

NAVAL AVIATION news



Vikings
Sweep
the
Seas

FEBRUARY 1983

An H-2 Seasprite from HC-4 en route from amphibious transport dock Nashville drops a diver during an amphibious exercise.



Photo by PFC Patrick Wilkerson

naval aviation news

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Features



COVERS—The wraparound cover is a graphics rendering of a photograph taken during carrier launch of an S-3 Viking. The assistance of PH1 Kenneth Downing at the Navy Recruiting Exhibit Center Photo Lab is greatly appreciated. See S-3 story on page 12.



RAdm. Tuttle, ComCarGr-8, discusses recent S-3 Viking improvements and its expanding ASW role on today's attack aircraft carriers in an interview on page 18.



Launching an airplane from a carrier is hard enough, but how about from a submarine? Find out how the British, Germans, Japanese, French and Americans did it on page 6.



ARAPAHO, the idea of using container ships as *emergency aviation platforms*, got its first test at sea. It worked and the story is on page 30.

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NRL Decoy Aircraft

A unique, compact flight vehicle, with long duration and low-speed loiter capabilities, is being developed at the Naval Research Laboratory by a team from the tactical electronic warfare division.

The long duration expandable decoy (LODED), has been designed to take advantage of the latest aerodynamic and structural materials technologies to produce a vehicle capable of ship-like loiter speeds in excess of 10 hours while carrying a payload of about 40 pounds. LODED uses controls, special airfoils, winglets and a tandem-wing configuration designed to achieve an efficient low-altitude flight speed envelope of up to 100 knots. In addition, the configuration is tailored to provide easy low-volume storage aboard ship with no maintenance, and minimal manpower and setup requirements during launch.



NRL's decoy aircraft rests on its launcher during testing.

New SH-2F Contracts

The Kaman Aerospace Corporation has received two contracts totaling \$140 million for the procurement of 54 SH-2F helicopters. The first aircraft rollout is scheduled for the end of 1983, with deliveries under both contracts to continue through March 1986.

The SH-2F *Seasprite* plays an important role in the light airborne multi-purpose system (LAMPS) MK I antisubmarine, antiship surveillance and targeting mission, extending the Navy's weapons capabilities to seek out enemy submarines and warn of enemy surface ships hidden beyond the horizon. The SH-2F has proven fleet experience with successful deployment aboard destroyers and frigates.

FAA Rules for Ultralights

Citing "particular concern about the uncontrolled use of the motorized ultralights that have...operational capabilities similar to regular aircraft" and "numerous instances of ultralight vehicles in controlled airspace causing near-miss situations with aircraft," the Federal Aviation Administration established new Federal Aviation Regulations (FARs) last August to govern the operation of hang gliders and ultralight aircraft.

The new rules, FAR Part 103, define two categories of ultralight vehicles: (1) hang gliders weighing less than 155 pounds and (2) powered ultralights weighing less than 254 pounds, limited to five U.S. gallons of fuel and having a full-throttle level-flight speed of not more than 55 knots and a power-off stall speed not exceeding 24 knots. Both powered and unpowered ultralights are limited to one occupant and may not be used for commercial purposes.

Part 103 prohibits ultralights from operating within airport traffic areas, control zones, terminal control areas and positive control areas without prior authorization from the appropriate air traffic control facility. They may not fly over congested areas or open-air assemblies, or in prohibited or restricted areas. Ultralights must operate by visual reference to the surface at all times, observing the flight visibility and distance-from-clouds requirements of visual flight rules. They are limited to daylight hours but, if equipped with operating anticollision lights visible for at least three statute miles, may operate 30 minutes before sunrise and 30 minutes after sunset in uncontrolled airspace. Ultralight pilots must yield right-of-way to all other aircraft categories.

Aircrew Restraint Improvement Program

In today's high-performance tactical aircraft communities, maneuvering control has become an extremely demanding task for a pilot. Mission effectiveness and successful emergency escape are determined mostly by the effectiveness of the restraint system. Poor restraint also increases the probability of spinal injury and, in some cases, fatalities during ejection because of resultant poor body positioning and rotation from the ejection G forces.

The Naval Air Test Center (NATC), Patuxent River, Md., and the Naval Air Systems Command have been working on the Aircrew Restraint Improvement Program, investigating the aircrew restraint problem and possible solutions. NATC's laboratory test series consist of displacement tests performed on the NATC negative-G fixture, flight equipment compatibility evaluations, and human factors evaluations. A survey of pilots with air combat maneuvering experience, for participation in displacement testing of candidate restraint systems, was conducted.

The analysis of data has revealed that the MA-2 harness with an additional center belt (fifth strap) attached to the front of the seat bucket provides the most restraint of all harness configurations tested to date.

The ongoing short-term program serves as an excellent baseline source for further study of the restraint problem and clears the pathway to a final documentation of long-term advanced development efforts for improved aircrew restraint.



Jim Rodriguez, a test subject for the restraint program, is seated in the NATC negative-G fixture, which rotates 360 degrees in pitch for displacement testing.

Phantom's Final Landing

The F-4J *Phantom* crew briefed for a night field carrier landing practice (FCLP) sortie which was to be preceded by an instrument round-robin flight to an adjacent Far East air base. The flight to destination and return to NAS home base was uneventful except for a slow aircraft wing fuel transfer.

The *Phantom* entered the NAS WestPac FCLP pattern shortly after dark and was soon joined by another squadron aircraft. The two *Phantom* crews performed five touch-and-go FCLP landings, each under LSO control. As the fifth touch-and-go landing was completed, a flight of three A-7E *Corsair IIs* radioed the tower from the VFR initial point and requested entry into the FCLP pattern. The LSO and tower controller briefly discussed the need to have the two F-4Js make their next landings to a full stop or exit the pattern in order to make room for the scheduled A-7 flight. The lead *Phantom* had started its downwind turn as the A-7 flight reported over the approach end of the runway. Tower instructed the A-7s to take interval between the two F-4s — behind the F-4J, turning on the downwind leg and in front of the *Phantom* on short final. The A-7 flight maintained runway heading at 1,600 feet MSL for roughly 30 seconds. The flight then individually broke at established intervals and entered the FCLP pattern.

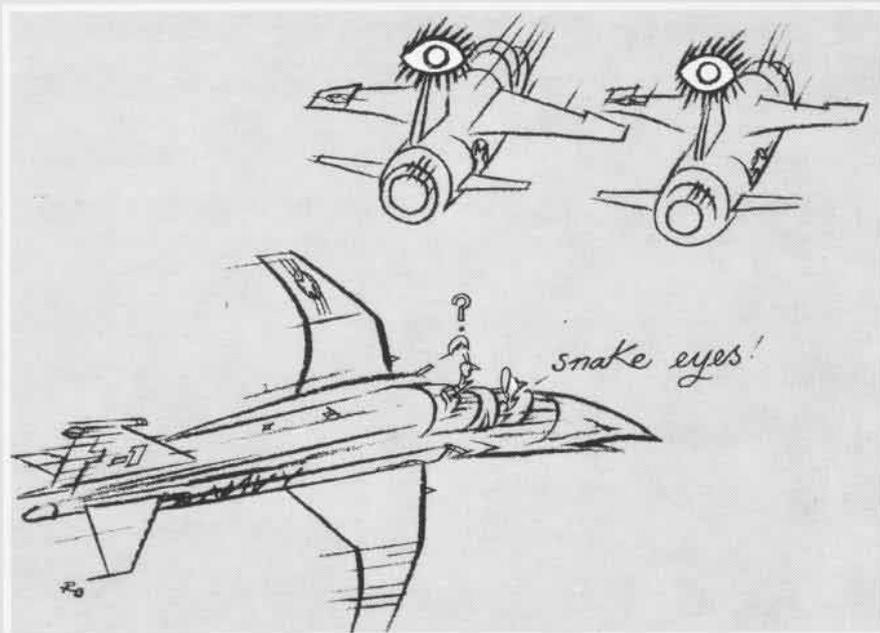
The *Phantom* crew which was on short final had now completed their sixth touch-and-go landing. Their next landing would be a final to a full stop. On lift-off, the RIO directed his attention outside to the left to gain sight of the A-7 interval.

