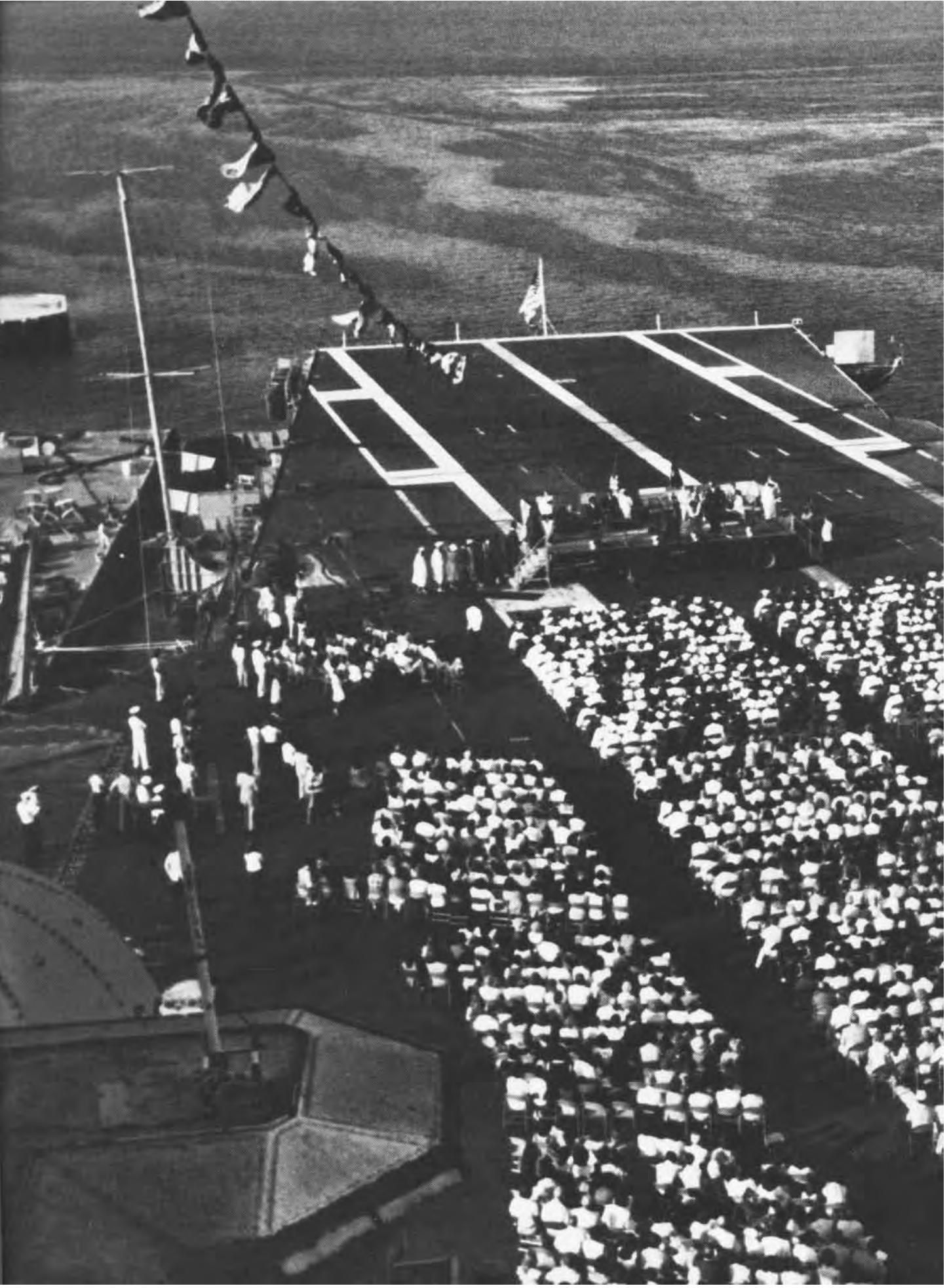
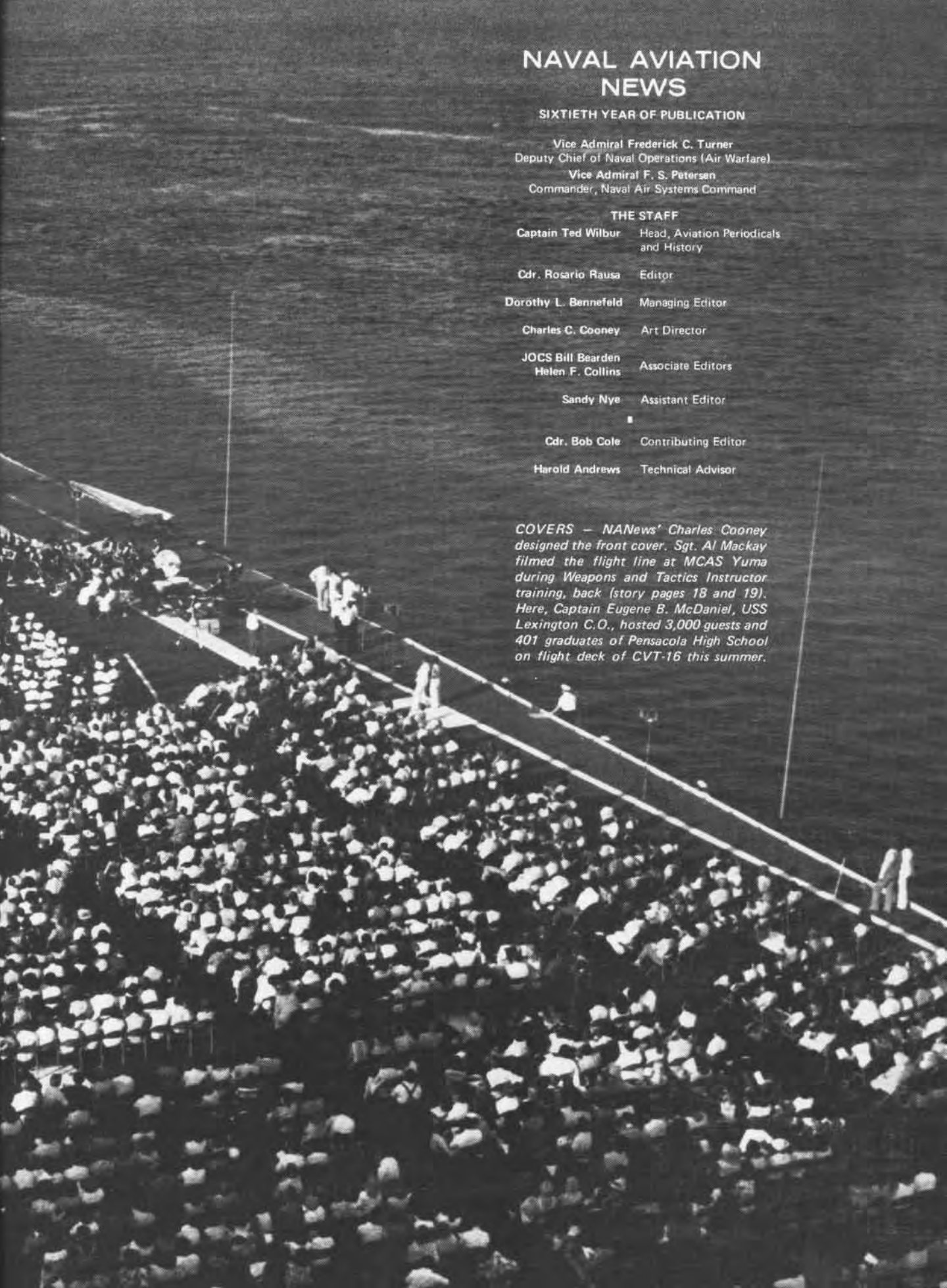
# NAVAL AVIATION NEWS

## V/STOL

September 1978






# NAVAL AVIATION NEWS

SIXTIETH YEAR OF PUBLICATION

Vice Admiral Frederick C. Turner
Deputy Chief of Naval Operations (Air Warfare)
Vice Admiral F. S. Petersen
Commander, Naval Air Systems Command

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*COVERS — NANews' Charles Cooney designed the front cover. Sgt. Al Mackay filmed the flight line at MCAS Yuma during Weapons and Tactics Instructor training, back (story pages 18 and 19). Here, Captain Eugene B. McDaniel, USS Lexington C.O., hosted 3,000 guests and 401 graduates of Pensacola High School on flight deck of CVT-16 this summer.*

# letters

## SAR

Regarding the profile of HC-9 in the squadron insignia in the February issue of *NANews*, the statement was made that HC-9 is ". . . the Navy's only combat search and rescue squadron." This statement is in error. While HC-9 is the only squadron in the Navy whose sole mission is combat SAR, the *Pacific Fleet Angels* of HC-1 are also tasked with providing combat SAR services to the fleet. As the only active duty squadron assigned the combat SAR mission, HC-1 is tasked with the requirement to be able to deploy a CSAR det anywhere in the world on short notice.

To provide a historical backdrop, when the *Big Mothers* of HC-7 were decommissioned in June 1975, their HH-3As were divided between HC-1 (from whose assets HC-7 was formed in 1967) and the newly established reserve squadron, HC-9. Those two squadrons are currently the only two in the Navy to provide combat rescue services.

Christopher J. Timmes, Ltjg.
HC-1, NAS North Island
San Diego, Calif. 92135

## Avenger

The TBF-TBM *Avenger* series is the subject of a book I am researching for a British publisher, and I wish to solicit contributions of any pilots, crewmen or maintenance folks from the period 1941-45.

War stories, sea stories, anecdotes and photos – particularly first-hand accounts of ASW actions in the Pacific and Atlantic – are needed. Please be as specific as possible: dates, places, units, full names and ranks where possible.

In particular, good quality photos of *Avenger* battle damage, accidents and crashes are solicited. Those available for long-term loan will be copied and returned.

Barrett Tillman
P.O. Box 135
Athena, Ore. 97813

**Ed's Note: Tillman is also author of *The Dauntless Dive Bomber of World War Two.***

## Kudos

Your magazine's covet story on ACMR/I (March 1978) is just super in all respects. It is the first piece to tell the entire story on the system, though much ink has been generated by ACMR/I.

Our Defense Systems Division produces ACMR/I under contract to the Naval Air Systems Command. If possible, we would like to obtain 200-300 copies of your magazine, should you have that many available. If that many copies are not readily available, is it possible to reprint the story?

Jerry Ringer
Manager of Public Relations
and Advertising
Cubic Corporation
P.O. Box 80787
San Diego, Calif. 92138

**Ed's Note: Copies on the way!**

## Banshee Pilots

Aviation writer wishes to contact McDonnell Douglas F2H *Banshee* pilots for magazine article. Especially interested in Korean War combat missions. Write Don Linn, P.O. Box 358, Marcus Hook, Pa. 19061.

## Help

I am a confirmed naval air buff and have been since I flew in the Navy in the Fifties. I have been working on a compilation and description of all carrier/air group or wing deployments since 1946. This is further broken down by squadron, type aircraft, model and markings. This project is currently about 80 percent complete but like many things the last is the toughest!

I need carrier cruise books (particularly the 1950s) and am willing to pay a fair price. The cruise books are the best source of aircraft marking information.

Robert L. Broaddus
700 Newport Center Drive
Newport Beach, Calif. 92663

### ANA Convention

The Association of Naval Aviation will hold its third annual reunion from September 28 to October 1 at the Fairmont Hotel in New Orleans, La. For further information contact the Association of Naval Aviation Convention, Box 24460, New Orleans, La. 70184.

## Movies

I am interested in contacting any pilots, crewmen and technical advisors, who might have been involved in the filming of a number of Hollywood aviation motion pictures, for a book I am preparing. Badly needed are personal anecdotes and/or photos from those albums in the attic. Any bit of information would be greatly appreciated and photos will be carefully handled and returned. I am enclosing a list of films that are of interest to me along with locations of filming.

*Wings of the Navy*, NAS North Island, 1939
*Flight Command*, NAS North Island, 1940
*Dive Bomber*, North Island and Pensacola, 1941
*Wake Island*, Salton Sea, Calif., 1942
*Wing and a Prayer*, ?, 1944
*The Fighting Lady*, USS *Yorktown*, 1945
*This Man's Navy*, NAS Lakehurst, 1945
*Task Force*, USS *Antietam*, 1949
*Flying Leathernecks*, MCAS El Toro, 1951
*Flat Top*, USS *Boxer*, 1952
*Battle Stations*, ?, 1956
*Tora Tora Tora*, NAS Barbers Point, 1969
*Midway*, USS *Enterprise*, 1976

Bruce Wm. Orriss
705 1/2 W. Hillcrest
Inglewood, Calif. 90301

## NAP

The *Storkliners* of Aircraft Ferry Squadron 31 enjoyed your article on NAP Jones (April 1978) but were disappointed when you failed to mention that NAP's famous last round-the-world leg in the venerable *Gooneybird* was flown with VRF-31.

We were honored to have NAP and his wife visit the squadron when he flew the ferry mission for us in March 1977. They are both special people and we wish them the best.

William H. Siegel, Cdr.
C.O., VRF-31
NAS Norfolk, Va. 23511

## Reunion

The USS St. Louis (CL-49) Association is making plans for its first annual reunion in mid-1979 to commemorate the 40th anniversary of *Lucky Lou's* commissioning. Ship's company is being polled for preference of three cities nominated to date.

*Lucky Lou*, commissioned in Norfolk, Va., on May 19, 1939, is presently in Rio de Janeiro, Brazil. She served in the Brazilian Navy for 27 years and now faces the scrap heap. The Association was formed to save her and the ship's WW II newspaper, *Hubble Bubble*, has resumed publication to spearhead the drive.

For further information, write or telephone Al Seton, 220 Otis Avenue, Staten Island, N.Y. 10306, telephone (212) 351-4556.

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NAVAL AVIATION NEWS

# did you know?

## 5,000 Phantoms

The 5,000th F-4 *Phantom* built by McDonnell Douglas Corporation was the center of a ceremony that also marked the 20th anniversary of the first flight of the famous twin-engine fighter – May 27, 1958. The specially-painted blue and white *Phantom* bore the marking "5,000th Phantom" and the colors of the 11 nations that have flown it.

