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COVERS—Front, *NA News Art* Director Charles Cooney rendered this illustration heralding May-June's lead article. Back, the T-45 *Goshawk* rolled out in March. More details on the Navy's newest trainer will appear in the July-August 1988 issue, which features the Naval Air Training Command.



1987 was a busy year for Naval Aviation. "The Year in Review" highlights the most significant events. **Page 4**



After 16 years buried under the Antarctic snow, an LC-130 *Hercules* was flown out of the polar region. Read about its spectacular recovery in "Rescue of a Snowbird." **Page 14**



Dr. Malcolm Muir, Jr., the Naval Historical Center's visiting scholar, spent time aboard USS *Dwight D. Eisenhower* during *FleetEx 1-88*. He recounts his first experience with Naval Aviation in "Hooked But Not Trapped." **Page 16**

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"Launching America's Newest Supercarrier" features the christening of *Abraham Lincoln*, the Navy's 25th carrier. Despite freezing temperatures during the ceremony, a crowd of 3,500 witnessed the baptism of CVN-72. **Page 22**



Described as "A Busy Oasis in the California Desert," NAF El Centro has not only an interesting history, but an increasingly important status in overall fleet planning. Besides being the winter home of the *Blue Angels*, the facility's tempo of flight operations continues to grow. **Page 25**

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The Team

During a football game, in the days of Knute Rockne at Notre Dame, the backfield was comprised of "The Four Horsemen," called the best in the country. They were showered with accolade after accolade.

One Saturday afternoon, The Fighting Irish were easily handling an opponent. The Four Horsemen were running at will through the defense and scoring freely.

So the story goes, they were getting quite cocky about it. Rockne wanted to teach them a lesson. He took out the first string line — the men who were doing most of the blocking — and sent in substitute guards, tackles and ends who seldom played and had virtually no experience. The Four Horsemen were soon stopped in their tracks. The offense faltered and became very frustrated. They complained to Rockne on the sidelines. Rockne sent in another substitute with a message. In the huddle, the courier looked at the four stars and reported: "Coach says you should show the other team your press clippings. Maybe that'll help."

The point is, there is no second team in Naval Aviation, regardless of size or horsepower. We've all heard that word "teamwork" countless times. The dictionary calls it "a coordinated effort by a group of persons acting together for a common cause."

Teamwork on the Naval Aviation team, in one way or another, depends on and is depended upon by each team member. They may not toil shoulder to shoulder but they function as a team to get the job done. Interoperability is their maxim.

The fighters from the VF community must gain and maintain air superiority. Achieving this becomes meaningless, though, if the carrier's attack aircraft are unable to reach and strike designated targets ashore and afloat. Moreover, neither the fighters nor the attack planes can succeed if the carrier is not protected from the vast and omnipresent threat of submarines.

It follows that the professionals in HS, HSL, VS and VP units must sanitize the seas on an around-the-clock, around-the-world basis to ensure safe and free passage of the battle groups. Shore-based maritime assets must coordinate their efforts with the fixed and rotary-wing elements operating from flattops and surface ships to make this happen.

Importantly, the Marine Corps must perform its primary mission, amphibious warfare, which requires the same interoperability, the same coordination, the same dynamic and skilled support.

Moreover, no community, regardless of self-sufficiency, can perform its mission without logistics support from cargo and personnel carriers, including, among others, *Skytrains*, *Hercules*, *Sea Knights* and *Greyhounds*.

Units smaller than squadrons are no less critical to the effort. I speak of the detachments tasked with airborne early warning, tanker, ECM and ESM missions. And feeding the whole apparatus, regenerating it with new blood, is the indefatigable training command.

All are knit into the sturdy fabric

which is Naval Aviation. There are no weak threads. Nor can there be any.

The *Seasprite* which launches from the fantail of a destroyer to search at low altitude for a submarine may not interplay with a carrier-based *Tomcat* intercepting a Soviet *Flanker* at 30,000 feet. The hardy souls who drone low and long over endless seas in a P-3 *Orion* perform a mission that seems diametrically opposite to that of an *Intruder*, *Hornet* or *Harrier* bearing down on a railroad yard with a load of bombs.

Yet, they are going about the business of Naval Aviation shoulder to shoulder, in stride, laboring for that common cause.

I exhort you all to keep up the good teamwork! ■



SH-60B



C-9



P-3

Tomcat Toppie

The pilot of an F-14 on elevator number three was advised that the *Tomcat* would be moved to catapult number three for launch. While the RIO preflighted the lower portion of the aircraft, the pilot manned the front cockpit to ride the brakes and continue his preflight. He also began to cycle the hand hydraulic pump to ensure brake pressure would be available for the move. The director doubled as tow tractor driver because a driver wasn't immediately available. He connected the tractor to the *Tomcat* for the move.

After about six strokes of the pump, the pilot detected a "commotion" in his peripheral vision. He had not acknowledged a breakdown signal from the director in the tractor, so was surprised to look up and note the F-14 moving backwards. The ship had commenced a roll to starboard. (The director had signaled for breakdown and, although he did not receive an acknowledgment from the pilot, thought that via "eye contact" the pilot knew the aircraft would be unchained. Blue shirts unhooked all chains on one main mount and one on the opposite wheel of the aircraft.)

The pilot double-checked the parking brake "on" and continued to cycle the pump while depressing the brakes. But the aircraft continued to slide. Another director intervened, gave the emergency stop signal, and blew his whistle.

The director in the tractor, meanwhile, had checked his parking brake "on" and applied normal brakes as the aircraft moved towards the coaming, pulling the tractor along with it. The starboard main mount then struck the coaming. The port mount snapped the side tending chain as it rolled back with the chock in place. The director in the tractor released the parking brake as the deck steadied and accelerated the tractor to move the aircraft away from the edge of the elevator.

As the aircraft moved forward, the port main mount split the chock and the aft tending chain snapped. The ship then rolled starboard a second time, causing the F-14 to roll backwards again. Sensing he was *in extremis*, the pilot hurried onto the boarding ladder as the main mounts traveled over the coaming and into the safety net. As the aircraft pivoted nose up, the pilot pushed away from the airplane and landed on the elevator deck, suffering minor injuries. The RIO



and other personnel were clear.

The *Tomcat* achieved a 70-degree, nose-up attitude, with the drop tanks resting on the coaming. The tractor's rear wheels rose off the deck. The driver jumped to safety before the trac-

tor broke free. The aircraft paused precariously a few seconds and then fell overboard. The *Tomcat* disappeared into the sea and sank to the bottom, 9,000 feet away.



Grampaw Pettibone says:

Sure wish we coulda traded King Neptune the tractor for the *Tomcat*!

The finger of blame's got more than one target for this fiasco. In deck edge moves, the book calls for a director, a tractor driver and two chock walkers. Not only did the director double up as tractor driver, he wasn't always plainly visible to the pilot in the cockpit. The pilot didn't see the breakdown signal. He was wearing sunglasses so "eye contact" with the director was limited at best.

Plus, nobody directly involved in the accident realized the carrier was in a turn. There was a "heel to starboard" call over the 5MC speaker from primary in anticipation of the ship's turn to port and 10-foot swells. But with other aircraft turning up and the starter units operating, the precautionary message was drowned out.

Lack of communication between the director and the pilot allowed removal of the tie-down chains and chocks before adequate brake accumulator



hydraulic pressure could be obtained via the hand pump. The aircraft's momentum caused by the flattop's roll to starboard was simply too great for the tractor to control without help from aircraft brakes. If the pilot had had more time to cycle the pump, this mishap might have been avoided.

About 40 increasingly difficult strokes are needed to attain sufficient pressure. He could only execute six. By the time the intended director arrived, the breakdown signals were already being given by the director at the tractor.

During the slide, traction was lost due to cross-deck pendants, which had been stowed on the elevator. Tractor skid marks in front of and behind the cables indicated there was momentary loss of traction, which sure didn't help matters.

The roof's a dang tough place to work, a place where a mistake or two can cost us a truckload of dollars. Like the price tag on one fine Tomcat resting useless in the very deep six.

In the aviati'n business, there can be no letup in the war against mistakes! Especially aboard the floating runways that pitch and roll on King Neptune's sea.

Lucky Landings

A student Naval Aviator in a TA-4J was on a solo night FCLP hop with five other *Skyhawks*. Following final touch-down in the simulated carrier box (left of the runway centerline), the SNA advanced the throttle and retracted speed brakes, as if to take off again. He realized his error, retarded the throttle and extended the speed brakes. In the process, however, the throttle was inadvertently moved to the off position.

The SNA did not realize he had shut down the engine until the generator dropped off the line and all electrical power was lost, with 5,000 feet of rollout remaining. He eased the aircraft toward the centerline and stopped 1,000 feet prior to the end of the runway, slightly right of center.

The five remaining *Skyhawks* came to full stops behind the lead TA-4J, with reduced landing separation interval.

The tower controller initially believed the first *Skyhawk* had only lost lights. Thus, the controller made no attempt to wave off or warn the other SNAs. The first three aircraft passed by number one but various UHF transmissions failed to promptly clarify the situation. No one, including the LSOs or tower personnel, fully understood what had happened until all aircraft had completed their rollouts. Never-

theless, the three SNAs and their *Skyhawks* retired safely to the squadron flight line and number one was ultimately towed in to join them.



Grampaw Pettibone says:

Whew! Hand me my bandana so I can wipe the sweat off my brow.

We coulda lit up the night with this caper. *Skyhawks* might have run into each other like a column of tumblin' dominoes, or Larry, Curly and Moe tryin' to board a trolley car at the same time.

Be careful when haulin' that throttle back. But if somebody does shut down without plannin' on it, any and all wingmen/observers need to get on the horn and make clear reports on the circumstances. In this case, the tower should have been advised ASAP by one or more of the SNAs that there was a "dark" and powerless bird on the strip. Warnings and/or wave-offs would have followed instead of some unsettlin' "passages in the night."

We lucked out in this case and didn't illuminate the night with a fireball.

Fatal Attraction

A flight of five F/A-18 *Hornets* were to make 15-degree, pop-up bombing maneuvers with MK 82 inert bombs on a target located in a lake bed. Visibility was excellent. Winds were calm. Due to unprecedented seasonal watersheds several years prior to the flight, a portion of the overall training area had become an inland lake. The lake was about 25 miles wide and 13 miles long with a maximum depth of eight feet. Run-in to the target would be over the lake.

The mission commander briefed a right-hand pattern with a 060-degree, run-in heading. Because of refueling delays, two of the *Hornets* took off

late. Before the two aircraft arrived, the mission commander, noting the smooth, still surface of the water, warned the others in the flight about the disorienting effect of flying over the lake bed. Thus, the late arrivers, including the mishap pilot, did not hear the warning concerning the glassy surface of the lake.

The mishap pilot made a right, descending turn to about 1,100 feet AGL to intercept the inbound heading to the target. He continued the approach and was on a heading of 047 degrees at about 400 knots when the *Hornet* struck the water and exploded. The pilot was killed. There were no radio transmissions from the pilot directly prior to the crash and there was no attempt at ejection.



Grampaw Pettibone says:

Glassy water is deadly when racin' over it at a "bat-outta you-know-what" speed.

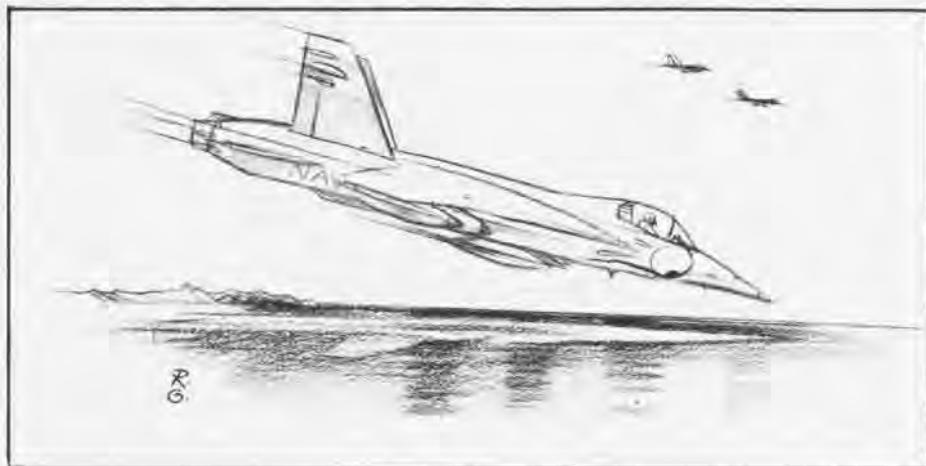
Other pilots on the flight described the water as "mirror-like, glassy, greenish in color, and disorienting."

The mishap pilot had a predominantly fighter background before transitioning to the *Hornet*. Thus, he was somewhat inexperienced in the low-level environment. Also, he had apparently failed to select the radar altimeter option on the heads-up display and was therefore receiving no low-altitude cues on the HUD.

He simply and tragically flew into the water.

"Mirror-like" seas have lured many an aviator into their fatal clutches. Depth perception can be lost when zippin' along down low over waveless water.

The message is as clear as the menacing mirrors of H₂O: be aware of the hazard, stay safely above the "glass," and use your altitude warning systems as a backup to good airmanship.



The Year in Review 1987

By Roy A. Grossnick,
John M. Elliott and
Gwendolyn J. Rich

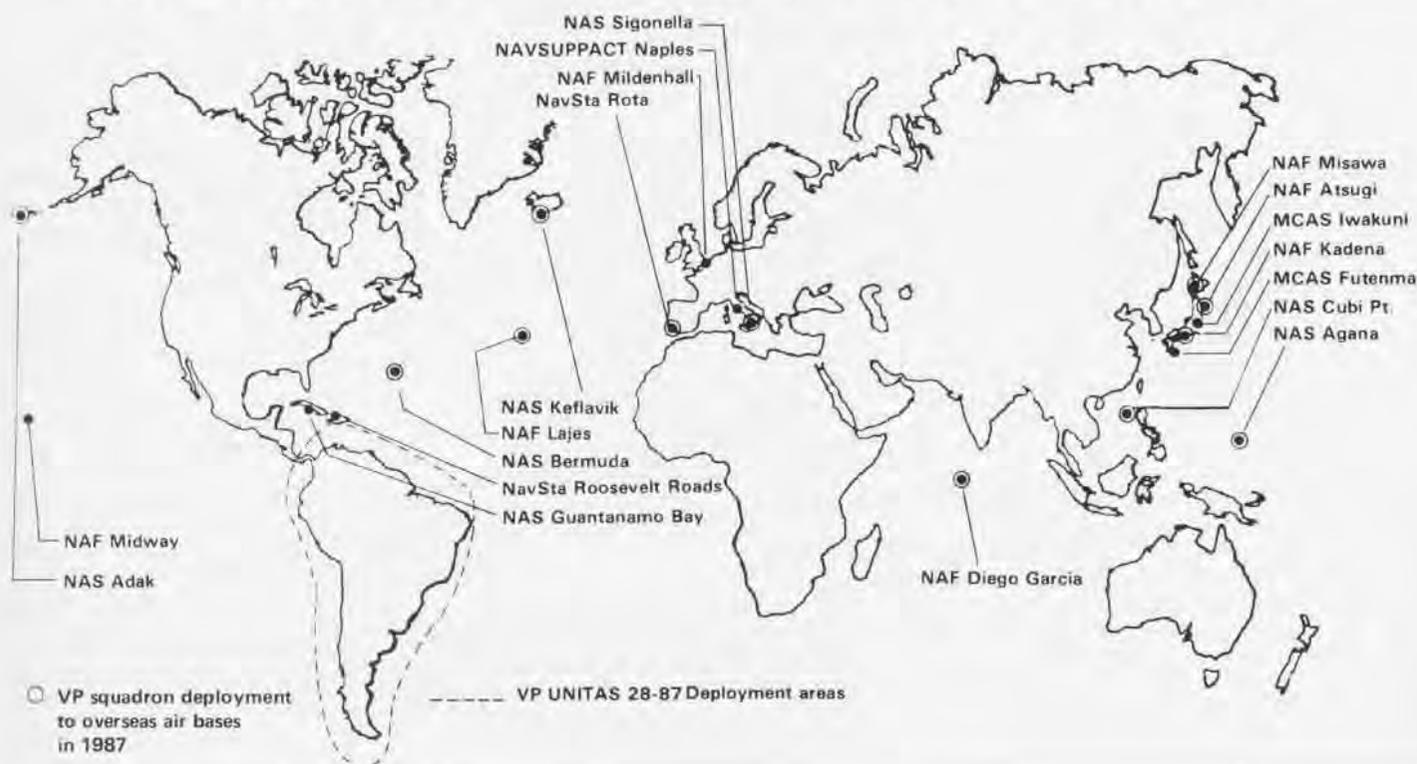
Naval Aviation entered its 76th year with its forces deployed around the globe and with a new commander, Vice Admiral Robert F. Dunn, at the controls. The global demands on Naval Aviation continued unabated during 1987, with a special emphasis on the helicopter community. Carrier aviation spearheaded the power projection capabilities of the U.S. Navy and patrol aviation remained as the quiet backbone of the antisubmarine warfare forces. But, as a result of the continued war between Iraq and Iran, helicopter assets began to play a heavy role in the Persian Gulf. With the U.S. Navy

providing escort services for U.S.-flagged tankers plying Persian Gulf waters, attack helicopters stationed aboard American destroyers displayed their mobility and capability to project their power beyond the immediate range of the escorting forces. The significance of the helicopter was further demonstrated when Helicopter Minecountermeasures Squadron (HM) 14 was called upon to deploy within 72 hours to the Persian Gulf. HM-14 assets were utilized to provide a quick counter to mines being laid by Iranian forces.

