Air Test Center, but their operations are unique, requiring the utmost from the air traffic controllers.

The air station's air traffic control (ATC) team carefully orchestrates the complicated operations of the Test Center's aircraft, and simultaneously directs arrivals and departures at 26 civilian and military airports within its control boundaries. Because the station is located along the main air routes between New York and Miami, the Patuxent controllers also are often involved in coordinating with the FAA, the commercial airliner traffic flying these north/south routes.

In addition to the standard precision approach control, feeder control, clearance delivery and approach control positions found at most facilities, the Patuxent air traffic controllers have an "approach control east" position which directs civilian airfield traffic on the Eastern Shore of Maryland, and three "radar advisory service" positions which monitor operations in the Test Center's "special use airspace". One of these three positions is used exclusively to track the Navy's new strike fighter, the F/A-18, under development at Patuxent.

Pax River averages 12,000 operations each month, not counting arrivals and departures from civilian airfields and transiting airliners. "Nobody can match us for variety in operations and responsibilities," claims Commander Thomas M. Marolds, air operations officer and U.S. Naval Test Pilot School graduate.

Flight operations at NATC alone are enough to test the mettle of any air traffic controller. To accomplish its mission of test and evaluation, the center must operate beyond the normal, and no two of its approximately 100 aircraft are alike, even though they may look the same to the casual observer.

It is commonplace to have jet and conventional aircraft in the traffic pattern at the same time. And, while most arrivals and departures are executed on the duty runway, crosswinds, test parameters and workload make it desirable

Photos by PH2 Kevin Knapp

During his initial checkout in the tower ACAN Jerry Hupp communicates with an aircraft on the runway as ACAN Patti Exum monitors his performance.

Telephone hookups keep the controllers in touch with their counterparts in adjoining traffic areas to facilitate the efficient transfer of aircraft.

to conduct simultaneous operations on the other runways. A typical day at Patuxent might find an F/A-18 being repeatedly launched and recovered from the catapult and arresting gear site on Runway 31, an EC-130 or P-3C departing Runway 24, an X-26A glider operating on Runway 09, AV-8B *Harriers* making vertical takeoffs and landings from the center field VTOL pad, and helicopters executing autorotations on the grass alongside Runway 20 – all of this orchestrated under the control of Patuxent's air traffic controllers.

"Not only do we sometimes have all six runways in action during a short period of time, but we can be operating aircraft on taxiways, the helicopter pad, and the grassy strips," noted Senior Chief Air Traffic Controller L. J. Gallagher, leading chief in the ATC Division. "Then, too, NAS Patuxent River is the home for more than 25 major tenant activities, and many of them operate aircraft. And, we can't forget the flying club," Senior Chief Gallagher added.

There is also approximately 6,000 square miles of special use airspace set aside for flight testing at the test center. Within its boundaries, every conceivable type of test evolution is conducted. Operations might include high angle of attack and supersonic flutter testing on F/A-18 aircraft, shake tests and air-to-ground ordnance testing on F-14s, flying quality testing and in-flight refueling testing of various other aircraft, all being accomplished at the same time under the watchful eyes of the Patuxent advisory position. Often, this airspace is used by outside agencies, and every minute that it is not in use by the military, it is made available to the FAA for transit of commercial aircraft traffic.

Just a few miles north of Patuxent are the busy airports of Washington and Baltimore. Even when weather has the air station socked in, there are still more than 100 contacts on Patuxent's radar, many of them representing commercial airliners with hundreds of people aboard. Throughout this period, Patuxent air traffic controllers continue to coordinate with the FAA, providing approach control radar services to aircraft terminating at airports on the Eastern Shore.

Meeting this demanding task are approximately 85 Navy and civilian air traffic controllers and specialists, 14 of whom are women. "Depending on our needs and the length of their tours, we concentrate the training of new controllers on a specific series of positions," explained Chief Air Traffic Controller Patrick Foy, manager of the Radar Branch.

As an approach control facility, Patuxent merits special attention by Navy manpower detailers. "We are selective in the senior enlisted assignments to Patuxent because of the level of responsibility," pointed out Master Chief Air Traffic Controller Ron Boikie, ATC detailer. "The duties at approach control facilities such as Patuxent are extraordinary."

A sign on the wall expresses the sentiments of the controllers at Patuxent. It reads: "The Best ATC Facility in the World."

"We are in control"

Air Controller School - NATTC Memphi

Student controller directs a simulated aircraft toward its destination and a safe landing.

By Chief Air Controller Charles R. Roth

From the days of the Wright brothers on the sandy dunes at Kitty Hawk and throughout the early years of aviation, piloted aircraft operated on the basic rule of "see and be seen." This concept worked very well with the limited air traffic and ideal weather conditions.

As timed marched on, aviation technology advanced and the world looked more to the skies for faster, more efficient means of transportation. In just a few decades the skies began to fill with a variety of flying machines for both commercial and military use. The risk of air collision increased. The demand for a system to provide a safe, orderly and rapid flow of air traffic became apparent, and a new field in civilian and military aviation was born – air traffic control. Today, both civilian and military services use air traffic controllers to maintain the safe movement of air traffic worldwide.

The training of individuals to fill the demanding job of an air traffic controller requires much more than meets the eye. The individuals selected for the specialized training must possess a valid FAA medical certificate, plus personal qualities of self-discipline, stamina and determination.

At the Navy's Air Traffic Control School, located at the Naval Air Technical Training Center, NAS Memphis, Millington, Tenn., training of future military air traffic controllers is conducted on a continuous basis. The prospective controller goes through 14 weeks of intensive "A" school training.

These weeks are broken into four separate blocks/phases. Classroom training begins with an introduction to the fundamentals of air traffic control. The extensive accumulation of information becomes the foundation on which successful controllers build their future. The students' retention ability is challenged with topics such as control tower operations, radar and non-radar operations, high and low airway structures, minimum safe altitudes, navigational aids and weather phenomena.

As students enter the second block, control tower labs are added to the classroom environment. The labs are divided into three levels: basic, intermediate and advanced. Each lab contains three operating positions: flight data, ground and local control. At these positions, students must prove to their instructors that they can apply what they have learned. They must overcome mike fright in order to communicate properly with instructor-directed and student-controlled aircraft and ground vehicles. In accordance with FAA guidelines, separation standards must be applied quickly and methodically, and radio telephony must be explicit. The importance of coordination and teamwork is constantly stressed. Before this phase of training is over the headaches are many and the collision rate astounding; but job satisfaction and a feeling of self-accomplishment prevail.

Moving into the third block, students enter a new dimension of control – radar. Many hours of classroom training are endured before their introduction to the "dark room" and its array of electronic equipment. Classroom training consists of the concept and operation of ground control approach radar, including the application of instrument flight rule standards, radio telephony, equipment usage and emergency procedures, with emphasis on proper coordination and teamwork.

In radar lab operations the students must learn how to apply air surveillance and precision approach radar procedures. Simulated aircraft targets are electronically generated on the face of the radarscopes. Through a radio and interphone communications network, the students coordinate and control their assigned targets from radar pickup point to letdown and landing transition. As in the labs of the second block, the students go through a simulated training experience.

The students encounter the final phase of basic training as they enter the last block – base operations. To assist pilots in properly preparing their flight plans, student training involves the use of aeronautical charts and publications. They must also learn how to disseminate these flight plans, operate interphone and teletype equipment, and assist facility duty officers in base operations functions.

One final step prior to graduation from "A" school is the requirement to pass the critical FAA airman's written test. Successful completion of this examination becomes the payoff for all the prior weeks of extensive training and study. The certification received from this exam licenses new controllers to actively control aircraft in the fleet.

After graduation, they are assigned shore stations, either stateside or overseas, and there they commence their training toward facility qualification. The training time to qualify at each station will normally depend on the density of traffic and the complexity of the facility's operations. Certification toward a complete facility rating may take as few as six months or as long as a year, sometimes even longer.

Those students who are ordered to fill billets aboard Navy carriers, receive further training before transfer. The novice controller is given advanced training known as carrier air traffic control. This type of training incorporates radar control, radio communication and interphone coordination in directing safe, orderly departures and recoveries of naval aircraft at sea. The students are taught one non-control and four control positions. The control positions are departure, marshal, approach and final control. The non-control position is known as the status board keeper. All five positions are tied closely together, so that a minor mistake by one will in some way have an impact upon the others.

After launch and completion of the airborne mission, the most critical phase begins – recovery. Aircraft are radar identified and directed into a holding pattern – stack – by the marshal controller. "Hand-offs" then begin in close intervals as the approach controller starts each aircraft toward "home." Final controllers monitor the last segment of letdown. As each aircraft locks on to the ship's electronic guidance system, the final controllers must constantly monitor their position, heading and altitude. They must issue advisories to the pilots and remain alert to unexpected emergencies that can develop on a moment's notice. The recovery phase can be very hectic and enduring. It can last for hours, depending on the density of the traffic, weather conditions and changing sea states. Only after the entire launch has been safely recovered can the carrier air traffic control center (CATCC) controller rest easy.

CATCC operations at the Naval Air Technical Training Center are simulated, but the concept and equipment are very real. The students, after classroom indoctrination, enter the CATCC control lab and are given the opportunity to apply the procedures they have been taught.

Once students successfully complete their CATCC training, they are transferred to their sea-going duty stations. The training they received in the schoolhouse, like that they received in their "A" school, is merely basic. Students must, upon arrival at their newly assigned ships, continue their training until qualified by their supervisors.

The air traffic control rating, much like other highly technical ratings, is constantly in a state of change. New equipment is continually being developed, tested and evaluated for future installation in the field. Procedures are reviewed and changed as frequently as required to meet the needs of the military and civil aviation.

The position of air traffic controller is demanding, yet rewarding. Students who seek training in this rating are entering a field that can provide them with a feeling of satisfaction and pride. And from those students who succeed come the air traffic controllers of the future.

"Walking the pattern" during a tower lab session.

Some Thoughts From A Friend

I was in Australia, finishing a film, when I heard the news of an airplane crash on the deck of USS *Nimitz*. I was stunned. Not long ago, we spent months aboard that ship, filming "The Final Countdown." Permission for filming had been granted, providing we did not interfere with the ship's operations.

When we were in port at Norfolk, no planes were aboard. They were all nestled at a nearby air base. Life on the ship, then, was relatively quiet. The flight deck seemed like an endless stretch of a deserted freeway.

The day of departure was an emotional experience. I stood at a railing high up on the deck and watched the crowded pier below. A mass of colors, women, children, babies, mothers, fathers, wives and sweethearts all clustered in sprawling, hugging, kissing, talking, laughing and crying farewells. This cruise was to be much longer than any of them expected. The trip took them, unexpectedly, to the Indian Ocean near Iran. They were there for more than 100 days.

We were not out of port very long when the planes like soaring eagles swooped in to land. It was fascinating to watch these speeding birds, tail hooks lowered, approaching the arresting wires stretched across the deck. Each plane stopped with a jolt and was guided from the landing area even as another plane came in.

I couldn't believe there were that many. The noise was deafening. You had to wear ear protectors if you were anywhere near the deck. I stood there, hypnotized, as the sun plunged into the sea, and the planes continued roaring down in rapid succession out of the black of night.

I was astounded at the precision and apparent calm of the whole operation. I watched from a corner of the bridge as the ship's captain guided this speeding behemoth through the night on a course to take advantage of the wind direction and aid his birds in landing.

I sneaked onto the crowded flight operations deck. Conversations were going on simultaneously with the approaching pilots, the men on the flight deck and the bridge. Complex computers were hurling off statistics, signal lights on the deck were blinking, and the planes kept coming in. The operation went on endlessly it seemed to me, to the point where I felt that even such a large nest could not hold so many birds.

Exhausted, I went to my bunk below. Lying there, I couldn't sleep, as I listened to the continuous thump of each plane as it hit the deck. Off duty crew members were sleeping soundly.

At sea, I lived in the captain's cabin. It was a large, comfortable cabin with a dining area, bedroom, office and galley. How gracious of the captain, I thought, to give up such commodious quarters. I later discovered the captain never used these quarters at sea. He occupied them only when the aircraft carrier was docked. While underway, the captain had a cramped cabin, high up on the flight deck, next to the bridge. He was on duty 24 hours a day.

Captain Batzler, commanding officer of *Nimitz*, is a remarkable man. He's small and wiry, with a warm, wry sense of humor. He invited me to participate in each reenlistment ceremony and when I expressed surprise that such a busy man would take the time to reenlist each person, no matter what his rank, the captain explained to me the significance of the occasion.

"We invest a lot of time and a big hunk of the taxpayers' money to educate each of these men," he said. On a nuclear-powered aircraft carrier, this is a very extensive and specialized education and we need their expertise. The education that each man receives would probably bring him greater financial success in the private sector."

The men were aware of that. They were reenlisting because they loved the life and wanted to serve their country. The reenlistment ceremonies were very touching. Usually, the parents, wives or sweethearts would be present. Sometimes, a father would look on with tears in his eyes because he also had been in the service. His son was carrying on the tradition.

Vicariously, I began to feel the spirit of comraderie that existed on this vessel. The men depended on one another. I marvelled at the daily drills that were carried on each day. But, like at any busy thoroughfare, no matter how well protected, accidents happen.

Days after the recent tragedy, repairs were completed and *Nimitz* left Norfolk, her crew still mourning for their companions who had been killed.

In Australia, thousands of miles from *Nimitz*, I also mourned for these young men. I remember how excited they were about a movie being made starring their ship. I was pleased when the captain told me that the reenlistment program had increased about 25 percent while we were aboard.

Since the Vietnam War, our military service had gone through a trying period. It is over. I can't think of a better way for young men or women to spend a few years of their life than in the military. The experiences and education available will help them throughout their lifetime. And they will be defending their country.