The pilot had established the aircraft in a positive rate of climb and transitioned from the gauges to an outside visual scan passing through 400 feet. The *Phantom* was now in a six-o'clock-low position on the two upwind A-7s. Suddenly the pilot became concerned over what he believed to be a pair of wing lights closing at 12 o'clock, less than a quarter-mile away and level. As he keyed the radio mike to relay his concern to the RIO, the two wing lights ahead appeared to separate rapidly, indicating a rapid closure rate and pending midair collision. An

immediate evasive maneuver was initiated. The pilot felt that he had insufficient airspeed to perform a zoom climb maneuver. Therefore, he pushed the stick forward, rolled to the right and reduced power.

In the immediacy of the situation, the pilot did not tell the RIO what was happening. The RIO, busily looking for pattern traffic and anticipating a left turn to downwind, was surprised by the severe evasive maneuver to the right. He keyed the ICS mike button to ask the pilot what was going on. Neither crewman had selected "hot mike." The pilot never responded to the RIO as he was concentrating on regaining control of the *Phantom*, which had developed a significant sink rate and a 30 to 40-degree, right-wing-down attitude. Sensing slow airspeed, low altitude and sink rate, the pilot advanced both throttles to military. His scan remained outside and did not reference the flight instruments as he sought to control the aircraft. The pilot corrected the right bank with lateral stick only. No rudder was applied because he normally flew the FCLP pattern with his feet off the rudder pedals. The pilot overcontrolled and rolled into a 15-degree left bank. Back stick was applied to stop the sink rate, but nose response was sluggish. Afterburner was then selected to speed the recovery effort. The RIO, also looking outside the aircraft and seeing the ground coming up rapidly, was now gravely concerned about the violent attitude changes. He again asked the pilot what the deuce was happening, but received no response. The pilot, having difficulty getting the throttles into afterburner, directed





his attention inside the cockpit for a look at the throttle quadrant. The aircraft rolled into a right bank as the pilot was struggling to get the throttles into the afterburner detent. The RIO, unable to get a response and not knowing if the pilot had control of the wild *Phantom*, became increasingly apprehensive with the severe maneuvering, detectable sink rate and low altitude.

During the second right-wing-down maneuver, the RIO could clearly see the runway taxi lights and adjacent ground and felt positively that a collision with the ground was imminent. He waited a few seconds until the *Phantom* approached a wings-level attitude and initiated command ejection at 200 feet AGL. The crewless *Phantom* continued in a wings-level, descending flight for another 2,000 feet, then touched down on the parallel taxiway in a nose-low, slightly wing-down attitude. It crossed the taxiway, jumped a drainage ditch, and came to rest inverted and aflame approximately 900 feet from the initial touchdown on the taxiway. The two crewmen had escaped uninjured.



Grampaw Pettibone says:

Holy falling *Phantoms*, gents! This tragic example of a failure to communicate almost cost these two young aviators their lives. Fortunately, the RIO's grave concern saved them from a potential real final landing!

Under the assumption that a mid-

air collision was pending, this inexperienced aviator maneuvered his aircraft into a situation where he apparently could not regain control, particularly when he wouldn't use all the parts of the aircraft provided. The pedals were put in there to push on for coordinated flight. Please use 'em! The pilot had a color vision deficiency which may have led to his erroneous interpretation of aircraft lights and unnecessary maneuvering which resulted in uncontrollable flight. His visual deficiency may have led him to think that the tail lights of the two A-7s as they split for interval were rapidly closing wing lights.

The RIO was not able to get his pilot's attention or response and, more correctly, was not willing to hang around to see what was going to happen next. However, the RIO or any other crew member who does not insist upon adherence to directives is equally accountable. Directives require that the ICS be on "hot mike" when maneuvering below 2,500 feet. Had he been able to communicate, the RIO possibly could have coached the pilot through a successful recovery of the aircraft.

Fortunately, the RIO's grave concern and quick action saved these lads from the finality of the dreaded "final landing."

Gramps is My Conscience

Last year a fleet squadron junior aviator passed on to Old Gramps a note which his Executive Officer had

published in the plan of the day.

The note read:

"I'm certain most of you have seen Grampaw Pettibone [articles] in *Naval Aviation News*. Well, Grampaw Pettibone is my personal conscience. Whenever I am stuck with *get-home-itis* or the temptation to do something I know is dumb, I can just see Gramps' comment in my mind's eye: 'Great Jumping Jehoshaphat! How a seasoned aviator who ought to know better can get himself in such a predicament is beyond me. Takin' a shortcut to save time...!' My imaginary notoriety at the hands of Grampaw Pettibone has saved me more than once. So, take the time and use your common sense — listen to your own Grampaw Pettibone. Don't assume someone else will stop it — he may be thinking the same thing! Let's keep our years of accident-free flying intact and, more important, let's have none of our people hurt or killed by doing dumb things on the job or at home. Be careful, be smart and be safe!"

Old Gramps wanted to share the X.O.'s note with the hope of recruiting more personal consciences to help make this new operating year one of the safest ever for Naval Aviation.

As we climb back in the saddle for another yearly run for the roses, we might profit from a brief look at 1982 which was an outstanding year — one of our very best, in fact.

However, we still experienced unnecessary loss of aircraft and aircrews due to violations of some basic Gs, such as:

Gas — Land before your last gulp.

Gear — Get 'em down 'fore the ground.

Goo — Avoid IFR conditions on VFR clearances.

Guts — Too much often have terminal *ground effects*.

We had four or five aircraft run out of gas. One other flamed out on landing rollout. We continue to land wheels-up and go aground in the goo while on VFR. And, can you believe we still have flathatters!!!

Let's recruit safety consciences from all quadrants and attempt to make this year an even better one than last.

Submarine Aviation

By Terry Treadwell

World War II was brought to the West Coast of the United States early one morning in September 1942, when a Japanese I 25 submarine surfaced about six miles off Cape Blanco, Oregon. Members of the crew scrambled onto the deck and proceeded to remove from a watertight hangar a small seaplane — a Yokosuka E14Y1 — called a *Glenn* by the Allies. They quickly assembled the aircraft and hung two incendiary bombs on its underwing racks. The aircraft normally carried an observer but, due to its attack payload, he had to be left behind for this mission.

The pilot, Warrant Officer Fujita, took off, penetrated the forest belt of Oregon and dropped his two bombs causing, it is thought, some serious fires. A second attack was carried out a week later with similar results. These attacks showed that it was possible to carry out raids from submarines, although the range and bomb loads were very restricted.

The very first aircraft launched from a submarine is attributed to the German Imperial Navy during WW I. The German Army had advanced into Belgium and occupied the port of Zeebrugge, famous for its giant breakwater. The German Navy then moved its U-boats into the port. One of the first to arrive was the U-12 commanded by Kapitanleutnant Walter Forstmann. A month later, the first contingent of the Imperial Navy's Air Service arrived, commanded by Oberleutnant zur See Friedrich von Arnould de la Perriere. His unit consisted of 3 other officers, 55 enlisted men and 2 aircraft. The aircraft, Fried-

richshafen FF-29s, were twin-float biplanes, powered by 120-hp engines.

The mission of the U-boats was simple, to sink enemy shipping. However, the role of the German Navy's air arm had still not been clearly defined. It had been created at the very beginning of the war, but what it could or should do had yet to be established.