First ordered by the Navy and Marine Corps as a carrier-based fighter, it later went into service with the U.S. Air Force and 10 allied nations. McDonnell Douglas has delivered 1,264 *Phantoms* to the Navy and Marine Corps and 2,640 to the Air Force. Those 3,904 aircraft have compiled nearly 8.5 million flight hours, the equivalent of one aircraft flying continually for 970 years.

In March 1961, an article in *NANews,* entitled "To Fabricate a Phantom," read in part:

"The wing of the F4H is unusual from the standpoint of construction. Wing skins, top and bottom, are machined from massive billets of aluminum 2½ inches thick.

"Armament of the F4H – there are no guns – consists of four air-to-air missiles nestled snugly in recesses in the lower surface of the fuselage. Launched downward by explosive charges, they then take off on their own power.

"Weighing more at landing than most of Navy's fighters weigh at take-off [some 20 tons], the F4H still has comparable approach speeds.

"New and unique features are incorporated in the design. The 'wet' wing utilizes the space inside the built-up box spar for fuel storage. Huge inlet ducts vary their area in flight, monitored by an air data computer which also eliminates position error on airspeed and altimeter readings. Ailerons go down, but don't go up; spoilers go up instead.

"One word about material: ribs and stringers of the stabilator are of steel, skin of titanium, and the trailing edge is made of steel honeycomb. Keel and aft sections of the fuselage also make extensive use of steel and titanium." (The *Phantom* was the first aircraft to make extensive use of titanium in its primary structural members.)

Within three years of its first flight, the *Phantom* established 15 world speed, altitude and time-to-climb records, and still holds one low-altitude speed record. The fighter bomber also proved its value in the combat arena of Southeast Asia.

The *Phantom* has more than fulfilled its designers' expectations.

## Pete Ross Trophy

For the second year in a row, Willow Grove's VMA-131, commanded by Lieutenant Colonel James R. Shea, has won the Pete Ross Trophy (1977). The award is presented annually to a light attack or fighter squadron of the 4th MAW for outstanding safety performance. Emphasis is on pilot training syllabus accomplishment and flight safety.

The award honors the late 1st Lt. Joseph F. Ross, a VMF-121 pilot at MARTD Glenview, Ill., who was killed in an aircraft accident in 1950.

The squadron's combat readiness is enhanced by an aggressive training program. During the award period, VMA-131 flew 1,606 syllabus sorties for a total of 3,786 accident-free flight hours. Most of its flight operations are conducted within the congested airspace of the Philadelphia, New York and Washington, D.C., area.

The trophy, a hand-sculptured gold cup mounted on a marble base, will be on display at Willow Grove until a new winner is selected. A plaque commemorating the award remains on permanent display.

NAVAL AVIATION NEWS

# did you know?

## Daedalian Award

Before an audience of approximately 1,000, Vice Admiral F. S. Petersen, Commander, Naval Air Systems Command, presented the 1978 Daedalian Weapons System Award to the co-winners, Naval Air Systems Command Headquarters and Naval Weapons Center, China Lake. The Colonel Franklin A. Wolfe Memorial Trophy was awarded during the annual convention of the Order of Daedalians held in San Antonio, Texas. The trophy is a large silver cup engraved with the names of past and present winners.

The honor cited the two commands as a combined technical and management team and recognized their successful development and demonstration of the *Sidewinder* family of heat-seeking guided missiles. Selection of the *Sidewinder* for this year's weapons system award recognizes a Navy development program that has produced nine different models of the air-to-air missile since 1950. Each succeeding model has been marked by increasing performance and reliability.

The award, together with the trophy, is given annually to the individual, group or organization, military or civilian, contributing the most outstanding weapons system development in a specified time. The recipient is selected from nominations submitted by the Navy, Army and Air Force, on a rotating basis.

The Order of Daedalians, now in its 45th year, was organized by a group of WW I pilots to perpetuate the ideals of patriotism and self-sacrifice.

## Environmental Protection

Among the winners of the Secretary of the Navy 1977 Environmental Protection Awards are NAS Chase Field, Beeville, Tex., for its outstanding environmental protection program, and the Naval Air Test Center, Patuxent River, for its program in combating water and noise pollution.

## More Tests for Super Stallion

The Naval Air Test Center is conducting a technical evaluation to determine if the CH-53E's performance has been altered by changes made since the completion of BIS trials in March and April 1977. In addition to several minor changes, Sikorsky decreased the horizontal stabilizer angle and uprated the main gear box to take more horsepower.

NATC also looked at the new two-point suspension system which is being tested by Sikorsky and monitored a structural demonstration flown by Sikorsky pilots at Patuxent River in September. Testing is scheduled for completion in October.

The three-engine E model, a growth version of the twin-engine D, is the largest helicopter capable of operating from Navy ships. It uses only 10 percent more deck space than the D models.

## T&E Museum

The Naval Air Test and Evaluation Museum at Patuxent River, Md., opened its doors to the public on July 8 and held a ribbon-cutting ceremony July 18. Its first exhibition depicts the full scope of test and evaluation in Naval Aviation.

The wide spectrum of naval aircraft which have passed through Patuxent River is represented in early photographs, vintage scale and wind tunnel models. Aircraft on display include the QH-50 *Dash* helicopter, F4D, and the rubber Goodyear *Inflatoplane*. Other exhibits such as the *Loon* and *Regulus* missiles cover the evolution of pilotless air vehicles.

Modern technology is also represented. A cutaway of the AV-8A *Harrier's* Pegasus engine allows viewing of the inner workings of a tactical V/STOL engine. A mock-up of the developmental F-18 radar illustrates recent electronics advances. Sonobuoy displays show how ASW sensors operate.

Other displays depict the actual tools and techniques of test and evaluation, such as personnel training, human factors evaluation and spin testing. Actual hardware highlights the importance of computers and instrumentation in aviation testing.

In addition to other audio-visual presentations, films will be shown in the museum's auditorium, including *Pax River* and *The Test of Time,* which tell the test and evaluation story.

Charter memberships for the museum association are still available. Applications may be obtained at the museum during operating hours or by calling 301-863-7418.

## Villard C. Sledge

The Chief of Naval Operations has presented 23 Certificate of Excellence Awards to Navy and Marine Corps intermediate maintenance activities for outstanding accomplishment in repairing gas turbine engines during 1977. The fifth annual LCdr. Villard C. Sledge Maintenance Memorial Awards in the jet engine Three Degree Intermediate Maintenance Program recognize outstanding accomplishment by maintenance, management and material support units.

LCdr. Sledge's 30-year naval career, from seaman, to chief, to lieutenant commander, was devoted to Naval Aviation maintenance. His primary interest was development of an outstanding professional maintenance program combined with safety. He established programs that resolved specific problems.

Several engine manufacturers contribute plaques which are inscribed and presented to the winners. They are passed on.

Recipients of the 1977 awards are listed below. Winners are classified by the degree level within intermediate maintenance activities.

| *Activity* | *Engine* | *Degree* |
|---|---|---|
| NAS Whidbey Island | J52 | First |
| HAMS-13 | J52 | Second |
| NAS Alameda | J57 | Second |
| NAS Pensacola | J60 | First |
| NAS Miramar | J79 | First |
| HAMS-11 | J79 | Second |
| NAS Chase Field | J85 | First |
| NAS Kingsville | J85 | Second |
| NAS Miramar | TF30 | First |
| NAS Point Mugu | TF30 | Second |
| USS *J. F. Kennedy* | TF30 | Third |
| NAS Cecil Field | TF34 | Second |
| | TF41 | First |
| NAS Lemoore | TF41 | Second |
| HAMS-29 | T400 | First |
| NAS Whiting Field | T53 | First |
| NAS Brunswick | T56 | First |
| NS Rota | T56 | Second |
| HAMS-16 | T58 | First |
| NAS Barbers Point | T58 | Second |
| NS Roosevelt Roads | T58 | Third |
| HAMS-16 | T64 | First |
| NAS Willow Grove | T64 | Second |

The announcement noted the following: HAMS-16, T64 first degree for the fifth consecutive year and T58 first degree for the third consecutive year; Whidbey Island, J52 first degree, fourth consecutive year; Chase Field, J85 first degree, fourth consecutive year; Whiting Field, T53 first degree, fourth consecutive year; Miramar, J79 first degree, third consecutive year; Kingsville, J85 second degree, third consecutive year; Point Mugu, TF30 second degree, third consecutive year; Pensacola, J60 first degree, third consecutive year; HAMS-29, T400 first degree, third consecutive year; and Cecil Field, TF41 first degree, second consecutive year.

# grampaw pettibone

## Flat-Hatter

On a beautiful July morning, a young ferry pilot departed El Paso International in an AF-1E he had accepted at NAS Alameda the previous day. A VFR flight plan was filed direct to NAS Dallas at 21,000 feet. The pilot reported his position to Wink radio, then proceeded to the Dyess AFB area.

At this point, however, he deviated from his planned route and a short time later crashed the *Fury* in a plowed field. Witnesses report the aircraft made several extremely low passes in the vicinity prior to the crash landing. It may be hard to believe but these passes were near or over his father-in-law's home.

Luckily several residents of the area saw the aircraft crash-land and rushed to the pilot's aid. They were unable to remove the canopy, but cut a hole in it and pulled the flat-hatter out. He received a cut above the left eye and a cerebral concussion. The aircraft sustained strike damage.

Grampaw Pettibone says:

Oh, my achin' back! Any description of the cause factors involved in this needless accident other than plain ole flat-hatting would be wasting words. Witnesses' statements verified that the pilot was making unauthorized maneuvers at an unauthorized altitude. How many times have I read these overworked words!

There isn't a pilot flying today who hasn't been warned about flat-hatting at least 100 times, yet this guy thought he could beat the odds. I'll admit he's rather lucky in one way – most flat-hatters end up a very unhealthy kind of statistic. (November 1963)


## Divert Dividend

Upon an A-3's arrival at a divert field, GCA took control of the *Skywarrior* at 1,500 feet on a modified base leg. GCA issued a turn to final with instructions to perform the landing check. These were acknowledged. On the glide path, the pilot said he was having some difficulty in maintaining his position because of a light fuel load.

Nevertheless, he proceeded without incident until just prior to touchdown. In switching his attention from the mirror to the runway, the pilot saw pulsing red lights lining the runway. He thought the lights were line-up aids; therefore, no wave-off was initiated. The aircraft settled to the runway without benefit of undercarriage.

Grampaw Pettibone says:

**Someday, someone will come up with a Dilbert-proof method of getting the gear down when it's supposed to be, but until such time let's all use what we've got – the checkoff list, wave-off lights and our heads. (March 1967)**

## Super Rescue

Late one afternoon two construction workers lining the inside of a 650-foot smokestack became trapped 250 feet from the top when the scaffolding they were using collapsed. The two men, supported by chest harnesses, clung to the broken scaffold. Various rescue techniques were considered and rejected until a call was initiated for helicopter assistance. Time was now a factor as concern grew over the possible failure of the scaffold and lifelines. About 2255, the



ILLUSTRATED BY Osborn

Chicago Coast Guard air station was asked to help.

En route weather was checked as satisfactory and the alert HH-52A launched at 2319. Lower than forecast ceilings forced the crew to file an en route IFR flight plan. A VOR approach and radar vectors were utilized by the crew to land at the scene, at 0110.

The aircrew briefed with local plant supervisors and received a thorough update on the exact location and predicament of the trapped workers. Local equipment available and the capabilities of on-scene workers were discussed. The plant representatives suggested the HH-52A hoist cable be attached to the lines on the chest harnesses so that the men could be pulled out vertically. The pilot rejected this idea because the men might be injured by scraping or bumping the inside of the chimney during the lift.

A steel cage much like a large bird cage was found. It was five feet high, three feet square and made of metal bars with a cable attachment welded on top. The plan was to attach 250 feet of cable to the eye of the cage, which would then be hand lowered to the trapped men by workers positioned on a catwalk atop the smokestack. The HH-52A delivered the cable, cage and two workers to the catwalk using the helo rescue winch.

The cage was then lowered to the trapped men. The weather was deteriorating with the ceiling down to 1,000 feet AGL as the helo positioned itself, at 0400, over the catwalk. The workers attached their end of the cable to the helo mechanism. The slack was taken up and all was ready with the helo hovering over the top of the stack.

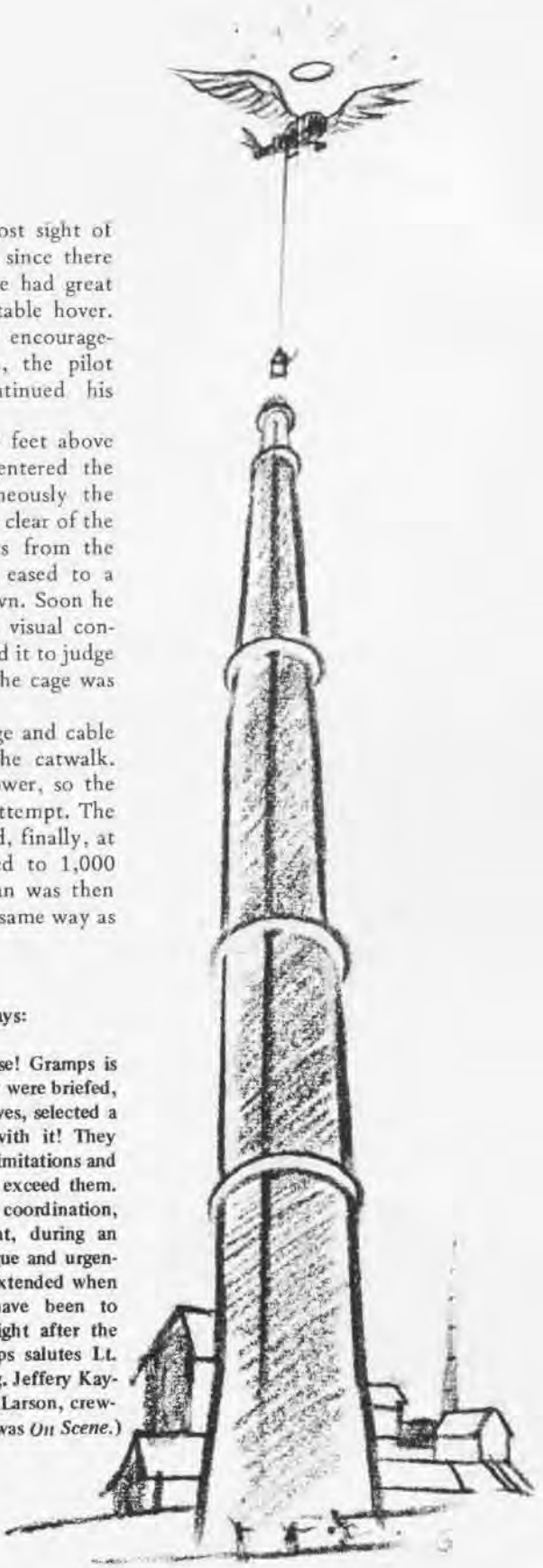
When, via portable radio, the trapped workers passed the word that one of them was inside the cage, the pilot began a slow vertical ascent to raise the cage. After moving the cage up about 30 feet, the pilot lost sight of the top of the stack and, since there was no reference point, he had great difficulty maintaining a stable hover. With calm assistance and encouragement from the crewman, the pilot smoothed out and continued his ascent.