My work takes me to countries all over the world. I don't know of a better way of life to cherish than our own.

Kirk Douglas

Aviation Gallery

In 1964 the first Navy photojournalists were graduated from the one-year course at Syracuse University. Since the program began, 230 Navy and Marine Corps photographers and journalists have gone through Syracuse, and from there many have gone on to aviation billets. Their photographs and stories about the men and women in Naval and Marine Corps Aviation have appeared in literally thousands of publications, from base newspapers to civilian Sunday supplements and magazines. The curriculum at Syracuse includes an initial review of basic photography, followed by advanced courses in newswriting and reporting, graphic arts, publications photography and a photography workshop. Both semesters of study total more than 30 credit hours, and most of the courses are at the junior, senior and graduate school level.

This summer the selection board met to choose the 1981-82 class from among more than 30 candidates, and it was not an easy process. The portfolios submitted by the candidates were among the finest ever judged, according to Bob Carlisle, head of the Still Photo Department in the Office of the Chief of Naval Information. As one member of the selection board, himself a Syracuse graduate, put it, "I'm damn glad the portfolio I submitted didn't have to compete with these."

Many of the photographs in the portfolios of those selected for this fall's Syracuse class were of Naval Aviation subjects. The photos on the next four pages are some of the best.

Photo by PH2 Lon Lauber

Photo by PH3 Kathleen M. Keil

Selectees for Navy Photojournalism Program Class of 1981-82

SSgt. Robert Bernal
Joint Public Affairs Office
New Orleans

PH2 Shayna Brennan
Photo Lab
NAS Patuxent River

PH3 Jesus A. Diaz
Atlantic Fleet Audio-Visual Command
NAS Norfolk

Cpl. Chris Hawthorne
Public Affairs Office
Camp LeJeune

PH2 Randy Hayes
Pacific Fleet Audio-Visual Command
NAS North Island

JO2 Gary Hopkins
Public Affairs Office
CincPacFlt

PH3 Kathleen M. Keil
Photo Lab
CincPacFlt

PH2 Kevin Knapp
Photo Lab
NAS Patuxent River

PH2 Lon Lauber
Navy Public Affairs Center
San Diego

PH2 David Loveall
Atlantic Fleet Audio-Visual Command
NAS Norfolk

PH2 Richard McDill
Atlantic Fleet Audio-Visual Command
NAS Norfolk

PH2 Paul Salesi
Pacific Fleet Audio-Visual Command
NAS North Island

PH3 Jeffery Salter
Fleet Intelligence Center, Pacific
Pearl Harbor

PH3 David G. Wujcik
Photo Lab
USS Belleau Wood

A P-3 Orion awaits preflight check on the line at NAS Barbers Point, Hawaii.

Photo by PH2 Richard McDill

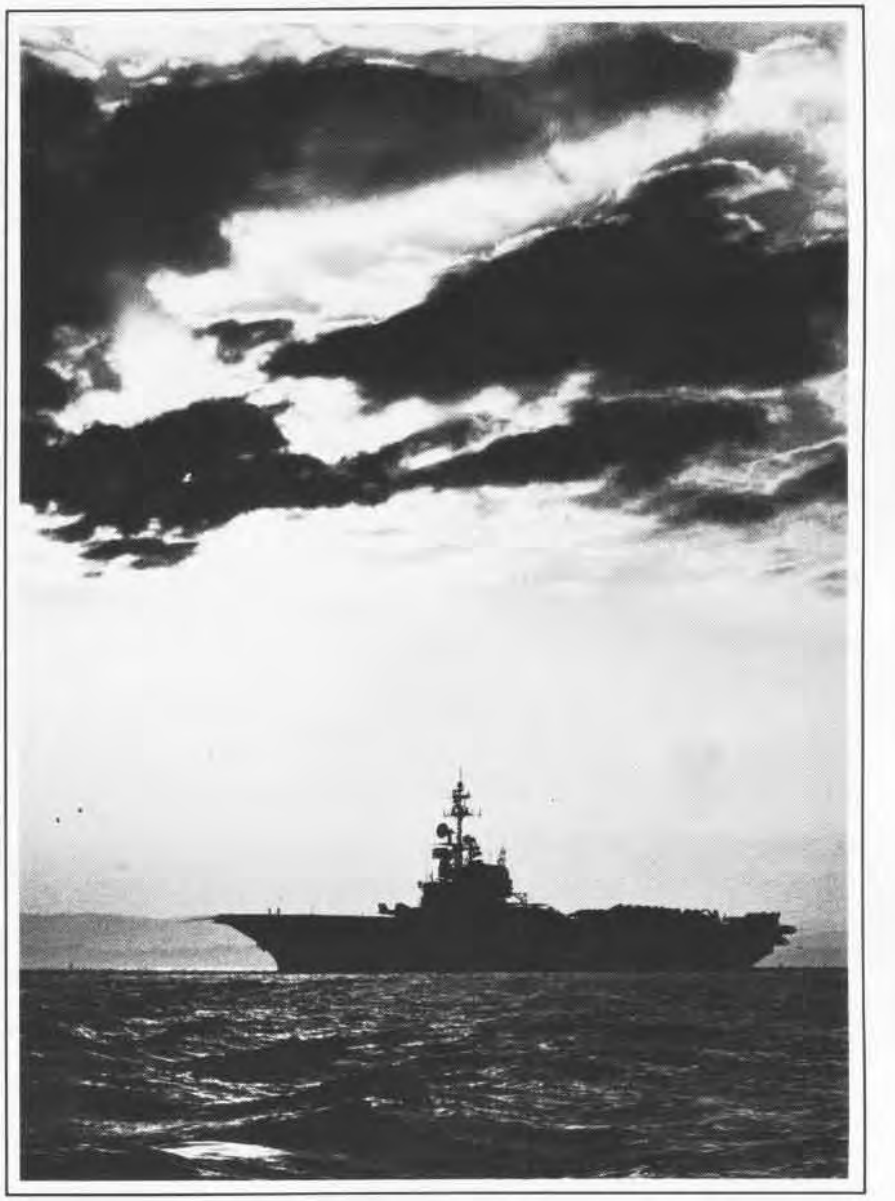
Crewmen preflight an F-14 Tomcat at NAS Oceana.

Photo by PH2 Shayna Brennan

A crewman is hoisted aloft during search and rescue training at NAS Patuxent River.

Photo by PH3 Jesus A. Diaz

Photo by PH2 Lon Lauber



Under a setting sun, Midway moves through Tokyo Bay en route to another deployment to the Indian Ocean.

A catapult crewman ducks as an F-14 Tomcat is launched in a blur of motion from the deck of the carrier Eisenhower.

Photo by PH3 David G. Wujcik

An unusual view from the flight deck of the amphibious assault ship Belleau Wood.

Photo by PH2 Steven Longchamp

Mr. P-3, Jay Beasley (r.), and Patrol Wing Five Commodore R. G. Castle leave the flight line after Beasley's 25,000th P-3 landing at NAS Brunswick.

Mr. P-3

By Jeff Beebe
The Times Record

He's known as "Mr. P-3" but everyone who walks up to him at the Officers Club calls him Jay, as in "Congratulations, Jay!"

Jay R. Beasley has shared the cockpit with just about every Navy pilot who ever flew Lockheed's P-3 *Orion*. In more than 8,500 hours of flight time in the Navy's sub-chasing workhorse, he has fine-tuned the landing skills of 4,150 pilots.

Last March 19 he went into the sky above NAS Brunswick, Maine, with five pilots and in just a few hours made 39 landings. The next day he took off in unsettled skies for one last mission.

On board were Commander Frank Hudnor, commanding officer of the accident-free *Tridents* of Patrol Squadron 26; Captain Ronald G. Castle, Patrol Wing Five commodore; and Rear Admiral Paul J. Mulloy, Commander Patrol Wings, Atlantic.

In their five hours in the sky, the weather deteriorated so much that by the time they were ready to land, there was no sky. There was only a gray thickness that began just above 300 feet of snow and mist. It was, Beasley would say later, one of those situations a pilot respects.

The admiral in the pilot's seat had only the voice of a closeted radar watcher to guide him down, "Slightly below glide path, slightly below, slightly above glide path, on glide path," intoned the disembodied voice until finally the runway arrived and lent itself to a perfect touchdown.

It was Jay Beasley's 25,000th landing in a P-3 *Orion*.

Beasley is employed by Lockheed as a trainer of Navy pilots, a sort of customer service representative. He was one of the first to fly the prototype P-3 in 1961, an *Electra* that had been sliced, shortened and painted blue.

He has flown continously for Lockheed since 1949. He returned to the aerospace company after a short stint as a commercial pilot with American Airlines, after beginning with Lockheed in 1943. Before that he flew in the ferry command of the Army Air Corps and before that he worked for American Airlines.

And even before that, he says, "I was a very young boy. I was an airport brat. I hung around airports looking for flight time."

The enthusiasm that carried him aloft alone for the first time in 1932 at the age of 17 is not diminished at 66. His eyes sparkle under silvery eyebrows that match a short mustache and thinning, slick, silvery hair that reaches to his collar in the back.

He prefers the older, orange, over-the-shoulder survival vest instead of the newer, Navy-issue belly belts because "they don't fit" around his portly fuselage, he says. Waddling across the slush-covered asphalt in a knit cap and a standard green, one-piece flight suit, he looked as much like a weathered polar explorer as an admitted grandfather of P-3 pilots.

Capt. Castle, who stood in the middle of the three generations of rank aboard for the final flight, explained Beasley's "fine-tuning" role. "We can go through steps 1 through 44 and all that, and land the airplane, but he shows us little things. Not shortcuts, but things to do, things to watch for."

The key to a good landing, says Beasley, is simple: "Landing on the runway in a position to stop on the runway." Even simpler is his explanation of why the landing is the most important part of a mission. "That's when you get hurt, when you hit the ground.

"You have to think fast, think ahead. When you're flying at 150 mph, you have to think 300. It's not like driving a car on a freeway." But it's a lot safer, he says.

He discounts the element of fear in flying and landing. "I wouldn't call it fear. It's respect. You have to respect the conditions. If you don't, you're behind the barn door." He says NAS Brunswick deserves respect because of its frequent, strong crosswinds.

The milestone landing by RAdm. Mulloy was not at all dangerous, he said. "It was a serious situation. If I thought this was dangerous, I wouldn't do it. If you don't have respect, however, it is dangerous."

> ‘You have to think fast, think ahead.’

His job as a fine-tuner, he added, really boils down to "making situations that would be very dangerous to a newcomer become second nature to handle."

And he apparently has done well. Never, he says, in 25,000 landings, did he ever once fear for his life. Credit for that goes not only to good pilots, he says, but to good maintenance, the pride of VP-26.

"You'd think in that many flights we'd have had all kinds of things go wrong, all kinds of blown tires, but I had only two," says Beasley. "The most amazing thing is that I've been able to do this without anything happening. It's such a good airplane and the people who work on it are so good."

The safety record of the VP-26 *Tridents* is legendary by now. In more than 150,000 flight hours since 1962, they have never had an accident.

Beasley remembers his first P-3 flight with RAdm. Mulloy, out of Argentia, Newfoundland in 1962. He first flew with him in 1960 when the admiral was a lieutenant junior grade, in a P-2 like the memorial aircraft displayed inside the NAS Brunswick main gate, with Beasley's name stenciled under the pilot's window. Captain Norman E. Koehler, NAS Brunswick's commanding officer, ordered Beasley's name stenciled on the P-2 to replace the name of the former station commander.

Before that local honor, Beasley was awarded the Distinguished Service Medal, the Navy's highest civilian medal, in 1970. In 1975, he was named Honorary Naval Aviator No. 11, an honor that allows him to wear a Navy pilot's wings. Only 11 civilians have had that honor.

Beasley's total of 18,500 personal flight hours fill nine or ten logbooks at home in Glendale, Calif., near Lockheed's Burbank center. "You have to keep a log by law, and I like to know whom I flew with, when, where and what sort of day it was. It's become sort of a diary. That's how I know I've flown with 4,150 pilots, and made 25,000 landings in a P-3."

Many, many of those landings were at NAS Brunswick. He's there so often that he hangs his flight suit and his old orange survival vest in the commodore's office.

naval aircraft

T-44

By Harold Andrews

Among active duty Naval Aviators who went through the multi-engine advanced training "pipeline," only the oldest and youngest, received their training in twin-engine Beech trainers. From WW II through the mid-fifties, the SNB (later C-45) served this role. Replaced by S2Fs (later S-2s), these early twin-Beech's are better remembered in their utility role by most pilots still on board today.

Over the years, the remaining twin-Beech C-45s were gradually retired from their many utility duties. At the Beech Aircraft Company, meanwhile, the Beech 18 series continued in production, with regular improvements in design and equipment. At the same time, Beech's line of lighter, piston-engined twins continued to advance towards larger and more capable aircraft to meet the needs of the business aircraft market. Elsewhere, the small turboshaft engine received more and more attention, resulting in new turbine engines suitable for small helicopter and business aircraft use. In the early sixties, Beech put these two thrusts together, resulting in a flight-test installation of Pratt and Whitney/Canada PT-6 engines in a modified *Queen Air* and the announcement of the turboprop-powered and pressurized *King Air* in 1963.

The new addition to Beech's line of business aircraft first flew in January 1964; certification followed in April and the *King Air* was on its way to commercial success. Military use followed. The Army procured unpressurized versions as the U-21A, while the Air Force acquired one as the UC-6A for its special mission operations. Five years later with a larger version *(King Air 100)* introduced, production of the Beech 18 finally ended.