Friedrich von Arnould, having received no instructions, decided to develop his own missions. He reconfigured the unarmed FF-29s to carry 26.5-pound bombs, and on Christmas Day one of his seaplanes flew across the English Channel, up the River Thames and dropped the bombs harmlessly on the outskirts of London. Although it was chased by three British aircraft, it returned safely. The aircraft themselves suffered more from fuel problems and faulty ignitions than they did from the British.

Forstmann and von Arnould decided that if they took an aircraft to sea on the deck of a submarine and placed it in a takeoff position, they could launch the plane by partially submerging until it floated off. This would effectively increase the range of the seaplanes. On January 6, 1915, the FF-29 was placed across the deck of the U-12 and lashed down. The submarine left the harbour, seemingly dwarfed by the 53-foot 2-inch wingspan, that stretched almost one-third of the submarine's 188-foot length.

No sooner had the U-12 left the safety of the breakwater than the captain realized that the heavy swell they

The British Royal Navy submarine M-2, commissioned as an aircraft carrier, prepares to launch a light Peto biplane in the late 1920s.



Flight International

were encountering might possibly endanger the operation. After less than an hour, it was decided to launch the seaplane. Captain Forstmann flooded the forward tanks and, despite the pitching of the vessel, von Arnould's aircraft floated off the deck and took off without difficulty. He had intended to rendezvous with the submarine but decided against it. It is not known how close to the English coast the submarine was when it launched the FF-29, but von Arnould flew along the Kent coast undetected and then made his way back to Zeebrugge.

The experiment had been partially successful inasmuch as the aircraft had been carried and floated off, but it was realized that calmer seas and more secure lashing of the aircraft were required.

Von Arnould and Forstmann were eager to try the experiment again but the German High Command vetoed it. The idea lay dormant until 1917, when it was revived by the High Command so that the striking power of submarines could be increased. Some of the long-range, cruise type of submarine were to be equipped with aircraft for scouting purposes. Although plans were drawn up and designs prepared for the quick assembly and dismantling of seaplanes on board ship, the idea was eventually abandoned.

While the idea was given up by the Germans, in 1927 the British submarine *M-2* was commissioned as an aircraft carrier. She was ideal for such an assignment because of the 12-inch gun that was housed in a turret forward of the conning tower. The gun was removed and the turret modified to take a specially designed reconnaissance seaplane. Many designs were considered, but the one selected was a two-seat, unarmed, wireless-equipped *Peto*, designed and constructed by George Parnall and Company.

The *Peto* was not the first British aircraft designed for

use on a submarine. In 1916, two Sopwith Schneider seaplanes were carried aboard the E22 submarine, lashed down on the deck. Even earlier, well before 1914, an aircraft called the Bristol *Burnley X* was built. It was designed to collapse and pack away on surface vessels and on submarines.

The *Peto* was mated with the ill-fated M-2. The little twin-floated biplane was locked onto a carriage that rested on two rails inside the hangar on the forward deck. The hangar crew of 10 found the room inside the hangar very cramped when standing by to get the seaplane launched.

The launch procedure went as follows: The pilot would ascertain from the captain when the boat was likely to surface. As it was impossible to start the engine while submerged, the lubricating oil in the tank and engine was heated up so as to shorten the running-up time once the aircraft was on the catapult.

As soon as the boat surfaced, the launch crew opened the hangar door and lowered it to form part of the launching platform. The airplane was quickly run out on its rails and locked into position at the end of the catapult, after which the wings were unfolded and locked in position.

The captain then turned the submarine into the wind and moved at such a speed as to show sufficient wind on his indicator in the conning tower, which ensured a safe takeoff. After opening the throttles wide and making sure that his engine was running correctly, the pilot raised his hand to indicate that he was ready to take off. The captain gave the order for the catapult lever to be pulled. The aircraft shot forward, slamming the pilot and his observer back into their seats, and was launched into the air. After the seaplane had carried out its objective, it returned to the submarine, landed and taxied alongside. It was then hoisted back on board by means of a small lifting crane on top of

After turning into the wind, the Royal Navy submarine M-2 successfully catapults the tiny *Peto*.



the hangar. Of course, all of this was possible only if the weather was calm.

The idea was never a complete success and on the night of January 26, 1933, an announcement from the Admiralty said that the submarine M-2 had dived at about 1030 hours off Portland, Dorset, and had not been heard of since. Destroyers and submarines searched the area and later the same night came the news that an object had been located three miles off Portland, lying in 17 fathoms on a sandy bottom. Salvage craft and divers were sent from Portsmouth and it was confirmed that it was indeed the M-2.

After days of frustration, the *Peto* was recovered from the submarine's hangar. Badly damaged, she was taken ashore for inspection. She was not preserved. The salvage work was finally abandoned in September, although at one point the M-2 was raised to within 18 feet of the surface before a gale sprang up and the boat sank again. How the accident happened is still a mystery, but it is probable that the inner hatch to the hangar was open at the same time that the hangar doors were, perhaps through a misunderstood order.

While the British were having their problems, across the Atlantic the American Navy had shifted its interest from submarine aircraft to small scouting aircraft carried aboard the airships USS *Akron* and *Macon*.

The U.S. Navy's interest in submarine aircraft had started way back in 1922. Two Heinkel-Caspar type U-1 submarine aircraft were received at NAS Anacostia towards the end of 1922. One was lost during an exhibition flight the following year and was used for spares for the other. The flight tests were completed by the end of 1923 and, although the aircraft didn't fly off a submarine, it did supply useful information for future designs.

The Navy accepted delivery of 12 additional submarine-

based aircraft and, although built by two manufacturers, the design was the same. Six were constructed by the Cox-Klemin Aircraft Corporation of New York and were made of wood and fabric. The other six were manufactured by the Glenn Martin Aircraft Corporation of Baltimore and were largely made of metal. This enabled the Navy to compare the new techniques using metal rather than wood.

During October and November of 1923, tests with the Glenn Martin MS-1 were carried out aboard USS S-1. The S-1 had a complement of aircraft specialists from USS *Langley* aboard. Their duty was to erect and dismantle the aircraft and stow it away in the pressure-resistant tank aft of the conning tower. Unfortunately, it took nearly four hours to assemble the aircraft. This obviously was unacceptable and so modifications had to be made to cut down the assembly time. The modifications were carried out by the Naval Aircraft Factory at Philadelphia and, although the aircraft was delivered to them late in 1923, it was nearly two years before the modifications were completed.

In the summer of 1926, the complete cycle of assembly, launching, recovery and stowage of the modified Cox-Klemin XS-1, now designated XS-2, was assigned to the



S-1. By the end of October, the launching crew had become so proficient with the modified aircraft that they could have the machine assembled, launched, afloat and with engine turning in 12 minutes. It took them only 13 minutes to recover, dismantle and stow away, which was a truly remarkable feat when compared with four hours on the original aircraft. The XS-2 had an effective scouting radius of approximately 130 miles.

Up to 1931, a number of tiny, foldaway aircraft were designed and submitted to the Navy, but none were adopted. In 1931, the Navy did purchase a Loening XSL-1 amphibian for submarine trials, but a number of modifications had to be carried out to improve its all-around performance. Although it was tested aboard the S-1, it was not accepted by the submarine service. Many reasons were given, including one which rumored that Naval Aviators did not relish the double hazardous duty aboard the old S boats!

The French had attempted to use aircraft on board submarines but met with very limited success. Their one and only attempt was on the 2,800-ton *Surcouf*, the pride of the French Submarine Services. Built in 1929, *Surcouf* was the second largest submarine in the world, the first being the British X-1 at 3,050 tons. A match for many surface warships, *Surcouf* had twin turret-mounted, eight-inch guns and formidable torpedo armament. The biggest drawback was that she was too large and too slow at diving. This meant that she was only at her best when on convoy duty and when her scout seaplane was ahead looking for enemy warships and submarines.