The deployable squadron forces in the carrier—along with the VP, VQ, HSL, HC, VR, HM, VXE and VXN communities—fulfilled their demanding and extensive commitments in 1987. It is important to note that these frontline forces could not carry out their missions in today's maritime strategy requirements without the support they receive from other elements of Naval Aviation. Technical developments are one of the keys to the success of aviation. The various organizations within the Naval Air Systems Command help to ensure the development of advanced equipment for fleet use. Their achievements for 1987 can be seen in the chronology section entitled, "Space and Technical Developments."

Other key elements in aviation are the training commands. The Naval Air Training Command and the Naval Technical Training Command provide the Navy with qualified aviators, Naval Flight Officers and the myriad technical support personnel which are necessary to get the plane in the air and keep it there. Without the aviation ratings, such as AT, AX, AE, AD, AO, AM, AB, AZ, AQ, AV, AF, AG, AS, PR, AC and AW, Naval Aviation would literally not get off the ground. To paraphrase VAdm. Dunn, "The

Overseas Naval Air Bases and Deployment Areas for VP Units



enlisted personnel in Naval Aviation, especially, constitute its very strength." This combination of well-trained aviation enlisted personnel and Naval Aviators, Naval Flight Officers and other aviation officer personnel makes Naval Aviation the leading edge of America's maritime strategy.

VAdm. Dunn has stated, "No matter what sort of fancy weapon systems, ships or aircraft we have, unless we have the people to make them go, we have nothing."

The Naval Air Reserve Force and Marine Corps Aviation also play a large role in contributing to the overall achievements of Naval Aviation and helping to meet its day-to-day commitments around the world and at home. "There will be increased interoperability among Navy and Marine Corps units, so well demonstrated recently by USMC *Hornet* and EA-6B *Prowler* units in the Mediterranean," VAdm. Dunn said during a 1987 interview. Activities for these two organizations during 1987 can be seen in the chronology section.

A vital part of any military organization is supply, and Naval Aviation is no exception. Fleet Admiral E. J. King once said, "I don't know what the hell this 'logistics' is that Marshall is always talking about, but I want some of it."

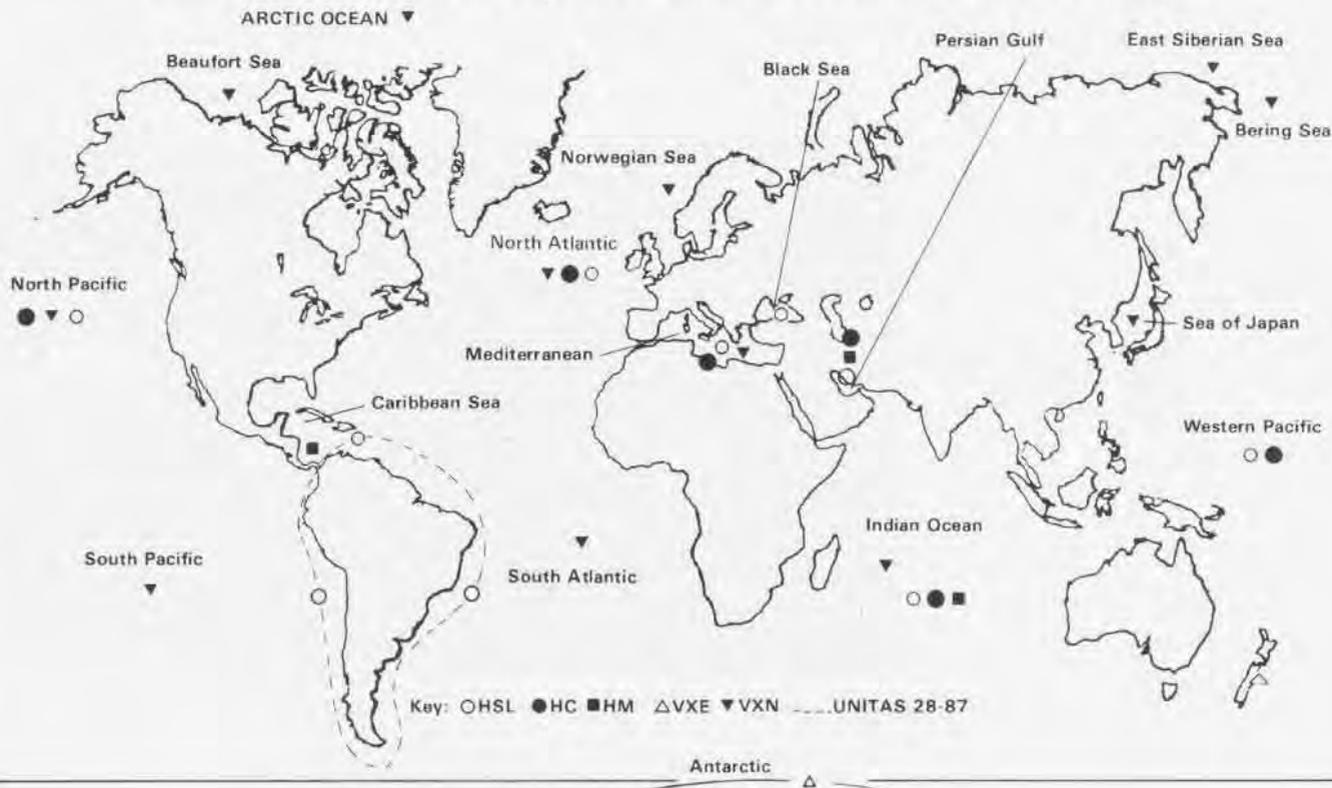
The Naval Aviation Supply Office (ASO) and its auxiliaries are the masterminds behind aviation supply. Along with the Navy and Marine Corps air stations and facilities and fleet logistics supply squadrons, ASO provides the support and logistics necessary to keep the fleet at sea and the aircraft in the air. The Naval Aviation shore facilities overseas support deployed aviation forces.

The activities and accomplishments of Naval Aviation in 1987 are exemplified by the terms: team, leadership, training, quality and dedication.



Battle Group Bravo, centered around flagship USS *Kitty Hawk* (CV-63), showed its precision during operations in the Arabian Sea. On station in 1987 to protect and preserve national and international interests, the battle group included: top — *Willamette* (AO-180); center, L-R — *Callaghan* (DDG-994), *Mars* (AFS-1), *Mount Hood* (AE-29) and *Vandergrift* (FFG-48); and bottom, L-R — *Stein* (FF-1065), *Halsey* (CG-23) and *Barbey* (FF-1088).

1987 Deployment Areas for Other Aviation Communities



Current Aircraft Carriers*

USS Lexington (AVT-16)
 USS Midway (CV-41)
 USS Coral Sea (CV-43)
 USS Forrestal (CV-59)
 USS Saratoga (CV-60)
 USS Ranger (CV-61)
 USS Independence (CV-62)
 USS Kitty Hawk (CV-63)
 USS Constellation (CV-64)
 USS Enterprise (CVN-65)
 USS America (CV-66)
 USS John F. Kennedy (CV-67)
 USS Nimitz (CVN-68)
 USS Dwight D. Eisenhower (CVN-69)

USS Carl Vinson (CVN-70)
 USS Theodore Roosevelt (CVN-71)

Amphibious Assault Ships

USS Tarawa (LHA-1)
 USS Saipan (LHA-2)
 USS Belleau Wood (LHA-3)
 USS Nassau (LHA-4)
 USS Peleliu (LHA-5)

USS Iwo Jima (LPH-2)
 USS Okinawa (LPH-3)
 USS Guadalcanal (LPH-7)
 USS Guam (LPH-9)
 USS Tripoli (LPH-10)
 USS New Orleans (LPH-11)
 USS Inchon (LPH-12)

*Several of these carriers are undergoing major overhaul periods.

1987 Carrier Deployments

USS Ranger (CV-61)
 CVW-2 (Tail Code: NE)
 NorPac, 02 Mar 87-29 Apr 87
 WestPac/IO, 14 Jul 87-29 Dec 87

Squadrons	Aircraft
VF-1	F-14A
VF-2	F-14A
VA-145	A-6E
VAQ-131	EA-6B
VAW-118	E-2C
VS-38	S-3A
HS-14	SH-3H
VMA(AW)-121	A-6E

USS Midway (CV-41)
 CVW-5 (Tail Code: NF)
 (Forward Deployed)
 IO, 15 Oct 87-88

Squadrons	Aircraft
VFA-151	F/A-18
VFA-192	F/A-18
VFA-195	F/A-18
VA-115	A-6E/KA-6D
VA-185	A-6E/KA-6D
VAQ-136	EA-6B
VAW-115	E-2C

USS Forrestal (CV-59)
 CVW-6 (Tail Code: AE)
 NorLant, 28 Aug 87-09 Oct 87

Squadrons	Aircraft
VF-11	F-14A
VF-31	F-14A
VA-37	A-7E
VA-105	A-7E
VA-176	A-6E/KA-6D
VAQ-132	EA-6B
VAW-122	E-2C
VS-28	S-3A
HS-15	SH-3H

USS Nimitz (CVN-68)
 *CVW-8 (Tail Code: AJ)
 World Cruise, 30 Dec 86-26 Jul 87

Squadrons	Aircraft
VF-41	F-14A

VF-84	F-14A
VA-35	A-6E/KA-6D
VA-82	A-7E
VA-86	A-7E
VAQ-138	EA-6B
VAW-124	E-2C
VS-24	S-3A
HS-9	SH-3H
VQ-2 Det	EA-3B

* CVW-8 (except VA-86), after returning from its Med deployment aboard Nimitz (CVN-68), was assigned to USS Theodore Roosevelt (CVN-71). VA-86 transitioned to the F/A-18, was redesignated VFA-86 and joined CVW-1 assigned to USS America (CV-66). Nimitz moved to the West Coast as part of the Third Fleet.

USS Kitty Hawk (CV-63)
 CVW-9 (Tail Code: NG)
 World Cruise, 3 Jan 87-29 Jun 87 (then to East Coast for extended SLEP at Phila, NSY)

Squadrons	Aircraft
VF-24	F-14A
VF-211	F-14A
VA-146	A-7E
VA-147	A-7E
VA-165	A-6E/KA-6D
VA-115 Det	A-6E
VAQ-130	EA-6B
VAW-112	E-2C
VS-33	S-3A
HS-2	SH-3H
VQ-1 DET A	EA-3B

USS Enterprise (CVN-65)
 CVW-11 (Tail Code: NH)
 NorPac, 25 Oct 87-24 Nov 87

Squadrons	Aircraft
VF-114	F-14A
VF-213	F-14A
VA-22	A-7E
VA-94	A-7E
VA-95	A-6E/KA-6D
VAW-117	E-2C
VAQ-135	EA-6B
HS-6	SH-3H
VQ-1 Det B	EA-3B
VS-21	S-3A

USS Coral Sea (CV-43)
 CVW-13 (Tail Code: AK)
 Med, 29 Sep 87-88

Squadrons	Aircraft
VFA-131	F/A-18A
VFA-136	F/A-18A
VFA-137	F/A-18A
VA-55	A-6E/KA-6D
VA-65	A-6E/KA-6D
VAW-127	E-2C
VAQ-133	EA-6B
HS-17	SH-3H

USS Constellation (CV-64)
 CVW-14 (Tail Code: NK)
 WestPac/IO, 11 Apr-13 Oct 87

Squadrons	Aircraft
VFA-25	F/A-18A
VFA-113	F/A-18A
VF-154	F-14A
VF-21	F-14A
VA-196	A-6E/KA-6D
VAW-113	E-2C
VS-37	S-3A
VAQ-139	EA-6B
HS-8	SH-3H
VQ-1 Det B	EA-3B

USS Saratoga (CV-60)
 CVW-17 (Tail Code: AA)
 Med, 05 Jun-17 Nov 87

Squadrons	Aircraft
VF-74	F-14A
VF-103	F-14A
VA-81	A-7E
VA-83	A-7E
VA-85	A-6E/KA-6D
VAW-125	E-2C
VAQ-137	EA-6B
VS-30	S-3A
HS-3	SH-3H
VQ-2 Det	EA-3B

Assistant Chief of Naval Operations (Air Warfare) and Other Highlights in Naval Aviation

January

15 VAdm. Robert F. Dunn became the 25th Deputy Chief of Naval Operations (Air Warfare) when he relieved VAdm. Edward H. Martin.

February

25 VAdm. C. J. Kempf officially assumed the title of Gray Eagle. The Gray Eagle award is sponsored by the Vought Corporation and goes to the active duty Naval Aviator with the earliest date of designation. VAdm. Kempf is the 34th person to receive the award.

April

1 A change in Navy uniform regulations authorized the wearing of brown shoes with khaki and aviation working green uniforms for all aviators, qualified flight surgeons, aviation physiologists, aviation experimental psychologists and enlisted aviation ratings E-7 and above. The brown shoes had been removed as part of the uniform on 1 July 1976 after being part of the Naval Aviator's uniform since 1913.

June

3 A special ceremony was held at the Navy Memorial Museum in Washington, D.C., commemorating the 45th anniversary of the Battle of Midway and the opening of an exhibit on the battle. Special guests at the



VAdm. Service



Lt. Gen. Petersen



VAdm. Kempf



VAdms. Kempf and Service and Lt. Gen. Petersen held the title of Gray Eagle at different times during 1987. The Gray Eagle trophy and recognition go to the active duty Naval Aviator with the earliest date of designation.

6 VAdm. James E. Service became the 35th Gray Eagle when he relieved retiring VAdm. Kempf.

July

25 Naval Aviator Adm. Thomas H. Moorer was enshrined in the prestigious National Aviation Hall of Fame in Dayton, Ohio.

August

21 When VAdm. Service retired on 21 August, he relinquished his Gray Eagle title to Lt. Gen. Frank E. Petersen, Commanding General, Marine Corps Development and Education Command, Quantico, Va. Lt. Gen. Petersen was designated a Naval Aviator in October 1952, becoming the first black aviator in the Marine Corps. He was the first black person to receive the Gray Eagle award.

October

23 The popular name *Goshawk* was established for the T-45A. The *Goshawk* is the new jet training aircraft to be used as the primary trainer by units in the Naval Air Training Command.

November

1 Training Squadron (VT) 9 was disestablished after 25 years of training Naval Aviators. VT-9 had been flying the T-2C *Buckeye*.

December

21 Changes to the Office of Chief of Naval Operations, required by the



Artist R. G. Smith rendered this painting which depicts a future flight of T-45 Goshawks over USS Carl Vinson (CVN-70).