At 900 feet AGL (250 feet above the stack) the HH-52A entered the overcast. Almost simultaneously the crewman reported the cage clear of the stack. Using voice reports from the crewman, the helo pilot eased to a clear spot and started down. Soon he was low enough to regain visual contact with the stack and used it to judge his rate of descent until the cage was lowered to the ground.

After refueling, the cage and cable were again delivered to the catwalk. The ceiling was getting lower, so the pilot stopped the rescue attempt. The crew waited six hours and, finally, at 1100 the ceiling improved to 1,000 feet AGL. The second man was then successfully extracted the same way as the first.

**Grampaw Pettibone says:**

**Applause! Applause! Gramps is very proud of this crew. They were briefed, prepared, considered alternatives, selected a reasonable plan and stuck with it! They displayed knowledge of their limitations and had the moral courage not to exceed them. They exhibited excellent crew coordination, coupled with good judgment, during an evolution surrounded by fatigue and urgency. They refused to be over-extended when the easy decision would have been to attempt the second rescue right after the first. Well done, lads! Gramps salutes Lt. Richard Hauschildt, pilot; Ltjg. Jeffery Kaylor, copilot; and AT2 David Larson, crewman. (Source for this article was *On Scene.*)**



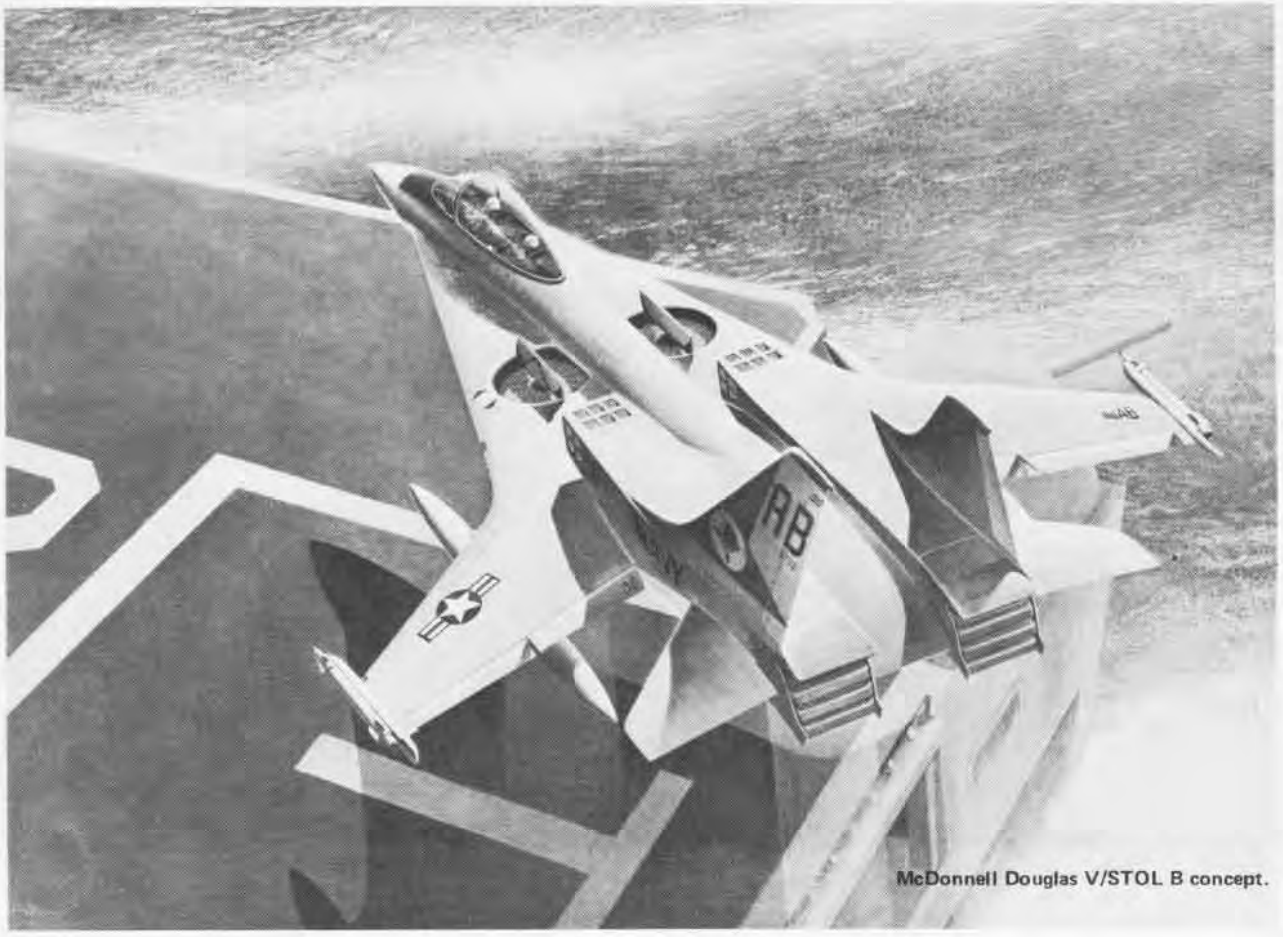

# V/STOL

. . . vee stawl – Vertical/Short Takeoff and Landing Aircraft – is an acronym which plays on the lips of Navy planners with significant regularity these days. This family of aircraft has been hailed as the potential answer to Naval Aviation tactical requirements for the turn of the century and beyond. Much more homework is needed, however, before that answer is fully sanctioned. Meanwhile, in the interests of the nation's defense posture, the Navy is carefully scrutinizing the V/STOL concept with CNO's Sea Based Air Master Study Plan serving as a prime direction document. The study plan was published in the fall of 1977 under the auspices of then Chief of Naval Operations, Admiral J. L. Holloway III.

The awesome task of predicting tactical requirements to support the Navy mission 20 to 30 years into the future places extraordinary demands on decision makers. Thus, a comprehensive investigation into future needs, covering all aspects of naval warfare, is a prerequisite to the decision process. The Sea Based Air Master Study Plan, consisting of 22 individual studies, is the vehicle which will culminate in an assessment of the requirements for sea-based air, circa 2000 A.D.

Rear Admiral D. F. Mow, V/STOL program coordinator for CNO, told the TacAir subcommittee of the Senate Armed Services Committee last spring that "The Navy has made the decision to transition sea-based air to V/STOL aircraft beginning in the 1990-2000 time period, providing that the feasibility of the V/STOL concept is validated."

The Navy plan includes two major V/STOL types, A and B, with a third,



McDonnell Douglas V/STOL B concept.


AG
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201


**V/STOL ideas, reflected in these and the following artists' concepts, include Rockwell's thrust augmented wing type, left, and a Sikorsky model, above, both V/STOL A types.**

the C, planned further down the line. Type A is presently conceived as a subsonic multimission aircraft designed as follow-on to E-2, S-3, C-2, KA-6 and CH-46 aircraft. V/STOL A, in other words, would assume early warning, ASW, carrier on board delivery, tanker, Marine assault and antiship surveillance and targeting missions.

The V/STOL B category includes supersonic fighters and attack aircraft which would eventually be follow-ons to *Tomcats, Hornets, Intruders* and *Harriers* in the inventory. V/STOL C is envisioned as the follow-on for the LAMPS Mark III helicopter.

However, ongoing studies may alter the above division of missions among the three V/STOL types.

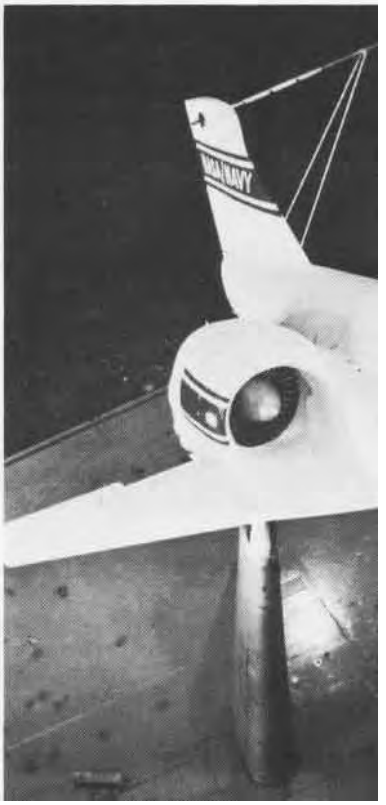
Before this summer, development of V/STOL A technology received primary attention. However, in May of 1978, Adm. Holloway elected to shift priority to the V/STOL B program investigation to permit the program to be more compatible with aircraft replacement scheduling and budgetary considerations. Consequently, this autumn the Navy will issue requests for proposals (RFPs) to industry to which most major aircraft manufacturers are expected to respond. Although emphasizing V/STOL B to some extent, the RFPs will primarily solicit broad V/STOL concepts, both technical and operational, without the constraints of present type A and type B categorization.

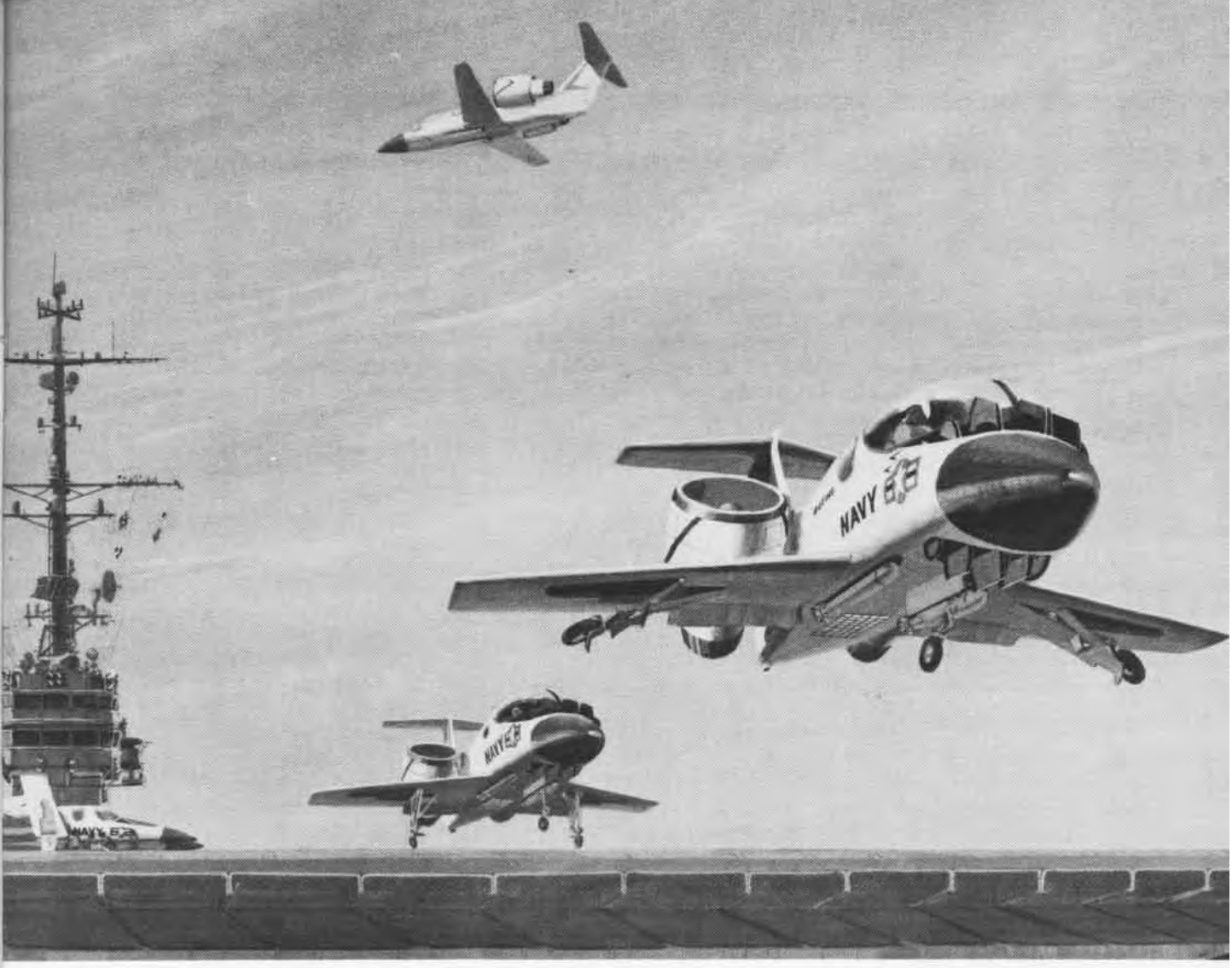
In about four months after the contract awards, the study results should be forthcoming; which could certainly influence the future of Naval Aviation.

In the master plan, CNO said, "The only way to achieve a unified position is through competent objective comparison of alternative courses of action which thoroughly address the totality of requirements, resources, time, ship-air-weapon and sensor systems and operational concepts." He added that "this has been a chronic deficiency in our planning approach to date, especially as it relates to sea-based aviation."