Surcouf had its hangar built as an integral part of the conning tower, and launch and recovery were achieved by using a crane after the submarine had stopped her engines.

Tests continued until 1942 when, on the night of February 19, *Surcouf* was in collision with an American freighter while en route to the Panama Canal. There were no aircraft on board and there were no survivors.

To go back to the Japanese contribution to the submarine aircraft era, it all started for them at the end of the first World War. They acquired seven war-prize U-boats from the German Navy and adopted the best features into the design of their own submarines. The Japanese had always shown great interest in the use of submarine scouting aircraft and purchased two Heinkel-Caspar U-1 aircraft from the Germans in 1921.

The first operational trials of the aircraft aboard a submarine did not take place until 1927 and, as with the American trials, launching operations were conducted by trimming down the stern and floating the aircraft off. The Japanese by this time had their own design available, very similar to the U-1 but with modifications such as a more powerful rotary engine. Although it was designed in 1925, the aircraft wasn't built until 1927 and operated from submarine I 21 for about 18 months.

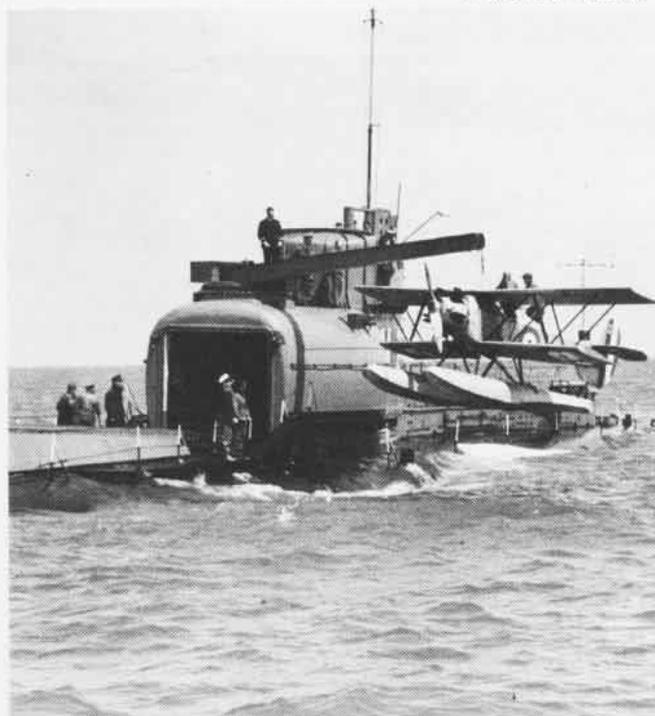
The I 21 was too slow and too small for serious operations, so a larger boat was selected and, in 1930, the 1,400-ton I 51 had a compressed air catapult fitted to her afterdeck together with a hangar capable of taking two aircraft. Also at this time, the Japanese introduced a new aircraft, a 6-shi E6Y1 type 91 small reconnaissance seaplane. It was

a miniature copy of the British Parnall *Peto* and used the same engine, the Mitsubishi Mongoose. By 1932, eight more models were built by Kawanishi and were known as the E6Y1-N. After aeroplanes were tested for three years aboard the I 51, the catapult was removed and the submarine was reassigned to general service.

The early 1930s produced a number of giant submarines based on the design of the huge German U-142 of 1918. Two of these were built with hangars capable of taking two aircraft, a compressed air catapult and a small crane for retrieving the aircraft. Work was completed on these giant submarines in the mid-thirties, and later ones were built so that the aircraft could be launched without the submarine having to stop its engines.

At this time, the Japanese were still at war with the Chinese and these submarines with their aircraft were used in the China Sea as a deterrent against Chinese blockade runners. They appear to have been quite successful and were still in use up to 1941. It was in 1941 that the first submarine-borne operational monoplane came into service — the E14Y1 or, as it was known to the Allies, the *Glen*. It became the eyes of the Japanese submarine fleet when it set sail to challenge the United States fleet in December 1941. It carried out reconnaissance over Pearl Harbor before and after the attack. Other submarines cruised the South Pacific and their aircraft scouted the harbours of Sydney and Melbourne, Australia, and of Hobart, Tasmania. There were a number of kamikaze-type missions carried out by the *Glens* — long-range reconnaissance flights that gave the pilot no chance of getting back to his submarine. One example was when submarine I 36 launched

Flight International



After completing a successful flight, the *Peto* lands on the water alongside the submarine M-2, is hoisted aboard and stowed in its watertight hangar.



General Dynamics

An artist's conception of the 1965 General Dynamics "sub-plane" feasibility design. The idea never took off.

her aircraft from 300 miles off the Hawaiian Islands and, although the pilot was able to radio back shipping information, it is presumed that he crashed into the sea and was lost. At the end of 1941, the Japanese had 11 submarines capable of carrying scouting aircraft and, by the end of 1945, this number had increased to 27.

Meanwhile, in Japan, work was progressing on their secret weapon and kept so well under wraps that the United States did not find out until after the Japanese had surrendered. The weapon they had been working on was a giant submarine, described as I 400 class, an undersea aircraft carrier with hangar space for three aircraft. It was 400 feet long, displaced 3,900 short tons on the surface and was capable of cruising for 37,500 miles without refueling. Originally, 18 were planned but as the war deteriorated material shortages caused the plans to be revised and only five were actually started. By 1945, three had been completed, one was dismantled while still on the slipway and one was destroyed in an air raid. Of three of the original five left — the I 400, I 401 and I 402 — two were completed as carriers and one as a supply boat.

Due to the cutbacks of the I 400 class in 1943, smaller, 2,900-ton, I 13 class submarines were converted to carry two aircraft. Of the four converted, two were completed, while the other two were still undergoing construction when the war ended. The I 13 class submarines had heavy-duty catapults fitted on their forward decks, with 12-ton, electric cranes for recovering aircraft.

While the I 400 class submarines were under construction, plans were made to use the submarines and their aircraft for a raid on the Panama Canal. The normal scouting aircraft would be of no use, so a light submarine bomber was needed. The Japanese Navy asked the Aichi Aircraft Company to provide them with a suitable design. One of the requirements was that the aircraft could be catapult-launched without landing gear. The reason for this was that the saving in weight would allow for a larger bomb load and a larger fuel supply. After the raid had been carried out, the aircraft would return to the submarine, ditch close by, and the crew would be recovered.

Training for the Canal raids did not progress well. The crews practiced their bombing runs on large scale models of the Canal locks, but were often interrupted by attacks from U.S. Navy carrier aircraft. The beginning of July 1945 brought the first submarine flotilla together, consisting of the I 400, I 401, I 13 and I 14. The task force was equipped with 10 aircraft and, although the two smaller boats did not have the fuel capacity for the round trip to Panama, they were to refuel from the bigger boats.

They were provisioned for a four-month cruise but time had run out. They were diverted to attack Ulithi Atoll where U.S. carriers were anchored. On July 16, 1945, the task force was attacked by carrier aircraft and the I 13 was sunk. The other boats did not press home their attack on Ulithi and all the other submarines were still at sea when the war ended. Not one of the giant submarines saw action in spite of all the time and money spent on them.

The final progression in the use of submarines in aviation warfare came when in March 1946 U.S. Navy Secretary James Forrestal approved the converting of two *Gato*-class submarines to guided missile launchers. The submarines that were converted were USS *Carbanero* (SS.337) and USS *Cusk* (SS.348). The weapon they were to launch was the American version of the German V1 called the *Loon*. The *Loon* was later to provide crucial experience and encouragement in the cruise missile program.