Many of the Navy's piston engine aircraft were gradually being replaced by turbine-powered types. S-2s had long been out of production and by the mid-seventies, the TS-2As were both old and tired, as well as inadequate for training pilots for T-56 powered P-3s, C-130s and E-2s, to say nothing of the turbofan-powered S-3s. Clearly a new turboprop trainer was needed for the multi-engined advanced training pipeline.

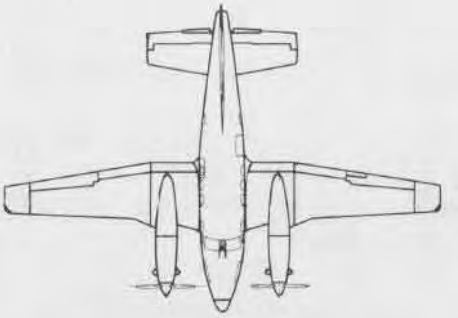
With several FAA-certified twin turboprop aircraft available, the decision was made to competitively select one of these as the VTAMX training aircraft to meet the Navy's requirements. As with all customers for these commercial aircraft, the Navy would indicate its needs for communications and navigation avionics and other equipment details. In 1976 the competition was held, Beech being the winner with its G90 *King Air* proposal. The aircraft were to be delivered complete with P&W/Canada PT-6A turboprop engines, and all support was to be provided commercially by Beech under the contract.

Since 1977, 61 T-44As have been delivered, all going t
VT-21 and VT-31 at NAS Corpus Christi, Texas. Contract
flight demonstrations and NATC service suitability tests we
performed with four of the first airplanes delivered befo

they joined the others at Corpus Christi. With Navy's *King Airs* expected to enjoy a long service life in their training role, Beech milti-engined trained Naval Aviators will once again become the norm.

T-44

Span	50'3"
Length	35'6"
Height	14'3"
Engines two P&W Canada PT-6A-34B	550 hp.
Maximum speed	245 mph
Service ceiling	31,300'
Maximum range	approx. 1,300 nm



Coast Guard Aviation 65 years

Coast Guard aviation began officially with an Act of Congress in August 1916 authorizing the establishment of 10 Coast Guard air stations. But the story actually began a year earlier.

It all started with the difficulties encountered by the Coast Guard in searching the sea lanes for derelict schooners. Two young Coast Guard officers, 2nd Lieutenant Norman B. Hall and 3rd Lieutenant Elmer F. Stone, supported by their commanding officer Captain B. M. Chiswell, felt that flying machines would be far more effective than surface vessels in the search mission.

The young officers were stationed aboard the cutter *Onondaga*, based at Hampton Roads, Va. Nearby was a flying school operated by the Curtiss Aeroplane and Motor Co., primarily to train pilots for the Canadian service. The manager of the flying school, Captain Thomas A. Baldwin, enthusiastically supported the idea that planes would be useful not only in locating derelicts but also in rescue and beach patrol work, and in carrying out other Coast Guard missions.

Baldwin arranged for Hall and Stone to ride along as passengers on a number of experimental flights in a Curtiss F flying boat. The underpowered craft did not take them out of sight of land, yet the range of observation from the air was so great that they knew their idea was a practical one.

They then had to map out their strategy for selling aviation to the Coast Guard. In the spring of 1916, when *Onondaga* was at Washington, D.C., Capt. Chiswell brought together on board the cutter Glenn H. Curtiss and then Assistant Secretary of the Treasury, Byron R. Newton. (Newton, earlier in his career as a young newspaper reporter, had witnessed the first flight of the Wright brothers at Kitty Hawk. The story goes that when he filed his account, his editor rejected it, maintaining that only a drunkard would dream up a story about a machine that flew.)

HH-52A, deployed aboard icebreaker Polar Star, searches for a lead in the ice near McMurdo Sound so that icebreaker can open path for cargo ships.

As a result of the meeting, Curtiss designed and built a flying lifeboat — a triplane with a short boatlike hull and control surfaces mounted high on the rear on tail booms. The Curtiss BT-1 Flying Lifeboat was designed to land in the open sea beyond the surf, rescue those in distress, shed its wings and tail, and motor to shore as a boat. This configuration was later employed by Curtiss and the Navy in designing the Navy's NC flying boats. By the time the lifeboat plane was completed, the U.S. was involved in WW I and further experiments ceased.

In the meantime, however, interest had been kindled in supplementing Coast Guard surface vessels with aircraft, and Captain Charles A. McAllister, Chief Engineer, and Commandant E. P. Berthholf asked the Navy Department about the possibility of training Coast Guard officers as pilots. Legislation was drafted to incorporate aviation into the Coast Guard and the Navy agreed to accept two Coast Guard officers for training at the newly established naval air station at Pensacola. On April 1, 1916, Lt. Charles E. Sugden and 3rd Lt. Stone were given their assignments to be the first two Coast Guard student pilots. 2nd Lt. Hall, who with Stone and Capt. Chiswell had conceived the idea of using planes and who was educated as a professional naval architect, was sent to the Curtiss factory at Hammondsport, N.Y., to study aircraft engineering and construction. Stone was designated Naval Aviator #38 on April 10, 1917.

Although the Naval Appropriation Act of August 1916, which had been promoted by the Aero Club of America and approved by the Treasury Department, authorized the establishment of 10 Coast Guard air stations, a Coast Guard aviation school and aviation corps, Congress failed to authorize the funds needed to put the act into force. However, 16 additional Coast Guardsmen were authorized to train at Pensacola. Thus, 18 aviators, an aviation engineering officer and an office at Coast Guard headquarters with

Coast Guard OS2U-3 Kingfishers, accompanied by Navy blimp, hover protectingly over convoy in WW II.

a sign on the door reading Inspector of Aviation constituted the Coast Guard's air section as the U.S. entered WW I.

The Coast Guard was incorporated into the Navy Department on April 7, 1917, by executive order, and members of the aviation section were ordered to naval air stations in the U.S. and overseas. One Coast Guard officer became the commanding officer of a naval air station in France.

At the end of the war, the Coast Guard returned to the jurisdiction of the Treasury Department and all activity in developing an aeronautical capability ceased. During the years that followed WW I, while the future of Coast Guard aviation seemed bleak, there still were dedicated souls who remained convinced of its importance. The exploits of wartime aviators and postwar barnstorming sustained their enthusiasm.

Then an event took place which had far-reaching effects. Toward the end of the war, the Navy and Curtiss had developed a long-range seaplane designed for transatlantic flight. Three of the Navy NC flying boats took off on a flight across the Atlantic to demonstrate the usefulness of the big flying boats. The NC-4 was the only one to successfully complete the journey and the Coast Guard's 1st Lt. Stone was one of the pilots. Stone, then serving as chief test pilot for seaplanes in the Navy's Aviation Division, was the only non-Navy member of the expedition.

The successful crossing of the NC-4 demonstrated the soundness of the big flying boat concept and the feasibility of long-distance overwater flying. It did much to convince the general public and the government of the potential of the airplane. Yet, there was only a vague interest in Coast Guard aviation.

Then, in 1920, Commandant Rear Admiral William R. Reynolds, a strong proponent of Coast Guard aviation, obtained six Curtiss HS-2L flying boats on loan from the Navy. With these as a nucleus, the first Coast Guard air station was established at Morehead City, N.C., in March 1920. The station served as an experimental operation to test the value of aviation in carrying out the Coast Guard mission. Although the flights were successful, the station was closed some 14 or 15 months later because of the lack of funds, and the aircraft were returned to the Navy.

It was not until four years later that there was a revival of interest, born again of necessity. Rumrunning during Prohibition became so flagrant that the Coast Guard was unable to intercept more than a small part of the flow. Its surface craft were hard pressed.

Early in 1925, the Coast Guard obtained the loan of a Vought UO-1 seaplane from the Navy. For a time it was based at Naval Reserve Air Station Squantum, Mass., and then it operated from a small base on Ten Pound Island in Gloucester Harbor. The Coast Guard made daily patrol flights on rumrunning surveillance missions, and succeeded in sharply curtailing this illegal practice in the area. In addition, the staff at the base gave instruction to Coast

Guard aviation students and also carried out a number of experiments in the use of radio communications between planes in flight and ship/ground stations.

Impressed by the successful operations at Ten Pound Island and plagued by increasing activity on the part of rumrunners in other areas, Congress authorized the transfer of 40 aircraft from the Navy and also appropriated $152,000 to purchase five aircraft, the first the Coast Guard could claim as its own. The Loening OL-5 biplane amphibian, delivered in October 1926, was the very first airplane constructed for the Coast Guard. In addition, in 1926, the Coast Guard established an air station at Cape May, N.J., on a portion of the naval air facility located there.

During the 1930s, Coast Guard aviation finally made significant strides. A substantial sum was appropriated for additional aircraft, equipment, air stations and flying ambulances – seaplanes which could land at sea in rough weather to give medical assistance. The service now had enough funds to establish specifications for planes instead of being limited to off-the-shelf types.

In 1934 all other Treasury Department aviation activity was placed under the jurisdiction of the Coast Guard, together with 15 aircraft which proved not to be serviceable for long since they were a motley collection of planes that had been seized for law violations. The Navy also turned over six Vought O2U-2 observation two-place observation biplanes, obsolete for military use but adequate for law enforcement and antismuggling operations.

In the years that followed, additional funds provided more planes and opened new air stations. By 1940 the Coast Guard had 50 aircraft, many custom built to meet Coast Guard specifications. Air stations were located, to make them part of the national defense pattern, on sheltered waters near the coast where land and seaplanes could operate safely and effectively.

First Coast Guard Aviator

Elmer F. Stone, designated Naval Aviator #38 on April 10, 1917, was appointed the first U.S. Coast Guard Aviator in 1920. For over 20 years he dedicated his life to advancing aviation in the Coast Guard.

Much of his duty was with Naval Aviation. While serving as chief test pilot for seaplanes in the Navy's Aviation Division, he was picked to be one of the pilots of the NC-4 and made the first transatlantic crossing. He served at the Naval Aircraft Factory, where he helped to develop the powder catapult which, until WW II, launched aircraft from ships. Stone was commended by the Chief of the Bureau of Aeronautics for his services in developing the catapult and deck arresting gear, and for his services as a test pilot. He was attached to BuAer from 1921 to 1926 and during his years there supported all attempts to develop Coast Guard aviation.

In 1932 Stone reported as commanding officer of the Coast Guard Cape May Air Station and two years later he became inspector of naval aircraft at the Douglas Aircraft Company in Santa Monica, Calif. He was commended by the Secretary of the Treasury in January 1935 for establishing a world record for amphibian planes, and was also awarded a certificate of record by the National Aeronautical Association.

A few months later Stone took command of the Air Patrol Detachment at San Diego. His untimely death came a year later on May 20, 1936, at the naval air station in San Diego, while he was inspecting a new patrol plane.

Recognized now to have been ahead of his time, like so many pioneers of early aviation, he left behind him an example of personal dedication for others to follow.

When war began in Europe in 1939, the U.S. organized neutrality patrols, in which the Coast Guard played an active part. In April 1941, the U.S. signed an agreement with Denmark for the protection of Greenland, and the service's aviation responsibilities increased as cutter-based planes participated in antisubmarine and coastal patrol operations to enforce neutrality on the high seas.

Some weeks before Pearl Harbor, the Coast Guard was transferred to the Navy Department by presidential order because of the deterioration of the international scene. Its routine duties were subordinated to the interest of national defense and the Coast Guard became heavily involved in convoy coverage, antisubmarine warfare, and patrol and rescue operations. Because of increased overwater flying by military aircraft, rescue activity accelerated dramatically.

During the war years, Coast Guard aircraft delivered 61 bombing attacks on enemy submarines, located more than 1,000 survivors of downed aircraft and torpedoed surface vessels, and took part in many rescues. The first Coast Guard kill of an enemy submarine was scored by Ensign Henry C. White of CG Squadron 212 off the passes of the Mississippi. His J4F *Widgeon* was capable of carrying one bomb, a 325-pound depth charge, and with it Ens. White scored a perfect hit.

Because of the need for a well-organized agency with the primary function of rescuing flyers forced down over land or sea, the first U.S. Air-Sea Rescue Unit was established in December 1942. Headed by the Coast Guard, it included all the services. Many individual acts of heroism highlighted Coast Guard rescue operations in the years that followed.

The following fall, Coast Guard Patrol Squadron 6 was established at Argentia, Newfoundland, and the Coast Guard began antisubmarine patrol duty in the Canadian Arctic, Iceland and Newfoundland. The squadron took over rescue duties that had previously been performed by naval aircraft in Greenland and Labrador, and also carried out patrols in northeast Greenland for ice observation, searches for enemy landings and weather station operations.

In February 1943, the Coast Guard was also assigned responsibility for the development of sea-going helicopters for convoy operations. In November, Coast Guard Air Station Floyd Bennett Field in Brooklyn, N.Y., was designated a helicopter training base and the Navy made three Sikorsky HNS helicopters available to get the project under way. The next month, the Chief of Naval Operations, who had an interest in shipboard helicopter operations, directed that a Coast Guard helicopter training program be conducted at Floyd Bennett Field. Soon afterward, the British Admiralty asked the Coast Guard to train helo pilots and mechanics for the British service. They provided four helicopters for this purpose and more than 100 pilots and 150 mechanics were trained under the program.

The versatility and maneuverability of the helicopter was ideal for many Coast Guard operations and in addition to using it for purely military duties the Coast Guard experimented with helicopters and used them extensively in rescue and relief missions.

When hostilities ceased in 1945, the President directed that the Coast Guard be returned to the jurisdiction of the Treasury Department and the air-sea rescue service was disbanded.

In the years following WW II, the flying boat was gradually replaced by the helicopter. Two types of helicopters have been widely used, both having amphibious capabilities. The HH-52A *Seaguard* is a single-engine jet helicopter used for short-range recovery missions while the HH-3F *Pelican* is a medium-range recovery twin-engine jet helicopter.