Goldwater-Nichols DoD Reorganization Act of 1986, resulted in the Deputy Chief of Naval Operations (Air Warfare) being redesignated Assistant Chief of Naval Operations (Air Warfare). This organization had originally been established on 18 August 1943 as Deputy Chief of Naval Operations (Air) and modified on 15 July 1971 to Deputy Chief of Naval Operations (Air Warfare).

21 Secretary of the Navy announced he had approved the opening of aircrew assignments to women for the Navy's two shore-based fleet air reconnaissance squadrons flying EP-3 *Oriens*.

22 Funds for two new nuclear-powered carriers, CVN-74 and CVN-75, were appropriated by Congress.

Naval Air Reserve

January

6 Reserve Carrier Airborne Early Warning Squadrons 77 and 78 loaned E-2C *Hawkeyes* to the U.S. Customs Service and the Coast Guard to bolster their federal drug enforcement efforts.

8 VF-201 began phasing out the F-4 when it took delivery of its first F-14 *Tomcat*. When fully equipped, VFs 201 and 202 will complete the transition of the Naval Air Reserve VF squadrons to the F-14. VFs 301 and 302 have already transitioned to the *Tomcat*.

18 VA-305 was redesignated VFA-305, becoming the second reserve squadron to transition to the F/A-18.

February

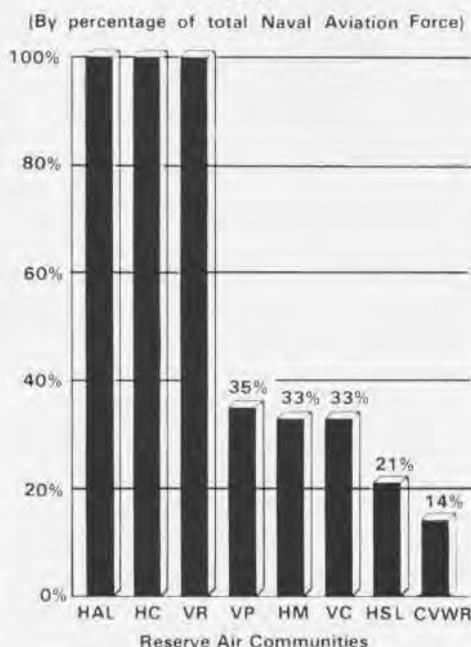
7 The reserve patrol squadrons, under the command of Reserve Patrol Wing, Atlantic, began their active duty training at NS Rota, Spain, beginning with VP-66. During the previous eight years, these squadrons had conducted their active duty training at NAF Lajes, Azores. Similar deployment training is conducted by Reserve Patrol Wing, U.S. Pacific Fleet squadrons at NAF Misawa, Japan.

March

18 VF-301 took part in an AIM-54A *Phoenix* missile launch at the Pacific Missile Test Range, Point Mugu, Calif. This was the first use of a *Phoenix* by a Naval Air Reserve squadron.

21 In support of exercise *Team Spirit '87*, HAL-5 deployed to Cheju

Assests provided by Naval Air Reserve Force for Naval Aviation in 1987



- HAL — Light Attack Helicopter capabilities
- HC — Helicopter Combat SAR capabilities
- VR — U.S. based medium to heavy logistics airlift capabilities
- VP — Patrol Squadron forces
- HM — Airborne Mine Countermeasures capability
- VC — Continental based Composite Squadron services
- HSL — Helicopter Anti-Submarine Light LAMPS MK I capabilities
- CVWR — Carrier deployable air combat squadron assests

Island, Republic of Korea, and conducted special warfare operations training with Seal Team 3. The deployment lasted until 15 April.

29 VFP-206, the Navy's last light photographic squadron, was disestablished at NAF Washington, D.C.



The last light photographic squadron (VFP-206) was disestablished and the era of the RF-8G *Crusader* came to an end.

This was also the end of the F-8 *Crusader* era in Naval Aviation. Some VFP-206 RF-8Gs were sent to the storage facility at Davis-Monthan AFB, Ariz., while one was transferred to the National Air and Space Museum. The last two Navy RF-8Gs remain assigned to the Naval Air Systems Command for test support purposes. The F-14A TARPS aircraft will take on the reserve requirements for photoreconnaissance.

April

24 HAL-4 deployed to Kiel, Federal Republic of Germany, for exercise *Flintlock '87*. The squadron remained deployed until 22 May.

June

15 Carrier Air Wing Reserve (CVWR) 20 embarked aboard USS *Forrestal* (CV-59) for its annual active duty training, which lasted until 25 June. CVWR-20 deployed with VFs 201 and 202, VAs 203, 204 and 205, VAW-78, VAK-208 and VAQ-209.

22 The Navy's newest transport aircraft, the C-20D *Gulfstream IV*, was received by Fleet Logistics Support Wing Detachment, NAF Washington, D.C.

December

5 VP-62 became the first reserve patrol squadron to transition to the Navy's most current maritime patrol plane, the P-3 Update III. The Update III features state-of-the-art computer integration equipment, an improved infrared detection system, a *Harpoon* air-to-surface missile capability and the ability to carry a variety of other weapons.

**Personnel on Duty in the Navy Aeronautical Organization
(30 September 1987)**

Officers in Flying Status

Pilots	8,636
Student Pilots	2,321
NFOs	3,970
Student NFOs	1,005
Flight Surgeons	353

Nonflying Status

Pilots	2,112
NFOs	1,996
Ground Officers	2,175
Flight Surgeons	217
Other	4
Total Officers	22,789

Enlisted Personnel 122,563

Aviation Officer Candidates 174

Grand Total 145,526

Naval Aviator Output, 1987

During 1987, Naval Aviators were trained for all services as follows:
Navy, 1,046; Marine Corps, 322; Coast Guard, 50; Foreign, 60; and NOA, 2.

Total: 1,480

This is the first year that the Navy has trained aviators for the National Oceanographic and Atmospheric Administration.

31 For the first time in its history, the Naval Air Reserve Force completed a full calendar year without a major aircraft mishap. During 1987, the force consisted of 52 operational squadrons and over 400 aircraft.

— Drug interdiction mission support during FY 87 included 304 flight hours by reserve carrier airborne early warning forces (E-2C) and 947 hours from patrol forces (P-3B).

— During FY 87, Selected Air Reserve pilots provided 15,612 instructor flight hours for the six training wings in the Naval Air Training Command.

Marine Corps Aviation

January

5 The first extended deployment for the AV-8B *Harrier II* began when VMA-331 deployed aboard USS *Belleau Wood* (LHA-3) for a six-month WestPac cruise.

12 The airfield at MCAS Camp Pendleton, Calif., was designated Munn Field in honor of Lt. Gen. John C. Munn. The general had been assistant commandant of the Marine Corps and the first Marine Aviator ever to command Camp Pendleton.

May

22 Marine Corps Aviation celebrated its 75th anniversary. On this date 75 years ago, 1st Lt. Alfred A. Cunningham reported to the Naval Aviation Camp at Annapolis for duty in connection with aviation. Marine Corps Aviation has been an active and important part of Naval Aviation ever since that date.



The airfield at MCAS Camp Pendleton was designated Munn Field in honor of Lt. Gen. John C. Munn.

June

26 The night-attack version of the AV-8B *Harrier II* conducted its maiden flight at McDonnell-Douglas' St. Louis,



The first AV-8B *Harrier II* equipped for night attack missions made its first flight over Missouri on June 26. The airplane features a forward-looking infrared sensor, a color digital moving map and night vision goggles for the pilot.

Mo., facility. This was followed by operational test and evaluation of the aircraft later in the summer. The upgrade to this aircraft will greatly expand the operational envelope by utilizing state-of-the-art navigation equipment and night-vision devices.

July

20 VMFAs 314 and 323 deployed to Egypt for exercise *Bright Star 87*.

23 The first production model of the TAV-8B was delivered to the Navy. The aircraft is the two-seat trainer version of the *Harrier II*.

August

13 VMFT-401 was established at MCAS Yuma, Ariz. The squadron will provide supersonic adversary support and operate the F-21A *Kfir*.

September

9 VMA-211 celebrated its 30th anniversary flying the A-4 (A4D) *Skyhawk*. During its 30 years of flying the A-4, the squadron has operated every model of the *Skyhawk* assigned to the Marine Corps.

October

1 VMFAT-101 transitioned from the F-4 to the F/A-18 and became the third *Hornet* fleet readiness squadron.

1 The last active replacement training squadron for the A-4 *Skyhawk*, VMFAT-102, was deactivated. This marked the beginning of the end of the A-4 era in Marine Corps Aviation.

8 HML(A)-169 became the first Marine Corps squadron to operationally deploy with the new AH-1W *Super Cobra*. The unit deployed to the Persian

Gulf aboard USS *Okinawa* (LPH-3). The AH-1W is capable of simultaneously employing the *Hellfire*, TOW and *Sidewinder* missiles. It also has a new heads-up display and bigger engines to give the ground support gunship greatly increased mission capabilities. The aircraft underwent testing at NATC Patuxent River, Md., earlier in the year.

12 VMFA-212, Naval Aviation's last F-4 *Phantom* squadron deployed in the Western Pacific, was relieved at MCAS Iwakuni, Japan, by VFA-132 with its F/A-18 *Hornets*. VMFA-212 returned to MCAS Kaneohe Bay, Hawaii.

Space and Technical Developments

February

19 The Navy's E-6A *Hermes* prototype flew for the first time. Flight testing of the new aircraft began on 1 June. The E-6A is a militarized version of Boeing's 707-320B and is scheduled to replace the EC-130 TACAMO aircraft. These aircraft provide an airborne communications link between the Navy's ballistic missile submarine force and national command authorities.

March

19 The SH-60F CV-Helo conducted its first flight. It was ordered by the Navy in early 1985 as the replacement for the SH-3H *Sea King* antisubmarine warfare (ASW) helicopter currently utilized for the inner-zone defense of carrier battle groups.

30 The Navy conducted the first flight of its new BQM-126A target drone at Pacific Missile Test Center, Point Mugu, Calif. It was designed as a lower cost, state-of-the-art replacement for targets currently used. It is capable of flying from sea level up to 40,000 feet.

31 As part of a reorganization approved by the Under Secretary of the Navy, naval air rework facilities were redesignated naval aviation depots, the Naval Aviation Logistics Center became the Naval Aviation Depot Operations Center, and the Aircraft Intermediate Maintenance Support Office assumed the new title Naval Aviation Maintenance Office. Under this reorganization, which centralizes support for fleet aviation maintenance, naval aviation depots will now report directly to the Naval Air Systems Command headquarters.

The Navy's newest ASW helo, the SH-60F, will replace the SH-3s assigned to the helicopter antisubmarine squadrons. The SH-60F Seahawk will operate off aircraft carriers to defend the carrier battle group's inner ASW zone.



Flight testing began of the Navy's new E-6A *Hermes* TACAMO aircraft. When the aircraft becomes operational, it will be the largest plane in the Navy's inventory.



Major Aircraft Types in the Naval Inventory during 1987 and their Popular Names

E-2	Hawkeye
E-6	Hermes
S-3	Viking
A-3	Skywarrior
A-4	Skyhawk
A-6	Intruder/Prowler
A-7	Corsair II
C-1	Trader
C-2	Greyhound
C-4	Academe/Gulfstream
C-9	Skytrain II
C-12	Super King Air
C-20	Gulfstream IV
C-130	Hercules
C-131	Samaritan
F-4	Phantom II
F-5	Tiger II
F-14	Tomcat
F-16	Falcon
UH-1	Iroquois/Huey
AH-1	Cobra
H-2	Seasprite
H-3	Sea King
H-46	Sea Knight
H-53	Sea Stallion
H-53E	Super Stallion
H-57	Sea Ranger
SH-60	Seahawk
P-3	Orion
F/A-18	Hornet
T-2	Buckeye
T-34	Mentor
T-39	Sabreliner
T-44	King Air
AV-8	Harrier
OV-10	Bronco

April

1 HM-12 was the first fleet squadron to receive the MH-53E *Sea Stallion*.

This new airborne mine countermeasures helicopter provides a greater tow tension capability, longer on-station time and a new digital automatic flight control system.

6 The first of 26 F-16N *Fighting Falcon* supersonic adversary aircraft was received by the Navy.

25 The *Blue Angels*, the Navy's Flight Demonstration Squadron, conducted its first air show using their newly assigned aircraft, F/A-18 *Hornets*.

— A reconnaissance version of the F/A-18 *Hornet*, designated the F/A-18 (R), is being developed by the Systems Engineering Test Directorate at NATC Patuxent River, Md. In the early 1990s, the F/A-18 (R) is expected to replace the RF-4Bs used by the Marine Corps.

May

18 *Oscar 13*, a Navy satellite designed to function as part of the Navy's Transit Satellite Navigation System, celebrated its 20th year of service. It is the oldest active U.S. satellite on record.

June

5 The Navy Department awarded a contract to Westinghouse-Airship Industries to build a prototype airship for fleet operations as an airborne early warning and communications platform.

The Navy terminated its lighter-than-air program in 1961 and ceased operation of its last airship in 1962.

30 The Navy received its first SH-60F *Seahawk* (Carrier Inner Zone Helo). Operational test and evaluation of the aircraft began in December. The SH-60F will replace the SH-3H *Sea King* used by helicopter ASW squadrons.

30 VX-5 conducted the first successful firing of a HARM from an A-6E *Intruder*. This was the first in a series of missile launches planned to test the system weapons integration program (SWIP) configuration for the A-6E. The new configuration will also allow the *Intruder* to be armed with *Harpoon* and *Maverick* missiles. These weapons systems will greatly increase the availability of standoff weapons for Navy carrier air wings.

July

10 The Navy awarded a contract to Boeing to outfit a P-3 to the Update IV



The Navy's new mine countermeasures helo, the MH-53E *Sea Stallion*.



This P-3C Orion arrived at Boeing Field in Seattle on August 9, 1987. It will serve as the prototype aircraft for the installation of the Update IV electronics package.

version, which will include an updated avionics suite to address the problem of the newer, quieter submarines.

August

10 The first of four new P-3 Weapons Systems Trainers (2F140) was received by the Navy at NAS Moffett Field, Calif. The trainers provide state-of-the-art capabilities for training personnel in ASW.

26 The A-6F, an upgraded version of the A-6, conducted its first flight. The updated A-6 *Intruder* will include a new radar system, digitized avionics and improved engines.



The Navy's first F-16N Fighting Falcon was received in April 1987. The aircraft will be used by the Navy's adversary squadrons.

September

19 *Wasp* (LHD-1) was christened. She is the first of a new class of amphibious assault ships. Her primary mission is to deploy and land elements of a Marine air and ground task force during an assault, by employing helicopters, landing craft and amphibious vehicles. The ship will operate the AV-8B *Harrier II*, as well as various types of helicopters, and the new air cushion landing craft (LCAC).

21 The Navy received the first updated version of the F/A-18 *Hornet*, the F/A-18C. Upgrades include the airborne self-protection jammer; the advanced medium-range, air-to-air missile; and the infrared imaging missile. This version provides for reliability, survivability and maintainability of the fuel system and additional growth capabilities in the areas of computer memory, speed and interface channels for the mission computer. The aircraft was scheduled for testing at NATC Patuxent River, Md., in spring 1988.

October

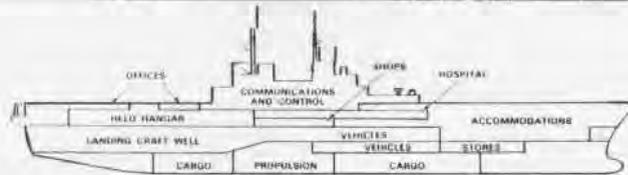
26 The Navy established the TF-16N aircraft model designation. It is a two-seat version of the F-16N and is to be used for pilot proficiency as a high-performance, all-weather fighter threat simulator in the adversary training program.

30 The Navy established the designation C-28A, which will be assigned to a Cessna 404 (Titan Ambassador) 8 to 10-passenger, twin-engine plane. The aircraft will be used to transport personnel and cargo.