The first launch was carried out on February 12, 1947, from *Cusk*, while surfaced off Point Mugu, Calif. This was the first time a submarine had launched a missile. Earlier tests of the *Loon* had been carried out at the Naval Air Missile Test Station at Point Mugu. In these tests, Lockheed P-80 *Shooting Stars* had flown alongside the missiles in case they turned off their course and threatened populated areas. The same idea had been used during WW II, when *Spitfires* and *Hurricanes* of the Royal Air Force flew alongside the German V1s and turned them around by using their wingtips.

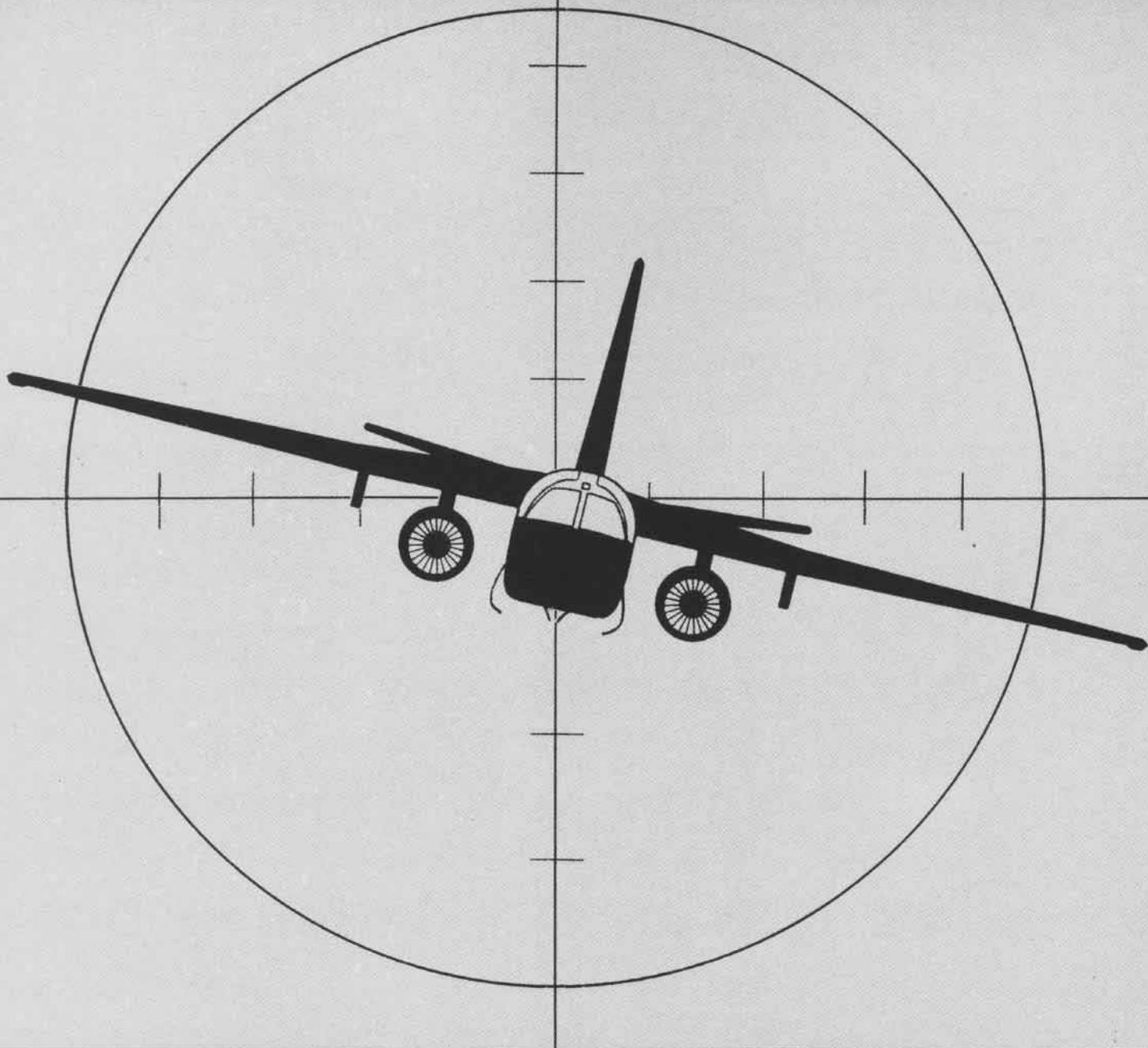
The submarines had a launching ramp installed on the deck behind the conning tower. The missile was contained in a 10-foot by 30-foot, steel, watertight capsule. When the submarine surfaced, the crew would open the capsule, assemble the *Loon* into a firing position, launch it and return below, leaving the submarine free to submerge.

Over the next few years, many tests were undertaken, culminating on May 3, 1950, when *Cusk* surfaced, launched a *Loon*, then tracked and controlled the missile over a range of 105 miles. The American version of the V1 disappeared soon afterwards, bringing to an end an area of development that was soon to be superseded, but heralding the start of a new type of warfare.

But surely the last word belongs to General Dynamics, who in 1965 announced the result of a feasibility study to produce a "sub-plane." This was an aquatic aircraft with a flight radius of 300 to 500 nautical miles at speeds of between 150 and 225 knots. Its underwater range was set at 50 nautical miles at 5 knots, at a depth of between 75 to 100 feet. To date, the work on this project has progressed no further than the feasibility study. But, who knows, it may herald the start of a completely new concept in underwater warfare. ■

Vikings Sweep the Seas

The S-3A *Viking* was last featured on the cover of *Naval Aviation News* in October 1978. That issue discussed the preceding four-year period during which the carrier-based, fixed wing ASW community had completed the *Viking's* introduction into the fleet, all of the 11 operational VS squadrons had made at least one deployment, and the S-3A production line had been closed. The impact of operating an aircraft that was a quantum leap in capabilities over its prede-



cessor, the S-2 *Tracker*, was discussed with the leaders of the VS community at that time. They focused on a variety of concerns such as the shortage of spare parts, test program sets, training, technical publications and personnel. These factors were degrading fleet readiness and morale, and were symptomatic of other problems.

To make things better, a frontal assault in the form of the S-3A readiness improvement program (RIP) was launched. It concentrated on the near-