Helicopters have accounted recently for roughly 60 percent of Coast Guard flight hours, with the remaining hours flown by the HC-130 *Hercules* and the HU-16E

Here, C-130 taxiing. Center, Loening OL-5 on takeoff run in 1926. Bottom, HH-65A Dolphin which will replace HH-52A.

Albatross. The HC-130 is an all-weather, four-engine, turboprop aircraft for long-range missions, while the HU-16E is an all-weather, twin-reciprocating-engine, amphibious medium-range aircraft. Both are being phased out of the Coast Guard inventory.

Although the air-sea rescue service had been abandoned, the need continued with ever-increasing overwater activity, both military and civilian. In 1959, a new air-sea rescue organization was created — the Search and Rescue Agency — making the Coast Guard responsible for search and rescue operations over water and the Air Force over the land area of the U.S.

The Coast Guard now operates planes from air stations around the continental U.S. as well as in Newfoundland, Bermuda, Puerto Rico, Hawaii and Alaska. Coast Guard pilots are trained at NAS Pensacola.

Although its primary duty is to save life and property, the role of Coast Guard aviation expanded during the 1970s into the area of law and treaty enforcement.

The Coast Guard mission now has responsibility for violations of federal law on and under the high seas and waters which are subject to the jurisdiction of the U.S. It is responsible for fishery law enforcement over 212 million square miles of ocean, and uses aircraft to effectively monitor foreign fishing fleet activity. The anti-smuggling role has greatly increased as the Coast Guard strives to prevent drugs and other controlled substances such as firearms from being smuggled into the country by sea. It cooperates with the Treasury Department's alcohol unit in spotting illicit stills, assists the immigration Service in preventing illegal entry of aliens, conducts surveys for the Fish and Wildlife Service, intercepts and escorts aircraft in distress, relays storm and hurricane warnings to surface craft and isolated communities, assists in forest fire control and in flood relief, participates in the international ice patrol in the North Atlantic and conducts pollution surveillance.

Increased use of aircraft to help accomplish these missions has resulted in both the expanded deployment of shipborne helos and increased patrol activity for fixed wing aircraft. The 1960s saw the emergence of the cutter/helicopter team as an effective arm of the Coast Guard. In recent years, new medium endurance cutters have been commissioned which will enhance the cutter/helo combination.

The implementation of the 200-mile fishery conservation zone off the U.S. coast in 1976 increased demands on fixed wing aircraft. The tremendous distances involved have created a need for high speed aircraft capable of covering hundreds of square miles in a short time.

To meet the requirement, the Coast Guard has contracted for 41 medium-range surveillance HU-25A *Falcons* to replace the retiring fleet of HU-16 *Albatross* aircraft and C-131 Convair search planes. The *Falcon* will accommodate eight people – two pilots, one sensor system operator, two search crew members and three additional passengers. Its primary duties will be SAR, pollution surveillance and law enforcement patrol. Each aircraft will be capable of carrying an oil pollution detection sensor system. Its loiter capability will enable it to remain on scene until a cutter or helicopter arrives. It will be able to drop emergency gear.

Ninety HH-65A short-range recovery *Dolphin* helicopters will replace the HH-52A *Seaguards*. The rotor head used in the HH-65A will have 90 percent fewer parts and weigh 40 percent less than the HH-52A. Its twin turbine engines will allow higher airspeed and greater endurance.

The HH-3F medium-range recovery helicopters and C-130 search aircraft continue to fill out the remainder of the Coast Guard aircraft inventory and are expected to reach the end of their service lives after 1985.

Coast Guard aviation today is actively exploring every avenue of research and development which might enhance its capabilities. One new program is designed to develop and evaluate a maritime patrol airship and determine its usefulness as an aerial surveillance platform. The airship envisioned could deploy and retrieve a small boat; tow small craft, oil spill cleanup devices and sensors; and deliver bulky, moderate weight payloads to the scene of pollution incidents. (For a more comprehensive account of the Coast Guard airship development program, see the upcoming "Lighter Than Air" issue of *Naval Aviation News*.)

Another innovative program employs pigeons in search and rescue operations. (See page 38.)

A Navy/Coast Guard Board was recently formed to improve coordination on policy matters and issues of mutual interest. The Board was created to redefine the Navy/Coast Guard relationship since in the event of war many Coast Guard units will augment naval forces. Thus, the Coast Guard and Navy will be better prepared to join together quickly to become an effective at-sea team in wartime operations.

As Coast Guard responsibilities grow, Coast Guard aviation is seeking ways to hone its skills and improve the tools of its trade in order to carry out its vastly increased responsibilities. Coast Guard aviation has come a long way since Stone and Hall went for a spin over Newport News in a borrowed Curtiss F flying boat.

Above, Curtiss BT-I Flying Lifeboat which could land in open sea beyond surf, shed wings and tail, and motor to shore as a boat. Right, HH-3F hovers over disabled sailboat off Cape May, N.J.

By Helen Collins
From history and information submitted by the U.S. Coast Guard and other sources.


RIO SCHOTT

SAR is for the Birds – or Project Sea Hunt

One of the most helpless feelings in man's experience is to be lost at sea. The accepted method of searching for someone in the vast expanse of ocean is to use as many aircraft as possible with human lookouts. The aircraft follow a pattern of search which is, hopefully, in the area of the lost person. Whether or not the observer is successful depends on many factors – alertness, fatigue level, interference with other essential duties, sun angle, weather, altitude, the list goes on. The main drawback, sometimes, is the capability of the observer's eyes.

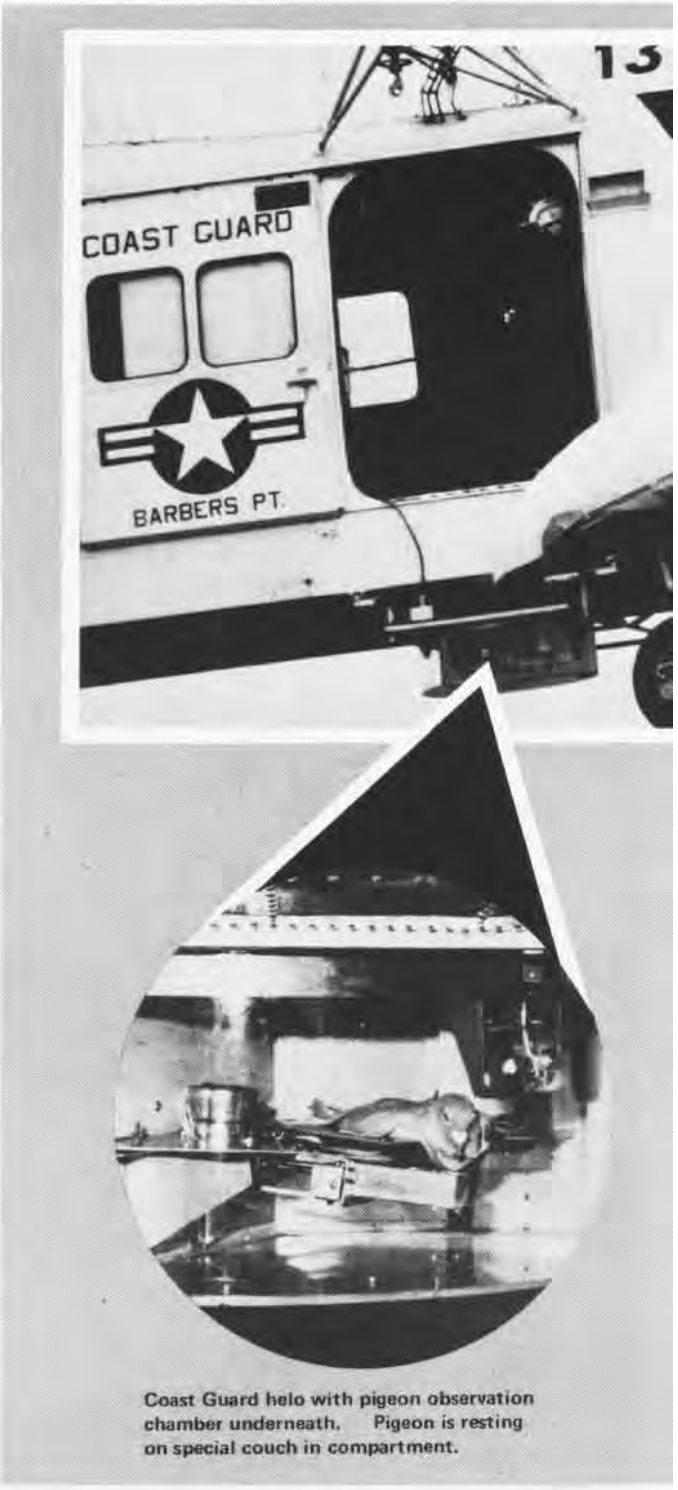
Since search and rescue is the core of the Coast Guard mission, that service has been looking for ways to increase the probability of detecting a person or object on the earth's surface.

Birds generally have eyesight far superior to man's. This is not strange since survival requires them to identify food, find prey or detect danger at great distances. The pigeon in particular is much better suited to visual search than man. It has a superior search rate ability, being able to process a much larger proportion of the visual field in the same amount of time.

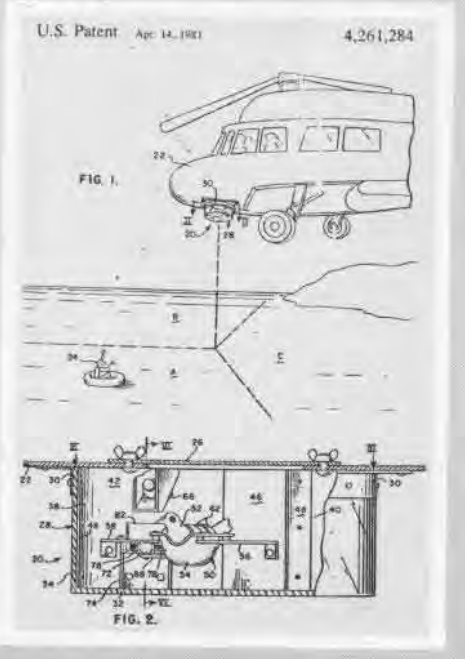
The Coast Guard began a study to determine whether the unaided visual abilities of the pigeon could be used to detect the presence of an object on the surface of the ocean at the distances required during aerial searches.

A prototype system was designed in July 1976 in which three birds were comfortably positioned in separate compartments in an observation chamber attached to the underside of a helicopter. Each of the three compartments was fitted with a peck key, feeding mechanism and pigeon couch.

The pigeons were trained to detect orange (the conventional color of emergency equipment) and to indicate the presence of such an object by pecking a response key, which alerted the observer with an auditory signal. Responses by the pigeon were displayed by counter and panel lights. A four-channel strip-chart recorder was used to record the pigeons' responses and detection of the target by the human observer. The target used during the heli-



Coast Guard helo with pigeon observation chamber underneath. Pigeon is resting on special couch in compartment.



copter training and testing was a spherical orange fishing float. The pigeons were trained to peck the response key when the target was presented and were also conditioned to perform their visual task in an environment which simulated the noise and vibration characteristics of a helicopter.

When the pigeons were ready for flight testing, the Station Operation and Maintenance Squadron at Marine Corps Air Station, Kaneohe Bay, one of whose primary duties is SAR for all airfield operations, and Coast Guardsmen at Barbers Point conducted the tests. The Marines flew HH-46As and the Coast Guard H-52s.

The helos would fly to the work area, usually 7 to 10 miles north of MCAS Kaneohe Bay or 5 to 10 miles southwest of the Coast Guard station at Oahu. The target, an 18-inch-diameter international orange buoy, was thrown out of the aircraft and a tacan fix was taken to mark its location. The aircraft then flew further out to sea and the pigeons were placed in the observation chamber. Minutes later the aircraft turned and flew back towards the target. Four to six approach trials were conducted in each one to two-hour flight. The pilot would try to fly the aircraft on a course that would place the buoy to the left or right of the flight path, and the aircrew members would begin visually searching for the buoy. The pigeons sighted the buoy 97 percent of the time on the first pass, compared to 30 percent by the crew members. In 77 percent of the passes, the pigeons were the first to acquire the target. It was frequently necessary for the helos to orbit the area indicated by the pigeons several times before the crewmen saw the buoy. The trainer monitored the pigeons' performance and gave direction information to the crew when there was a detection by the pigeons.

At the end of each session, the practice target was recovered by the hovering helo, using a grappling line to snag a floating line attached to the target.

Not only did the pigeons detect the target on the first pass at a higher probability than the human observers, but the information supplied by the pigeons helped the crewmen concentrate their search in the proper direction.

By 1979, three of the four pigeons had been successfully trained to detect not only orange but also red and yellow. Then, in early 1979, a Coast Guard helicopter carrying the Sea Hunt pigeons was involved in a real-life drama, searching for five men missing on a fishing trip. The crew was forced to make an emergency landing off the North Kona Coast of Hawaii. The observation chamber carrying the birds was torn from the helo and lost along with the birds, martyrs to the cause of SAR.

Both the Marine Corps and Coast Guard pilots involved in the testing agreed that pigeons are much more efficient than humans in searching for small objects of a specific color and will be of great aid in search missions. And so, although there was a break in the testing after the first pigeons were lost, Project Sea Hunt is on again with a new group of "volunteers."

The search aparatus for the Sea Hunt system has been patented and is believed to be only the second U.S. patent granted where a living being is a basic part of the patented item.

It is planned to use the pigeons at a Coast Guard air station for actual search missions in the not too distant future and, in the years to come, many downed pilots may owe their lives to concerned men and women of the Coast Guard and their feathered friends.