November

16 The Navy accepted the first production F-14A (Plus) *Tomcat*. The aircraft is part of a two-step program leading to the F-14D, an advanced air superiority aircraft. Improvements in the F-14A (Plus) include two new, more powerful engines and better reliability, operability, maintainability and fuel consumption. Flight testing of the F-14A (Plus) will be done by NATC Patuxent River, Md.

23 The first flight test of the F-14D *Tomcat* was conducted at Grumman's Calverton, L.I., N.Y., test facility. The development program calls for six aircraft to flight test the F-14D engines, avionics and radar equipment.



Wasp (LHD-1)

Contractor: Ingalls Shipbuilding Division, Litton Industries, Pascagoula, Miss.

Length overall: 844 feet
 Beam: 106 feet at the water line
 Speed: Greater than 20 knots
 Displacement: 40,500 tons
 Aircraft: AH-1T, UH-1N, CH-46E, CH-53D, CH-53E, AV-8B and SH-60
 Amphibious lift: Equivalent of 42 CH-46s (including 6 AV-8Bs)
 Sea control ship: (Air Wing) 20 AV-8Bs and 4-6 SH-60s

Landing Craft: 3 air cushion landing craft (LCAC) or various conventional landing craft
 Accommodations: 1,080 crew, 1,870 embarked troops plus 200 surge troops
 Medical capabilities: 6 operating rooms, 600 bed ward
 Propulsion: 2 steam boilers, 2 shafts, 70,000 shp total
 Armament: 3 Close in Weapon Systems, 2 Eight-cell Sea Sparrow Surface Missile System launchers, 8 .50-cal. machine guns
 Full array of radars, electronic and communications systems which will allow the ship to serve as a command ship for various naval operations.

December

7 The Naval Test Pilot School at NAS Patuxent River, Md., received the first of three HH-65 *Dolphin* helos on loan from the Coast Guard.

10 The X-31A designation was established and is applied to the enhanced fighter maneuverability (EFM) demonstrator aircraft. The EFM is designed to provide dramatic improvements in maneuver agility for fighter aircraft during close-in aerial combat, as well as in transonic and supersonic engagements and in ground attack applications.

15 The YEZ-2A designation was established and is assigned to the Navy's operational development model (ODM) airship. Potential use for the YEZ-2A airship is as an organic asset of surface action groups to serve as a fuel-efficient, long-endurance airborne platform for area surveillance and communications, command and control.

17 The first fleet S-3A *Viking* retrofitted to an S-3B configuration entered service with VS-27 at NAS Cecil Field.

F1a. This update provides major weapon systems improvements, including a new acoustic processor, new electronic support measures system, target imaging radar, the *Harpoon* missile, and an electronic countermeasures system. The modifications greatly increase the *Viking's* multiple-mission capability.

— To meet Persian Gulf contingency and tanker escort requirements, 25 SH-60B and 15 SH-2F helicopters were modified with special mission defensive equipment, such as the M-60 machine gun and special countermeasure and infrared electronic devices.

— By the end of 1987, two more carriers — USS *America* (CV-66) and USS *Independence* (CV-62) — and their assigned air wings had completed transition from the A-7 *Corsair II* to the F/A-18 *Hornet*.

— E-2C *Hawkeyes* assigned to various Navy units provided 50 hours of drug interdiction operations each month during 1987.

Fleet Activities

January

2 Helicopter Mine Countermeasures Squadron (HM) 16 was disestablished. HM-16 operated the RH-53D.

2 HM-15 was established. This squadron will operate the new mine countermeasures helo, the MH-53E.

22 Air Antisubmarine Squadron (VS) 27 was established at NAS Cecil Field, Fla., as the Navy's East Coast fleet readiness squadron for the S-3A/B *Viking*.

March

1 Attack Squadron (VA) 127 was redesignated Strike Fighter Squadron (VFA) 127. On 1 October, VFA-127's home port was changed from NAS Lemoore, Calif., to NAS Fallon, Nev.

3 VS-35 was established at NAS North Island, Calif. The squadron was assigned the S-3A *Viking* as part of CVW-10.

6 Attack Squadron 36 was established at NAS Oceana, Va. It is the second squadron to carry the designation VA-36. The new unit will fly the A-6 *Intruder*.

10 Helicopter Antisubmarine Squadron (HS) 16 was established at NAS North Island, Calif., as part of CVW-10. The squadron received the Navy's first SH-3H conversion helo.

31 VA-66 Detachment was disestablished. VA-66 was disestablished on 1 October 1986 while deployed to the Med aboard *Kennedy*. The squadron then became known as VA-66 Detachment and remained deployed. Following its return to the States in March, the detachment was officially disestablished. This administrative nightmare is enough to confuse our own personnel let alone the enemy!

April

1 Helicopter Combat Support Squadron (HC) 2 was established at NAS Norfolk, Va. The Sea Duty Component of HM-12 separated from the squadron to establish the new HC-2. The new squadron provides vertical on-board delivery support to deployed fleet units using the CH-53E.

May

1 Commander Air Antisubmarine Wing (CVSW) 1 was redesignated Commander Sea Strike Wing (Com-SeaStrkWing) 1.

1 Light Attack Weapons School, Atlantic was established.

June

1 Medium Attack Weapons School, Atlantic was established.

17 The Navy Fighter Weapons School, Top Gun, received the first Pacific Fleet F-16N adversary aircraft.

July

1 Tactical Electronic Warfare Squadron (VAQ) 141 was established. The *Shadowhawks* will fly the EA-6B *Prowler* with CVW-8.

6 SH-60B and SH-2F helicopters, modified for Special Middle East Force duties, were deployed.

14 VAQ-131 began the first Pacific Fleet deployment of the EA-6B with HARM. The WestPac deployment was aboard USS *Ranger* (CV-61).

15 VA-86 was redesignated VFA-86. The squadron will fly the F/A-18 *Hornet*.

15 VA-82 was redesignated VFA-82 and will fly the F/A-18 *Hornet*.

15 Commander Naval Air Force, U.S. Pacific Fleet initiated extensive modifications to LAMPS MK I and MK III aircraft to increase survivability and surface surveillance capability during Persian Gulf operations.

27 HM-14 was called upon for a rapid response deployment to the Persian Gulf and departed 72 hours later with its RH-53Ds to counter mines being laid by Iranian forces. HM-14 assets were flown by USAF C-5 and C-141 aircraft to Diego Garcia where its helos were reassembled and placed aboard USS *Guadalcanal* (LPH-7). The squadron conducted sweeping and hunting operations in the Persian Gulf until relieved by surface mine-sweeping units.

August

1 Distribution began to Pacific Fleet aviation units for laser eye protection (LEP) devices to counter the emerging laser threat.

1 Commander Naval Air Force, U.S. Atlantic Fleet began support of an average of five to seven LAMPS helo dets operating on convoy duty in the Persian Gulf.

September

1 VA-155 was established at NAS Whidbey Island, Wash. The *Silver Foxes* are assigned to CVW-10 and fly the A-6E *Intruder*. The official establishment ceremony was on 4 September when Cdr. Jack J. Samar, Jr., assumed command of the unit.

10 VC-6 Det 1 deployed aboard USS *Iowa* (BB-61) with the *Pioneer* remotely piloted vehicle (RPV) for a NATO and Indian Ocean cruise. This marks the beginning of battleship-operated RPVs providing independent reconnaissance and naval gunfire support capabilities.

25 Helicopter Antisubmarine Squadron Light (HSL) 47, a LAMPS MK III SH-60B unit, was established at NAS North Island, Calif.

29 USS *Coral Sea* departed for a Med cruise operating under a new concept called the "Coral Sea configuration." To help streamline aircraft maintenance, the two attack squadrons on board used a shared maintenance concept.

30 The deployment of the first AV-8B *Harrier II* to the Mediterranean Sea began as USS *Nassau* (LHA-4) left her home port of Norfolk Va., en route to the Med. The AV-8Bs on board were assigned to VMA-231.

October

1 Strike Fighter Wings, Atlantic was established at NAS Cecil Field, Fla.

1 Helicopter Mine Countermeasures Squadron 15 was officially transferred to the West Coast. This is the first permanent basing of an HM squadron on the West Coast. The squadron flies the MH-53E mine-sweeping helo out of NAS Alameda, Calif.

December

1 Attack Squadron 185 was established at NAS Whidbey Island, Wash. The *Knighthawks* will fly the A-6E *Intruder*.



PH2 Paul Splotta

Rescue of a Snowbird

By Joan A. Frasher

A Lockheed ski-equipped LC-130 *Hercules*, buried for over 16 years under 30 feet of solidly packed snow, flew out of Antarctica under its own power in January. The aircraft, owned by the National Science Foundation (NSF) and flown by Navy Antarctic Development Squadron (VXE) Six, is currently being repaired for return to duty in the frigid polar region.

Based at Point Mugu, Calif., VXE-6 flies ski-propjet LC-130 transports and UH-1N *Huey* helicopters, which provide airborne logistic support for the NSF's U.S. Antarctic Research Program. The aircraft ferry personnel and supplies to

the isolated region for exploration and scientific research.

The recovered "Herky Bird's" story began in 1971. The aircraft (BuNo 148321), commonly referred to as "321," crashed on takeoff from a geographical area called D-59 — the 7,300-foot-elevation East Antarctic Plateau. This location is 750 miles from McMurdo Station, home of U.S. Antarctic research. The crash was attributed to a jet-assisted takeoff (JATO) bottle on the side of the aircraft which exploded, damaging a propeller.

Excavation of "321" began during VXE-6's 1986-87 summer deployment

season (October through January) from Point Mugu to Antarctica, under the direction of a Navy/Lockheed team. In January 1987, contract personnel from ITT/Antarctic Services, Inc., dug the LC-130 out of the snow. Despite its being encased in ice, the excavation personnel discovered that the aircraft was still airworthy. They attributed this to the dry, cold weather of the Antarctic. No rust was discovered.

"The work had to be done in phases," Dr. Peter Wilkness, NSF Director of the Division of Polar Programs, said. "The planning, the traverses, the excavation, it all came

together. It took a monumental effort over three years."

Returning for the 1987-88 summer season, the crew began preparing the aircraft for flight, which included the removal and replacement of ailerons and flaps, all four engines and propellers and the nose radome. The most difficult task confronting the team was rebuilding the nosewheel well and replacing the two main landing gear struts. New cockpit instruments had to be installed. The LC-130's ultra high frequency and very high frequency radios and the tactical air navigation system were also repaired.

The repair team was severely hampered by the extreme weather — whiteouts, snow and windstorms that blew down from the ice cap. For one week in January 1988, a continuous storm — classified as a "Herbie," the worse possible polar storm — kept the team isolated in their huts until guidelines could be attached to the airplane in order to complete their work.

Lockheed engineer Joe Wyatt, who later observed the actual takeoff of "321," said, "We [flew] the airplane out on January 10 — after 42 days on the site. We had a 'window' of only 45 days and we beat it."

Commander U.S. Naval Support Force, Antarctica, Captain Dwight D. Fisher, called the project a significant accomplishment. "When you think of how long this airplane's been there and to see the condition it's in now, it's amazing," he said. "We've learned that there doesn't seem to be a limit to what we can do in maintenance repairs in the field here in Antarctica.

"I don't think you can say this type of work has been done anywhere else in the world," Capt. Fisher added. "They really had to *build* an airplane out there, and under very difficult conditions."

The aircraft was flown to

Christchurch, New Zealand, and will be housed there while an Air New Zealand maintenance team completes all the necessary repairs before piloting it to its home base in California.

Both the military and civilian officials in the Antarctic program declared the recovery effort highly successful. The rescue of "321" is an excellent example of what can be accomplished by the mutual cooperation of several organizations. ■

Although the salvage of "321" represented a savings to the Navy, it also resulted in an unrelated, but tragic loss. Another C-130, which was en route to assist in the repair, crashed within sight of "321." All 11 people on board were injured and two members of VXE-6 were killed, Lieutenant Commander Bruce Bailey and AK2 Donald M. Beatly.

PH3 Pat Gilliland



AN Joel Conger



Opposite page, the LC-130 Hercules emerges from its frozen home. Above, "321" on its flight to McMurdo Station before beginning the homebound segment of its trip to Point Mugu, Calif. Left, Cdr. Jack B. Rector, C.O. of VXE-6, greets his family upon arrival at Point Mugu on March 3, after more than five months on the frozen continent.

Many thanks to Eve Miller of *The Missile* for contributing to this article.

HOOKED BUT NOT TRAPPED



PH2 Gary Bonaccorso

By Dr. Malcolm Muir, Jr.

The first catapult shot I ever witnessed was spectacular, to an even greater degree than I expected. From the bridge of USS *Dwight D. Eisenhower* (CVN-69), I watched, entranced, as the number three catapult launched an E-2 *Hawkeye* toward the bow. With tires smoking furiously, the big, turboprop plane left long, black lines of rubber as it was dragged across the deck. Near the end of the cat stroke, both main tires blew out, but the plane lumbered into the air

anyway. The landing gear went up normally.

The commanding officer of the ship, Captain Gary Beck, remarked coolly, "There's the second mistake that young pilot made in a few seconds. The first was to set the parking brake, the second was to retract the blown tires. They might stick in the wheel wells." All in all, it was a most impressive introduction to carrier aviation — and to the aura of inexorable power that these ships project.

As the Secretary of the Navy scholar for 1987-88, I had signed on with the

Navy to write a history of the antiship missile from WW II to the mid-seventies. Although I had focused for years on surface warfare, I also had long harbored an interest in carrier aviation. Accordingly, I jumped at the chance when Rear Admiral R. G. Guilbault, Commander, Cruiser-Destroyer Group 12 and director of fleet training exercise *FleetEx 1-88*, invited me aboard his flagship, *Eisenhower*, to talk about surface warfare — and to take a peek at carrier aviation.

I arrived by SH-3 helicopter during a

brief break in flight operations. As we circled, waiting for our turn to land, I could not help reflecting that *Ike* was not a pretty ship. With her great size and angular lines, her appearance instead was overpowering. Oddly enough, she reminded me of the steel stockpiling yard where I worked summers as a college student. My first sensations as we settled aboard simply reinforced this impression. With the wisps of catapult steam, the shimmering heat of jet exhausts, and cacophony of assorted noises that worked their way through my hearing protection equipment, *Eisenhower's* flight deck smacked of just such an industrial establishment: taut, dangerous and thoroughly purposeful.

As I expected, the vastness of the ship impressed me. What surprised me was the crowding on the flight deck. Although *Eisenhower* is one of the four largest naval vessels ever commissioned, she and her sisters also accommodate the heaviest aircraft ever operated from ships. Ready for launching, an F-14 *Tomcat* weighs well over 30 tons. Seen up close, this is a *big* plane. When 40 aircraft of like size are crammed onto the flight deck, and a similar number parked cheek by jowl down on the hangar deck, space constraints dictate a traffic control capability of exquisite complexity.

Nowhere else on the carrier does one get quite the same sense of urgency as in the flight deck control spaces. As crowded with men inside as the deck outside is with aircraft, the scene is

one of constant incipient chaos. The job of the flight deck control officer, with its pressure and variables, must certainly be one of the most hectic ever undertaken by a human being. Variables, indeed: this A-7 needs fuel; this S-3 must be parked with its tail inboard of the deck edge so that the mechanics can fix a defective MAD (magnetic anomaly detection) boom; this "down" EA-6B must be replaced by a similar aircraft sitting way forward on the hangar deck.

"Low-tech," explains one of the flight deck control officers during a momentary break in the action, as he points to his tools: wooden models of aircraft — some with wings folded, some not — sitting on planning views of the carrier's flight and hangar decks. Boxes of plastic symbols — red cubes, green triangles — lend an air of unreality to the scene, as if this were some strange game of Monopoly played with grim intensity by grown men speaking in argumentative voices. "Why isn't this E-2 gassed up and ready to go?" the controller angrily asks, gesturing at an E-2 cutout with the upturned machine nut on its radome denoting its refueling status. Smiles are few and thin in this space during working hours.