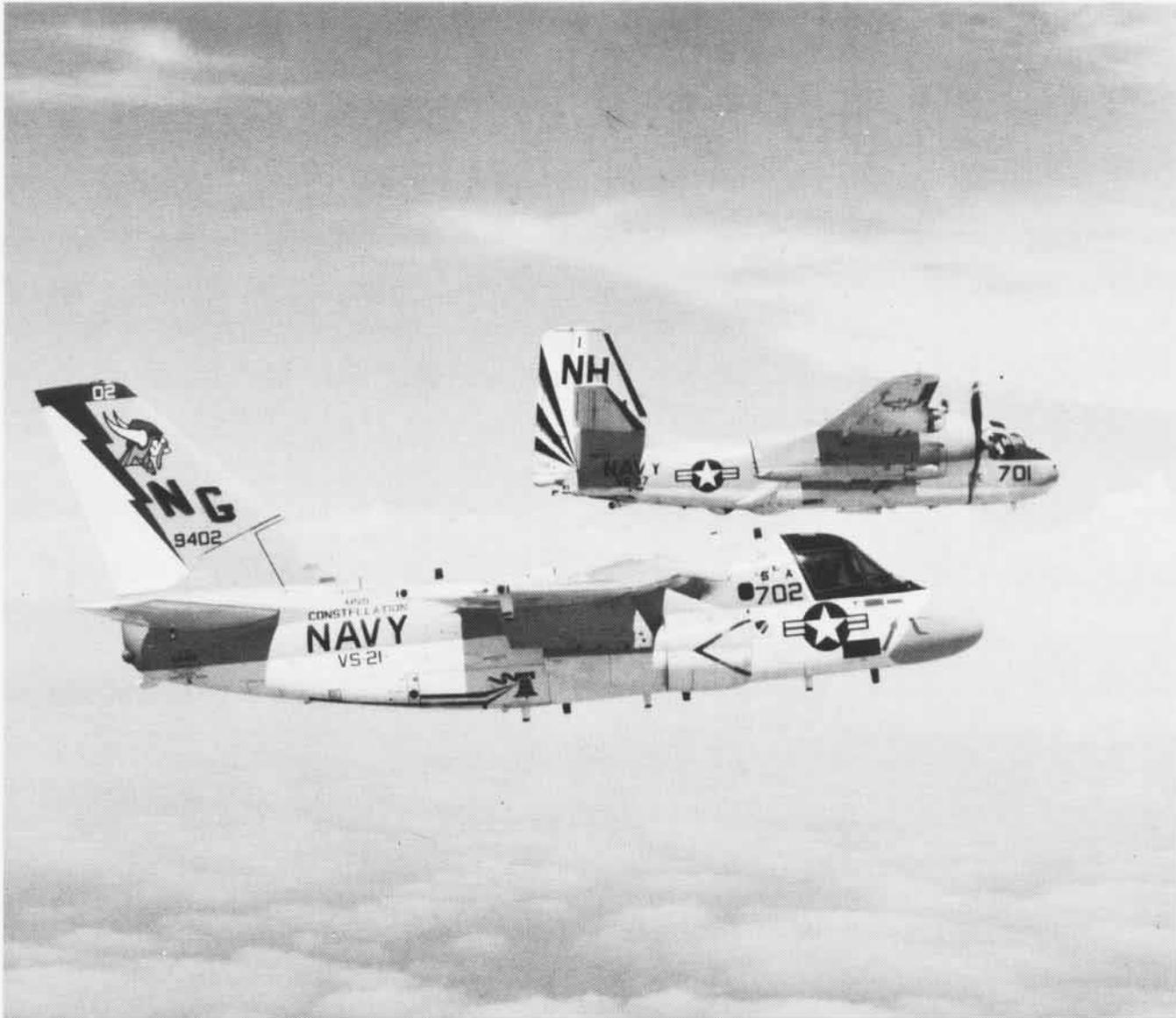
term reliability and maintainability issues which were resulting in lower-than-desired readiness stemming from supply and maintenance deficiencies. The near-term RIP initiatives were coordinated with the mid-term operational and safety improvement program (OSIP) for improvements to existing mission systems through engineering change proposals.

The S-3A improvement program included a major system update, known originally as the S-3A weapon

system improvement program (WSIP), which would change the *Viking's* designation to S-3B. The limitations of the existing avionics system, the expanding multimission role of the S-3A in the carrier battle group, the opportunity for incorporation of updated technology, and the application of current Navy equipment standards led to approval of the WSIP Navy Decision Coordinating Paper by the Secretary of the Navy in 1981.

Meanwhile, the S-3A weapon sys-

Below, from pistons and plotting boards to turbofans and computerized sensors, the VS community made a revolutionary transition from the S-2 Tracker to the S-3 Viking. Right, S-3s line up on VS-41's flight line at NAS North Island.



tem improvement program had already gathered momentum and passed advanced development milestones through 1980. A full-scale engineering development contract in early 1981 was the result of the planned development and adaptation of Navy standard equipments, extensive studies on reliability, maintainability and man-machine interface, and logistic support requirements. Simultaneously, the Chief of Naval Operations established the requirement to increase S-3A readiness prior to procurement of the

WSIP kit for the S-3B program in 1985.

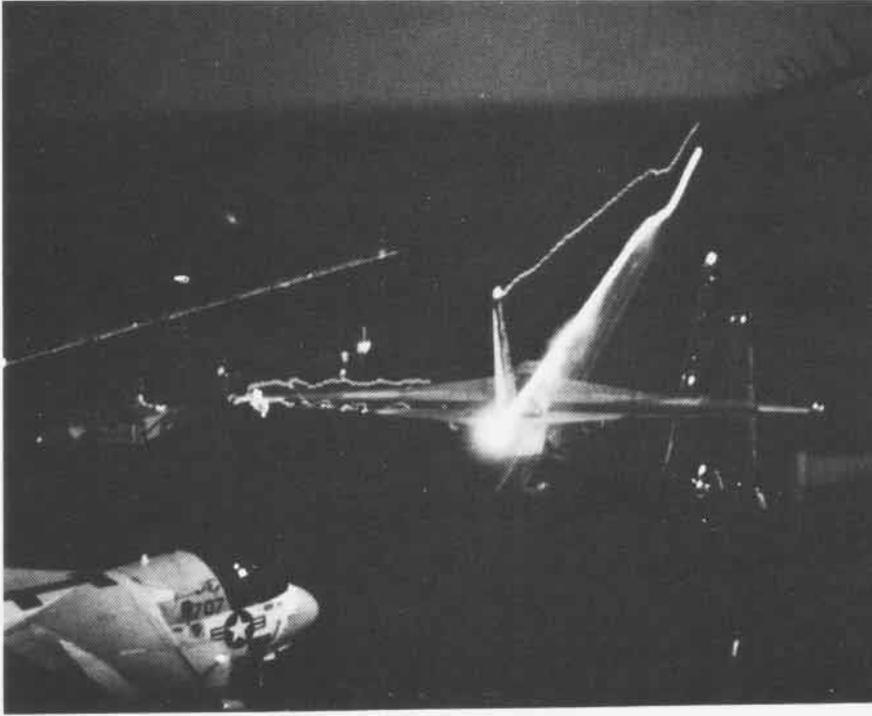
With the stage set for a major modification program to improve both the ASW and surface surveillance system capabilities of the S-3A against current and projected threats of the 1990s, sponsors in the office of the Chief of Naval Operations, the Naval Material Command and the Naval Air Systems Command set out to meet CNO's readiness goals. The VS community was on course with Office of the Secretary of Defense policies of upgrading subsystems to meet any

threats with an evolutionary integration of technology coupled with specific readiness objectives.

Realizing the uniqueness of the S-3A with regard to spares requirements for a carrier-based avionics-packed aircraft, the dependency (90 percent) on commercial repair, and the resulting low availability of spares due to supply problems, the Chief of Naval Material established a flag-level readiness review board, with its first meeting scheduled in September 1981.

S-3A readiness problem areas were





A time exposure captures a VS-21 launch from USS Ranger.

identified and attacked. One area isolated for action was the availability of components where an unusually long turnaround time by vendors results in a large backlog of non-RFI (ready for issue) components. Provision was made for funding to correct this situation.

In the fleet, effectiveness is measured in many ways: flight hours, sorties, readiness and mission success. Without adequate parts support, the double-edged sword of cannibalization becomes deadly to fleet maintenance, morale and, ultimately, readiness.

Launching mission-capable aircraft and exploiting the enormous potential of the multimission S-3A, and soon the S-3B, is the ultimate goal. The out-of-production S-3 has been brought to the forefront within OpNav, NavMat and NavAir. Of major importance is the cooperative teamwork of NavMat, NavAir, the Naval Aviation Logistics Center, the Aviation Supply Office and their commercial counterparts to provide sufficient quantities of parts to the fleet for readiness improvement. Their efforts are bearing fruit, as components and replenishment spares are seen entering the fleet, thus reducing down time.

Of equal importance are the main-

tenance improvements which have been realized in the fleet and which have reduced aircraft down time even more. The results of these combined efforts speak loud and clear — S-3A readiness increased approximately 50 percent in the last year.