Accordingly, the current plan for V/STOL development calls for continuing the pursuit of advancements in technologies critical to both V/STOL

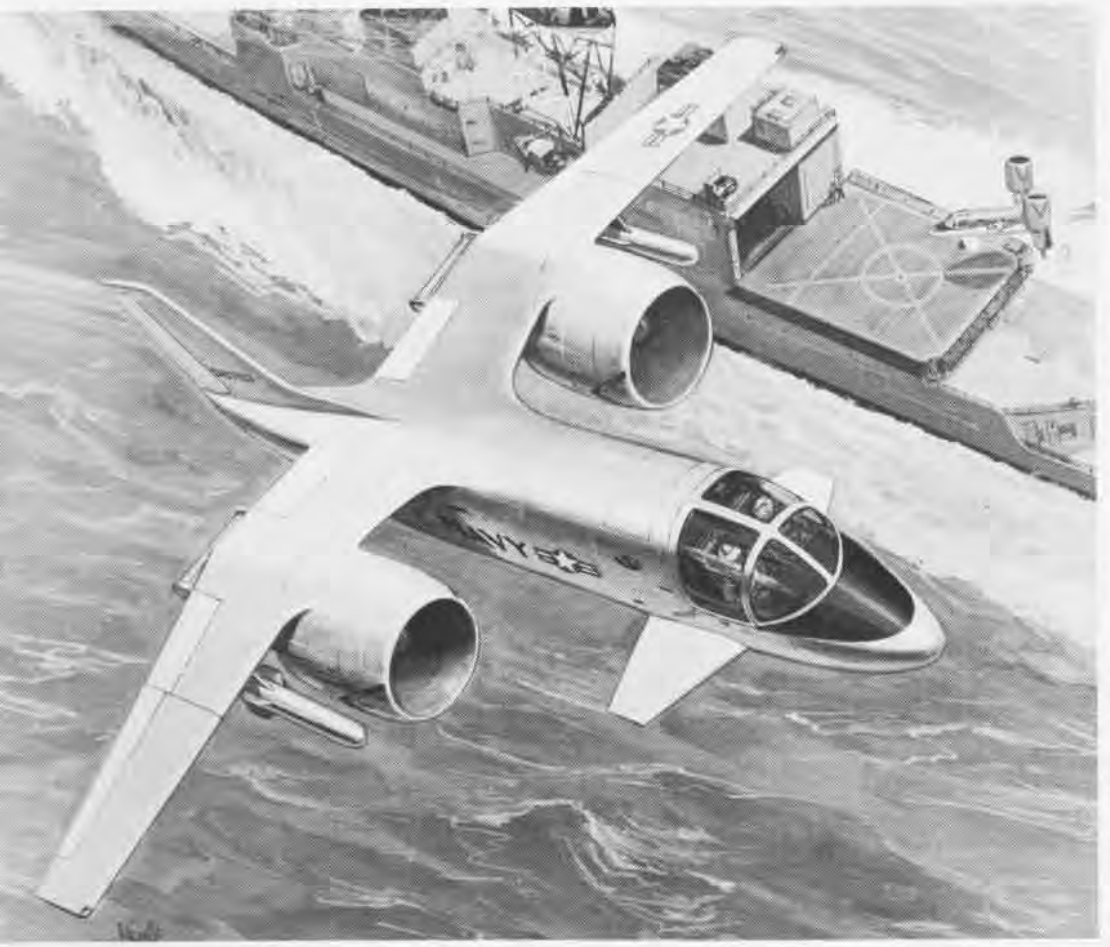

Marine AV-8A is U.S.'s first operational V/STOL plane, above. Convair's XFY-1, from another generation, was a tail-sitter type, right. Below, in the Ames Research Center wind tunnel is Navy/NASA lift/cruise fan research model.







Top view shows Boeing V/STOL A concept with lift/cruise fans.
Above is Rockwell XFV-12A, real-life version of which is being tested.



**Grumman's concept, above, has tilt wing. Middle is a Bell idea. Both are V/STOL A types.**

and conventional aircraft, until the sea-based air studies are completed. If the results of those studies indicate that V/STOL naval aircraft should be developed, a competitive advanced prototype program will be initiated.

Looking back, it was in the spring of 1976 that the Navy proposed the overall V/STOL concept to the Secretary of Defense. The go-ahead was given to proceed with a program which primarily involved transition from conventional takeoff and landing aircraft (CTOL) to V/STOL for all sea-based, manned tactical air missions in the Navy.

Writing in the September 1977 issue of *Naval Institute Proceedings*, Adm. Holloway advocated "transition to pure V/STOL carriers when V/STOL capability has been achieved."

It is important, he observed, to "provide alternate courses of action that would allow time to establish plans for follow-on CTOL aircraft in the early 1990s. We do not think we will need this alternative but having it will reduce the overall risk of the transition."

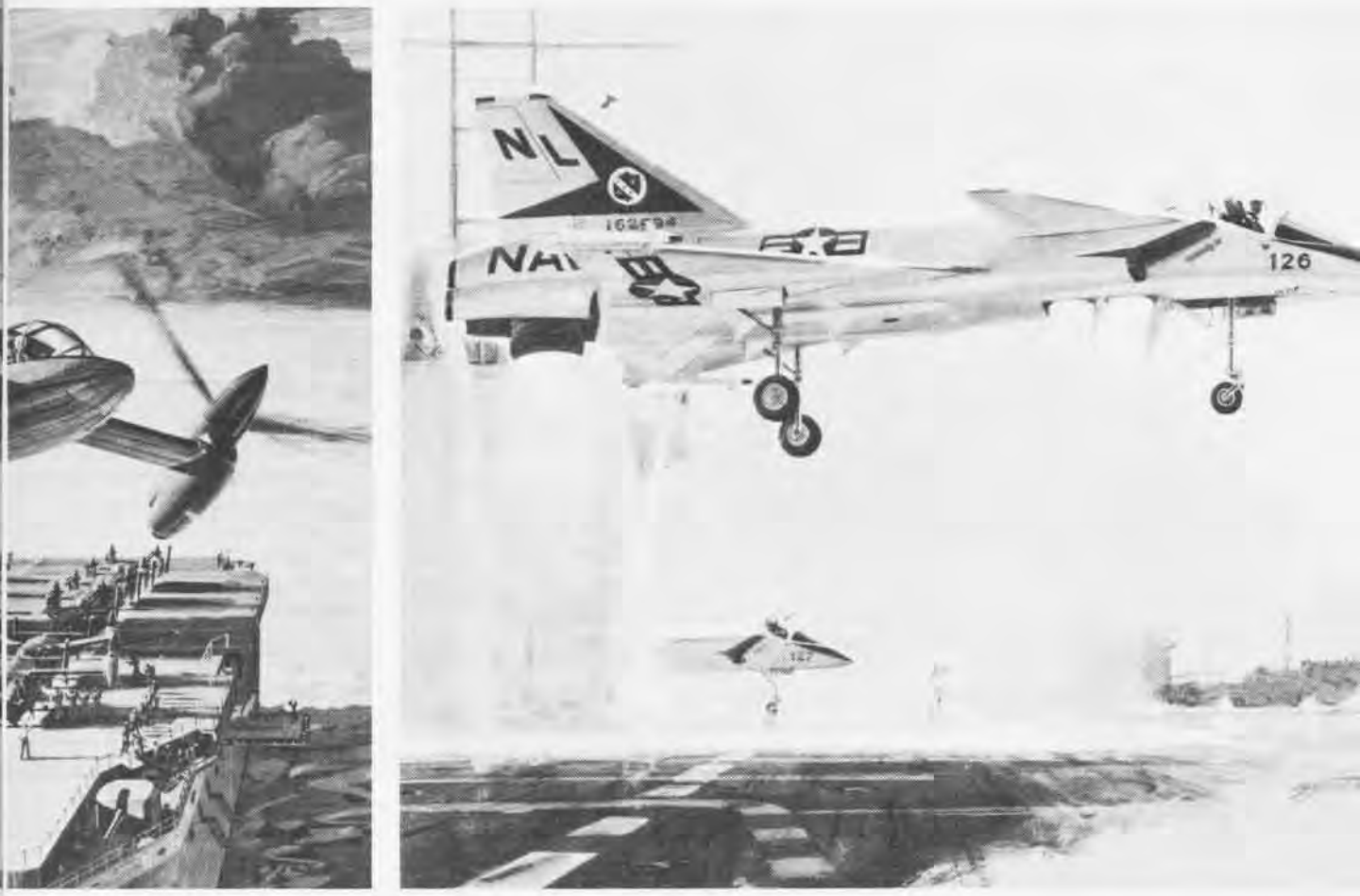
The admiral added, "Because of the impracticability of attempting to support both V/STOL and CTOL developments, the realization of a high performance V/STOL capability is possible only if all sea-based air is converted to V/STOL."

During his testimony before the Senate Armed Services Committee, Adm. Mow pointed out that "the performance of a carrier as a sea-based air platform depends on the number and type of its aircraft and its ability to generate sorties. At present the sortie output of conventional takeoff and landing carriers is limited jointly by aircraft availability and deck constraints. The ability of V/STOL aircraft to land vertically frees them from the constraints of normal CTOL deck cycles. This fact, combined with the faster launch, recovery and turnaround times of V/STOL aircraft, results in higher sortie rates at short mission ranges."

The admiral continued, "For example, at ranges of 100 to 150 miles, V/STOL air wings can fly 60 to 100 percent more sorties per day and, if aircraft are launched in the short takeoff mode, carry as much ordnance per sortie as CTOL air wings.

"On the other hand, at 300 miles, ordnance delivery capabilities for either air wing on the same ship are about equal."

PMA-269 is the designation for Naval Air Systems Command's V/STOL project manager, Captain Jack McHugh. His deputy for air vehicles and propulsion is captain selectee Jim Davis, an experienced helicopter pilot who was the project officer during a




This is older V/STOL B design by Convair.

joint NASA/Navy effort which examined V/STOL concepts several years ago. NASA, incidentally, is well into V/STOL-related aerodynamic studies at its Ames facility, NAS Moffett Field, Calif., and works with other service branches examining V/STOL characteristics.

"It appears important," says Cdr. Davis, "that we concentrate on developing a multimission aircraft. The Navy simply can't support the one-aircraft-for-one-mission idea.

"Even if V/STOL isn't the answer for our future needs, the alternative aircraft must have multimission credentials," Davis emphasized. "Funding dictates that we must reduce the number of different airframes on ships."

Commander Hoot Gibson, also in PMA-269, observes: "We have a long way to go but we're making progress. We know, for instance, that disc loading, similar to wing loading on conventional aircraft, has to be dealt with. Some of the existing concepts exhibit high disc loading but with shortcomings. These aircraft can go very fast but at the expense of hovering characteristics. Conversely, low disc concepts are slower machines but possess excellent hovering characteristics.

"Regardless of the concept," says Gibson, "the pilot workload is receiving uppermost consideration. We must give him an extra measure of help, especially if launch and recovery techniques differ considerably from what he's known in conventional planes."

V/STOL propulsive designs are generally divided into four groups which various companies have conceived and examined over the years. These groups are: vectored thrust; lift plus lift/cruise – both of which have been referred to as the "brute force" approach; the thrust augmented wing – symbolized by the Navy-Rockwell XFV-12A now being tested; and the vertical attitude concept, once epitomized by the Navy's XFY-1, flown a generation ago.

Which design will prevail cannot be predicted. But tremendous energies are being directed toward aircraft which can take off and land vertically and attain fast speeds horizontally in order to fulfill mission requirements anticipated for the turn of the century and after.

The Navy, with industry on the other seat of the tandem bicycle, must jointly pursue the questions and answers to V/STOL as the potential wave in Naval Aviation's future. It follows that there will be considerable updating of V/STOL technology during the weeks and months ahead as the research, study and analysis continue. By early 1979, after industry presents their study results, we will have a better idea of just how promising V/STOL aircraft can be.

At Naval Base, Guam, Crew One of VQ-3 goes through refresher training in the use of water survival equipment. PR1 Lee Lechleidner and HM2 Craig Hartman supervised the action in Apra Harbor.

# Refresher

Photos by PH2 Jeff Hilton


# Marines at Yuma

By Sgt. Al Mackay

At daybreak on a Sunday in March, the Marine Corps began a three-day war. When it was over, there were no casualties, no injuries, and no equipment was lost. The combatants were 69 Marine and four Army officers who were taking the Weapons and Tactics Instructor (WTI) Course 1-78 at MCAS Yuma, Ariz. It was the final exercise in some of the most real-life air-ground combat training the Marine Corps has today. The Marine students came from the 2d, 3d and 4th Marine Aircraft Wings, the 1st Marine Brigade, and 1st and 2d Marine Divisions. The four Army pilots were from the 6th Cavalry, Fort Hood, Texas.

The seven-week course represents the combined efforts of Marine Air Weapons Training Units (MAWTUs) Pacific and Atlantic. It is designed to increase the combat readiness of Marine Aviation units and enhance their effectiveness as a supporting arm. There were 75 staff and instructor personnel who provided a good one-to-one relationship with the 73 students.

Instructors are chosen carefully. All have attended some type of advanced school and are proficient in their particular aircraft's systems and tactics.

The course provides in-depth coverage of the know-how and skills a weapons and tactics instructor needs in a training or tactical squadron, according to LCol. R. L. Hanle, officer in charge, MAWTUPac.

The academic portion of the course covers all aspects of aircrew training and its management, as well as weapons and weapons systems and their employment in current threat environments, both singly and as part of an integrated air-ground team.

Concurrent airborne instruction provides the opportunity to refine required tactical skills and to participate in the execution of student-planned integrated mission scenarios.

During the first two weeks, the class studies subjects such as weapons tactics instructor concepts, training management and implementation, instructional techniques, media support, electronic warfare, enemy threat, Marine Corps Aviation organization, functions and tasks, air-delivered weapons and new developments.

The class is divided, for the third week, into fixed wing, rotary wing and air defense/air control subgroups for academic instruction. The students then return to their squadrons, pick up their aircraft and ground crews, and begin actual flying during the fourth week.

Weeks five and six give the students additional flying time as they break up into groups according to the particular aircraft they fly.

The last week consists of planning and execution of the final exercise, a three-day war in the Arizona desert involving the students and elements of a Marine air-ground training force.