Sincere thanks

HERZLICHEN DANK

Pensacola ceremony marks 25 years of German Naval Aviation training

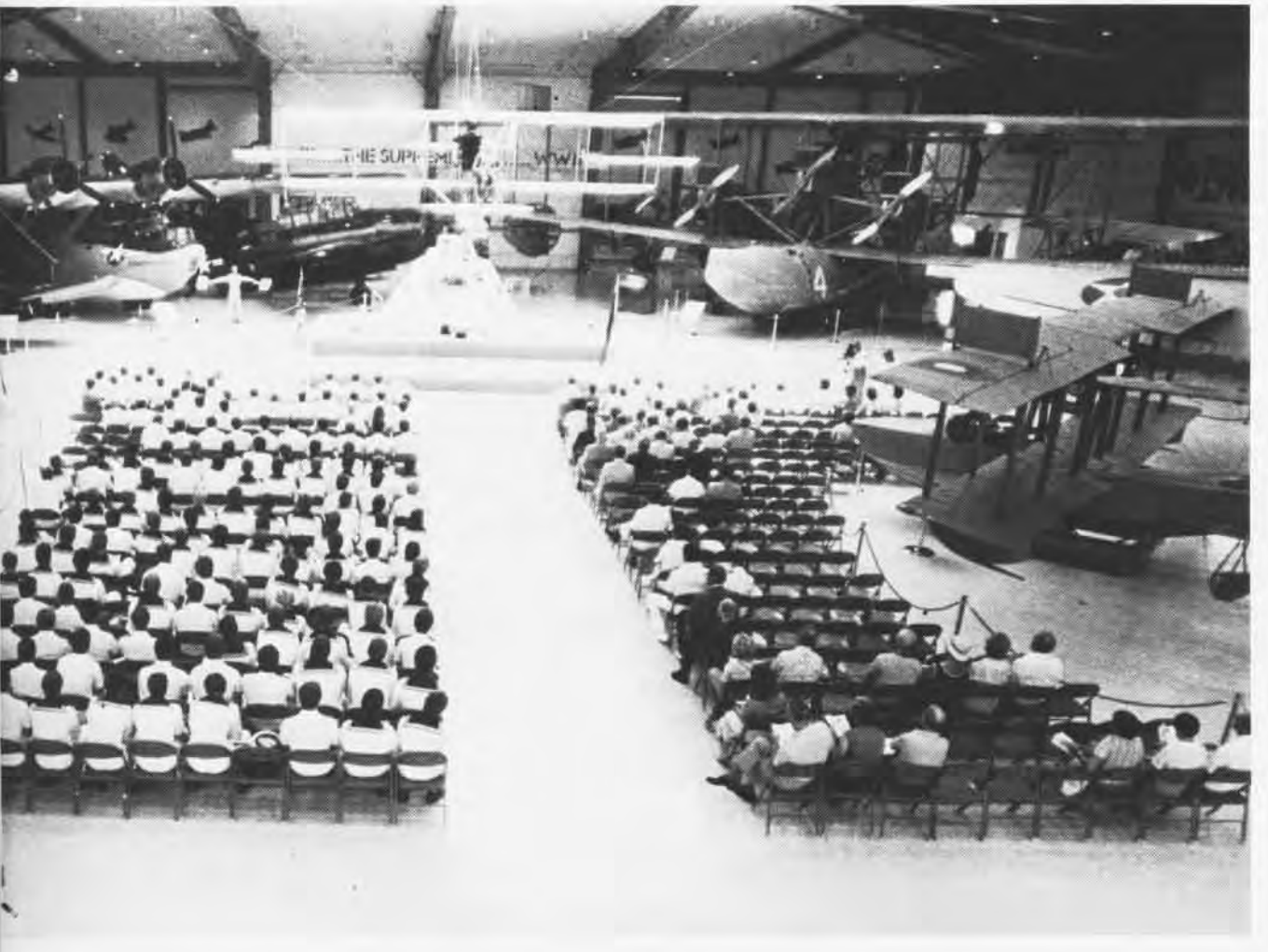
They fly for the Federal German Naval Air Arm, a key extension of the North Atlantic Treaty Alliance, but like most U.S. Naval Aviators, they received their flight training at Pensacola Naval Air Station.

At NAS Pensacola, July 9, representatives of the Federal German Naval Air Arm and U.S. Naval Aviation marked the 25th anniversary of the program that has trained nearly 200 German pilots, flight officers and flight surgeons since 1956.

At the ceremonies, guest speaker Rear Admiral Helmut Kampe, Deputy Commander in Chief of the German Fleet, referred back to initial planning to produce a new German naval aviation branch shortly after the Federal Republic of Germany's acceptance into NATO. "We were heavily dependent on foreign support. This support was given to us by the U.S. Government and the U.S. Navy in a most generous and effective way." *(Continued)*

At left, RAdm. Edward H. Martin (center), Chief of Naval Air Training, assists RAdm. Helmut Kampe, Deputy Commander in Chief German Fleet, in cutting the cake as German RAdm. Rudolf Decker watches. Below left, German Navy signalman Chris Kruse holds souveniers from the Naval Air Museum at Pensacola. Below, old aircraft form the setting for ceremonies marking the 25th year of aviation training for members of the Federal Republic of Germany's Naval Air Arm.

Photos by JOI Jim Bryant



The job of building a naval air arm for the Bundeswehr was particularly difficult, explained RAdm. Kampe, since the German navy had not had its own aviation program since the end of WW I in 1918. "So we were all the more grateful to the U.S. Navy which, within the grant aid program, offered. . .to 20 German pilots the opportunity to undergo flight training here in Pensacola."

This year marks the 70th anniversary of German naval aviation. It started in 1911 when the German Imperial Navy formed a unit comprised of fixed wing aircraft and Zeppelin airships. This nucleus proved to be of great value and functioned effectively throughout WW I. By the end of the conflict, German naval aviation forces consisted of 16,000 men and 2,500 aircraft.

After the war, military aviation activities were suspended until 1922. During WW II, naval aviation became a special arm of the German air force. Many German naval officers considered this to be an unfortunate error in judgment which seems to be borne out by history.

After WW II, the cold war forced West Germany to rearm. The armed forces of the Federal Republic of Germany became part of the military alliance of NATO, and a bulwark in the Free World defense posture.

Initial planning to revive the German Navy's air arm began in Bremerhaven in 1951 with the aid of the "American Naval Historical Team." In 1956, the actual buildup of the air arm began at the Kiel Naval Air Station. Part of that buildup was a substantial training program at NAS Pensacola comprised of novice pilots as well as veteran WW II fliers who were undergoing a refresher course.

On June 16, 1956, the first Commander, Naval Air Division assumed command at Kiel-Holtenau, and on June 22, 1958, the first squadrons of both tactical fighter-bombers and ASW aircraft were ready for service. The size of the naval air arm, relatively small at the beginning, was brought up to its full strength by the late 1960s. Today the naval air wings, with approximately 7,000 men and women, represent one-fifth of the total strength of the German Navy.

The role of the naval air force is integrated into the navy's overall mission. The Germans practice what they call, "a balanced fleet concept." Naval fighter-bombers, reconnaissance aircraft and helicopters fall under command of the Commander Naval Forces, as do destroyers, submarines and other naval assets. Rather than considering itself a separate entity, the naval air arm stands ready to conduct "naval warfare from the air."

The Atlantic (inset) performs sea surveillance, antisubmarine warfare and search and rescue duty for the Federal Republic of Germany Naval Air Arm. The Tornado (below) will be the fighter-bomber mainstay.

In this capacity, German naval aviators and aircrews are prepared to engage in:

- air reconnaissance operations and control of the sea within the navy's area of operations.
- combat against enemy surface units and coastal installations of naval interest.
- anti-submarine warfare.
- search and rescue.
- personnel and material transport.

There are four naval air wings.

Wings One and Two are comprised of three naval fighter-bomber squadrons and one naval reconnaissance squadron. They are equipped with F-104G and RF-104G *Starfighters,* all of which are assigned to NATO. Naval Air Wing Three is equipped with MPA Breguet *Atlantics* and is also assigned to NATO. Naval Air Wing Five is under German command and employs *Sea King* helicopters for search and rescue operations and Dornier Do-28 aircraft for naval air transport and liaison.

A third generation of combat aircraft is now beginning to enter service. In 1982, Naval Air Wing One will convert to the new multirole combat aircraft *Tornado*. Wing Two will follow in 1986, replacing the *Starfighters,* which although modernized have been in service since 1963.

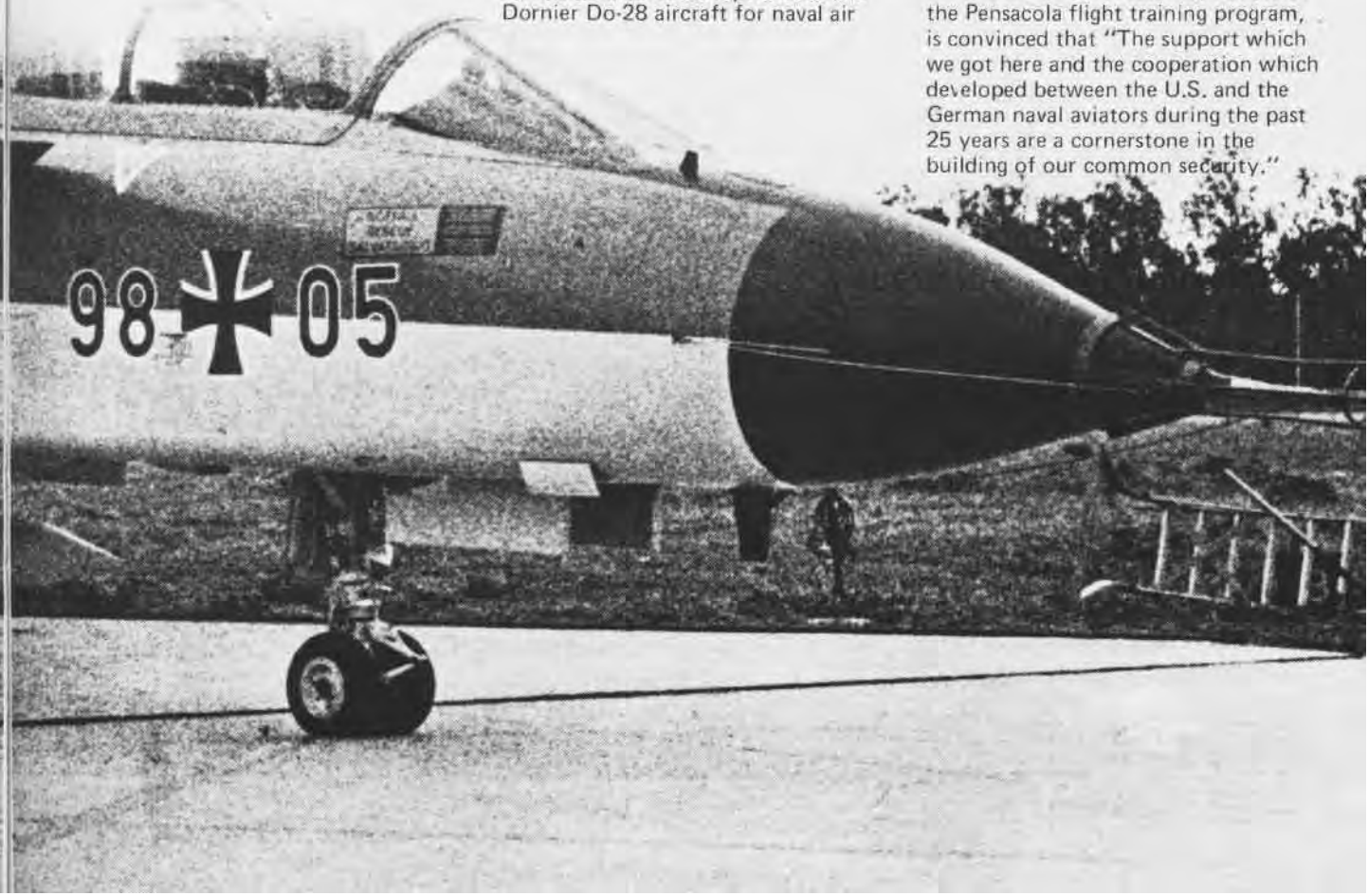
The new F 122 class NATO frigates will be equipped with *Sea Lynx* helicopters, which will greatly enhance their ASW capability.

It is clear that the naval air arm of the Federal Republic of Germany continues to play an important role in the NATO defense structure.

"In spite of the fact that we carry out our pilot training since many years now by our own, the naval aviators trained in the United States were and still are the personal basis of our present naval air arm," said Kampe. The admiral himself is a graduate of that program, as are many other senior German naval officers.

Speaking to guests at the U.S. Naval Aviation Museum, RAdm. Kampe pointed out that though different in size, composition and strength, the forces of the U.S. and West Germany, "are complement to each other and united in the endeavor to preserve our way of life, freedom and peace.

The Admiral, himself a graduate of the Pensacola flight training program, is convinced that "The support which we got here and the cooperation which developed between the U.S. and the German naval aviators during the past 25 years are a cornerstone in the building of our common security."



Chicago Daily Tribune: "Navy Plane First to Fly Over Atlantic: Washington, D.C., May 27, 1919, Associated Press. Blazing the way for the first air trail from the western to the eastern hemisphere, the United States Navy seaplane NC-4, under Lieutenant Commander Albert Cushing Read, swept into the harbor at Lisbon, Portugal, today, the first airship of any kind to have crossed the Atlantic Ocean under its own power and through the natural element."

Albert C. Read

By Jeanne Gray

Albert Cushing Read, like fellow New Englander Calvin Coolidge, was a man of few words. He was also resourceful, hard working and dedicated. A native of New Hampshire, he was small in physical stature, standing 5'4" and weighing only 120 pounds. His friends dubbed him "Putty" when he came back from a summer vacation with a pallid complexion instead of a tan and he carried the nickname the rest of his life.