In concert with readiness improvements, the VS community has aggressively pursued a program for improving the safety and operability of the S-3A. This operational and safety improvement program covers aircraft and system modifications, procurement of initial spares, support equipment, changes to trainers, and provisioning data. Each year, in addition to safety and performance candidates, reliability and maintainability proposals are submitted and prioritized for improvement.

One of the most significant engineering change proposals in the works will be the installation of an increased capability auxiliary power unit (APU) to allow independent maintenance on the flight deck. This critical modification will provide avionics cooling and full diagnostics troubleshooting capabilities without reliance on the carrier's power. Moreover, the new

APU offers additional flight deck commonality with the system installed in the F/A-18 *Hornet*.

As mentioned earlier, the long-range program for the S-3A is the avionics upgrade of its sensors. The new systems will provide S-3 crews with an effective weapon system to operate against current and projected surface and subsurface threats throughout its operational service life. Major S-3B improvements include:

Acoustic Data Processing (ADP).

The improved acoustic processor utilizes a Navy standard UYS-1 advanced signal processor, combined with a modification of the existing OL-82 AYS. Maximum hardware and software commonality with other airborne UYS-1 systems affords significant production and logistic cost savings. The capability to utilize common sophisticated operational acoustic software, being developed by the Navy for UYS-1 system support, allows cost savings with timely updates. Maintainability concepts also provide more efficient maintenance and reliability within the CV environment.

Advanced Sonobuoy Receiver (SRX).

The receiver will increase the number of available RF channels from 31 to 99 while providing growth for advanced acoustic sensors.

Analog Tape Recorder (ATR).

The more reliable AQH-4(V)2, a system similar to that installed in the Canadian CP-140, reduces the installation size of the current dual WRA configuration and provides compatibility with the UYS-1.

Sonobuoy Reference System (SRS).

In addition to compatibility with the new 99-channel receiver, the new SRS will have an end-to-end test capability and automatic scanning for available RF channels.

Inverse Synthetic Aperture Radar (ISAR). To be designated the AN/APS-137, this modified version of the AN/APS-116 represents the first upgrade to the radar since the original design 15 years ago. The periscope detection capability has more than doubled from the original requirement and the ability to classify ships at extended ranges is made possible by a real-time two-dimensional representation. There is no impact on aircraft installation as the number of WRAs and their form factor are unchanged.

Electronic Support Measures (ESM). Operability, detectability of more emitters, and increased probability of intercept/classification in a dense emitter environment are enhancing features of the new system.

Electronic Countermeasures (ECM).

Improved self-protection will be achieved by integration of the Navy standard ALE-39 countermeasure system which will dispense flares, jammers, and chaff.

Harpoon. Air launched at a broad envelope of altitude and speed, the all-weather antiship missile provides a new dimension in accuracy and firepower against the surfaced submarine or surface combatant.

In summary, the efforts at OpNav, NavMat and NavAir headquarters, teamed with the logistics and supply commands, are providing fleet squadrons with the means to continue readiness improvements. The initiatives, dedication and hard work of fleet personnel are making sustained high readiness of this vital aircraft a reality. The *Viking* team is steady on course, maintaining the momen-

tum generated at all levels to ensure attainment of optimum readiness goals.

The VS community has evolved from an isolated existence aboard CVSs to the longest arm of the mighty CV battle group. Operating autonomously or in concert with other platforms in the outer zone, the S-3A (and the upgraded S-3B) will provide a most versatile offensive/defensive weapon system in the carrier air wing through the 1990s. ■

VS-28 on the cat.



Viking



“... we must continue to exploit this capability and know no limitations.”

RAdm. Jerry O. Tuttle

Rear Admiral Jerry O. Tuttle started out as a fighter pilot, but his career led him into the attack community where he eventually skippered VA-81. Later, he became commander of Carrier Air Wing THREE and commanded Kalamazoo (AOR-6) and John F. Kennedy (CV-67). He was assigned as Special Assistant to the Chief of Naval Operations, and as Vice Deputy Director for Intelligence and External Affairs at the Defense Intelligence Agency prior to becoming Commander, Carrier Group EIGHT (ComCarGru-8) in June 1981.

The admiral became involved in antisubmarine warfare (ASW) with the introduction of the S-2 Tracker into the CV concept aboard Saratoga in the early seventies and, later, with the S-3 Viking in Kennedy. From his vantage point as carrier group commander, RAdm. Tuttle was able to watch the S-3 in action during exercises in the North Atlantic last year. As he makes clear in the following interview, he liked what he saw.

As ComCarGru-8, RAdm. Tuttle is energetic and enthusiastic, and some of his staff members find themselves running to keep up with him. He is gregarious and possesses a wry sense of humor. He also leaves no doubt about who is in charge, and if he is outspoken he is also acknowledged as the kind of boss who accepts responsibility for what he says and does. He has a reputation for quickly getting to the point. And as one officer put it, “The Soviets would not like to see him in charge of a battle group in an actual confrontation. He is not a person they could easily second guess.”

When NANews interviewed the admiral last December at his headquarters in Norfolk, Va., he was straightforward with his opinions on the evolution of the S-3 community and on the Viking’s multimission capabilities.

NANews: The S-3A was developed as an ASW aircraft to be operated from CVs. With the passing of the CVS, has the aircraft’s role changed in the eight years it has been with the fleet?

RAdm. Tuttle: It is still primarily an ASW aircraft. When we went into the CV concept [with S-2s], we integrated ASW into the CV mission. Although the ASW mission has not changed since transition to the S-3, we’re just

Viewpoint



VS-29 coming aboard USS Vinson in late 1982.

now beginning to realize its full capability. As we have learned more about what the aircraft and its systems can do, its reliability and maintainability have improved.

Isn't it true, though, that the transition to the S-3 wasn't without growing pains? The initial introduction aboard CVs included problems with reliability and maintainability.

Yes. There were growing pains. The leadership that went into the S-3 came out of the S-2 community aboard the CVS, an ASW carrier with a different role and a different tempo. It took a while to acclimate to the CV's tempo. There were normal introduction problems for the new jet aircraft, such as wing fuel leaks, problems with the switching logic unit, and contact problems. At that time, there were also problems with supply support, which is still being corrected and is continuing to improve as funding is provided for component repair and spares replenishment.

I was involved in the first CV concept back when we had S-2s aboard *Saratoga*. I was also part of the introduction of the S-3 in *Kennedy*, with VS-32, and it did quite well.

What has probably lagged is a mutual appreciation and communication among those involved on how best to maintain the aircraft. Within the last year, we have been looking at some of the discrepancies and have corrected problems in the radar, forward-looking infrared system, and the antenna couplers which are vital to the HF link. We found that some of the components in the couplers could be repaired on board. In the radars, we determined how to detect problems early before component failure. By correcting these areas, and sticking to established maintenance procedures, we netted a significant increase in availability of the aircraft.

Over the last couple of years, there has been a significant increase in the S-3's mission-capable rates. Were these improvement initiatives the reasons for the change?

Yes, in part, and that rate should increase even more. I'm convinced now, having gone through the evolution I just mentioned, that the community has improved its maintenance effectiveness. We're learning more about the aircraft and getting smarter about employing and maintaining it.

The Viking is a versatile aircraft. What do you see as the aircraft's role in supporting the carrier battle group commander?

It is ASW protection, and its capabilities mesh well with the LAMPS, and the P-3 long-range roles. We made a new benchmark in our last deployment in which S-3s flew unprecedented 1,000-mile missions. It demonstrated the potential and tremendous capabilities of the S-3, and it worked. Normally, the P-3s come out and support the battle group while steaming in the blue water environment. We reversed the entire role on transit from the North Atlantic in which we supported the shore-based maritime patrol community in carrying out its ASW tasking.