The students carry out a diverse series of missions: coordinated strike, vertical assault and extraction, landing zone preparation, medical evacuation,


**These aerial views were filmed by McDonnell Douglas' Harry Gann. Opposite, proceeding from number four to lead, are A-4Ms from VMA-211, VMAT-102 and VMA-223, and a VMA(AW)-242 A-6E. At left, from top, are A-6E Intruders from VMA(AW)s 332, 202 and 242. Below, an F-4N from VMFA-531 flies wing on a VMFA-312 F-4J. Aircraft participated in WTI course training at Yuma.**

search and rescue, parachute drops and direct air support. They get the opportunity to practice tactics which can later prove to be lifesavers. Helo pilots use evasive tactics to elude attacks by enemy jets and other fixed-wing aircraft. Maj. D. C. Beyma, assistant officer in charge, MAWTUPac, says that proper aircrew training in evasive tactics quadruples the helicopter's survival rate in combat.

Other instruction includes night firing at targets lighted by artillery illumination flares; dropping of reconnaissance teams into enemy territory from OV-10 *Broncos;* and low-level flying at 200 knots to avoid enemy detection. *Bronco* pilots climb straight into the air and, at about 1,500 feet, recon teams parachute straight out the back of the aircraft.

When the course is over, students attend a debriefing in which representatives from the F-4, A-6, A-4, helicopter, artillery, infantry, and other communities critique their participation in the course.

Students who attend the course must meet certain requirements, depending on which type of aircraft they fly, and they must have two years left on station. When a student successfully completes the course, he returns to his squadron qualified as a weapons and tactics instructor. He carries with him information packets and color slides of everything he has learned. He can then compress the information into a condensed version for teaching at the squadron level. Later, when not on deployment or conducting training classes, squadron WTIs will often get together to continue their learning experience.

To familiarize squadron C.O.s with WTI training, a commanding officers' orientation course has been developed for both helicopter and fixed wing. LCol. Hanle explains, "We want the C.O.s to know what they can expect from weapons tactics instruction.

# The Message Then...

Keep complete control of


ur plane right to the chocks!

Tate stands ready on wing of the DT-2. . .


. . .then hits the sil

# Tate's Test

By Rear Admiral Jackson R. Tate

VAdm. Tate died of cancer last July, shortly before we went to press with this issue. A prolific writer and frequent contributor to *Naval Aviation News*, his wit, perspective and delightful irreverence will be sorely missed. Over the phone last summer, the admiral related an anecdote about the day he had to fly a stack of newspapers to President Calvin Coolidge who was on a U.S. Navy ship at sea. It is a charming story which we hope to publish in the future. He told it with the same sort of vim, zest and love of life manifested in this parachuting adventure — the sort of vim, zest and love of life which characterized the man himself, a one of a kind Naval Aviator.

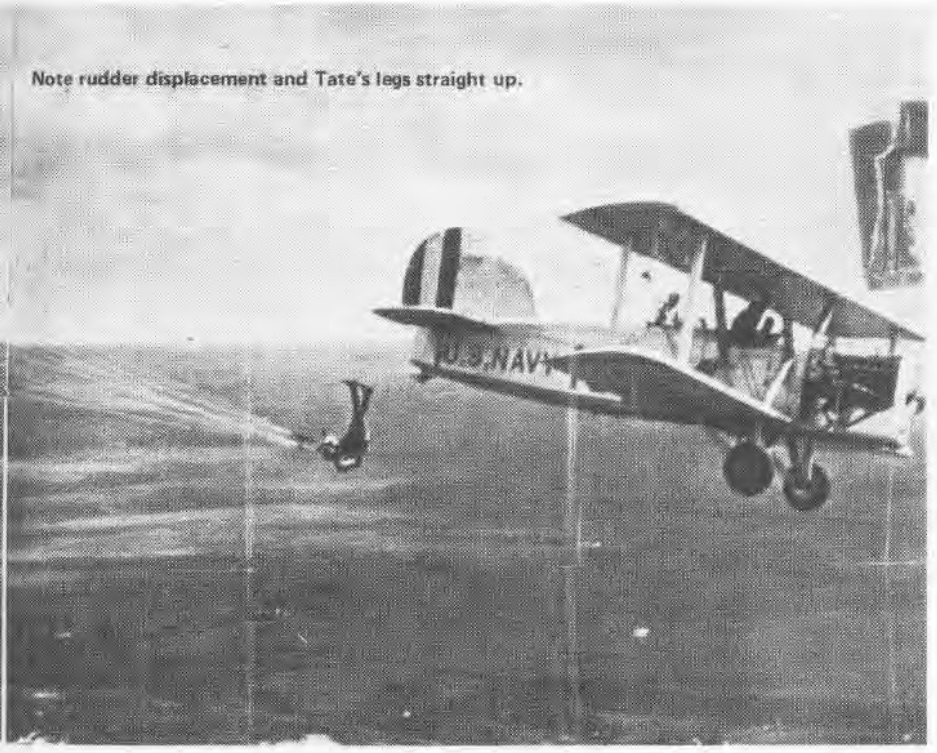
In the early days there were two kinds of flyers: those who flew the machines devised by the Wright Brothers, called Aviators, and those earlier ones the aviators scornfully called Balloonatics.

The latter were a hardy lot and did all sorts of foolish things, like hanging parachutes under their balloons and, at county and state fairs, jumping out in the parachute for sometimes 10 bucks a jump!

Which any good aviator knew was very foolish as sometimes the parachutes failed to open.

Nevertheless the parachutists stayed with it and when the heavier-than-air machines became popular, they did all sorts of funny things to adapt the parachutes to those fast moving machines. One of those funny things was the Pickle Barrel Parachute. This consisted of a pickle barrel with one end open, hooked on a bomb rack under the wing. The chute was stuffed into the barrel and was connected to the harness by "shroud" lines. (I never liked that word associated with parachutes. My *Websters Dictionary* gives nine meanings to the word shroud and number one is "A cloth or sheet in which a corpse is wrapped for burial." Ugh.) The shroud lines led into the open cockpit and were secured to the aviator by a harness. In an emergency the aviator jumped out and the shroud lines pulled the chute out and the aviator, hopefully, drifted safely to earth. The aviators foresaw the possibility of the chute coming out of the barrel without the aviator jumping, with probably disastrous results — so, until an emergency, the hookup of the shroud lines was not completed. This and many ideas were experimented with, but none with much success.

While I was a test pilot at Norfolk, the test unit received two new-type, fancy parachutes . . . each made by a different company. We were directed to test them from a "fast flying airplane." Fast in those days meant anything up to 100 knots! These new-type parachutes consisted of a harness of wide straps which buckled around the legs and across the chest. The chute was packed in a bag attached to the harness and placed so the pilot, when in the plane, used it as a seat. The bag was fastened with a set of pins arranged so that when the ripcord was pulled the bag opened



Note rudder displacement and Tate's legs straight up.

completely and the drag chute (a small one-foot-wide chute) was expelled by springs and pulled the main chute out. The ripcord was attached to the harness at a spot near the left shoulder and ended in a ring called the D ring.

I was detailed to test these things. After a conference with the head of the test section it was decided we would go over to the lighter-than-air hangar and borrow 200 pounds of sandbags (the weight of a man) and secure them on a bomb rack under the wing of a torpedo plane. The parachute harness and chute were attached to the bags with wire. One end of a white line, about 15 feet long, was attached to the ripcord D ring. The other end was tied to a longeron in the observer's cockpit. The idea was that on signal from the pilot the observer would pull the bomb release and drop the sandbags and parachute. As they fell free, the white line would pull the ripcord out and open the chute. The white line would break at about 15 pounds pull and would act as a safety device.

We took off and approached the flying field from the bay side. I gave the signal to drop but the observer was slow to release and we were nearly over the naval station before he succeeded in pulling the release. I felt the thump as the 200-pound load left the bomb rack. I cocked the plane up in a flipper turn so we could look down and see the chute open. There was *no chute* but there was a large crowd running to the front of the administration building!! In those days the Navy had few cars and the only U.S. car issued in the Fifth Naval District was a Pierce-Arrow limousine. It was parked in the commandant's parking space in front of the administration building . . . and the 200-pound sandbags had made a direct hit . . . square in the middle of the top!!! All four tires blew out and the frame looked like a perfect V. I landed in a hurry and the observer told me that when the chute and sandbags fell clear, they rolled. The white line that was supposed to pull the ripcord twisted in the harness and parted without ever pulling the ripcord. The chute, of course, could not open. I hurried in to tell Captain Whiting that there had been a slight accident during the parachute test but no one was hurt. Just then the phone rang. He listened for a few moments, then said to me, "No one hurt? Go quickly . . . take a long leave or maybe desert . . . or even commit suicide while I try and explain to the commandant why the parachute did not open!"

Two years later, in the spring of 1925, I was with Fighter Squadron Two, attached to the first aircraft carrier, USS *Langley*, and stationed in Hawaii. We were still flying happily along without parachutes, when suddenly the operations officer of Naval Air Station, Pearl Harbor delivered six parachutes to our 12-plane squadron, with very little information other than that they were to be carefully repacked once a month by an experienced parachute rigger and used regularly by the operating pilots. They came with orders that we were to use them fully in service. Inasmuch as the squadron had 12 planes and pilots and flew quite often as a unit, the latter directive was met by issuing an order that pilots would fly alternate weeks with and without parachutes. One week half the squadron wore chutes, the next week the other half.

Fighter Squadron Two was led by LCdr. Nathan Chase and, the week he was wearing a parachute while on gunnery run shooting at a towed target, he collided with another plane which was also attacking the target. Both pilots were wearing the new parachutes. Lt. T. B. Lee was able to bring his badly damaged plane back safely to Pearl Harbor. Chase came out of his plane at 6,000 feet and fell clear without his chute opening. Later investigation revealed much blood in the

Continued on page 40

In April 1948, Martin test pilots took the latest of a long line of Martin/Navy flying boat patrol planes up for its first flight. In their enthusiasm over the improvements promised by the XP5M-1 compared to its WW II PBM *Mariner* predecessors (*NANews,* April 1977), neither the pilots nor Martin and Navy project people would have predicted that the final production models of the P5M would be the last production aircraft built by Martin. Nor could they have guessed the P5Ms would be the last flying boats to see operational service with Navy VP squadrons.

Taking advantage of extensive WW II hydrodynamic research, design of the XP5M-1 was begun in mid-1946 based on the PBM but employing a longer, narrower hull with a full length planing bottom, a single vertical tail and higher powered engines, the Wright R-3350s. Hydroflaps under the aft hull improved maneuvering on the water.

Following successful prototype tests, production P5M-1 *Marlins* were ordered, with a large nose radome replacing the forward gun turret and armament limited to the twin 20mm guns in the tail. Entering service with VP-44 in March 1952, 121 P5M-1s were built, including seven P5M-1Gs for the Coast Guard. Some of these were later operated for training without ASW systems as P5M-1Ts (TP-5As) and others were modified to update the ASW systems as P5M-1Ss (SP-5As).

With production of the P5M-1 under way, an improved configuration was developed. It employed a lowered bow chine, higher powered versions of the R-3350 engines, increased internal fuel capacity and a new T-tail configuration with MAD gear extending aft from the intersection of the vertical tail with the horizontal surfaces.

Production of 117 of these improved models followed the -1, including four Coast Guard P5M-2Gs and 10 -2s for France. The last, a P5M-2S with improved ASW systems, delivered in December 1960, was the last aircraft delivered from Martin's production lines. Older P5M-2s were updated to the final configuration, the 2S, and, subsequently redesignated as SP-5Bs, served well early in the SEAsia hostilities. A late test modification, based on the success of augmenting P-2 *Neptune* thrust with auxiliary jet engines, was the test installation of a single J60 in the tail. This was to have been followed by series modification with a J85, but only the prototype flew. The remaining SP-5Bs carried on their sea-based patrol mission until the last were retired in November 1967.

P5M-2

P5M-1C

SP-5B/J60

P5M-1

# MARLIN

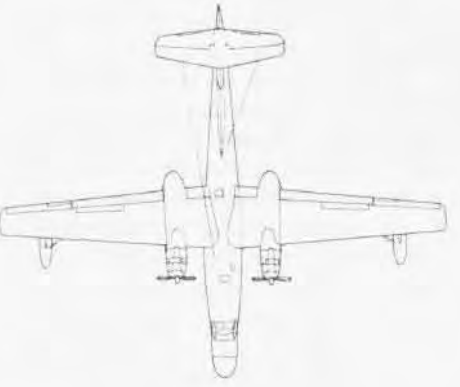
SP-5B

P5

| | | |
|---|---|---|
| Span | | |
| -1 | | 118'2" |
| -2 | | 118'2" |
| Length | | |
| -1 | | 91'1" |
| -2 | | 100'1" |
| Height | | |
| -1 | | 37'3" |
| -2 | | 30'11" |
| Engines | | |
| -1 | 2 Wright R-3350-30 | 3,200 hp |
| -2 | 2 Wright R-3350-32W | 3,400 hp |
| Maximum speed | | |
| -1 | | 234 kts |
| -2 | | 240 kts |
| Range | | |
| -1 | | 2,860 nm |
| -2 | | 2,940 nm |
| Crew | -1 and -2 | 7 |

Armament: two 20mm tail guns in basic -1 and -2 models; up to 10,000 pounds divided between 2 engine nacelle bomb bays; 8 underwing 5" rockets (4 each side)

M-270



XP5M-1

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## Records

Cdr. Stu Langdon, CAW-5, recently congratulated members of VF-161 for achievements in accident-free hours in the F-4. *Chargers* honored were: LCdr. Pete Bacheller, Lts. Bob Kelly, Bruce Cordes, John Kinzer, Tom Grafton, Joe Ellis, Stu Burfening and Joe Pazik, and Ltjg. Tom O'Brien – 500 hours – and Lt. Harry Kellner with 1,000 hours. The squadron also achieved an impressive retention milestone from January 1976 through May 1978 with 100 percent reenlistment of eligible second-term and career-designated personnel and 63 percent of all eligible first termers, for an overall retention rate of 75 percent.

While deployed aboard *Enterprise*, HS-2 flew 706.7 hours in April, a new record for the eight-plane squadron. LCdr. Jim Delong, ops officer, passed the 3,000-hour mark in the SH-3 at the same time. The *Golden Falcons* fly SH-3D *Sea Kings* and will receive the SH-3H upon their return from WestPac.