Graduating from the U.S. Naval Academy in 1907 with honors, Read spent seven years at sea serving aboard *Decatur, Barry, Bainbridge* and *Delaware*. Following a tour of duty at the Naval Torpedo Station, Newport, R.I., he began his aviation career on July 8, 1915, as a student at the Naval Aeronautic Station, Pensacola, Fla. There, he mastered the principles of flight and was designated Naval Aviator #24 on March 7th of the following year.

Read's first aviation assignments were aboard *North Carolina* and *Seattle*. While these tours were of brief duration, they exposed him to the special problems and requirements of shipboard aviation, and provided experience in such unique features as catapult takeoffs and plane handling alongside ships. Perhaps more important was his participation in fleet operations where the role of Naval Aviation was beginning to unfold. Subsequently, Read commanded NAS Bayshore, N.Y., and NAS Miami, Fla., from which flying boats operated to patrol coastal shipping lanes against the U-boat menace.

During a tour in the Office of the Chief of Naval Operations in 1919 he became interested in the four Navy-Curtiss (NC) flying boats, which had been designed for wartime use in Europe and had the capability of delivering themselves across the Atlantic. After the armistice, Navy interest turned toward a transatlantic flight in the NC-boats, a feat which had never before been accomplished.

Read volunteered to participate and was given command of the NC-4. This plane was the last to be completed for the flight and the crew had an opportunity to fly it only once before they left for Newfoundland, which was the jumping-off point.

Read worked hard to insure that his crew would have the best possible chance of getting across. As aircraft commander, he was also the navigator and it was essential that his navigation be pinpoint accurate. If he missed the Azores, which was their refueling stop, they would go down in the open ocean. Walter Hinton, one of the pilots on the NC-4, remembers Read as ". . .a wonderful fellow to work with — very conscientious. I don't know about the others but he took his (navigation) instruction from Byrd. He got out there and practiced at night and worked with Byrd (with the latter's especially designed bubble sextant)."

All three aircraft left NAS Rockaway, Long Island, N.Y., on May 8, 1919. The NC-4 was the last of the three to be completed and the crew had had an opportunity to fly it only once before. Read would have liked more time to adequately test and ready the aircraft, but time did not permit this luxury.

Read's concern became reality when, barely out of sight of Long Island, the NC-4's oil pressure in one engine dropped and the crew was forced to continue on the other three, until the forward engine threw its connecting rod. Then there was no choice but to land in the open ocean. When Read's boat went down, he found himself and crew in the middle of an empty sea about 80 miles from Cape Cod. Radio transmissions from the aircraft failed to raise ships in the area and haze prevented a searching destroyer from spotting the aircraft. Read had no option but to start taxiing with the remaining two engines. By taxiing all night, they brought the plane into Naval Air Station, Chatham, Mass., the next morning under her own power. There, after a change of engines, the NC-4 took off again for Halifax, Nova Scotia, and proceeded on to Trepassey Bay, Newfoundland, arriving just in time to meet the other two planes taxiing back from an unsuccessful attempt to take off for the long hop to the Azores. At Trepassey, another change of engines and replacement of three split propellers put the NC-4 back in the game. On May 16, with one engine fresh from the crates, unflown, untested, and not broken in, the NC-4 together with the other two aircraft set off on the long-

est, most difficult leg of the flight across the Atlantic.

Good weather had been expected, but it deteriorated along the route to the point where some of the ships spaced over the 1,200-mile stretch to the Azores were able to keep their station only with great difficulty.

The planes flew all night and into the next day, encountering turbulent air, freezing temperatures and fog. Contact with the other two aircraft had been lost early in the flight. Read checked his navigation carefully as he flew over ships positioned along the way but with the onset of heavy fog, he was limited to dead reckoning. Nevertheless, Read was quietly confident of his calculation and they flew on toward the Azores. NC-4 landed at Horta at 9:25 a.m. on May 17, 1919. NC-1 and NC-3 did not fare so well and went down at sea. One of these crews was rescued by a passing merchant ship while the other was blown toward the Azores and taxied in under its own power on the 19th.

The NC-4 completed the crossing on May 27th when she landed in Lisbon, Portugal. Later she went on to her ultimate destination at Plymouth, England, arriving there on the 31st. Read and his crew had made the world's first transatlantic flight.

In January 1920, Read returned to Pensacola for duty. From October of that year to June 1922, he had consecutive service as commanding officer of the seaplane tender *Harding*, and as staff officer attached to Commander Aircraft Squadrons, Scouting Fleet aboard the tender *Shawmut*. He was a student at the Naval War College, Newport, R.I., 1922-23, and became an instructor there the following year.

On June 24, 1924, Read assumed command of Aircraft Squadron 20, Asiatic Fleet. During the next few years he had a number of aviation fleet command assignments until October 1926, when he became C.O. of NAS Hampton Roads. This was followed by duty as X.O. of *Saratoga* beginning May 1929. On August, 1931, he reported to the Bureau of Aeronautics, where he remained until he assumed command of *Wright* in June 1934. In May 1936, he became Assistant Chief of BuAer, moving on two years later to *Saratoga*, this time as C.O.

After a tour as C.O. of NAS Pensacola he was promoted to flag rank in 1940. Later he became wartime Chief of Air Technical Training and in January 1944 he was designated Commander Fleet Air, Norfolk. He served in that capacity throughout the remainder of the war.

In December 1945, RAdm. Read returned to Washington, D.C., where he served in the Office of the Deputy Chief of Naval Operations (Air) until he retired in September 1946.

Albert C. Read passed away at Miami, Fla., on October 10, 1967, at age 80, after a distinguished career. History records that he commanded the first aircraft ever to conquer the Atlantic.

PEOPLE·PLANES·PLACES

Awards

At the end of the rainbow is a pot of gold, but at the end of the 1980-81 WestPac/Indian Ocean cruise was a Golden Tailhook for VA-25. In the process of winning the CVW-2 award, the squadron logged 1,082 day traps and 628 night traps.

Anniversary

The U.S. Postal Service recently awarded a commemorative indicia honoring the 35th anniversary of the U.S. Navy Flight Demonstration Squadron, *Blue Angels*. The commemorative cancellation marking was issued to only two cities. Pensacola, Fla., home base for the squadron, and Palm Springs, Calif., near the *Blues'* winter training home at El Centro, each received the distinctive postal marking which, according to postal officials, will be used until December 15.

BOOST

With 15 months of taxing physical and academic training behind them, 185 Navy, Marine Corps and Coast Guard men and women graduated from the Broadened Opportunity for Officer Selection and Training (BOOST) program on June 5. BOOST is a college preparatory program which provides an avenue for upward mobility to enlisted personnel, from all ratings, with educational deficiencies. During the program, approximately 12 months long, participants are assisted in acquiring the scholastic skills and academic credentials needed to pursue a naval commission through the Naval Academy or the Naval Reserve Officers Training Corps. Applications for the June 1982 class must be in by December 1, 1981. BuPers Manual Article 1020360 and OpNav Notice 1500, dated July 1981, contain details. In photo, RAdm.

The Golden Gate Bridge pokes its head through the cloud cover as the Blue Angels streak by. The Blues were the main attraction at the NAS Lemoore Air Fair and Open House on Sunday, June 28.

Gerald E. Thomas, Commander Training Command, U.S. Pacific Fleet, hands a BOOST graduate the certificate that will open doors to a college degree and a naval commission.

Records

VAW-115's *Liberty Bells* recently passed a *Midway* milestone when they logged the carrier's 255,000th arrested landing. Flying the squadron's E-2B *Hawkeye* was Lt. Ellis Woumnm who logged the trap; LCdr. Mark Allen, carrier aircraft plane commander; Lt. Jim Green, combat information center officer; Lt. Steve Burchard, air control officer; and AT2 Rodger Zoerner, flight technician. *Midway's* milestone trap was logged during her 1981 deployment, the squadron's sixth Indian Ocean deployment since January 1977.

LCdr. C. Nation of VA-65 achieved his 2,000th hour in the A-6E *Intruder*. In recognition of this milestone, Tom Llewellyn of Grumman Aerospace Corp. presented LCdr Nation with a 2,000-hour plaque. A 1,000-hour plaque was presented to Lt. Ken Pavic for his time in the A-6E.

VA-56 marked individual milestones. Skipper C. S. Mitchell logged his 200th *Midway* trap. Cdr. H. T. Rittenour and Lt. Mike Moffatt each reached the squadron goal of 300 *Midway* traps, 100 of which were at night. Lts. Bob "Hulk" Caulk and George "Zorba" Alexander each logged his 200th CV-41 arrestment.

Et cetera

"It was a beautiful run," said Air Traffic Controlman First Class Clyde Torgerson after his 51-mile effort to raise funds for the Navy Relief Society. Torgerson's goal was to run 50 miles from the flagpole at NAF El Centro, Calif., to a point in the desert. From there he had hoped to run another 20 miles to the flagpole at MCAS Yuma, Ariz. The longer goal of 70 miles was made impossible by a sore hip and blisters on his right foot but Torgerson still netted $1,343 for Navy Relief. Almost all of the donations came from his shipmates at El Centro.

The 32-year-old veteran marathoner began his run at 0300, leaving early enough to avoid the hottest temperatures he would encounter running through the desert. For the first 35 miles, Torgerson set an 8.5-minute-per-mile pace, saying, "It was the pace I felt most comfortable with. It's like driving a car. When you find the right gear, you stick with it." Not so comfortable was his sore hip, which began to bother Torgerson after the 25th mile. He ran the equivalent of a full 26-mile marathon with the hip pain. "You reach a point and

beyond that it's sheer determination," added Torgerson. "It's tough only if you think it will be." He said, smiling, "One of the trucks gave out before I did."

There is probably no other family like the Dishart's in which four out of five sons are aviators flying four different aircraft in three military services.

Navy Ltjg. Gregory S. flies an F-14 *Tomcat* and is currently stationed aboard *John F. Kennedy*. Marine Corps 1st Lt. Daniel W., flying an A-6 *Intruder*, is based at Cherry Point, N.C. Air Force Capt. Urban

The flying Disharts.

E. is based at Moody AFB, Ga., and drives an F-4 *Phantom*. Lt. Jeffrey P., also in the Air Force, stationed at Hill AFB, Utah, is pilot of an F-16 *Falcon*.

Stephen K. Dishart is the maverick in the family and chose a civilian career as commentator-investigative reporter for Station WCHS in Charleston, W.V.

The members of this unique family all graduated from West Virginia University. Each is fiercely loyal to his branch of the service and prone to extol the virtues of his particular aircraft. Their father, Urban E., Sr., is a former Marine Corps staff sergeant.

Change of Command

3d MAW: Maj.Gen. Cox relieved Maj.Gen. Leo J. LeBlanc, Jr.

3d MAW G-1: Col. Michael P. Sullivan relieved Col. R. Darrell Miller.

4th MAW: Maj.Gen. Gregory A. Corliss relieved Maj.Gen. Richard M. Kuci.

ASWOC 0965: Cdr. Franklyn P. Smith relieved Cdr. John P. Cann III.

ComTacSupWing-1: Capt. Kenneth A. MacGillivray relieved Capt. John P. Smith.

FltAvComPac: LCdr. Franklin D. Peele relieved Cdr. Richard J. Wade, Jr.

HM-16: Cdr. Paul F. Erny relieved Cdr. Raymond M. Carlton, Jr.

HT-8: Cdr. Clyde E. Lassen relieved Cdr. Vincent C. Secades.

HT-18: Cdr. Thomas W. Tilt relieved Lt.Col. Robert G. Clapp.

H&MS-26: Lt.Col. William G. Barnes, Jr., relieved Lt.Col. Faustin E. Wirkus, Jr.

H&HS, New River: Capt. Ronald P. Stirrat relieved Maj. Lloyd M. Hekhuis.

MCAS Beaufort: Col. William J. Cooper relieved Col. George H. Leach.

MCAS El Toro: Brig.Gen. Richard M. Cooke relieved Maj.Gen. John V. Cox.

NAS Moffett: Capt. Andrew C. A. Jampoler relieved Capt. Ronald F. Marryott.

VA-113: Cdr. Wilbur C. Trafton relieved Cdr. Ted D. Hill, Jr.

VAW-115: Cdr. George C. Kickhofel relieved Cdr. George E. Huxhold.

VF-33: Cdr. John A. Best relieved Cdr. Frederick H. Vogt.

VF-202: Cdr. Bruce L. Frye relieved Cdr. Terry R. Born.

VMA-242: Lt.Col. William M. Dale relieved Lt.Col. G. A. Focht.

VMFA-251: Lt.Col. Norman G. Kerr relieved Lt.Col. D. A. Richwine.

VP-19: Cdr. John P. Brockley relieved Cdr. Howard R. McDaniel.

VP-26: Cdr. Ron Gladin relieved Cdr. Frank L. Hudnor.

VP-60: Capt. Gary Engle relieved Cdr. Howard Lysne.

VP-0919: Cdr. Robert A. Gall relieved Cdr. Allan A. Connel III.

VT-3: Cdr. John F. Healy relieved Lt.Col. G. A. Brown.

VT-28: Cdr. Julius B. Dell, Jr., relieved Cdr. Sammy D. Stair.

VQ-4: Cdr. F. W. Hilton, Jr., relieved Cdr. T. W. Joyner.

VXE-6: Cdr. Paul Dykeman relieved Cdr. Victor L. Pesce.

Professional Reading

By Lieutenant Commander Peter Mersky, USNR

Miller, Thomas G., Jr. *The Cactus Air Force*. Bantam Books, 1981, previously published by Harper & Row, 1969. 247 pp. Maps, index. Paperback. No photographs. $2.50.