Somewhat less hectic, and infinitely more high-tech, is the ship's Combat Information Center. The semidarkness and the red, green and orange lighting of the various electronic sets impose an initial false sense of womb-like security on the scene. But, because we are in the middle of the fleet exercise, the large-screen displays are filled with symbols; surface ships, aircraft and submarines all have their individual designators. To even the inexperienced eye, certain of these stand out as hostile, others as friends, still others as unknown.

In responding to these threats and in initiating offensive strikes, the carrier conducts flight operations almost constantly during the 24 hours I am aboard. One of the best vantage points is Vultures Row, high up on the island. Every piece of the choreography is interesting. Deck crewmen, many still in their teens, bear enormous responsibility. Working long hours in close proximity to moving airplanes, the deck crewmen must do their jobs properly. If not, other men — or they themselves — may die.

"BEWARE OF JET BLAST PROPELLERS AND ROTORS," tall letters warn from the side of the island. Accidents, when they do happen, are generally serious. It is a tribute to *Ike's* crew that there are no lives lost on the ship during this exercise.

From Vultures Row, certain sights

etch themselves on the memory, such as the changing shape of the F-14 exhaust ducts as the pilot goes to afterburners moments before the catapult stroke. The bluish-golden flames seem to shoot 20 feet out of the back of the aircraft. The new F-14A (Plus), with its upgraded engines, will no longer need the afterburners to get aloft, and the Navy will lose one of the most spectacular shows in all of aviation. When Capt. Beck wondered what could replace it to impress visitors, I suggested shooting the E-2 with brakes locked.

From Vultures Row, night landings with the stern pitching up and down about 10 feet possess a drama all their own. The ship is so large that her movement is imperceptible unless an observer tries carefully to line up the flight deck edge and the horizon. But 10 feet is plenty of movement for an A-7 pilot landing his *Corsair* at 130 knots. On a clear night, the pilot can see the deck and the "ball" from five miles out.

Tonight, visibility is not so good. The pilot has about 60 seconds from the time he first sees the carrier to the moment his wheels slam onto the deck. An unusually large number of aircraft bolter. From the standpoint of pure show, it is grand. When the landing plane hits the flight deck, the pilot goes to full throttle and, as the aircraft misses the wires, its tailhook throws up a ribbon of sparks until the aircraft is airborne again. A grand show, indeed, until one realizes the risks involved, and then one is thankful for each successful trap.

During the time I spent aboard, I watched the almost continuous air operations from a number of vantage points: pri-fly (primary flight), ICCS (integrated catapult control system) or "the bubble," CATT (carrier air traffic control center), the landing signal officer platform, and flight deck control. Despite the complexity of much of the modern equipment, I was struck by the fact that some pieces of gear were hallowed by time. The massive arresting gear looked like a piece of industrial machinery right out of the 1876 centennial exhibition. The equipment recording the speed of each catapult launch spit out pieces of paper marked by the simple expedient of the shuttle closing three electrical contacts as it made its stroke.

Whether the equipment was high-tech or low-tech, I was most impressed with the human commitment, so evident in all phases of the aircraft operations. There was simply no room for clowning around or slacking off. The costs of mistakes were too great — and so very obvious. It seemed to me that the greatest enemy of safety and

PH2 Gary Bonaccorso



Page 16, flight deck crewmen watch an A-6 land aboard *Eisenhower* at twilight. Above, a phone talker keeps contact with *Ike's* bridge during a utility boat recovery.



Dr. Malcolm Muir, Jr.

efficiency was not in sins of commission but in carelessness brought on by that unavoidable enemy: exhaustion.

Obviously, the planes, when they are flying, determine the tempo of life on the carrier even below decks. To a newcomer in his cabin, the noises associated with aircraft can be startling — the peculiar sounds as the blast deflectors are raised or as the cat shuttle runs back for another shot, or the terrific bang when a plane hits the deck. One falls asleep to this barrage of sound, awakens to it, and quickly becomes accustomed to it.

But if aviation is an inescapable presence, so too is the vastness of the ship itself. The sea motion so evident in smaller ships like destroyers and cruisers was virtually absent. By concentrating, I could, while lying in my bunk, barely discern the slightest movement. There was hardly a trace of that 10-foot rise and fall at the end of the flight deck, which was so bothersome to the returning aviators just a short time before. The next morning, I was not surprised to find that the shampoo tube that I stood on its cap the previous evening had not fallen over.

In so many ways, the size of the carrier impresses the observer. Of course, a community of 6,000 men needs space in which to live. Enlisted men have a modicum of privacy with a curtained bunk and their own lockers. Officers fare better. My stateroom was commodious, with a sink, desk, telephone and adequate storage space even for a Mediterranean deployment. Outside the cabins, the passageways are labyrinthian. Although the space designation system on the carrier is logical enough, it is still easy to get lost. Walking down certain passages late at night can be a disorienting experience. As the line of kneeknockers recedes into the distance, the sensation is one of looking into the multiple images of back-to-back mirrors in a barber shop.

I visited as much of the ship as possible: meteorology, signals, medicine, dentistry, the hangar bay, jet shop, and forecastle. All interested me; two deserve special mention. The dentistry department was far more complete than I anticipated. The chief dental officer, exuding pride in his unit, spent 15 minutes showing me how he and the other four officers under his command could answer virtually all the dental needs of the ship's company. And patients undergoing any procedure, from routine cleaning to the most complex oral surgery, had the pleasant distraction of scantily clad pinups to contemplate. In parting, the officer remarked, "Do you know how many dentists will be aboard the new Soviet carrier *Brezhnev* when she goes to sea? The answer is none. Now what does that tell you about how the

From "the bubble," the author watched an F-14 being prepared for launch.

Soviets care for their people? What does this facility tell you about how we care for ours?"

However, it was the forecastle, oddly enough, that came to symbolize for me so much that is right with today's Navy. Away from the glamor areas of the huge warship, in a space rarely visited by outsiders (or by other members of the ship's company, for that matter) sailors here had enough pride in their work to keep the gear entrusted to them immaculate. One seaman was obviously pleased to show me around. He had not given a tour to anyone in the two-and-a-half years that he had been in the forecastle, he said. He talked enthusiastically about the equipment and the procedures followed in raising or lowering the anchors. The young man volunteered to take me to see the chain locker, but hatches buttoned up in combat readiness kept us from that out-of-the-way spot.

My time aboard *Eisenhower* was all too short. I left the way I had come — by SH-3 *Sea King*. Sadly, no cat shot for me; no trap, either. Otherwise, the experience had been a memorable one. I was "hooked" on Naval Aviation. I am honored to have been at least for a short time, associated with this proud community. ■

Dr. Malcolm Muir, Jr.



Ike's packed flight deck reflected the high tempo of FleetEx operations.

Hall of Honor Selectees Enshrined

Six men who made significant contributions to Naval Aviation were enshrined on May 5 in the Hall of Honor at the Naval Aviation Museum, Pensacola, Fla. Five naval officers and a civilian engineer were honored at the ceremony.

The following is a brief biography of their careers:

Captain Washington I. Chambers, USN (deceased) — Capt. Chambers was the first Director of Naval Aviation. On May 8, 1911, he signed the order for the purchase of the Navy's first three aircraft. Although not an aviator, Capt. Chambers was a strong advocate for Naval Air power.

Doctor Jerome C. Hunsaker (deceased) — Dr. Hunsaker was a Naval Constructor who established the first aeronautical engineering course in the U.S. for the Navy at the Massachusetts

Institute of Technology in June 1913. He made numerous contributions toward the advancement of aeronautical knowledge throughout his career in the Navy, and he became the Navy's Coordinator of Research and Development.

General Keith B. McCutcheon, USMC (deceased) — McCutcheon was a combat aviator in WW II and the Korean conflict. Realizing the necessity of rotary-wing aircraft, he became the principal advocate for helicopters in the Marine Corps. He oversaw the introduction and expansion of these aircraft throughout the Marine Corps.

Captain David McCampbell, USN(Ret.) — As a fighter pilot, who became the Navy's leading ace during WW II, McCampbell was credited with shooting down 34 enemy aircraft in aerial combat. He won the Medal of Honor

and the Navy Cross in two days — October 24-25, 1944 — for combat achievements as commander of Air Group 15 aboard USS *Essex*.

Admiral Thomas H. Moorer, USN(Ret.) — Moorer flew combat missions in WW II as a PBY *Catalina* pilot. He commanded Carrier Division Six, the Seventh Fleet, and served as Commander in Chief of the Pacific Fleet, the Atlantic Fleet and NATO's Allied Command, Atlantic. He served two terms as Chief of Naval Operations and two terms as Chairman of the Joint Chiefs of Staff.

Admiral Alfred M. Pride, USN(Ret.) — One of the Navy's foremost aviators and test pilots, Pride was Chief of the Bureau of Aeronautics and a prime developer of the carrier arresting gear landing system as it is known today. ■

POW Service Medal

The Secretary of Defense announced that the Prisoner of War Medal, recently authorized by Congress, is now available to former POWs.

The medal will be issued at no cost to any person who was taken prisoner of war and held captive after April 5, 1917. To qualify, an individual must have been taken prisoner during an armed conflict, i.e., WW I, WW II, Korea and Vietnam, and must have rendered honorable service during the period of captivity. The medal may be awarded posthumously to the legal next of kin. However, the next of kin of those who are listed as missing in action, but for whom there is no evidence of captivity as a POW, are not eligible. Qualified applicants may apply for the medal by writing to the military records center of their service during their imprisonment. A toll-free number, 1-800-873-3768, has been established to take requests for application forms and provide information about the medal.

Requests for the medal must include basic personal information so that the records center can verify the applicant's former POW status and character of service while imprisoned. Information should include full name, service number, social security number, Veterans Administration claim number, date and place of birth, branch of

service, unit of assignment when captured, and dates of confinement and release as a POW. A personal letter containing the necessary information will also be accepted from those applicants who do not use the official form. In addition to writing directly to their military records center, applicants

may submit their requests through a third party, such as a veterans' organization or public official, who will agree to receive the medal and present it to the requestor. Former Navy, Marine Corps and Coast Guard prisoners of war should send written requests for issue of the medal or determination of eligibility to: U.S. Navy Liaison Office, National Personnel Records Center, 9700 Page Blvd., St. Louis, Mo. 63132-5199. ■



Above, the proposed design: Front, the eagle, symbol of the U.S. and the American spirit, surrounded by barbed wire and bayonet points. This stands for pride and dignity, continually on the alert for the opportunity to seize beloved freedom, the hope that was ingrained in all POWs. Back, below the words "AWARDED TO," the recipient's name is engraved and, below it, the inscription naming the purpose of the award — "FOR HONORABLE SERVICE WHILE A PRISONER OF WAR." The shield is from the coat of arms of the USA.

F-16N Fighting Falcon

By Hal Andrews

The Navy's newest fighter won't ever operate from a carrier, but in its own way will increase the carrier air wings' capabilities to defeat any potential fighter threat. Serving with the Navy's "Top Gun" and adversary squadrons, the General Dynamics (GD) F-16N *Fighting Falcons* will provide realistic dissimilar aircraft combat training, simulating the best any enemy has to offer in "honing the edge" for Navy and Marine fighter pilots.

New to the Navy, the F-16 has already accumulated quite a history in the 14 years since the first prototype YF-16 made its initial flight. Well-known for its extensive use by the Air Force's Tactical Air Command, it is also the most widely used high-performance "international" fighter currently in production — and the first one produced from the start on an international basis. The one major thrust toward a Navy carrier version was not successful, so Navy use will be confined to its adversary role. But Navy pilots flying it in that role will both enjoy and utilize to the fullest its outstanding combat performance characteristics.

Back in the early seventies, two separate Department of Defense interests combined to result in the YF-16's appearance. When David Packard was Deputy Secretary of Defense, he strongly pushed the building of prototypes as a way to get a real assessment of potential new military systems at a reasonable cost. At the

same time, the growth in size and cost of new fighter aircraft led to considerable concern over whether or not the necessary numbers of fighters for the services would be affordable. The result was the inclusion of "lightweight fighter" prototypes in an Air Force prototype program established in 1971.

With maximum specification freedom, companies were to bid on building two prototype fighters — designed to be smaller, simpler and less costly than the F-14 and F-15. Advanced technologies — though not totally new concepts — were to be used for maximum combat performance within the reduced size and cost objectives. General Dynamics and Northrop were selected as winners, to build two YF-16s and two YF-17s, respectively.

General Dynamics selected a single-engine approach. Northrop based its design on two engines — its general configuration being that of today's McDonnell Douglas F/A-18, which would evolve from Northrop's original YF-17 design. Following the Lightweight Fighter (LWF) program objectives, GD's design was basically straightforward, with carefully selected advanced technology features. These included blended wing-body aerodynamic design with extended leading edge strakes along the fuselage; variable wing camber, using leading edge flaps; an analog fly-by-wire flight control system, without mechanical follow-up or reversion,

operated by a side-stick controller; and a 30-degree-reclined pilot's seat to increase tolerance to maneuvering G forces. Use of many off-the-shelf system components and conventional structural design for the fuselage and wings were cost-saving measures. Armament included a single gun in the left wing root and tip-mounted *Sidewinders*, with design provisions for wing and fuselage store stations. Using one Pratt and Whitney 23,500-pound-thrust F-100 engine, two of which power the F-15, and with a combat weight of some 17,500 pounds, performance was expected to be quite spectacular.

For its first small aircraft, GD's Fort Worth Division put together a compact design team, well experienced with some of its past advanced designs such as the B-58 and F-111. In January 1974, two years after the request for LWF proposals had gone out, the first YF-16 was flying.

Later in 1974, with all four LWF prototypes flying for the planned one-year flight evaluation program, the Secretary of Defense directed that the winner be the Air Force "Air Combat Fighter." It would be the low end of a high/low fighter mix, an affordable multirole fighter/attack aircraft providing the large number of fighters required for the Tactical Air Command. During the same period, the needs of

four of the smaller European/Scandinavian NATO countries for replacement fighters led to another international competition. When all the competitions were over, the YF-16 was selected for both the U.S. Air Force and NATO use as the F-16A, with coproduction involving three of the four NATO purchasing countries.

From prototype to production, the overall F-16 configuration didn't change. A small increase in wing area addressed the weight growth, while a small increase in fuselage length accommodated the added electronic systems necessary to give the production F-16 the desired multimission fighter capability. Two wing stations were added to the five wing and fuselage store stations originally envisioned to accommodate increased air-to-ground weapons. A two-place F-16B version was included in the program — essentially identical except for the second pilot cockpit and longer canopy.



F-16N



Eight preproduction F-16A/Bs were built in Fort Worth while all the other production details were sorted out.

The Navy, meanwhile, was also exploring a new fighter/attack airplane under the label VFAX. It would be designed to replace both F-4s and A-7s in the carrier air wings. Congressional direction resulted in the VFAX being selected from carrier versions of the YF-16 or 17. Vought and General Dynamics teamed on the YF-16 derivative, but lost the competition to the McDonnell/Northrop team for what became the F/A-18.

The F-16A and B went into full service with the U.S. Air Force, and with the air forces of the original NATO partners. Subsequently, other countries around the world added *Fighting Falcons* to their military inventories. GD initiated exploration of many potential improvements for the F-16, both to make the full capabilities of the basic design available and to provide increased capability.

While many improvements were incorporated in production block changes, the availability of a new generation of jet engines and significantly enhanced avionics systems

resulted in new production models, the F-16C and D (single and two-place, respectively) which have joined the earlier models in Air Force squadrons.

At the same time, the new Russian aircraft with increased aerodynamic and electronic performance caused the Navy to look again at its adversary aircraft capabilities. More capability was clearly needed. After several studies and approaches, the F-16 was in another Navy competition — to replace the Navy's adversary fighters. This time it was the winner and the F-16N was ordered — basically a standard F-16C off the production line with the 25,000-pound thrust GE F-110 engine. Avionics systems were adapted to provide threat simulation without unnecessary cost; the F-16As radar system was considered adequate, and a radar warning receiver and chaff/flare dispenser were included.