The *Black Panthers* of VA-35 flew 1,102 hours during one month in the Med on board *Nimitz*. Flying the A-6E and led by Cdr. G. D. O'Brien, the squadron conducted round-the-clock carrier operations while participating in Exercises *Open Gate* and *Dawn Patrol*.

During 23 days of carrier operations, VF-84 logged 752.9 flight hours, eclipsing the old record of 607.7. Flying 388 sorties from *Nimitz* with a completion rate of 98.7 percent, the *Jolly Rogers*, led by Cdr. T. S. Treanor, established themselves as pacesetters in the fighter community.

AIMD, NAF Misawa, processed its 10,000th ready-for-issue component since the facility's commissioning in October 1975. AIMD officer, Lt. John E. Fitzhugh II, commented, "This is one milestone we, as an entire department, can be proud of." Commanded by Capt. William S. Meyers, NAF Misawa supports P-3Cs of deployed squadrons, aircraft of *Midway* and tactical squadron detachments from MCAS Iwakuni.

According to Bull (senior) Ens. Joe "Fox-47" Hollander, USNR, of VP-49, the *Woodpeckers* notched a big one in squadron annals recently with 120,000 accident-free hours. Safety officer LCdr. Dick Phelan said, "The VP-49 safety team operates on the principle that all of us are safety officers. Our biggest enemy is complacency. To combat this, we maintain a training program emphasizing personal safety awareness and active involvement by all hands." VP-49 is led by Cdr. R. M. Howard.

Lt. Greg Deprez of VA-82 recently became *Nimitz's* first triple centurion. Seven other *Marauders* attained the title of centurion. They were: Cdr. Don Hunt, C.O., LCdrs. Mike Scott and J. T. Schneider, and Ltjgs. Pete Wilson, Ron Hoppock, Bill Henderson and Tony Veiga.

Although to him it was "just another flight," LCdr. Bill Thomas' recent sortie, during which he logged his 2,000th flight hour in the A-7E, made him a member of the exclusive 2,000 Club.

VS-28 reached a milestone in aviation safety when an S-3A piloted by C.O. Cdr. Jerry E. Goodman and co-pilot, LCdr. Harry Shackelford, passed the squadron's 75,000-hour mark of accident-free flying, over 15 years of safe operation.

With VA-56's LCdr. James M. Gill (left) at the controls and AC3 Herbert A. Tyson in the carrier air traffic control center, an A-7 completed the first *Midway* automatic carrier landing.

LCdr. Chris Gates recently flew his first sortie in a TA-7C. He is believed to be the only West Coast pilot to fly all the different models of the A-7 – A, B, C, D (used by the Air Force), E, YA-7H and TA-7C. An 11-year naval veteran, LCdr. Gates has logged 1,100 hours in A-7s and 600 in A-4s, as well as several hundred hours in the T-2, F-9 and other training aircraft. When asked about his future goals, he said, "I would like to fly the *Hornet*, of course." In photo, Gates is greeted upon arrival at Lemoore by Cdr. M. W. Patrick, C.O. of VA-122.

Jacksonville's VP-16 recently completed 100,000 accident-free flying hours. Skipper Cdr. G. F. Wright piloted the P-3C *Orion* during the record-making flight. Other crew members were: Lts. John Higgins and Bill Johnson, Ltjg. Bob Elliott, AFCM John Bollinger, AWCS Jim Phifer, AO1 Ken Porter and AW3 Steve Dupuis.

Cdr. Bill Mooberry, VAW-125 X.O., made his 500th carrier arrested landing on board *JFK* during recent at-sea operations in support of *Solid Shield 78*. Flying since 1962, he has accumulated over 4,700 hours in eight different aircraft and has trapped aboard many carriers, from *Yorktown* to *Eisenhower*.

Several squadrons achieved accident-free-hour milestones: Norfolk's VAW-126, 15,000; North Island's VF-302, 20,000; Patuxent River's VP-68, 40,000; and Cecil Field's VA-37, seven years.

## Awards

The VAW-116 *Sun Kings*, part of CVW-17 aboard *Forrestal* in the Med, claim to be the runningest squadron in the Navy. Led by C.O. Cdr. Matt Matheson, the Baja Hummers swept the team category recently in the Miramar 13.1-mile marathon. Prior to deployment the squadron competed in the 15,000-meter River Run at Jacksonville.

AT1 Franklin Delano Petersen of HSL-31, North Island, was selected as the ComASWWingPac Shore Sailor of the Year. Petersen competed with 1,400 sailors from 13 other units to win the honor.

VAdm. Pierre N. Charbonnet, Jr., CNavRes, conducts a prestart check in a CT-39. The *Sabreliner* division of Rockwell International presented a special award to the admiral in recognition of his 1,000 hours as a pilot of the aircraft. VAdm. Charbonnet is believed to be the highest ranking U.S. military officer to achieve this record.

## Rescues

On May 30, 1978, a helicopter from *Enterprise* sighted 13 Vietnamese refugees in their sinking 20-foot wooden boat. The survivors, who had been in the South China Sea for 11 days and without food and water for three days, used a signal fire as a distress signal. The six men, two women and five children were transferred to USS *Hull* (DD-945) and taken to NB Subic Bay where they were turned over to the United Nations High Command for Refugees.

VP-8's Crew Seven recently participated in a search and rescue when the P-3 crew was asked to locate the *Vixen*, a 30-foot sailboat en route to Bermuda. Its sails were damaged by severe weather and one of the three crew members had a head injury he sustained when he was washed overboard. The sailboat's distress signal was picked up by a Navy C-130 which notified the Coast Guard. The sailboat was located near the Mobil Oil tanker, *Conestoga*, which altered course to intercept the stricken vessel. Crew Seven coordinated the rendezvous and acted as a communications center, transmitting medical advice for the injured crew member. Since attempts to hoist *Vixen* aboard *Conestoga* failed, the sailboat's master and second crewman decided to sail it to Bermuda rather than release the sailboat to the sea. The P-3's navigator plotted a course for them and then, after circling seven hours above *Vixen*, Crew Seven headed for home. *Vixen* arrived safely in St. George, Bermuda, three days later.

A Navy SAR team from Lemoore recently plucked two hikers and a climber out of the Sierras. One hiker had fallen into a canyon near Yosemite National Park, suffering a broken jaw and possible broken back. His partner slid down to help, sustaining an ankle injury. The helicopter crew lowered

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HN A. N. Provincio to the victims and, using a litter, hoisted each into the helo separately, then transferred them to a hospital. The same weekend the same SAR crew, Lts. John Sullivan and Donald Swain, Chief Benny Revels and crewman John Decicco, did it again. Revels rappelled 250 feet from the helo to the victim who had fallen from a trail to a ledge below. He was hanging upside down and suffering from multiple injuries. With Revels and the victim attached to harnesses, the helo carried them five miles to a meadow. The injured man was taken to Valley Medical Center in Fresno.

## Honing the Edge

The number 2002 is not a sequel to *2001 Space Odyssey*. It is NAMTraDet 2002, which provides training in the various maintenance aspects of aircraft being retired from the first-line fighting forces. Students are currently working on systems used in the S-2, C-118 and P-2 — all aircraft which went out of production in the 1950s and 60s. Because NAMTraDet 2002 offers unique training that is unavailable anywhere else, when Navy transferred S-2s to the U.S. Forestry Service in California, the Service requested that the Det train its personnel in the maintenance of the vintage planes.

During recent operations in support of NATO Exercise *Dawn Patrol*, the *Jolly Rogers* of VF-84 cross-trained with the USAF. VF-84 hosted several pilots and air controllers from the 53rd TFS aboard *Nimitz*, including LCol. Fred Fitzsimmons, C.O. of the 53rd. The high point of the exchange centered on the air combat training between the Navy's F-14 *Tomcat* and the Air Force F-15 *Eagle*. The exchange of tactics and philosophies enhanced the combat capabilities of all participants.

## Anniversary

VMGR-252 celebrated its 50th anniversary recently. The *Heavy Haulers* first appeared in June 1928 as Headquarters Detachment 7M. By 1941 the squadron had been outfitted with R3Ds and changed its name to Marine Utility Squadron Two. With the approach of WW II, the squadron moved to Pearl Harbor aboard *Enterprise*, where its hardware assets were nearly wiped out by the Japanese attack on December 7. It then became Utility Squadron 252, carrying personnel and supplies to Midway Island. Flying R5Cs, 252 kept squadrons and battalions stocked with supplies and ferried replacement personnel as the war in the Pacific moved closer to Japan. In 1946, after participating in the Iwo Jima and Okinawa campaigns, 252 was ordered back to the U.S. Settling at Cherry Point, the *Heavy Haulers* have been supporting East Coast operations ever since.

## Commissioning

A ceremony held recently at Yuma marked the formation of the Marine Corps' newest squadron, Marine Aviation Weapons and Tactical Squadron One. Its mission is to manage the Marine Aviation weapons and tactics program, including development, standardization, instruction and evaluation of weapons employment and tactics. A comprehensive course of instruction is provided for experienced, qualified officers from all Marine Aviation communities, as well as officers from infantry and ground supporting arms units.

## Et cetera

VRC-50's Lt. William D. Vance returns to Cubi Point in a rainstorm. His


C-2A *Greyhound*, nicknamed *The COD Father* (for carrier onboard delivery), had just completed a mail run to *Midway*. Vance said, "At times I feel more like a mailman than a Navy pilot, but I enjoy the job and the responsibility. It's an intangible reward that comes when I see sailors tearing into letters and packages from home. The boosting of their morale increases my desire to fly these missions."


When the officers and men of VP-19 returned to Moffett Field after a six-month deployment to Okinawa, they were welcomed home by this sign located on the base facing Highway 101. The $300 cost for removing the old billboard, designing the new sign, and placing another recruiting advertisement after 15 days was donated by squadron wives, led by the wife of VP-19 X.O., Cdr. Norm Lord.

ABE1 Simmie D. Barber sits astride the nose-gear launch apparatus on the TC-13-0 catapult at NAEC Lakehurst to symbolize the continuation of his career after being reenlisted by his former C.O. and present head of the engineering department, Capt. Frank W. Hill. ABE1 Barber was catapult captain of the test catapult during his tour at Lakehurst. He was recently assigned aboard *Ranger.*

The Canadian 419th Tactical Fighter Squadron from Cold Lake, Alberta, recently completed training with VMFA-323 at El Toro. The exercise, dubbed *Maple Leaf 1,* was designed to increase the combat capability of participating aircrews from U.S. and Canadian forces by providing combat experience in a realistic environment. "The Canadians' two-week stay consisted of intensive air-to-air and air-to-ground flying," explained Maj. Harry Sprague, project officer for the *Death Rattlers.* "Approximately 325 people and more than 30 aircraft from various units participated. We'd been looking forward to this challenge between services – it was a good learning process."

*Urban Health* publisher and editor, Harold A. Hamilton, Jr., combined business with pleasure when he joined his son, AEAN Harold Hamilton III, aboard *Midway* recently. Mr. Hamilton was on board researching an article for his Atlanta-based magazine on health care aboard Navy ships.

## Change of Command

CAEWWing-12: Capt. Tom P. McClenahan relieved Capt. W. Paul Courtney.

CGFMFLant: LGen. Edward J. Miller relieved LGen. Robert H. Barrow.

HelWingRes: Cdr. Charles T. Steckler relieved Cdr. Melvin E. Taunt.

NAMTraGru: Capt. Edward O. Williams relieved Capt. Thomas E. Davis.

PatWing-5: Capt. Oakley E. Osborn relieved Capt. Edward A. Wilkinson, Jr.

*Iwo Jima:* Capt. Walter H. Brown, Jr., relieved Capt. Phil R. Hawkins.

NARF North Island: Capt. Leo L. Hamilton relieved Capt. Thomas J. Ryan.

NAS Norfolk: Capt. Roderick P. Crawford relieved Capt. Kenneth B. Stafford.

*Ranger:* Capt. Thomas G. Moore relieved Capt. Douglas R. McCrimmon.

VA-22: Cdr. John D. Grice relieved Cdr. Lee B. Cargill.

VA-35: Cdr. James D. Joyner relieved Cdr. George D. O'Brien.

VA-66: Cdr. James E. Gill relieved Cdr. Stuart J. Fitrell.

VA-145: Cdr. John Juan relieved Cdr. Vincent J. Huth.

VAW-122: Cdr. Richard J. Malla relieved Cdr. Lawrence F. Permenter.

VC-2: Cdr. Wallace T. LeSuer relieved Cdr. Phillip R. Black.

VC-6: Cdr. Charles A. Futch relieved Cdr. George R. Brown.

VF-114: Cdr. David E. Frost relieved Cdr. Theodore M. Wanner.

VF-302: Cdr. Dudley B. Moore relieved Cdr. Jon G. James.

VMFAT-101: LCol. Ronald L. Beckwith relieved LCol. John L. Clark.

VP-4: Cdr. John W. Stark relieved Cdr. Ted F. Rogers.

VP-11: Cdr. Edward (Mike) Brittingham relieved Cdr. Marion J. Bartolomei.

VP-19: Cdr. Norman C. Lord relieved Cdr. Andrew C. A. Jampoler.

VP-44: Cdr. William L. Vincent relieved Cdr. Michael C. Roth.

VP-50: Cdr. Robert J. Arnold relieved Cdr. Gary C. Ledbetter.

VP-65: Cdr. Thomas W. Rhodes relieved Cdr. Robert P. Burroughs.

VR-30: Cdr. Hendon "O" Wright relieved Cdr. John V. Cuddy.

VS-29: Cdr. "J" Michael Herring relieved Cdr. Ralph M. Gilstrap.

VS-30: Cdr. Robert D. Fuller relieved Cdr. Jon G. Wolynies.

VS-33: Cdr. Terrence S. Todd relieved Cdr. Bruce W. Churchill.

VT-27: Cdr. John S. Glaeser relieved Cdr. David E. Borcik.

VTC-21: Cdr. Charles E. Asher relieved Cdr. Donald C. Klein.

# Feathers and Frogs

The talk begins. It involves two groups of men, in separate ships, rarely in sight of or communication with each other. The talk is of "feathers" and "frogs". . . and other things.

It is a concurrent sequence of events that unfolds between the separate crews. They are bonded by a common cause – Exercise *Solid Shield 78*.