During WW II "Cactus" was the code name for Guadalcanal-Tulagi. With a handful of pilots, men and machines from three services, the Cactus Air Force, as it came to be called, flew out of Henderson Field and was able to keep the enemy at bay under difficult and primitive conditions. It was a shoestring operation but success was imperative. Navy and Marine Corps F4F *Wildcats* and Army P-400s, the latter being intended export versions of Bell P-39s, played key roles in preventing the Japanese from reclaiming the island. Together they helped to establish the momentum to push the enemy northward in retreat toward the home islands. This book concentrates on the spectacular aerial action of the Guadalcanal campaign. Although containing no photos, it does make use of well-rendered drawings of most of the primary aircraft involved, American and Japanese. There are also some useful maps which cover the area of action. A moving account.

Barrow, Jess C. *Marine Fighting Squadron Nine (VF-9M)*. Tab Books, Inc., Blue Ridge, Pa., 1981. 239 pp. $7.95.

This book is an excellent research effort and fills a significant gap in historical writing on Marine Corps Aviation. The colorful Curtiss and Boeing fighters of the period come alive as the author describes their roles as part of VF-9M. Included are a number of rare photographs which have not been previously published. Appendices include a listing of the serial numbers of all the planes which served in the squadron, as well as a roster of squadron commanding officers. The book contains in-depth accounts of the air shows in which this unit demonstrated its aircraft and pilot skills in an attempt to keep Marine Corps Aviation before the public eye. It is the story of a group of outstanding officers and men who influenced Marine Aviation in its formative years. The trials of keeping a separate Marine Aviation organization alive during the war-weary twenties and depressed thirties is well told. This volume is excellent reading, as well as a valuable reference work.

Polmar, Norman. *The Ships and Aircraft of the U.S. Fleet*, 12th edition. Annapolis: Naval Institute Press, 1981. 432 pp. 749 photos and drawings. Appendices. $24.95.

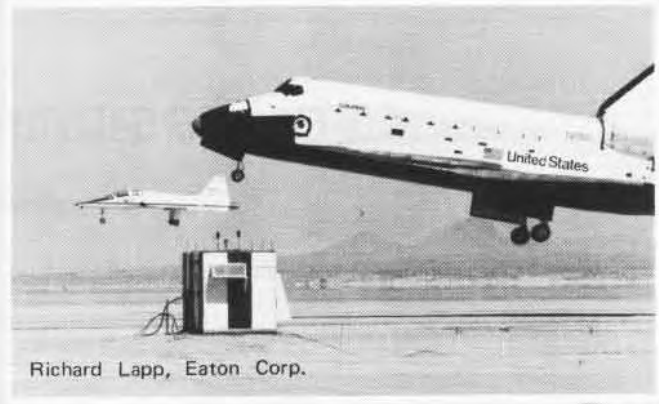
All active U.S. ships are covered in this volume with pertinent facts and figures and generally sharp, well-chosen photographs, many of which have not been published before. The aviation side of the Navy is well represented with aircraft and squadrons, active and reserve, described and their missions explained. With the impending addition of new surface combatants, submarines and aircraft to the fleet, this book is an excellent reference and a good update on today's Navy.

Hanson, Norman. *Carrier Pilot*. Patrick Stephens Ltd., Bar Hill, Cambridge, England. 1979. 255 pp, glossary, personnel roster. Illustrated. $19.25.

This autobiographical account of a Fleet Air Arm pilot's experience flying *Corsairs* from British carriers provides a different perspective on a familiar subject. Trained at Pensacola, the author flew from HMS *Illustrious*. It is a little known fact that the British used the F4U in regular carrier operations before the Americans did. The wartime carrier operations of our British allies are often given only cursory coverage in discussions of the subject, because they tend to be upstaged by some of the more conspicuous exploits of large U.S. carrier task forces. Yet the contributions of these ships and their aircraft were significant and the experiences of their pilots colorful and exciting. This book helps to bring this part of the picture into focus.

Dickinson, Clarence E. *The Flying Guns*. Washington, D.C.: Zenger Publishing Company. 196 pp. Illustrated. $10.95.

First published in 1942, and subtitled "Cockpit Record of a Naval Pilot from Pearl Harbor through Midway," this book is one of several reprints issued by this publisher. The author, who retired as a rear admiral, literally flew *into* WW II when he was shot down in an SBD *Dauntless* by Japanese fighters during the surprise attack on Pearl Harbor, December 7, 1941. The account of his experiences makes fascinating and colorful reading as he covers the previously mentioned incident and subsequent combat with Scouting 6 in *Enterprise*, in the first attacks against the Marshall Islands, Wake, and the pivotal Battle of Midway in June, 1942. Maps and photos which were not part of the original edition are included. Markings and color schemes of SBDs during the early 1942 period are clearly shown.



Richard Lapp, Eaton Corp.

C-SCAN

By Frederick B. Pogust

Evolution of the Navy's C-SCAN System into the Space Shuttle Landing System

When the Space Shuttle Orbiter *Columbia* headed home to earth after its historic maiden voyage last April 12, Navy landing systems developed aboard aircraft carriers were responsible in no small part for the near-perfect approach and landing.

From its conception there was a requirement to make the Space Shuttle Orbiter perform as much like a normal airplane as possible. It was recognized, however, that descent would be much steeper, due to the limited lift and high drag needed for atmospheric reentry. It was further recognized – when it was decided that the landing would be unpowered – that there would have to be a variability in the glideslope which could not be met by an instrument landing system (ILS) type of guidance.

NASA's Johnson Space Center and the prime Space Shuttle bidders began investigating possible means of landing guidance as early as 1970, and in the fall of 1972 the decision was made to use a microwave scanning beam system for landing guidance.

The U.S. Navy already had experience with microwave scanning beam landing systems. The deployment of an AN/SPN-41 aboard USS *Oriskany* to Yankee Station off Vietnam in 1971 marked the first operational application of a landing guidance concept that had been conceived as early as 1955.

Carrier landing operations required a guidance system with a wide sector coverage combined with a high degree of path accuracy to feed the automatic carrier landing system and provide an independent monitor for the pilot whose aircraft was being automatically controlled. The SPN-41 signal, received by the AN/ARA-63 in the aircraft, provided steering signals to the cross-pointer needles on the instrument panel, allowing the pilot to verify adherence to the glide path and localizer courses.

The Navy procured a prototype of the C-SCAN* (SPN-41, ARA-63) landing system in 1964 and the first carrier trials took place in 1965 aboard USS *America*. Further system development led to operational evaluation in 1967 aboard *Independence* on a Mediterranean deployment. An F-4 air group, equipped with receivers, performed the evaluation. By 1969 the system was in full production with AN/SPN-41s for all attack carriers, AN/TRN-28s for training at naval air stations, and AN/ARA-63s for eventual installation in all Navy aircraft.

By 1974, when the choice had to be made for a definitive landing system for the Space Shuttle, many proposed and experimental types of microwave landing systems were advanced as the replacement for the standard ILS. Since only the system in active use in the Navy had the capability and maturity needed, the Space Shuttle landing guidance system uses the localizer and glideslope signal format of the Navy system. Naval aircraft, almost all of which have ARA-63s, can make guided approaches to shuttle landing sites at Edwards, White Sands or Cape Canaveral and, theoretically, the Space Shuttle Orbiter could make an approach to any attack carrier in the Navy. This is possible because NASA adopted the Navy's signal specification. The name by which NASA identifies the system is the microwave scanning beam landing system but it's still C-SCAN or SPN-41 when the signal in space is detected.

A person familiar with the Navy's SPN-41 or TRN-28 would recognize many common elements if he viewed landing system ground stations at the Shuttle's landing runways. The antennas are exact Navy designs and they also scan at two and one-half cycles per second, using the same tuned-resonant torsion bar mechanisms employed on Navy equipment.

Space Shuttle equipment uses dual installations for each runway to provide reliability through redundancy. The triple monitor system can command instantaneous switchover from the primary to secondary system. The Space Shuttle makes only dead-stick landings and so this extra measure of reliability is needed.

The equipment in the Orbiter is triple redundant. Each of the three landing system navigation sets provide absolute localizer, glideslope and DME values to a data bus that interfaces them with the redundant navigation computers. In Navy aircraft, the AN/ARA-63 is connected directly to the flight control instruments, but future airborne sets are being planned with the data bus type interface.

Proof of the performance of the system in the Space Shuttle began with the approach and landing tests of Orbiter *Enterprise* in 1978. The system was operational for all four "drop" tests, and on the third test *Enterprise* was coupled to the landing system beam for automatic flight for about one minute.

A complete test of the equipment came in April of this year when three landing system navigation sets in *Columbia* rode out the stresses of the launch and the two days in orbit, and then performed perfectly during the approach and landing at Edwards AFB. NASA recordings show the three units tracking the localizer, glideslope and DME signals throughout the landing. The information was on the data buses, feeding the computers that drove the horizontal situation indicators which the astronauts used to reference their near-perfect landing.

As is so often the case, technology developed for military use has demonstrated its application to other areas of endeavor. In this instance, ten years of C-SCAN landing operations aboard carriers made this reliable, time-tested landing system immediately available to meet exacting Space Shuttle requirements.

*Carrier system for controlled approach of naval aircraft.

TOUCH AND GO

Coming and Going With the Carriers

After 17,000 miles and 3,500 launches, *Midway* returned to home port at Yokosuka, Japan, on June 5 after her fourth Indian Ocean deployment in two years. The deployment included exercises with the Royal Australian and Royal New Zealand Navies, and the rescue of 17 civilians whose helicopter went down at sea.

LCdr. David Hastings gets kicks aboard Forrestal as he launches an F-4.

Also home from an Indian Ocean deployment is the carrier *Independence* which returned to Norfolk, Va., after a seven-month cruise. Carrier Air Wing Six, aboard *Independence*, flew more than 10,300 missions during the deployment and, of 211 days at sea, the ship spent only nine in port.

In June, *Coral Sea* made a short visit to Pearl Harbor for a few days of rest and relaxation. The carrier, along with six other ships, had just completed *Readiex 5-81*, a major naval exercise off the Hawaiian islands.

From the East Coast, *Forrestal* was host in June to Chief of Naval Operations Admiral Thomas B. Hayward during her Mediterranean deployment. The visit included reenlistment of 10 *Forrestal* crewmen, a 30-minute question and answer session over closed-circuit television, and a speech by Adm. Hayward to the ship's crew on the flight deck prior to departure.

In the Caribbean, *Nimitz* participated with 17 other U.S. Navy ships in *Computex 3-81*, an exercise with special emphasis on weapons delivery from ships and aircraft, seamanship, navigation, replenishment at sea, NATO procedures and communications.

The amphibious assault ship *Nassau* returned in July with Marine Air Group 32 to home port in Norfolk after four months in the Mediterranean. During the deployment, *Nassau* and MAG-32 *Harrier* aircraft combined operations as part of an attack aircraft carrier battle group. The deployment demonstrated the *Harrier's* flexibility, specifically the ability to operate effectively in the high tempo environment of an attack aircraft carrier. "Superb performance," said Vice Admiral Ronald J. Hays, Commander in Chief, U.S. Naval Forces, Europe.

Coral Sea arrives at Pearl Harbor.

Photo by PHI Harold Gerwien

Smithsonian Jet Aviation Exhibit Opens

On August 27, 1939, only a few days before the invasion of Poland and the beginning of WW II in Europe, the first aircraft powered by the thrust of a turbojet engine lifted off the ground at Marienehe Airfield in Germany. The plane was the Heinkel He 178, and its historic flight was the start of a new era – the jet age.

"Jet Aviation," a new exhibit gallery that tells the story of the first 40 years, opened in July at the Smithsonian's National Air and Space Museum.

Two feature attractions of the new gallery are a Navy McDonnell FH-1 *Phantom*, the world's first U.S. operational shipboard jet fighter, and the Messerschmitt Me 262, the world's first operational jet fighter.

A large mural painted by aviation artist Keith Ferris provides a backdrop for the exhibit and features 27 significant aircraft of the jet age. An "advanced flight deck" simulator provides visitors with an instrument approach to London. Navigation and control

information appears on television screens.

In another area, visitors can look into the cockpit of an F/A-18, the Navy's newest high performance jet fighter, and another unit called "Design a Jet" uses computer graphics to allow visitors to build an aircraft of their choice on a computer screen.

In a lighter vein, museum goers may relax in the Sid Caesar Theater, watching a 10-minute Sid Caesar/Imogene Coca comedy called "Sneaking Through the Sound Barrier." The film is a humorous takeoff on the first attempt to break the sound barrier in a jet plane.

The National Air and Space Museum is open seven days a week, from 10 a.m. to 9 p.m. Admission is free.

Marine Corps FH-1 Phantoms fly in formation from Cherry Point, N.C., in 1949.

Point Mugu Terminal Turmoil

"If you asked me what I was going to do at work today, I wouldn't be able to tell you for sure," says Martha McMullen, a dispatcher at the Point Mugu Air Terminal. Some 1,000 persons pass through the terminal each week on in and outbound flights, but not everything is part of the daily routine. "That's what makes it so enjoyable," adds McMullen.

An example was a recent Wednesday morning when a civilian 727 airliner made an emergency landing at Point Mugu after a bomb threat. Suddenly, the relatively small terminal had 86 unexpected visitors.

In addition to the Key Airlines flights which transport people back and forth to San Nicolas Island, the terminal handles transient personnel and a myriad of Seabee units that deploy.

Since the election of President Ronald Reagan, the terminal has seen even more activity. The President's frequent visits to his nearby ranch are usually routed through the Point Mugu terminal, and are always accompanied by a large number of news media representatives, advance security personnel and spectators trying to get a look at Mr. Reagan.