While initial Navy *Falcons* are single seaters, two-place TF-16Ns will join them later. This will round out the major increase in threat capabilities that Naval Aviators will train against to achieve all the combat performance available from their F-14s and F-18s against any potential real adversary. ■

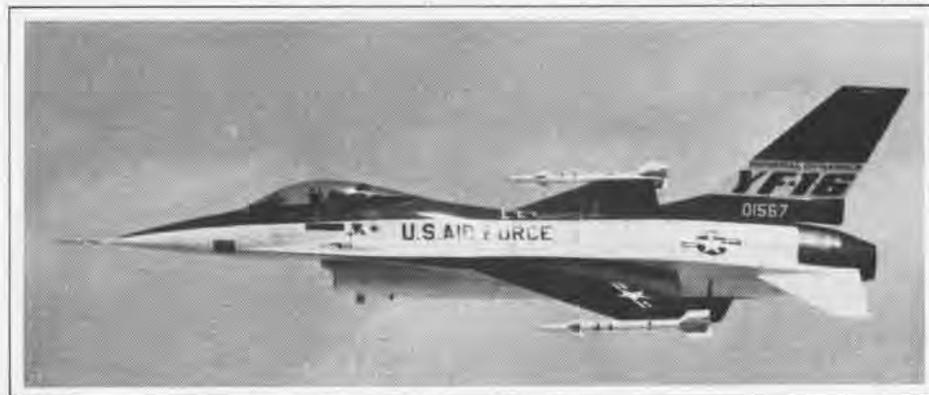
F-16N



Span	32'4"
Length	49'4"
Height	16'8"
Maximum weight	37,500 lbs
Engine	One F110-GE-100 25,000 st
Maximum speed	Mach 2+
Service ceiling	55,000'
Maximum range	classified
Crew	One
Armament	One 20mm cannon; two Sidewinders plus various weapons on six wing and one fuselage station.



YF-16



Abraham Lincoln



The nation's 25th aircraft carrier, Abraham Lincoln (CVN-72), towers over its guests during launching ceremonies at Newport News Shipbuilding, Va.

Launching America's Newest Supercarrier



JO1 Jim Richeson

By JO1 Jim Richeson

One of former Secretary of the Navy James H. Webb's last official acts before leaving office was to help launch the nation's 25th aircraft carrier, *Abraham Lincoln* (CVN-72), at Newport News Shipbuilding, Va., on February 13.

Secretary Webb was joined by his wife, JoAnn, the ship's sponsor, and their three children. Also present were Chief of Naval Operations Admiral Carlisle A. H. Trost, Virginia Governor Gerald L. Baliles and Illinois Governor James R. Thompson. Secretary of Defense (SecDef) Frank C. Carlucci, the ceremony's principal speaker, addressed more than 3,500 guests and crew members.

Despite freezing temperatures during *Lincoln's* christening, spirits were high among the crowd, which gathered along the ship's starboard side, at dry dock 12. Fighter Squadron 103's F-14 *Tomcats* flew overhead, kicking off the event.

"This christening represents, for those of us who watched and anguished over the evisceration of our Navy, one of the greatest triumphs of the Reagan administration," Webb said.

During the ceremony, Webb recalled that since the Civil War, America has remained insulated from battles fought in faraway lands, particularly those in Europe. "This insularity is the greatest blessing of a maritime nation, although it also demands that our sea services remain vigorous, strong and continuously deployed," Webb said.

Above, it took Mrs. JoAnn Webb, *Lincoln's* sponsor, four tries before smashing the traditional bottle of champagne across the 95,000-ton carrier's bow. Right, *Lincoln's* pre-outfitted, 396-ton island structure was slowly lifted on top of the carrier's deck with the help of the shipyard's 900-ton capacity gantry crane.



Caroline Kiehner

Right, Abe Starr was among the launching ceremony's distinguished guests. The native of Indian Neck, Va., who bore an uncanny resemblance to the nation's 16th president, roamed the dock shaking hands with those who braved the day's freezing temperatures.



JO1 Jim Richeson

He reminded those present, "Many here today remember a time, not so long ago, when this vigor, strength and method of deployment were gravely threatened by cutbacks in force structure that did not take into account the gravity of our national commitments. Our great Navy, the finest navy the world has ever seen, was cut in half over the space of a few years, falling from almost a thousand ships in the late 1960s to only 479 combatants by 1979."

"National commitments remained the same," he went on. "Periods of deployment increased. Many of our best young officers and NCOs broke under the strain and left for civilian employment."

Secretary Webb and other keynote speakers, including Secretary Carlucci, were forced to cut short their prepared speeches for the sake of brevity and good health as biting winds steadily blasted across the James River.

Both Governor Thompson and SecDef praised *Lincoln's* prospective crew members and the ship's mission. "In giving a name and a sponsor to this magnificent ship, so much of our nation's greatness is brought into focus... the courage and dedication of the sailors and Marines who will serve in her," Carlucci said.

"As she sails through the seas and oceans of the world, this aircraft carrier will send a clear and unambiguous message to friends and enemies alike that we have every intention of remaining true to our commitment to strength and freedom," Carlucci emphasized.

"We build the military posture we need, as we always have, based on our nation's interests and the threats to those interests posed by potential adversaries. Although that posture may change as the world's economic and

political landscape evolves, the precept upon which we base it endures. We seek to deter war. Ours is a defensive stance. But if war comes, nonetheless, we must be able to restore peace on terms favorable to ourselves and our allies," Carlucci stated.

SecDef added that in naming this newest aircraft carrier, President Reagan has reiterated the administration's goal of a 15-carrier, 600-ship Navy as an essential element of America's national security strategy.

"This goal, however, has to be reconciled with our other military requirements in a severely resource constrained atmosphere," Carlucci said. "We must have a balanced set of capabilities. That will require an end to the pattern of declining military budgets imposed by Congress over the last several years."

Finally, Carlucci congratulated the builders of America's recent aircraft carriers, Newport News Shipbuilding, for its contribution to the country's sea power and security. *Lincoln*, the shipyard's fifth *Nimitz*-class carrier, is 17 months ahead of schedule and is expected to be delivered to the Navy in late 1989. Captain Joseph J. Dantone, former skipper of USS *Wichita* (AOR-1), is the new carrier's prospective commanding officer.

Then came the moment everyone had anxiously awaited. JoAnn Webb took her stance and aimed to crack the traditional bottle of champagne across the 95,000-ton carrier's hull. Standing next to Mrs. Webb were the ship's matrons of honor, Illinois First Lady Jayne Thompson and Mrs. Webb's sister, Donna K. Woody of Glen Riddle, Pa.

The crowd stood silently, conceding to the chilling temperatures, as Mrs. Webb struck out on her third attempt to christen the 1,092-foot vessel. Then,

like a major league switch hitter, she changed her batting stance and gave it her best shot, smashing the bottle of bubbly beneath the ship's bow.

The crowd came alive, as cheers rang from the shipyard while "Anchors Aweigh" blared and a huge American flag rose behind the reviewing platform.

Just as quickly as the champagne's fizz evaporated, the crowd dispersed. After her christening, the new supercarrier, named after the country's 16th president, remained moored at dry dock 12. She had to wait for the next high tide to be moved to an outfitting pier for another 20 months of systems installations and testing.

Work has already begun on the next *Nimitz*-class carrier, *George Washington* (CVN-73), scheduled for commissioning in 1991.

Extensive use of computer-aided design and recent manufacturing techniques have helped reduce the time needed to build the Navy's mammoth vessels, which require approximately 40 million man-hours and nearly five years to put together.

Through modular construction, and with the help of a 900-ton capacity gantry crane, the shipbuilders have been able to undertake the massive projects. When finished, each module — resembling a giant toy building block — is pre-outfitted with as much electrical equipment, machinery, ducts and piping as possible. Each completed module is then lifted by the crane and attached to other modules to form the carrier's structure. Larger modules are called superlifts. According to Newport News Shipbuilding, *Lincoln* is comprised of 150 superlifts, some weighing up to 870 tons each.

After nearly five years of construction, *Lincoln* and her crew of 6,000 will be a welcome addition to the nation's armada. ■

NAF El Centro: A Busy Oasis in the California Desert

Story and Photos by Peter Mersky

The Imperial Valley in southern California is one of the American southwest's largest farming areas. Lush, green, irrigated plots expand to the roadways of this arid breadbasket. Naval Aviation is an integral part of the valley, for 120 miles due east of the bustling naval complex of San Diego is the well-established, but little-publicized Naval Air Facility, El Centro.

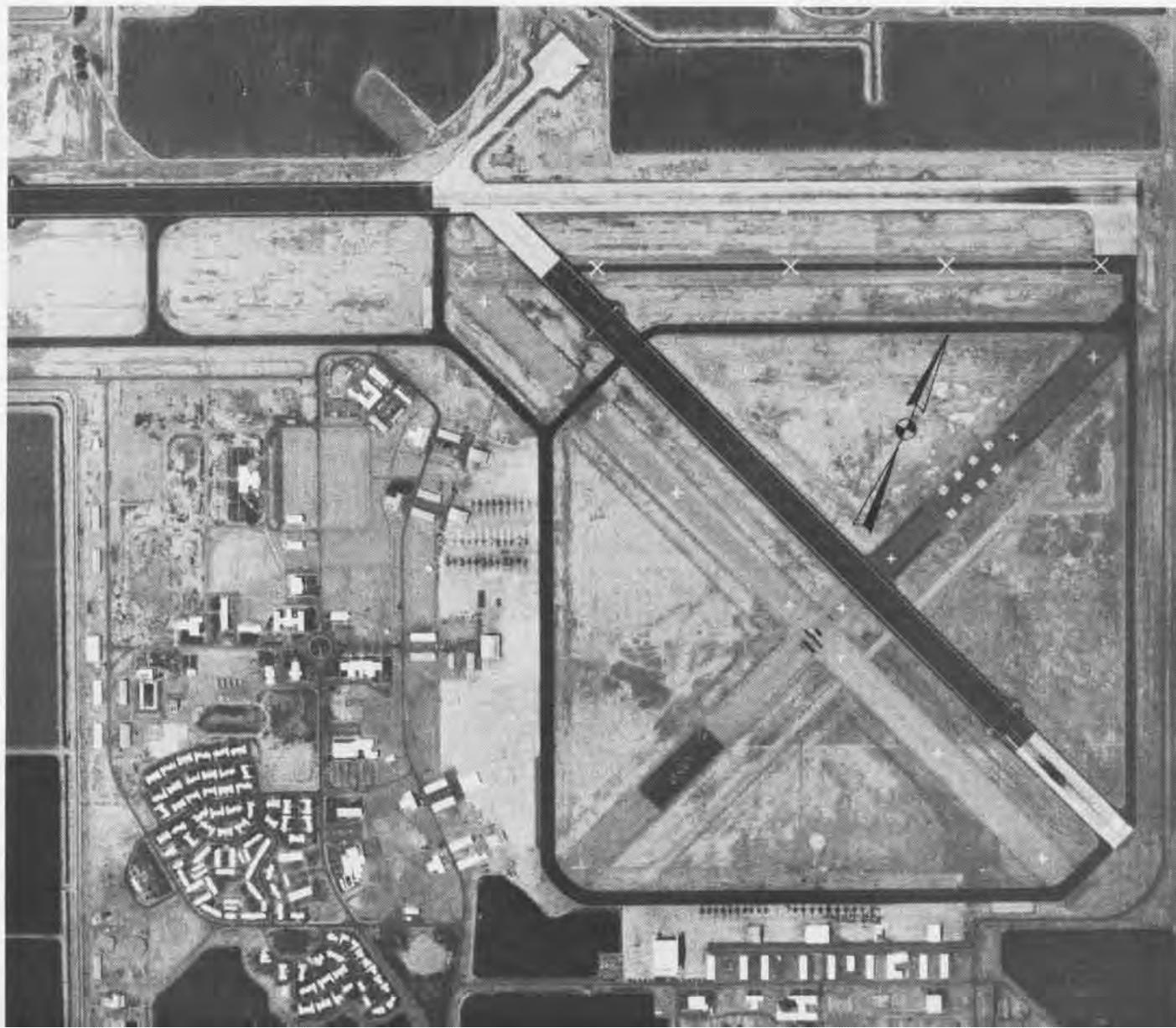
At first, the base appears desolate, dusty and somewhat forlorn. There is the typically stark beauty of the desert, with mountains in the distance lending a blue-purple background in low

sunlight. El Centro is, indeed, bare. After settling in, however, a newcomer begins to develop an appreciation for this small, busy portion of Imperial Valley.

Established on May 1, 1946, as a naval air station — before which it had been a Marine Corps air station — NAF El Centro's status has changed several times, from its original air station title to a naval auxiliary landing field, back to NAS, and then to the National Parachute Test Range.

For 35 years, El Centro supported experimentation and development in

aeronautical escape system testing, evaluation and design. In 1947, the Parachute Experimental Division from Lakehurst, N.J., moved to El Centro. In 1951, the Joint Parachute Facility was established, consisting of the Naval Parachute Unit and the Air Force's 6511th Test Group (Parachute). The Air Force remained part of the organization at El Centro for 27 years but, in 1964, the U.S. Naval Aerospace Recovery Facility was established, and was later combined with the naval air facility to form the National Parachute Test Range. The parachute test function was



U.S. Navy photo

transferred to Naval Weapons Center, China Lake in 1979, and El Centro became a naval air facility once more.

NAF El Centro provided support to fleet squadrons, offering near-ideal weather conditions and open, uncluttered spaces in the Imperial Valley. In 1949, the Fleet Gunnery Unit was assigned and remained there for 10 years. VA-174, the East Coast A-7 fleet readiness squadron (FRS), established a permanent detachment — the *Desert Rats* — at El Centro in 1979 and, in 1985, a Tactical Aircrew Combat Training System subsystem was added to the training syllabus at El Centro. The VA-174 det left El Centro in 1987 as A-7 training began to decline with the continued introduction of the F/A-18 *Hornet*.

As NAF El Centro enters the late 1980s, it continues to build on its rich history. Plans are afoot to reestablish the base as a naval air station, indicating its higher ops tempo and increasingly important status in overall fleet planning. While the entire area encompasses more than 4,400 acres, NAF El Centro actually covers 2,200 acres, including runways, supporting flight lines and hangar areas, base support activities, and family housing and welfare structures.

NAF El Centro enjoys an excellent relationship with the surrounding community. El Centro's Navy League — with over 400 active, and at times vocal, members — gets right into the spirit, supporting facility activities and lending knowledge and resources to the base. It's a reciprocal arrangement and, over the years, the base and civilian members have developed close ties.

Perhaps one reason for the town's feeling of involvement in base affairs is one of the facility's most well-known

group of residents, the Navy Flight Demonstration Squadron, *Blue Angels*. Since 1967, the *Blues* have made their winter flight headquarters at El Centro, taking advantage of the dependably warm, clear, occasionally breezy environment in which to conduct their training for the coming year. It's an ideal place to introduce new personnel to the routine, and to rehone the skills of last year's team.

But, while the *Blue Angels* are certainly the most publicized members of the El Centro family, they are only in residence from January through March and, of course, NAF El Centro's responsibilities are year-round.

The two major areas in which the facility contributes the most are in the fields of initial weapons training and fleet carrier landing practice (FCLP), or "bouncing."

El Centro's boundaries include the Shadetree Weapons Range, comprising several ranges situated to the northwest of the main base. Shadetree was originally a parachute test facility, from 1951 to 1979, but now includes a bombing range, strafing range and something which could be likened to a go-cart track. The first two provide target areas for simple weapons deliveries and strafing runs. But the third is a level plot of ground which accommodates MLTs (moving land targets). MLTs are simple, remotely controlled motorized carts that offer an opportunity for ground attack pilots to confront erratically moving targets, which simulate tanks and other armored vehicles. Although it is not permitted to actually shoot at the MLTs, an aircraft can fire rockets at a prescribed distance from the little white rovers.

All activity at the Shadetree Range is

monitored by an elaborate system of microwave relays, which allows the centrally located observer team to watch and score deliveries and strafing runs. The tracking system at Shadetree is officially designated WISS (weapon impact scoring system) and consists of an electro-optical system which measures air-to-ground weapon impact locations relative to a defined point in real-time. Split-imaging on television monitors allows only a five-second delay in triangulating bombing results.