The 18-day exercise is an annual joint armed forces operation under the direction of the Commander in Chief, Atlantic. It involves some 28,000 persons from the four services operating in Georgia, North Carolina and at sea off the Carolinas. Operations are centered on amphibious and airborne assaults on the fictitious island of Atlantis.

The talk in the tactical support center (TSC) on board *John F. Kennedy* is triggered by a reported sighting of a "feather," the spray caused by a submarine periscope knifing through the water at moderate to high speed. This ignites an awesome matching of power as the race begins. There could be a winner in only minutes. To lose would mean the demise of 5,500 sailors on board the carrier. Countless more lives ashore would be threatened. It would certainly be the end of several key ships in the task force.

This is a time of testing at sea, of command and control, of ingenuity between military forces temporarily divided into opposing Blue and Orange teams. The exercise brings with it long, challenging hours which turn into electrifying moments of action for the men under attack. Occasionally, consternation, perhaps "salty" comments, erupt in an agony of defeat. It does not linger. The players continue, learning from their mistakes and resolving to "get 'em next time" as the simulated war rages. The exercise hones the skills which may be needed in a real world situation.

On board *Guadalcanal* (LPH-7), as the exercise begins to unfold, the talk is more of spotting the "frogs" (helicopters) than of feathers. The ship is approaching the amphibious operating area (AOA) and the Marines embarked, ready for the assault, are in an equally dangerous race with life.

In the flight deck control space of the LPH, Lt. Hamilton D. Hearn, Jr., flight deck officer, confirms the flight deck positioning of the frogs – CH-46s. He and his crew remain alert and flexible as to which frog goes where as they listen to primary control.

In the time remaining, as the predawn amphibious assault nears, Lt. Hearn is more intent on quizzing his crew. "Let's go over it again." He repeats, "What's the hand signal for . . .?" as he looks for the man he

wants to provide the correct answer. He poses repeated questions. "I'm concerned about being careful out there (on the flight deck), so listen up. Rossignol, what's the signal for lowering the ramp?"

Battery-lighted hand wands are the sole means of communication for launching aircraft in the darkness. Although the crew have radio headsets, they are only used in an emergency while launching the helos.

Proud of his crew, Lt. Hearn says, "We all care about each other and watch out for each other on that deck. It's a sense of pride as well as care."

Meanwhile, 100 miles away, another lieutenant, Richard E. Barbour, Jr., assumes the duty as the antisubmarine warfare watch officer in TSC on *Kennedy*. The pilot, like other watch officers in TSC, is an underway officer of the deck. More often than not, he leaves one watch for the other. It is voluntary duty with challenge.

Ten minutes into his ASW watch, Lt. Barbour is intent on a report from an S-3. A feather is spotted 80 miles from the task force where sailors and Marines are moving into the AOA. Although unconfirmed, the report has started a race. The feather is a lethal force which could cripple the amphibious assault. It is Barbour's job and that of his immediate watch section to direct the search, confirm the contact and, if necessary, recommend attack. The feather must be identified as friend or foe. (Two submarines are a direct part of the Blue ASW force. They are SSNs.)

Adding to the pressure of the watch, an ominous note of reality is present. A Russian ship trailed an SSN leaving Norfolk and is still in the area.

While the dynamic mix of submarines, destroyers and aircraft integrated into an ASW force go about their business, Lt. Barbour receives advice from a submarine element coordinator, who helps second guess what an enemy sub may do and knows what his can do.

Lt. Barbour is the funnel through which information is conveyed. He receives orders from the task force commander, the coordinator for ASW operations.

**Lt. Barbour, opposite page, as ASW watch officer views A-7 launch positioning on Kennedy flight deck via monitor (bottom), while RAdm. N.K. Green holds staff briefing in war room. Meanwhile, Lt. Hearn on Guadalcanal, left and below, quizzes senior flight deck personnel on safety procedures.**

And 10 to 12 advisors, crowded into a space designed for 4, all give advice to Barbour. Periodically, the sound level reaches the breaking point. AWC Michael V. Briggs, a senior analyst in TSC, wisely notes that in TSC a sense of humor is mandatory, in order to function under the noise and tension. Barbour is also responsible for keeping the tactical action officer in CIC, the ship's bridge, flag staff and others informed on the latest ASW picture.

There are similarities that transcend the distance between the two lieutenants and their specified jobs during the exercise. Both have an ease of communicating with their crews. Each in his way displays a healthy sense of humor. Both are pilots. During *Solid Shield 78* both were taken out of their cockpits into a world of "feathers" and "frogs." And both are but two men of a team of 28,000 which combines its skills for a common cause.

**Story and Photos by**
**LCdr. J. Mancias, Jr.,**

**Bee Bonnet?**

No. On board USS Nimitz, AN Ernest Tsekas prepares to spray-clean the underside of a VA-82 A-7E. AMSI J. Walsh took the photo.


**Magic**
The magic camera of JOCS Bill Bearden shrunk this Golden Intruder A-6 on the flight line at NAS Whidbey Island.

**Full Service**
is what this Venezuelan C-130 received when it checked in at Lockheed Georgia for routine maintenance.

**Star-shaped**
room at the Manned Spacecraft Center is world's largest anechoic chamber. It is used to simulate outer space conditions when testing antennas.

*A History of Sea-Air Aviation*

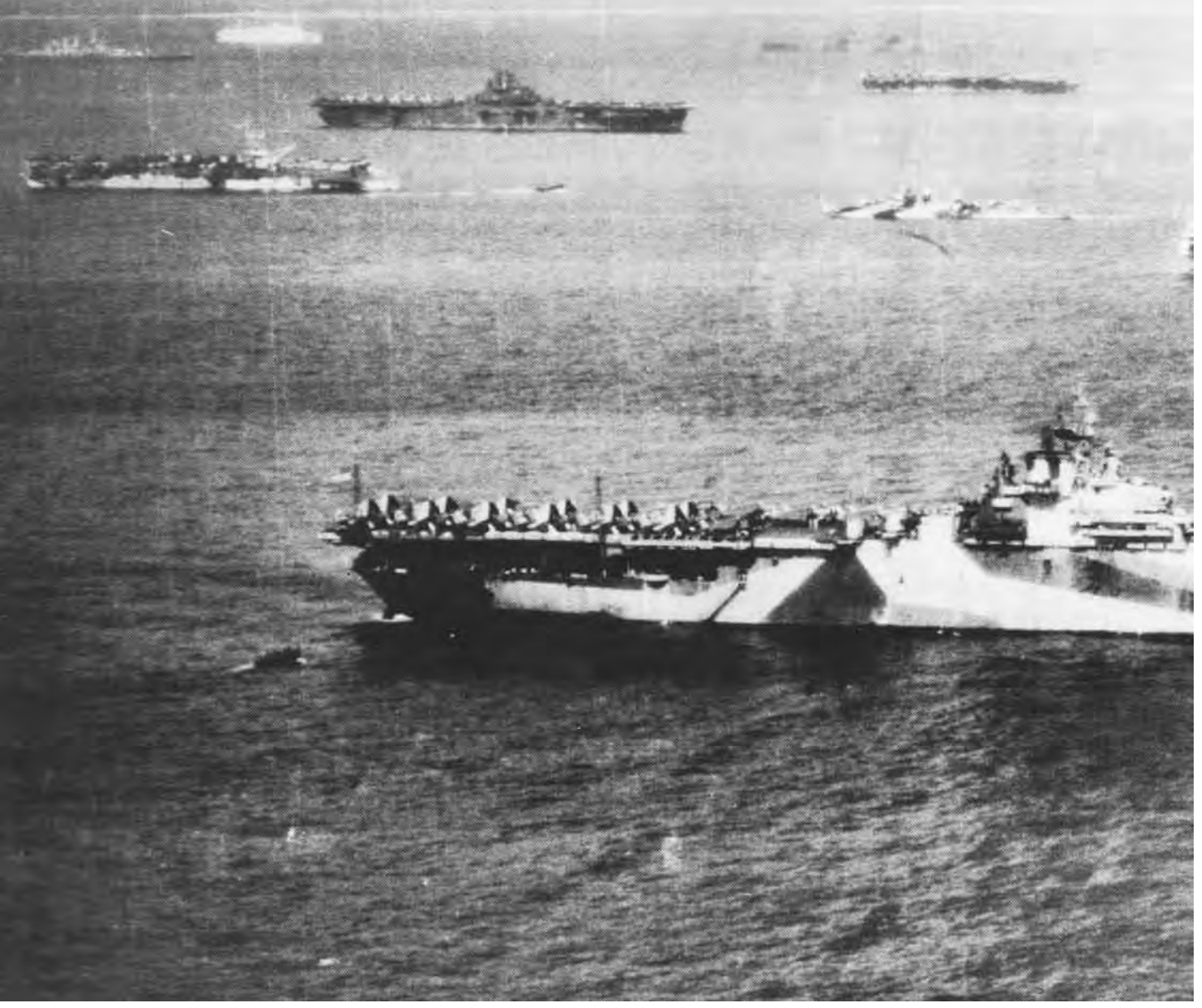
# Wings Over The Ocean

## part fourteen

**By John M. Lindley**

After Midway the U.S. Navy wartime carrier construction program had four dimensions. It had its existing fleet carriers *Saratoga, Enterprise* and *Ranger* (in the Atlantic). There were the existing escort carriers and the new ones, under construction or being converted from merchant hulls. Nine light cruiser hulls were also being converted to light carriers (10,000 tons). Lastly new fleet carriers were under construction. These new carriers were of two types: the *Essex*-class (27,000 tons) and the larger *Midway*-class (45,000 tons), three of which were begun during the war. (When she joined the fleet at the end of 1945, USS *Midway* (CVB-41) was 986 feet long, had a maximum speed of 33 knots, had 184 antiaircraft weapons and carried 137 aircraft.) The magnitude of this carrier building program was so great that between December 31, 1942, and mid-June 1943, the U.S. Navy commissioned nine fast carriers, one more than it had at the beginning of the war. By the end of the Pacific war, the Navy had 28 fast carriers in commission.

These fast fleet carriers were not the only new weapons that the U.S. Navy had in late 1943. The Grumman Aircraft Company had produced the F6F, the first fighter that could outclimb and outmaneuver the Japanese *Zero*. The *Hellcat* had a heavier engine and greater firepower than the *Zero* and also had armor protection for the pilot and fuel tanks. Moreover, its self-sealing fuel tanks nullified the effects of bullet punctures. Besides the F6F, the U.S. military research and devel-



opment programs had produced a multi-channel, very high frequency radio for improved fighter-direction communications and improved surface-and-air-search radar equipment. Navy antiaircraft gunners got the new proximity fuze (VT) for 5-inch .38 caliber naval gun shells and improved 20 and 40mm antiaircraft guns. The VT fuze was a real breakthrough because it caused antiaircraft shells to explode by radio signal when they were in the vicinity of an enemy aircraft. Navy gunners no longer had to get direct hits on Japanese planes to bring them down.

In addition to these defensive weapons, there were also new offensive weapons. The Chance Vought F4U *Corsair* fighter and the Curtiss Wright SB2C *Helldiver* dive bomber joined the fleet. The Marines found the *Corsair* (maximum speed 417 miles per hour) particularly valuable for close air support missions. It was adapted for carrier use in April 1944. The *Helldiver* began to replace the older *Dauntless* in late 1943. It could carry up to 2,650 pounds of bombs or one torpedo. New weapons for fighter aircraft were also becoming available in 1943. Among these were 20mm cannon, napalm bombs and aerial rockets.

The fast carrier came to maturity as a ship type with the arrival of the *Essex*-class carriers in the fleet in 1943. USS *Essex* (CV-9) displaced 27,100 tons, carried four squadrons of airplanes (90 to 100) and could steam at speeds in excess of 30 knots. Ships of this class carried 150 officers and 2,550 men as well as their embarked air groups. *Independence*-class light carriers also joined the fleet in 1943. They displaced only 10,000 tons and carried 24 fighters and 9 torpedo bombers. Their maximum speed was 32 knots.

The job of a fast carrier was to take the naval war to the Japanese warships, aircraft, merchant marine and island bases. In the Navy's words, the fast carriers "were primarily an offensive weapon used to gain control of vast sea areas and to destroy enemy forces which threatened friendly fleets or amphibious operations." The task

Left to right: Wasp, Yorktown, Hornet, Hancock, Ticonderoga. Lexington is far left near the horizon.

force, with its high cruising speed, maneuverability and operational efficiency in combination with the offensive punch of its air squadrons, was definitely up to carrying out this assignment. In addition to this offensive force, each carrier had antiaircraft batteries of 20 and 40mm and 5-inch .38-caliber guns which fired in conjunction with visual and radar fire controls to strike at enemy planes which penetrated the defensive patrols of the carrier's fighters.

On the typical fast carrier, the air arm was always the main battery for offense and defense, but this main battery would have been of little use without the command and communications centers on each flattop. The captain's bridge, located on the forward portion of the carrier island, was the central command post for each carrier. The ship's captain and his watch officers ran the ship from this bridge. One level below the captain's bridge was the flag and signal bridge. On this level the ship's air officer directed flight operations and the admiral, if embarked, directed the task force. Close by the flag bridge lay gunnery control for directing antiaircraft fire, the radio shack which housed the vessel's communications gear, and air plot which dispensed updated information to pilots and aircrews waiting to take off or already in the air. In the photo lab, also nearby, air intelligence officers analyzed photographs of enemy targets in an effort to assess the damage caused in a raid or to prepare for future raids.

On the captain's bridge, in air plot and in the combat information center (usually located below the flight deck on the galley deck), as well as elsewhere on the ship, radarscopes displayed pictorial information about the disposition of friendly air and surface forces as well as potential enemy bogeys or surface ships. These radars, in combination with reliable radio communications, were essential to fast carrier operations. High speed maneuvers involving numerous surface warships, either by day, by night or in bad weather, became much easier with the aid of radar. With radar every ship in the formation knew exactly where all the other ships were, regardless of visibility or weather conditions. Radar also helped the fast carrier task force defend itself against enemy air attacks. Long-range air search radar gave warning of impending attack and radar-directed antiaircraft fire, and fighter interception helped protect the task force against air attack. The U.S. Navy also had an electronic device built into its radars known as IFF (identification friend or foe) which was used to identify incoming planes as friendly or unfriendly. No response to an IFF interrogation meant that the approaching plane could be hostile. Therefore it might be fired on. Sometimes American pilots forgot to switch on their IFF equipment. This sometimes cost them their lives.