"I think we're the best," says Herman Moraga, air terminal manager. "Our workload is about twice of that of any other military passenger air terminal up and down the coast, and our staff is composed of only 10 people."

The terminal personnel provide passenger services, air freight service and transit alert. Transit alert means being prepared to bring in transit aircraft at some hours considered outside the working norm.

"For instance, the other night we came in at 1 a.m. to meet a DC-10 which delivered a group of Seabees back to their homes and families (at nearby Port Hueneme)," explains Moraga.

The Point Mugu Air Terminal handles some 8,000 flights a year, as many as 800 flights in a month. It breaks down further to about 1.5 million pounds of baggage a year and nearly 3.5 million pounds of cargo. The aircraft passing through include everything from civilian airliners to military jet transports and helicopters.

It's a little terminal doing a big job. Tongue-in-cheek, it might be called "terminal turmoil." Except that it never really ends. **Ltjg. Sue Glutting**

Aircraft Serviceman Tim Mullins directs a Key Airlines Convair 440 at Point Mugu Air Terminal.

The Fix is in at AIMD Rota

"If it comes off an aircraft, we can fix it," says the department head for the Aircraft Intermediate Maintenance Department (AIMD) at U.S. Naval Station, Rota, Spain.

Backing up his claim are 276 personnel in nine divisions scattered through buildings that stretch more than a mile, from the jet test cell, to the AIMD hangar. They maintain four naval station aircraft and provide support for three tenant squadrons based at the station, deployed units aboard ships in the Mediterranean, and Naval Air Reserve squadrons using Rota as a base during active duty for training.

One of the newest additions to the inventory at AIMD Rota is equipment and space to support the P-3C *Orion* which is scheduled to be introduced to the station this year. Also, the power plants division is expanding with an additional 3,000 square feet, a move appreciated by men and women who process approximately 140 engines a year.

Dedicated personnel in each division were responsible for processing more than 17,000 individual items for repair and reissue in 1980.

The essence of AIMD Rota can be seen in the ground support person remounting a P-3 nose gear, the first class petty officer checking a frequency counter, or the sailor performing temporary additional duty who is working on a C-131 one day and an A-3 the next. They all add up to AIMD and the unit's motto, "Service to the Fleet."

Like the man said, "If it comes off an aircraft, we can fix it."

AZC William Matthews reads an overflow of paperwork in the Data Analysis/Quality Assurance Division.

Renegades launch Sparrow missile.

Renegades Flex Missile Muscle

The *Renegades* of Fighter Squadron 24 are compiling an impressive record of successful missile shoots with *Sparrow* and *Sidewinder* weapons. In recent training exercises, VF-24 pilot/radar intercept officer teams flying the F-14 *Tomcat* scored hits with two *Sparrows* and four *Sidewinders* and in one instance actually shot down the drone.

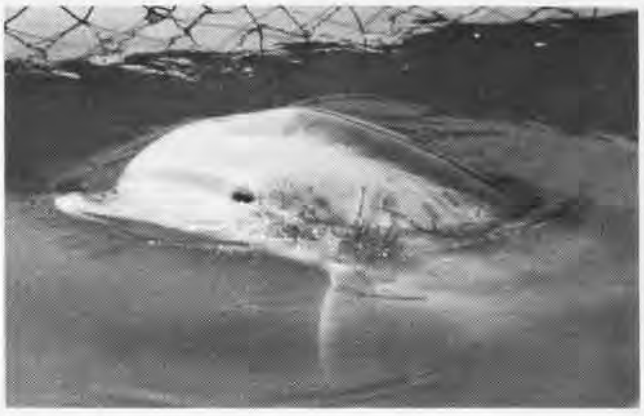
During exercises, missiles are normally unarmed and a hit is judged by how close they pass the target. The drone can then be reused for other missile exercises.

For the direct hit that destroyed the drone, Lt. Ed Riley and RIO LCdr. Dave Bunnell released a *Sparrow* while closing in on the target at better than 700 knots. Split seconds after the direct hit, a heat-seeking *Sidewinder* launched by Lt. Larry Morris and RIO Ens. Paul Rumberger passed through the resulting fireball and debris.

In another missile exercise, Lt. John Alling and RIO Ltjg. Dave Baranek scored hits with both a *Sidewinder* and a *Sparrow*. Cdr. Bill Switzer and RIO Ens. Craig Limoges, and Lt. Bob Thompson and RIO Lt. John Sill scored with one *Sidewinder* apiece.

VF-24 pilots and radar intercept officers gave much credit for the successful missile exercises to the men in the squadron aviation fire control technician shop and ordnance branch, and the "energetic and professional support" provided by everyone else in the squadron, Carrier Air Wing Nine and the *Constellation* team.

MISSION WITH A PORPOISE

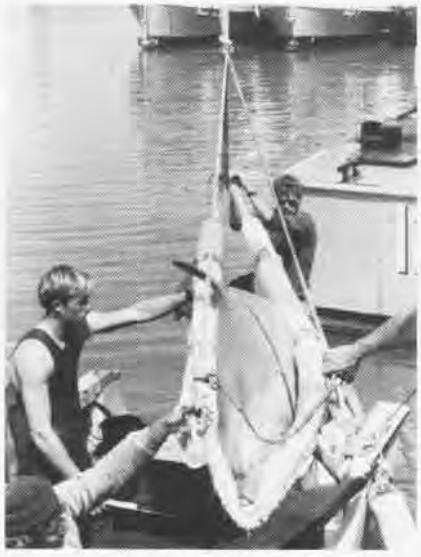


Story and photos by Sergeant Hugh Hawthorne

The mission closely resembled a medevac, but there was something about the patients that seemed a little fishy. After all, it's not too often the Marines are called upon to transport Atlantic bottlenose dolphins. But that's what happened when Marine Medium Helicopter Squadron 365 got involved in the Navy's Project *Bottom Look*.

The porpoises belong to Navy Special Warfare Group (NSWG) One based at Naval Amphibious Base, Coronado, Calif. Eight men and two dolphins from NSWG-1 were conducting operations at Coast Guard Base, Fort Macon, N.C., but on May 1 the detachment needed to relocate to Coast Guard Station, Oak Island, N.C., a move of more than 100 miles.

Two Marine helicopters were called in to perform the move, because every minute the porpoises spend out of water increases the risk of sickness or death, according to detachment head Lieutenant Junior Grade Charles Chaldekas. "Our biggest aim is to get them back in the water as quickly as possible," he said. "And this is the best way to carry them," he went on, speaking of the CH-46 *Sea Knight* placed at his service.



Top, one of the trained dolphins used in Project Bottom Look. Center, members of NSWG-1 load a dolphin nestled in its SCAT aboard an HMM-365 Sea Knight. Above, a dolphin is steadied as a dockside crane lifts the stretcher to be placed in a SCAT for transport aboard a Marine CH-46.

Preparing the two 400-pound porpoises for the helicopter ride was quite an undertaking. The mammals were placed on stretchers and carried by motorboat from their holding tanks to within reach of a loading crane on the dock. They were then lifted and carefully placed into individual self-contained animal transporters (SCATs). The 900-pound SCATs are carts with pressurized water tanks and time release valves designed to spray the dolphins at regular intervals to keep them cool. Though dolphins breathe air, they need the cooling effect of water to survive.

Once loaded into the SCATs, the porpoises were carted aboard the helos and the flight began. Upon arrival at CGS Oak Island, the loading process was reversed and the porpoises were returned to the safety and comfort of their holding tanks, apparently none the worse for wear.

The details of the project, including the names of the dolphins, are classified. Chaldekas said, however, that the dolphins were trained by the Naval Oceans Systems Center, San Diego, Calif., and are used for research. He added that California sea lions are also used by NSWG-1 to retrieve anti-submarine rockets in Project *Quick Find* and that NSWG-1 is the only group in the Navy which uses marine mammals.

LETTERS

VRJ-1/VRU-1

I'd like to thank your staff for publishing my request recently in connection with my research on the history of VR-21. I have received information from ex-squadron members which has been very valuable.

May I impose upon your generosity once more? I urgently need information from those who flew with VRF-1 and VRU-1, from late 1944 to September 1948, when the latter unit was recommissioned as VR-21. Aircraft operated by these squadrons included PB2Y-5F/5Zs, PB4Y-1Fs and an RY-1, as well as variants of the R5D.

Nicholas M. Williams
American Aviation Historical Society
P.O. Box 751
Cypress, CA 90630

Ed's note: VRJ-1 became VRU-1 on November 15, 1946.

Army B/Z

I just wanted to tell you what a beautiful job you folks did on the May 1981 issue of *Naval Aviation News*. The use of color on the cover is superb, and the entire issue, editorially and graphically, is outstanding. It's the best issue of the magazine I've seen in the 21 years I've been reading it.

Congratulations to Naval Aviation on its 70th anniversary and to the staff of *Naval Aviation News* for a job well done.

Richard K. Tierney, Editor
U.S. Army Aviation Digest
Fort Rucker, AL 36362

Patches Wanted

I am a former test pilot for the military and participate in air shows in my T-33A jet trainer when the *Blue Angels* or *Thunderbirds* come to Florida. I take college men up for a ride to get a feeling of what it would be like to be a military pilot and, over the past 10 years, I have recruited over 317 men into the Navy, Marine Corps and Air Force.

I was given a flight jacket in the mid-1950s by the skipper of *Essex* (CVA-9) with Task Force 77, after I landed aboard during an air show at Alameda. Unfortunately, the jacket was stolen from the cockpit of my plane six years later and I've been trying to replace it ever since, with no luck. I have the patch of VF-143 but am now looking for the patches from *Essex* and Task Force 77. Any help your readers can give me would be greatly appreciated.

Rev. Frank Hooper
529 Foothill Way, E.
Casselberry, FL 32707

High Flying Ladies

The February issue of *NANews* profiled women in various areas of Naval Aviation. Conspicuously absent from the feature was mention of AT2 Kathryn O. "Kit" Murphy, VRC-40's first female C-1A aircrewman. Kit Murphy was one of the squadron's best aircrewmen, serving both at NAS Norfolk and in detachments at other air stations in support of Atlantic Fleet carriers. A veteran of over 100 arrested landings, she left VRC-40 to attend Officer Candidate School at Newport, R.I., and is now serving with VT-26 at Beeville, Texas.

Kit is truly one of the pioneers in the development of the role of females in Naval Aviation, and it is only appropriate to give credit where credit is due.

Cdr. E. E. Bieraugel
C.O., VRC-40
NAS Norfolk, VA 23511

Color Photos Wanted

I am gearing up on a vintage color book of around 250 photos, using only color shots taken between 1935 and 1955. Today's generation tends to think of those years as black and white. If any of you out there have slides or negatives you would be willing to lend (or copy and charge me), I would love to see them. Those years in color should be exhibited for all to see. Needless to say, I would take the utmost care of what was lent. I think quite a handsome book could result.

Jeffrey L. Ethell, Aviation Writer
2403 Sunnybrook Road
Richmond, VA 23229

Reunions, Conferences, etc.

Tactical Warfare Symposium hosted by the EA-6B *Prowler* and A-6E *Intruder* communities at NAS Whidbey Island, Oak Harbor, Wash., September 22-24, 1981. The theme this year is "War at Sea, TacAir's Role." For details contact LCdr. Mell Stephenson, autovon 820-2093/2793 or commercial (206) 257-2093/2793. Invitations will be mailed to those who attended last year.

An effort is being made to locate survivors of **Ommaney Bay (CVE-79) and embarked VC-75.** A reunion of members and families of deceased former members will be held April 2-4, 1982, in Charleston, S.C. Contact Lawrence F. Fitzgerald, Secretary, U.S.S. Ommaney Bay CVE-79 Assoc., Inc., 3602 S. Parker Street, San Pedro, CA 90731.

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control system. Some simply ignored the controllers and refused to comply with established procedures. One airline was forbidden to fly under instrument conditions until its pilots complied with air traffic control procedures.

Aviation continued to expand rapidly with new and ever increasing demands on the federal government. The Bureau of Air Commerce became the Civil Aeronautics Authority in the late 1930s and this in turn was reorganized as the Civil Aeronautics Administration. After World War II the introduction of jet aircraft, first by the military services and then by the airlines, created new problems of air traffic control. The Federal Aviation Agency was created in 1958 and this led to establishment of the Federal Aviation Administration in 1967 under the Department of Transportation.

Today, air commerce has become a pillar of the American economy and regulation of air traffic an absolute necessity. The FAA has evolved into a well-greased system which maintains 19,000 manned and unmanned facilities and navigation aids throughout the United States.

To commemorate their twilight cruise in the F-4J *Phantom II*, VF-33 *Tarsiers* staged a unique fly-in on June 9. Three aircraft were painted to reflect the paint schemes used since they received their first *Phantom* in 1964. Coincidentally, aircraft 206, BuNo 155566, entered the fleet and was accepted by VF-33 in March 1971 and, 10 years later, was transferred from the squadron following the fly-in – a true "workhorse of the fleet."

The *Tarsiers*, who are home-based at NAS Oceana and skippered by Cdr. John Best, are transitioning to the F-14 *Tomcat*.

The squadron insignia features a winged "Tarsier" which, according to a squadron spokesman, is the most ferocious, pound-for-pound, of all animals. The "Tarsier," he says, will attack other animals, regardless of their size. The officers and men of VF-33 believe the analogy to be appropriate.

Pictured are aircraft 201 (1971 paint scheme) flown by Cdr. John Best and LCdr. Mike Robinson; aircraft 233 (1975-78 paint scheme) flown by former *Tarsier* skipper Cdr. Fred Vogt and LCdr. Don Santapaola; and finally aircraft 200 (1979-81 paint scheme) flown by CAG-6's Capt. Tim Wright, and LCdr. John Reid.

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