Bouncing is another important El Centro function. Squadrons from NASs Miramar and North Island take advantage of the facility's hospitality, since increasing traffic in the already congested San Diego area precludes readily available FCLP facilities. At any time, El Centro's bounce pattern can include E-2s, S-3s, training command TA-4s, and other fleet aircraft.

Captain Mike Boston is the current commanding officer of NAF El Centro. An experienced light attack aviator who was the air boss aboard USS *John F. Kennedy* (CV-67) just prior to the 1983 Lebanon air raid, Capt. Boston spent a great deal of time at El Centro during his junior officer days in the fleet and has special memories and feelings for the desert base. His enthusiasm for El Centro's future is constantly apparent.

The facility supports nine squadrons, 100 aircraft and 1,100 transient personnel. The pace accelerates during intense bounce periods and Fleet Fighter Air Readiness Program operations, which involve squadrons

Below, an S-3 from VS-37 begins its takeoff roll during FCLPs at El Centro. Many squadrons from the North Island-Miramar area conduct bounce sessions at the air facility.



from Miramar, including adversaries and members of Commander Fighter Airborne Early Warning Wing, U.S. Pacific Fleet. Spring always brings a heavy influx of people, including a permanent training command strike det whose students are in the last stages of undergraduate training. There is also a permanent consolidated det from VA-42 and VA-128, the East Coast and West Coast A-6 FRSs, respectively.

Airfield operations at El Centro have grown from 103,000 in 1982 to 147,000 in 1987, a 42-percent increase. Squadron dets numbered 51 in 1982; five years later, that number had jumped to 166, over 300 percent.

While calling duty at El Centro "a well-kept secret," and touting the "tremendous potential" of the facility, Capt. Boston acknowledges a few problem areas with which he and his relatively small staff must contend.

Along with El Centro's increased ops tempo, the growth in squadron personnel highlights the lack of proper transient housing. Many of the existing bachelor enlisted quarters (BEQs) are old and, even though they are being refurbished, do not adequately support the 1,100 transients who can descend upon the base.

Likewise, the bachelor officer quarters (BOQ) are small and, often, crews find their orders being stamped "quarters not available" before they are sent out into the small city to seek accommodations in various motels.

Even the permanent staff, which totals 65 (11 officers and 54 enlisted), initially finds assignment to El Centro a trial. While there is plenty of on-base housing, the lack of services and off-duty recreation is a problem. Recently, the additions of a miniature golf course, putting green, go-cart track and

bowling alley helped alleviate some of the problem. The Navy League lent its services here. There is even a small area set aside for the "snowbirds," retired Navy veterans who can bring their campers and trailers onto the facility to take advantage of the warm weather.

Bachelor on-base housing is limited, and FY 90 will see a \$14-million BEQ and BOQ construction program. El Centro has begun using the Base Operation Support contract system which allows private industry to bid on supporting various military functions, such as messing, billeting and security. However, fire-fighting, ordnance duties and air controller positions are still manned by military and government personnel.

NAF El Centro recently erected a security fence around the flight line that relieves the need for a 24-hour watch; at sunset, the gates are locked. The facility also received its own C-12 transport aircraft in March. A tactical air navigation system was installed in 1987 and the Federal Aviation Administration is evaluating the operation prior to certification. In addition, base cleanup is an ongoing concern. Years of collecting and storing scrap metal and aircraft resulted in large "junkyards," which are now being cleaned up under contract by civilian scrap dealers.

A look at the planning board in Capt. Boston's office shows the growing intensity of operations. Navy A-6s and F-14s, Marine Corps F/A-18s and H-53s, and other communities will make liberal use of the naval air facility in the Imperial Valley. In March alone, 900 transient personnel trained there.

"It's busy, but fun," Capt. Boston remarked. "The key to living at El Centro is being a good neighbor. It's not difficult to get along out here." ■



Top, Blue Angel F/A-18 Hornets break over the El Centro flight line during practice. Far left, Capt. Mike Boston, NAF C.O. (standing), and two VS-37 LSOs (L-R, Lts. Mark Woodall and Jerome Frechette) observe an E-2's bounce technique. Left, ordnance personnel store inert Mk 82 500-pound bombs at NAF El Centro's bomb assembly tables.

Anniversary

The crew of USS *Lexington* (AVT-16) celebrated the ship's 45th birthday in February. *Lexington* is the only active *Essex*-class aircraft carrier in the Navy's fleet today. That makes her the oldest carrier in the U.S. or any other navy in the world. *Lady Lex* has recorded more than 466,000 carrier arrested landings — over 100,000 more than any other aircraft carrier. Her starboard catapult has launched more than 275,000 aircraft. Both records may never be broken. Yearly, about 2,000 Naval Aviators earn their Wings of Gold aboard *Lexington*.

TraWing-5, NAS Whiting Field, FL, celebrated its 16th birthday in January. The air wing administers and coordinates the training of Naval Aviators and flight students of allied nations and provides liaison between local operational units and the Chief of Naval Air Training.

Awards

After outperforming seven other squadrons while deployed aboard USS *Coral Sea*, the *Warhorses* of VA-55 were presented the CVW-13 Professional Excellence Award. It is presented to the air wing's most operationally proficient squadron during the competitive cycle. The squadron's availability of full-mission-capable aircraft and sortie completion rate played a part in its selection, as well as the *Warhorses'* overall administrative excellence and outstanding inspection results.

The *Privateers* of VFA-132 were awarded the ComNavAirLant Fox One Award as the finest missile shooters in AirLant. The *Privateers'* award-winning missile shoot was conducted at Roosevelt Roads, P.R. Runner-up in 1986 as the top *Hornet* finisher, VFA-132 became the first F/A-18 squadron to win the award, leading the pack of *Hornets* which took the top five places.

A civilian aircraft engine repairer at the Naval Aviation Depot, Alameda, Calif., received the highest civilian cash award for a beneficial suggestion. Winston Edwards was awarded a total of \$35,000 for saving the government \$11 million a year in the overhaul of TF34 aircraft engines used in Navy S-3s and Air Force A-10s.

Edwards first submitted his suggestion in 1981 when he recognized that \$18,664 engine combustor liners for the TF34 engine could be repaired instead of scrapped. Each engine combustor liner has 18 swirlers, which mix and atomize fuel and air. Previously, if any of the swirlers were cracked when the engine came in for rework, the entire liner was replaced. Edwards' method allows a worker to salvage good swirlers from two bad engine liners and combine them to make one good one.



Winston Edwards examines an engine combustor liner. A TF34 power plant is in the background.

Records

The following units marked safe flying time: VA-55, 15,300 hours and 4 years; VAW-88, 25,000 hours and 17.5 years; NAS Bermuda, 6,500 hours and 10 years; VX-1, 10,000 hours and 3 years; VT-6, 263,000

hours and 6 years; VP-48, 141,000 hours and 20 years; and VF-114, 15,000 hours and 4 years. The Naval Air Training Command's accident rate for 530,000 flight hours was 1.5 per 100,000 hours.

Major J. A. Brizendine of HMM-161 completed 4,000 accident-free career flight hours during preparations for Exercise *Kernel Blitz 1-88*.

Several VF-143 *Pukin' Dogs* achieved aviation milestones: Lts. J. Casciaro, J. Gordon, B. Buxton, G. Boyd, D. Howe, J. Howe, A. Byrne, P. Lorge, K. Haskell, V. Garrido and R. Burda logged 100 carrier arrested landings.

January 19, 1988, marked the completion of 1.5 million hours of simulator instructional time in the Naval Air Training Command. The simulator devices allow future Naval Aviators to receive training in procedures and maneuvers which are later flown in actual aircraft. The instructors who train students on the equipment are all former aviators from a wide variety of fleet and instructional backgrounds in helicopters, tactical and patrol aircraft.

Rescues

Members of a Coast Guard HH-3F helicopter crew were honored at a ceremony in New York for their participation in a water landing rescue of two fishermen in the seas off the coast of Alaska. Adm. Paul A. Yost, Commandant of the Coast Guard, presented the Coast Guard Distinguished Flying Cross to aircraft commander LCdr. Thomas D. Walter, copilot Lt. John Filipowicz and Petty Officer Antonio Juan. Petty Officers Donald Nolan and John Holcomb received the Air Medal.

The aircrew was dispatched from CGAS Kodiak to the Shelikof Straits where the fishing vessel *Laura* was sinking with two men aboard. The weather was rainy and overcast with 50-knot winds and 30-foot swells, making headway for the helicopter very difficult.

Several attempts to secure a rescue

basket aboard *Laura* failed due to the vessel's pitching in the rough seas. With low fuel becoming a problem, LCDr. Walters suggested that the two sailors abandon ship for a water pickup.

The helicopter landed after two attempts, picked up the two men and lifted off just in time to avoid a violent wave. By this time, the fuel supply was drastically low. The HH-3F headed for a Coast Guard emergency refueling station on Sitkanak Island but, after 15 minutes of flying, the helicopter was no match for the headwinds it faced. The HH-3F landed on a small island, and six hours later, when the winds died down, all were evacuated by another HH-3F.

HSL-32, Det Six, embarked aboard the *Unitas XXVIII* flagship USS *Arthur W. Radford* (DD-968), is credited with rescuing a crew member of USS *John King* (DDG-3) during operations in the icy waters of the Chilean Inland Waterway. While HSL-32 refueled aboard *Radford*, SN Earnest Pickett, Jr., fell overboard as he rigged an accommodation ladder aboard *John King*. With a water temperature of 41 degrees, time was a critical factor in the rescue. The crew had 18 minutes before hypothermia would take hold of the man overboard. Within minutes, the Det Six SH-2F helicopter hovered 15 feet above SN Pickett. AW3 Scott Martin, a helicopter aircrewman, leaped into the water and attached the rescue strap that hoisted Pickett to safety. Eleven minutes had elapsed since Pickett fell overboard. Near exhaustion, AW3 Martin could not get positioned to hoist himself back aboard the helicopter and was pulled from the water by whale boats launched by *John King*. As a result of the det's quick reaction, SN Pickett suffered only a moderate case of hypothermia and was listed in satisfactory condition.

While conducting operations with USS *Truxtun* (CGN-35) and USS *Enterprise* (CVN-65), an HS-6 *Sea King* rescued a critically injured Japanese fisherman. The two ships altered their courses from Battle Group Foxtrot to intercept the 80-foot fishing vessel in the Pacific Ocean west of Hawaii. PO3 Eddie Dion of HS-6 was lowered from the SH-3 into the vessel, where he splinted the fisherman's fractured leg and prepared him for small-boat transfer to *Truxtun*. The victim was then transferred to *Enterprise* where operating room personnel removed his ruptured spleen, tended his partially

collapsed right lung, and set his badly infected leg. The patient recovered aboard the carrier until he could be safely transported to a hospital ashore.

Honing the Edge

U.S. Navy ships and naval and Air Force aircraft teamed up with allied forces in support of *FleetEx 1-88* in the Atlantic Ocean, off the East Coast. The fleet training exercise involved more than 23,000 Navy personnel and included NATO's standing naval force Atlantic ships.

VMA-224 completed a successful detachment to NAS Cubi Point, R.P., in support of training Exercise *Cope Thunder*. Flying A-6 *Intruders*, the squadron made low-level night flights and close air support drills. The *Bengals*, home-ported at MCAS Cherry Point, N.C., are deployed to MCAS Iwakuni, Japan, but detached their aircraft and 160 Marines to Cubi Point for *Cope Thunder*.

Army helicopter pilot Lt. Will Brunet recently transitioned to Naval Aviation. The former Army medevac pilot, who flew for the 377th Air Ambulance Company in Korea, now wears Navy Wings of Gold. Brunet completed a modified syllabus that consisted of all the basic phases of naval helicopter training, including aviation indoctrination at NAS Pensacola, followed by primary fixed-wing training in the T-34C and advanced helicopter training at HT-18. Brunet started Army helicopter training in June 1983 and earned his Army wings in February 1984. In January 1987, he received an interservice transfer to the Navy.

Bravo Zulu goes to VA-75 for consistently winning the Medium Attack Wing One bombing competition. The *Sunday Punchers* aced the overall squadron competition, as well as individual events. X.O. Cdr. John Meister received best pilot honors and Lt. Curtis Eggers was named best bombardier/navigator. This marked VA-75's fourth win of top honors at MATWing-1 in the past six months.

The *Blacksheep* of VMA-214, MCAS Yuma, Ariz., recently completed a successful two-week deployment to Nellis AFB, Nev. The squadron participated in its first *Red Flag* exercise, which is viewed as the most extensive and realistic simulated combat exercise of

its kind. *Blacksheep* A-4 *Skyhawks* joined A-7s, F-16s, F-111s and B-52s as friendly aircraft to make target bombing runs. F-16s and F-5s, aggressor aircraft, attacked the "friendlies." Electronic warfare simulation and communication jamming, as well as surface-to-air missile simulators, added to the realism of the training.

Participating in a dual exercise with *Forrestal* and *Eisenhower* off the coast of Puerto Rico, the *Thunderbolts* of VA-176 completed a successful two-week *FleetEx* detachment. Simulating maneuvers in the fjords of the North Atlantic, the *Thunderbolt* A-6 *Intruders* flew numerous strikes against *Eisenhower*, and dropped a wide variety of ordnance on targets at the Vieques range.



An A-6E from VA-176 drops Rockeye cluster bombs at the Vieques target range near Puerto Rico.

The Navy and Marine Corps combined forces in a three-day field carrier landing exercise that sharpened the skills of both the fighting forces. Working with the air departments of *Tarawa* (LHA-1) and *Belleau Wood* (LHA-3) during Operation *Green Deck 1-88*, helicopter Marines from MAGs 16 and 39 and air controllers from MATCS-38 participated. The exercise provided predeployment training for units participating in Exercise *Kernel Blitz 1-88*, which proved to be a successful evaluation of the Navy/Marine Corps team's ability to move amphibious expeditionary forces ashore and support them.

Lt. Francis G. Lukemill

Et cetera



PH12 Bryan Peppers

Former *Good Morning America* talk show host David Hartman participated in a water survival test at NAS Patuxent River, Md. Hartman, now an independent television producer living in New York, is filming an hour-long special on people in the military, to be aired on ABC later this year. He had to be certified by a Navy flight surgeon, pass the water survival test and undergo physiology training to fly in the back seat of an F-14 *Tomcat*.

The Navy realized a first year's savings of \$195,000 after Lt. Jeff Stenzoski, with the help of coworkers, introduced a solution to a P-3 *Orion*

community problem. Stenzoski's idea, submitted through the beneficial suggestion program, earned him a reward of \$5,000.

Orion crews were having problems operating new avionics control panels called plasma panels, which replaced conventional push switches. The operator pressed a flat plastic sheet on top of the panel, but found that it was hard to press and it provided no discernible sensation to the touch. Stenzoski and coworker Mike Mikulewicz used heated thumbtacks on clear plastic sheets to make "bubbles" which are more easily felt. The sheets correspond to each "switch" on the panel and are also easier to press. They will cost \$2.00 each and can be replaced at squadron level maintenance. The idea will be adopted at all active and reserve Navy P-3 squadrons.

Change of Command

CVW-1: Capt. Jay L. Johnson relieved Cdr. W. W. Copeland, Jr.

HAL-4: Cdr. Wilbur Edwards, Jr., relieved Cdr. Brian Weinkle.

HC-16: Cdr. Dean G. Sedivy relieved Cdr. Clifford J. Strohofer, Jr.

HMH-363: LCol. Richard T. Willard relieved LCol. D. T. McKnight.

HMM-166: LCol. Warren North relieved LCol. R. T. Sarles.

HS-4: Cdr. Christopher W. Cole relieved Cdr. Thomas J. Bernsen.

HS-15: Cdr. Timothy J. Hallihan relieved Cdr. Christopher L. Addison.

HSL-32: Cdr. Augustus W. Clark III relieved Cdr. Robert J. Prestridge.

NATC: RAdm. Donald V. Boecker relieved RAdm. John F. Calvert.

PMTC: Capt. Sam Vernallis relieved RAdm. Richard C. Gentz.