When American carriers went on the offensive in the central Pacific in late 1943 and throughout 1944, they were in the process of bringing the tactical organization and operation of the fast carrier task force to maturity. Prior to WW II all the major navies of the world had worked out the techniques for operating airplanes from carriers. The United States was more successful than either Japan or Great Britain in determining how best to utilize the carrier-based airplane in combat. Thus the fast carrier task force emerged as a means of controlling the sea through dominance of the air.

Since the Japanese attack on Pearl Harbor had wiped out a substantial portion of its fleet, the U.S. Navy was forced to fight the battles at Coral Sea, Midway and the Solomons with the task force form of tactical organization. The Navy defined a task force as "an assemblage of naval units of the right type and in sufficient numbers for the accomplishment of an assigned task." In its manner of organization, all elements were thought of "as integral parts of the whole complex required for control of the sea. Each should be used in the manner best suited to its inherent characteristics and all should be formed into a unified operating machine through the task-force system."

This description of the WW II task force implied a subtle change from pre-war ship tactical organization to scouting and battle fleets. Instead of an organization based upon a hierarchy of power (cruisers to fight destroyers or other cruisers; battleships to fight cruisers or other battleships), there was a new emphasis on organic organization based upon function. No longer were all fleet units subordinated to the all-powerful battleship. For task force operations, the U.S. Navy found it needed a "unified operating machine" because the carrier was *both* a scout and a capital ship due to its aircraft. As long as naval warfare had to be conducted at a gun range of 10 to 15 miles, naval tacticians had organized their fleets so they could bring the greatest possible concentration of fire on an enemy fleet.

The Battles of Coral Sea and Midway showed, in contrast, that the fleet engagements of modern air navies could take place at far greater ranges – as much as 50 to 150 miles. Thus tactical organization based upon gun calibers was obsolete because the key to carrier air battles was concentration of aircraft to produce an overwhelming striking power. U.S. Navy tacticians compared the task force to a building made out of prefabricated units (of a definite number and specified design) which, when put together, formed the whole structure. One clear-cut advantage of the task force organization over the old battle fleet was its adaptability to amphibious operations. The carrier task force was ideally suited to amphibious operations as well as fleet engagements because of its flexibility.

A typical fast carrier task force of the U.S. Navy in WW II was divided into various task groups, each of which had three to six carriers and a sufficient number of escorts to provide an antisubmarine screen, antiaircraft protection and defense against surface attack. Sometimes a given task group would be used for an independent offensive operation, or it might be detached for refueling and replenishment at sea. Ideally each task group would have four carriers (three CVs and one CVL), two fast battleships or battle cruisers, four heavy or light cruisers and sixteen destroyers. Three

or four of these task groups constituted a fast carrier task force. This kind of multiple carrier organization received its first serious combat test in the Gilbert Islands landings in November 1943 when four task groups formed Rear Admiral Marc A. Mitscher's Task Force 50 (later redesignated alternately as Task Force 58 and 38).

Tested in combat, the fast carrier task force proved its effectiveness as the Navy-Marine Corps amphibious team island-hopped its way across the Central Pacific via the Gilbert, Marshall, Caroline and Marianas Islands. In the Battle of the Philippine Sea (June 19-21, 1944), in the Marianas campaign, the U.S. Navy brought 15 fast carriers, organized into four task groups, to bear on a Japanese Fleet formed around nine fast carriers and land-based aircraft. History has labelled the first day of this battle the Marianas Turkey Shoot because American planes and submarines scored a decisive victory over Japanese Naval Aviation. On June 19 two U.S. submarines sank two enemy fast carriers while American carrier aircraft shot down 346 Japanese planes. U.S. Navy losses were about 30 aircraft. The next day U.S. carrier planes sank another Japanese flattop and downed 65 more enemy planes.

Those Japanese carriers which remained afloat after the Marianas campaign did not last long. Aircraft from Task Force 38 sank four more Japanese carriers which had almost empty decks because the Japanese had run out of trained pilots in the Battle of Leyte Gulf (October 24-26, 1944). Beginning with Leyte Gulf the Japanese turned increasingly to kamikaze missions in a desperate attempt to stop the fast carriers. By the end of the war all of Japan's 20 aircraft carriers had been sunk; those left afloat after Leyte Gulf became the victims of U.S. Navy submarines or Allied bombing attacks.

During the drive across the central Pacific in 1943 and 1944, the multiple carrier task force emerged as the most powerful naval weapon up to that time because it brought together an overpowering number of ships, aircraft and pilots in tactical concentration against the enemy. Throughout 1942 and into 1943, U.S. Navy tacticians had struggled with the problems of joint carrier operations. In a sense it was a serious learning period. The Navy's senior commanders were unsure whether fast carriers should be operated as single or multiple carrier task forces. The experience of *Lexington* and *Yorktown* in the Battle of the Coral Sea seemed to support the position favoring carrier concentration. During the battle the two flattops had become separated some distance from each other. This caused their screening escorts to divide spontaneously. Once divided, both carriers were more vulnerable to Japanese


SB2U returns to Ranger after ASW patrol on December 2, 1941.

Task Group 38.3 after strikes against the Japanese in the Philippines. In line: Langley, Ticonderoga, Washington, North Carolina, South Dakota, Sante Fe, Biloxi, Mobile and Oakland.

air attack. Subsequent carrier operations at Midway for both the Japanese and American Navies tended to reenforce the arguments in favor of operating multiple carrier task forces. The arrival of the *Essex*-class carriers and improved radar and antiaircraft guns in 1943 all coincided with the adoption of the doctrine of multiple carrier operations. This formalization of carrier doctrine appeared most prominently in the Pacific Fleet *Tactical Orders* (PAC-10) issued in June 1943 which emphasized the mobility and flexibility of offensive carrier operations but also demanded the concentration of carriers and their supporting screens when under enemy air attack.

Concentration of carriers when under enemy air attack had several advantages. The combined striking power of the carrier's aircraft could defeat decisively an enemy carrier fleet or land-based aircraft as in the Battle of the Philippine Sea. Conversely, the combined air defense of a multiple carrier task force was more effective with fewer fighters than when each carrier operated alone, and the carriers could provide a greater concentration of antiaircraft fire when under attack. Screening ships also benefited from these new tactics. The carrier escorts suffered less damage than the carriers because the flattops became the primary target.

Carrier air operations in the Pacific were essentially a form of mobile warfare. While land-based aircraft could operate from a base as long as the enemy remained within range, carrier aircraft could take their bases with them. The Pacific Fleet Service Force provided supplies for the fast carrier task forces. Instead of having to return to Hawaii or the continental United States for resupply or repair of battle damage, the fast carrier task forces either resupplied at forward mobile bases (on islands recaptured from the Japanese) or replenished their food, fuel, ammunition and aviation gas from Service Force ships while underway at sea. At one time Service Squadron Six, for example, consisted of 73 ships, including 7 escort carriers, 29 screening ships and 29 oilers. The effectiveness of these floating logistic bases was particularly apparent in the Okinawa campaign (April to July 1945) when three fast carrier task groups remained at sea for 47, 62 and 77 days, respectively.

Okinawa was the last major amphibious campaign of the Pacific war. The final battle that everyone expected, the assault on Japan itself, never came. Instead, the Japanese surrendered when the air-sea blockade by the Navy's carrier task forces and submarines, in combination with the Army Air Force's strategic bombing of Japan (which included the two atomic bombs) from bases in the Marianas, forced all but a few fanatical Japanese leaders to realize that they had no hope of victory. All combat ended on August 14, 1945, when the news of the Japanese capitulation became certain.

The U.S. Navy had much to celebrate on V-J Day – the end of the war and the great number of lives which were saved by not having to invade Japan. But the Navy could also take pride in the success of two previously untried concepts of warfare: the amphibious doctrine of the Marines and the fast carrier task force of the Navy. Navy carrier commanders had learned in the southwest Pacific battles how to provide effective close air support for amphibious operations. This knowledge, when combined with the tactical superiority of the multiple carrier task force, had proven to be unbeatable in the central Pacific campaigns. When the Allied pincers from the southwest Pacific and the central Pacific converged at Leyte Gulf, the war could be taken directly to the Japanese homeland via Okinawa. Although the conquest of Okinawa was costly in terms of American lives lost, its fall in late June 1945 set the stage for the final act of the Pacific war, the Japanese surrender. *(Continued)*

SBDs on Enterprise after raid on Marcus.

*TATE (Continued)*

cockpit of his plane, which fell over a mile from Chase's body. There was no doubt in my mind that he had been badly hurt in the collision and after releasing his safety belt was not able to pull the ripcord. Several of us were sure that he was injured in the crash while others said the chute was no good and that parachutes were useless.

There were immediately two schools of thought in all the squadrons stationed at Pearl Harbor. At almost every meeting in the hangar you could see pilots using their hands as planes and the arguments were sometimes hot as the anti-parachute people explained why the chutes were no good and the pro-parachute group tried to defend their continued use. I was one of the group that thought that the parachute had a definite place in Naval Aviation, though admitting it was very uncomfortable. The chutes were not as easy to sit on as the regular cushions. They did not fit the contour of the airplane seats. The harnesses were bulky and hard to wear. It was almost impossible to walk while wearing one.

I kept my early test experience very quiet as I was sure that it was not the parachute that had failed. The fault was with our test procedure. The story got out, however, and I was in for a lot of kidding . . . and was, in a more or less derogatory manner, referred to as the "auto-busting parachute expert."

During one of the arguments, someone said, "O.K., you know so much about parachutes, why don't you go jump with one . . . if you are so sure they are reliable?" That really put it up to me and I replied, "O.K., I'll do it, but I'm sure going to do it my own way, under my own conditions . . . tomorrow after lunch." I went to see the parachute rigger on the air station who would pack my chute. I told him, "The balloonatics, when they jump these things, are standing still in the air and the chute is hung under the basket, practically open. I propose to give myself somewhat the same advantage by crawling out on the wing and pulling the chute while still on the wing. That way it will be open when I go off the wing. If it doesn't open I won't go." The rigger looked at me and laughed, "Lieutenant, I'd almost bet my life that any chute I pack will open." I replied, "It's my life I'm betting but I'm glad you are *almost* willing to bet yours." He smiled, "Lieutenant, *this* chute is going to open, and boy . . . if you pull it at 100 knots on the wing, you are going to know it, too!" I talked it over with a friend of mine, Lt. Fred Harper, whom I had asked to fly the plane I would jump from. I told him my idea of crawling out on the end of the wing and doing what we decided to call a "pull-off."

We borrowed an old Douglas Model DT-2 torpedo plane. The pontoons had been replaced with wheels. We looked the plane over and Fred, after making a few measurements, came up with a serious problem. He said, "If you get out on the wing at the outer strut, which is as far out as you can go, you are going to miss the tail surfaces by only about two feet, and that's pretty close. I don't want to be flying this crate with a parachute wrapped around its tail . . . especially with you attached to it. It would be a mess to try and land." I told him, "You and the mechanic on the bar behind you and Steve Donnely in the rear seat will all have chutes and if that happens, you can jump! When I give the signal and pull the ripcord . . . as you see the chute going out, apply down flipper and right rudder and I will pass under the tail surfaces and everything will be O.K." We arranged for another friend, Lt. Del Conley, to fly an old *Jenny* (JN4B) as a photo plane. He took pictures with a one-dollar Brownie.

After lunch, on the day of the jump, we all piled into the torpedo plane with Fred Harper flying and the mechanic and I riding the bar in back of the pilot. Steve Donnely, on the admiral's staff, was in the back seat prepared to make an official report of the event. I thought at the time, "If this does not work we will at least get a good report on it."

Quite a crowd had gathered at Ford Island to watch the action. Fred took off and circled while climbing to 1,500 feet, which we had decided was the ideal height to jump without getting too much drift in the eight-knot wind. We circled over Pearl City and headed back for the air station on Ford Island in the center of Pearl Harbor. I climbed out on the right wing and worked my way out to the outer strut. That in itself was no small project. I motioned to Fred several times to slow down, as the wind seemed terrific and I thought we were flying well above 100 knots. Fred later said he never exceeded 100. As we approached the drop point I motioned that I was ready . . . and pulled the ripcord. I wanted to look over my shoulder and see if the chute was coming out and opening properly. I also wanted to watch the tail surfaces in order to duck them if necessary. There was suddenly a loud bang, audible even over the roar of the big Liberty engine. I saw the tail go up, then some great giant grabbed me by the shoulders and quickly swung my feet high above my head (as you can see in the photo). I looked up and there was the ground above me. Then in a mighty sweeping arc, everything revolved again and I looked up at that beautiful parachute spread out above me like a great flower. "Well," I thought, "this proves they will open."

While floating down, I tried to remember how many bets I had won and then thought, "What a fool bet it was . . . if I lost, I sure would not win or collect anything." I had read that it was a good idea, if possible, to turn the risers and thus the chute so as to be headed down-wind on landing. I twisted the risers like an old pro and hit running, about in the middle of the flying field. I hit with a force equivalent to a free fall of about 10 feet. The ambulance and crash truck were almost instantly on the scene to give me and that beautiful parachute a ride back to the hangar. Within a month we received chutes for all pilots and from 1925 on we wore them regularly.

The emergency use of the parachute caused the organization of a very exclusive club called the *Caterpillars*. If you see someone wearing a small gold caterpillar on a lapel, you will know he has "hit the silk." There was no nylon in those days.

Reprinted courtesy Mandarin Weekly Advertiser, Jacksonville, Fla.


**SQUADRON INSIGNIA**

Attack Squadron 97, commissioned on June 1, 1967, is home-based at NAS Lemoore. Led by Cdr. Rex R. Arnett, Jr., the squadron flies A-7Es. The Warhawk insignia depicts strength, power and superiority on land, at sea and in the air. The hawk clutches a knight's helmet, symbolic of guardianship. A trident relates to the power of Neptune. To its allies, the warhawk typifies protection – to its enemies, an overwhelming power. VA-97 is currently deployed with CVW-14 on board USS Enterprise.

# NAVAL AVIATION NEWS