VA-55: Cdr. Ralph E. Suggs relieved Cdr. W. Craig Chewing.

VA-81 (redesignated VFA-81): Cdr. William N. Deaver, Jr., relieved Cdr. Jay M. Munninghoff.

VF-31: Cdr. Simeon H. Austin relieved Cdr. Dennis P. Curry.

VF-143: Cdr. Stephen S. Weatherspoon relieved Cdr. Larry C. Baucom.

VMFA-312: LCol. Pete Kranker relieved LCol. E. B. Hailston.

VP-6: Cdr. Walter B. Massenburg relieved Cdr. Gary B. James.

VP-44: Cdr. Stanley J. Lichwala relieved Cdr. D. Scott Thompson.

VP-45: Cdr. Charles J. Dale relieved Cdr. Robert L. Hume.

VP-50: Cdr. Daniel R. Veldstra relieved Cdr. Greg Zorbach.

VP-60: Cdr. James B. Johnson relieved Cdr. John I. Hallquist.

VT-27: Cdr. James Sinz relieved Cdr. David Faraldo.

VX-1: Capt. Terry A. Carr relieved Capt. Robert R. Hanke.

AWARDS

AVCM Neal Award

The AVCM Donald M. Neal Award, presented annually to the ASW and patrol squadrons demonstrating the greatest excellence in aircraft maintenance, went to VP-92, ComNavResFor, and VP-22 and VS-33, ComNavAirPac. Also known as the Golden Wrench Award, it is sponsored by Lockheed Aircraft Corporation.

Goldthwaite Award

The Vice Admiral Robert Goldthwaite Award was presented to VT-23, NAS Kingsville, Texas. Competition among 19 squadrons was based on overall excellence in the training of students to become Naval Aviators/Naval Flight Officers. Sponsored by Rockwell International, the award is named in honor of VAdm. Goldthwaite who contributed significantly to the Naval Air Training Command during his 45-year career.

Conway Trophy

NAS Atlanta, GA, was awarded the Edwin Francis Conway Memorial Trophy which recognizes the reserve naval air station, naval air facility or naval air reserve unit judged to be the most effective in readiness, recruiting, retention and fiscal management. Established in 1936, the award is presented by Commander, Naval Air Reserve Force, New Orleans, LA.



Capt. Bruce Frye (left), C.O. of NAS Atlanta, accepts the Conway Trophy from RAdm. Richard Chambers, ComNavAirResFor.

Night Attack AV-8B

The AV-8B *Harrier II* equipped for night attack missions completed the first phase of testing at Naval Weapons Center, China Lake, Calif., in January. Several systems are integrated into the new version, including a forward-looking infrared sensor, color digital moving map and night vision goggles for the pilot, and new cockpit lighting which is compatible with the goggles.

The first production night attack *Harrier II* is scheduled for delivery to the Marine Corps in 1989.

F/A-18 Vertical Ejector Racks



This F/A-18 is fitted with four modified bomb racks which are being evaluated at the Naval Air Test Center, Patuxent River, Md. The new vertical ejector racks are canted several degrees, can carry two stores of up to 1,000 pounds, and present a lower aerodynamic profile with reduced drag. During tests, dummy bombs will be released at the various speeds and dive angles used by fleet pilots.

F-14D Super Tomcat



The F-14D *Super Tomcat* prototype flew for the first time at the Naval Air Test Center, Patuxent River, Md., with pilot Lt. Joe Edwards and radar intercept officer Lt. Scott Stewart. The F-14D incorporates General Electric F110-GE-400 turbofans to provide increased engine thrust and improved operability over the standard F-14A engines. The *Super Tomcat* includes redesigned cockpits, the Hughes digital APG-71 radar, infrared search and track set, and improved avionics. The first production F-14D is scheduled for delivery in 1990.

WEATHER FRONT

Lightning Safety

Of all the nasty pranks in Mother Nature's cauldron of mean tricks, none is so spectacular or fatal as lightning. Each year, there are from 75 to 100 casualties in the U.S. from cloud-to-ground lightning. Many of these deaths could have been avoided if only a few simple thunderstorm safety precautions had been observed.

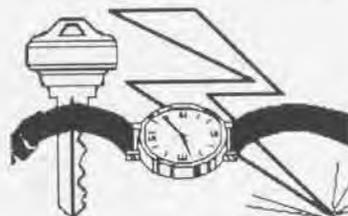


The obvious human targets are those that spend considerable time outdoors. Golfers lead the list. Boaters, fisherman and flight line personnel are also



vulnerable. Seek immediate cover before the storm arrives.

If caught in the open during a storm and you sense a sudden tingling, or your hair stands on end, a bolt may be headed your way! Quickly remove all



metal objects on your person and bend forward into a crouched position with hands on your knees to make a smaller target.



Your weather and safety officers can provide additional advice. It is said the Lord takes care of his own...but notice our clergy see to it that the steeples are protected by lightning rods!

By Commander Peter Mersky, USNR-R

Polmar, Norman. *The Ships and Aircraft of the U.S. Fleet, Fourteenth Edition*. U.S. Naval Institute, Annapolis, MD 21402. 1987. 591 pp. Illustrated. \$29.95.

This large but handy book has become a standard reference in many libraries, both ashore and afloat. The latest edition (the cycle is every three years) includes many new photos and details.

Following the method of presentation of previous editions, the 14th edition of *Ships and Aircraft* considers all areas of the Navy and Marine Corps — from aircraft, cruisers, destroyers and aircraft carriers to submarines, amphibians, and electronics and weapons systems. Numerous ship class tables show at a glance the numbers of ships and vital statistics in each category. There are line drawings and discussions of designation systems.

In keeping with this series' established reputation, the latest edition belongs in any lineup of books showing the current status of the free world's most powerful Navy.

Gunston, Bill. *The Illustrated Encyclopedia of Aircraft Armament: A Comprehensive Guide to Modern Airborne Weapons and Sensing Systems, Their Operating Principles, and Tactical Deployment*. Orion Books, 225 Park Ave. S., New York, NY 10003. 1987. 208 pp. Illustrated. \$24.95.

This book, with its lengthy title, is probably one of the most unusual efforts to appear in several years — not so much for its large format, or even the amount of color photography it contains, but rather for its extremely important subject. The author, one of the most prolific aviation writers today, discusses every modern weapons system — guns, bombs, missiles, mines, ammunition — currently carried by aircraft.

This is one of those books that belongs in a squadron's or ship's library. Here, the researcher, intelligence officer or pilot briefer can quickly find the names which create those maddening acronyms, as well as a neat account of a particular bomb's or missile's development and deployment.

Every country that manufactures bombs, rockets and guns has its wares presented — from Brazil to China, the U.S. and the USSR. This book appears to have few, if any, typos or misinformation — a rarity for such a compendium.

Elliott, John M., Maj., USMC(Ret.). *The Official Monogram U.S. Navy & Marine Corps Aircraft Color Guide, Vol. 1, 1911-1939*. Monogram Aviation Publications, Boylston, MA. 1987. 192 pp. Illustrated. \$39.95.

This *tour de force* is obviously destined to become a classic reference in the often murky area of military aircraft paint schemes and markings. The author's credentials are well-known to aviation history buffs and writers. He has created a book with a wealth of detail and authoritative discovery which is all the more remarkable because of its relatively small number of pages. However, its large format permits an open, pleasing layout as well as the printing of many of the rare photos in large, usable sizes. Color paintings, marking diagrams and a unique page of authentic color chips also complement the text.

The details of cowling and rudder colors within Navy squadrons of the 1930s are familiar to the general buff, but the seemingly anarchic area of U.S. Marine Corps markings of the same period receives clear, graphic inter-

pretation and depiction.

Without a doubt, Maj. Elliott's first book in this series demands a place in every aviation library.

Stockdale, Jim and Sybil. *In Love & War: The story of a family's ordeal and sacrifice during the Vietnam years*. Harper & Row Publishers, New York, NY. 1984. 472 pp. \$18.95.

This autobiographical account is the story of a Naval Aviator, but it is also the story of his family and a period of modern American history which is only now beginning to be discussed with more than a passing interest.

Jim Stockdale tells of his operational involvement — including direct participation in the Gulf of Tonkin incident — his shootdown and first excruciating year of imprisonment. His wife, Sybil, builds a wrenching account of her initial shock and confusion, then uncertainty and growing anger and frustration at the government's seeming incapacity to assure her husband's, and his fellow prisoners', safety and humane treatment at the hands of their captors.

For Naval Aviation buffs, there are dynamic glimpses of the hectic period from July 1964 to mid-1965 when the U.S. tried to establish a proper military stance in SEAsia. Now retired Vice Admiral, then-Commander Stockdale was convinced that the second Tonkin incident on August 4, 1964, never happened, and he carried that thought with him into his long period of imprisonment, living in mortal fear that the North Vietnamese would somehow force him to reveal the truth.

VAdm. Stockdale received the Medal of Honor for his activities and endurance as a POW, and this book covers in detail his long years of isolation, torture and mind-bending uncertainty relieved only by sporadic letters from home and even rarer photographs of the family he left behind to endure their own form of imprisonment and torture.

Although this book is about Naval Aviation, it goes well beyond that subject and becomes a story of the human spirit and what it can endure, and attain.

Wheeler, Howard A. *Attack Helicopters: A History of Rotary-Wing Combat Aircraft*. Nautical & Aviation Publishing Co. of America, Baltimore, MD 21201. 1987. 117 pp. Illustrated. \$22.95.

Written by a retired Navy helicopter pilot, this book discusses the development of the helicopter in general, and the armed helo specifically. From early experiments in the later 1940s to the first regular deployment with U.S. forces in Korea in the early fifties, the helicopter held great promise and generated a cadre of advocates at all levels.

The author includes details on little-known British operations in Malaya during the insurgency there, which began in 1948, and the rarely covered French operations in Algeria starting in 1954. It is the latter period that the author gives as the first true use of armed helicopters for close air support for ground troops.

The "helicopter war" in Vietnam is covered, with special attention to the development of the ubiquitous UH-1 *Huey* series. Post-Vietnam activities, such as Grenada, the Falklands and Afghanistan, are also discussed.

Although a relatively short book, this volume represents a good, quick reference and discussion of the increasingly important member of tactical aviation, the armed helicopter.

Army Air Corps Wings

I would like to identify the unusual, WW II-vintage wings pictured here. Below, top, are typical WW II Army Air Corps (AAC) pilot wings. However, they are gold-plated while all Army wings were silver. An undocumented story about the gold color asserts that a number of Navy personnel were ex-AAC pilots who, technically, could not wear the Army wings on their Navy uniforms so they gold-plated the silver wings and wore them as they underwent Naval Aviation training. The wings are the same size and weight as Navy ones, while the attaching device is exactly the same as other WW II badges.

Below, bottom, are miniature Navy pilot wings with a camera superimposed over the shield. Small dots or circles on the uppermost layer of feathers date them after 1940. The attaching device is a straight pin that fits into a catch having a rotating fastener — exactly like those on most WW II badges and medals. Measuring one and five-eighths inches long, the solid casting is stamped on the reverse with: STERLING/CHAS FISCHER/NY.

Vernon Brook
2621 Memphis
El Paso, TX 79930



OS2U Book

I am conducting research for a book on the Navy OS2U of WW II and would like to contact ex-Kingfisher personnel.

Dave Lusk
1710-1/2 Market St.
Lewisburg, PA 17837

F6F Hellcat

I am seeking veterans of VFs 2 and 10 who operated F6F Hellcats from Enterprise during early 1944. I am particularly interested in contacting anyone with firsthand accounts of occasions when Army Air Force B-25s penetrated

the task force air space in late January and early February.

Philip Marchese
5753-32 Harwich Ct.
Alexandria, VA 22311

Changes to Blues 1988 Schedule:

Apr 2	Lafayette, LA (D)
May 28-29	Pease AFB, NH (C)
Jul 30-31	NAS Memphis, TN (C)
Aug 10	NAS Whidbey Is., WA (C)
Oct 27	NAS Key West, FL (A)
Oct 29-30	Opa Locka, FL (C)
Nov 2	NAS Key West, FL (D)
Nov 5-6	New Orleans, LA (C)

(D) = delete; (C) = change; (A) = add

Blues Seek Enlisted Members

The *Blue Angels* are seeking enlisted personnel for the 1989 season. The squadron will consider top performers who are physically fit and highly motivated in the following aviation ratings: AD, AE, AK, AME, AZ, AT, AMH, AMS, AO, ASM and PR. The *Blues* also need YNs and four aviation chief petty officers. Experience in the F/A-18 is considered a plus but is not required. Selected personnel can expect travel, hard work, long hours and interaction with the public.

Interested personnel, with PRDs between May 1988 and February 1989, are encouraged to contact AZC Kessinger at the *Blue Angels*, autovon 922-2466/4475/2583 or (904) 452-4475/2466/2583.

Historian Aviators Wanted

The recently established Naval History VTU 0615 seeks aviation officers and enlisted members with a background in history, museum or archival work. The reserve unit drills at the Naval Historical Center, Washington Navy Yard, Washington, DC. VTU 0615 welcomes remote drillers who work on projects in support of the Center and those who perform AcDuTra at the Center. Projected plans call for the eventual establishment of combat operations documentation teams, which would be able to react on an immediate basis to record events of historical significance.

Anyone interested in affiliating with this volunteer training unit may write: Commanding Officer, NR NAVHIST VTU 0615, Naval & Marine Corps Reserve Center, Bldg. 351, Anacostia Annex, Washington, DC 20374-3511.

Steichen Photo Exhibition

The Navy Museum, Washington Navy Yard, Washington, DC, opened "The Steichen Image: A Portrait of World War II" in April 1988. The photographic exhibition features black and white and rarely seen color prints, from original negatives, by Edward Steichen and the men who served in his Navy combat camera units during the war. The exhibit will continue through September 30.

Reunions, Conferences, etc.

USS Bataan (CVL-29) and air groups (WW II and Korea) reunion, May 18-22, Philadelphia, PA. Contact Al Kling, 401 N. Frederick St., Arlington, VA 22203-1312, (703) 528-0740, or Nick Paradis, 7010 Falling Waters Dr., Spring, TX 77379, (713) 251-8701.

USN/USMC Air Traffic Control Symposium, May 24-26, Cavalier Hotel, Virginia Beach, VA. Contact ACC(AW) Norris or ACI Allen at AV 433-2851, ext. 227/298, or (804) 433-1227/1298, or write USN/USMC ATC Symposium, c/o FACSFAC VACAPES, NAS Oceana, VA 23460-5105.

VF-11 (Guadalcanal, June 16, 1943) reunion, May 6-7, NAS Miramar, CA. For further information, send name, address and phone number to VF-11, P.O. Box BD, Los Gatos, CA 95031, or call (408) 395-1035.

Tactical Electronic Warfare Symposium, May 24-26, NAS Whidbey Island, WA. Contact Lt. J. Blevins, VAQ-129, NAS Whidbey Island, Oak Harbor, WA 98278-6100, AV 820-2093, (206) 257-2093.

USS Hancock CV/CVA-19 Association reunion, June 23-25, New Orleans, LA. Contact Charles F. Boyst, 1801 W. Bend Ct., Clemmons, NC 27012.

NAS Kaneohe Bay (October 1939-June 1950) personnel reunion, August 24-28, Nashville, TN. Contact James L. Evans, 1776 Troy Ln., Oceanside, CA 92054, (619) 433-7224.

USS Enterprise (CV-6) and Air Groups Northwest Regional reunion, June 10-12, Oak Harbor, WA. Contact A. W. Olson, 707 W. Florentia Pl., Seattle, WA 98119, (206) 283-2948.

USS Santee (CVE-29) reunion, July 7-9, Omaha, NB. Contact Bill Walsh, 205 S. 16th St., Denison, IA 51442, (712) 263-2737.

VQ-1/VQ-2 reunion, July 2-3, Washington, DC. Contact Cdr. Richard M. Norman, 5118 Pheasant Ridge Rd., Fairfax, VA 22030, (202) 695-9590 or (703) 830-0443.



Coming soon! T-45 Goshawk and the Training Command — July-August 1988 issue