We were involved in Exercises *United Effort* and *North-ern Wedding*. The outer limit for S-3s has historically been



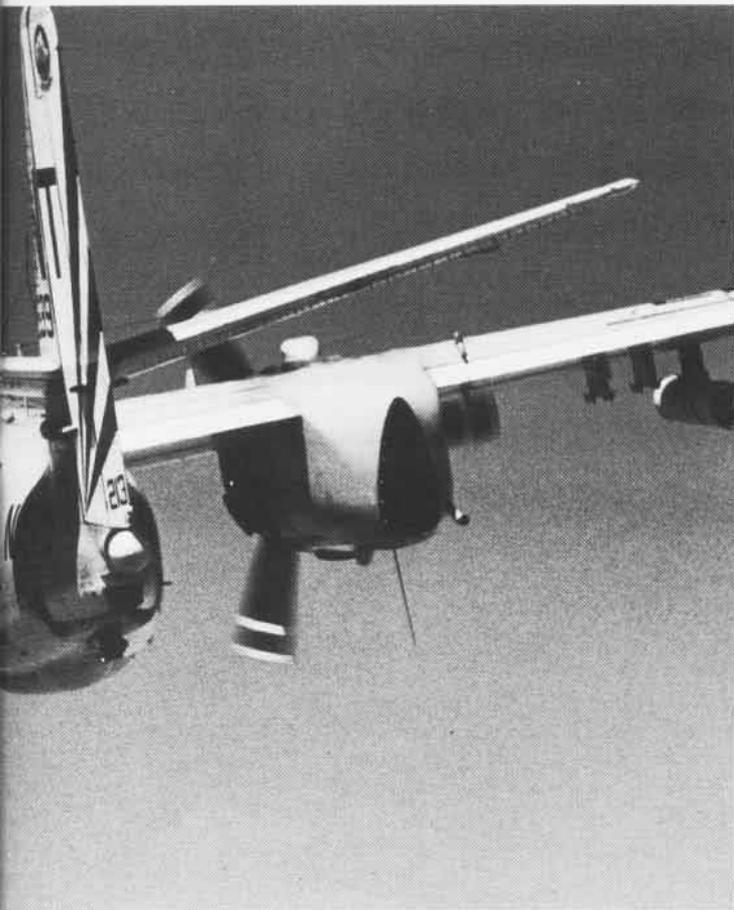
200 or 300 miles. We demonstrated the capability of the aircraft to go out and stay three or four hours on station at 1,000 miles, and to do things that heretofore would not have been possible. The *Viking* was not only able to operate at these extended ranges, it found submarines. And that is the name of the game.

So you see all of the ASW elements melding well together?

I am on a high right now. There has been a tremendous improvement and breakthrough in that regard, and I feel very good about our ASW capabilities. I see a total integration of all assets, with the S-3 as an integral part.

The weapon system improvement program (WSIP) is designed to counter the submarine threat into the 2000s and improve system capabilities. Do you see any change or expansion of the aircraft's role?

There will be, certainly. The S-3 is a fantastic aircraft and, as long as its primary mission of ASW is not degraded, it would be very short-sighted not to use it in other roles. We did this in the last exercise. As long as the ASW mission of the exercise was fulfilled, we gave the S-3 other tasks, such as working for the P-3s at great distances. Then we integrated the real-world ASW in and it worked beautifully. As you know, the aircraft is already capable of drop-



Update III and LAMPS MK III aircraft. The first WSIP squadron will be introduced in 1987.

Is the Viking's mine-laying role expected to be expanded?

It has not gotten clearance to lay the Mk 60 Captor yet, but I expect that it will because of its ability to fly long distances. There is some trepidation around, although I don't share it, that we are overextending the S-3s. I think it would be foolish not to use a capability that exists. There's a mind-set here on this staff that we do not accept limits. The comfortable outer limit for the S-3 to operate was originally considered to be 350 miles. Now we can take it out to 1,000 miles to do its work, day or night. There are those who believe that because of the high drag and weight aspects of the aircraft when used for minelaying, the S-3's range will be cut down. I say that if you refuel it enough, you can take it transatlantic. We should never permit ourselves to be bound by the limits of any distance. We don't have anything in the inventory that is as fuel efficient as the S-3 and capable of carrying mines.

What message do you have for the S-3 community?

Within the last 15 months, it has made great progress. I would like to see the S-3 community take a leading role in what I call an *ASW strategy*. It should use national assets as well as integrate with the maritime patrol, SOSUS and helicopter ASW communities. We need a coherent ASW plan in which it is an integral part, not an isolated operation. Also, computer technology should be used to determine the highest areas of probability in using target motion analysis and artificial intelligence. In the S-3 we have an improving asset that can be expected to contribute across the broad spectrum of carrier battle group tasking.

The bottom line is that we must continue to exploit this capability and know no limitations. ■

ping torpedoes and Mk 82 series and Rockeye bombs, and shooting *Zuni* rockets. Eventually, the S-3 will have a *Harpoon* interface, chaff dispenser, an electronic support measures processor and an advanced signal processor, which will bring it up to commonality with the P-3C



The retired S-2 Tracker (top) served well aboard the old CVs, while the S-3 Viking (l.) provides state-of-the-art ASW protection to the CV battle group.

Seasprite Revived

"The reports of my death are greatly exaggerated," said author and humorist Samuel Clemens, in response to a story circulating that he had passed away. Officials at Kaman Aerospace Corporation feel that way about their UH-2 *Seasprite* helicopter. Not only are rumors of the demise of the sturdy, little aircraft unfounded, but the main production line closed since 1965 has been reopened. The Navy expects to receive the first of 54 new copies of the SH-2F antisubmarine version by February 1984.

Revival of the *Seasprite* in its light airborne multi-purpose system (LAMPS) antisubmarine (ASW) role is a solution to providing the *Knox* (1052) class fast frigate with an over-the-horizon targeting and ASW capability through the year 2000. The SH-2 has been a mainstay of the LAMPS program since 1972. The new

An early, single-engine, UH-2B *Seasprite* from Helicopter Combat Support Squadron One flies over the carrier *Enterprise* in this 1966 view of an underway replenishment.



SH-60B *Seahawk* cannot be used, due to size restrictions, off the smaller *Knox*-class ships, of which there are more than 40 in active service.

"We don't consider the two aircraft to be in competition," says Commander Dennis Christian, Special Assistant to Deputy Chief of Naval Operations (Air Warfare) for LAMPS and Aviation Matters. He emphasizes that the SH-2F is, along with the *Seahawk*, "most definitely" part of the LAMPS weapons system.

"The SH-2 operates within the area of the inner (first convergence) zone while the SH-60B is capable of working out to the third convergence zone," says Christian, adding that "The SH-2F has a very clearly defined and very important mission in antiship surface and targeting/ASW defense of amphibious groups, convoys and surface groups.

The *Seasprite* is considered the helicopter that validated the LAMPS concept of over-the-horizon protection

for the fleet from submarine threat. But the SH-2F is a greatly modified version of the original, single-engine HU2K-1 utility helo that rolled off the line in 1959. In fact, the last *Seasprite* to leave the Kaman production line was a single-engine version. Spare parts production continued long after main production had stopped in 1965. Conversions to the twin-engine model had been done at a separate hangar facility.

It was this modification, along with other changes such as an improved aft power train and tail pylon, and composite material main rotor blades that worried Navy officials who first investigated reopening the production line. They had anticipated not only the normal problems of reopening the line, closed for 18 years, but additional expense and difficulties of separate facilities for modifying the "new copies." Kaman solved the problem neatly by integrating the modification facilities into the original production line, including installing the LAMPS gear.

According to Kaman vice president for Washington, D.C. operations and Navy liaison, Owen Polleys, the first fuselage has already been completed. "We are on schedule and on budget," he noted in an interview.

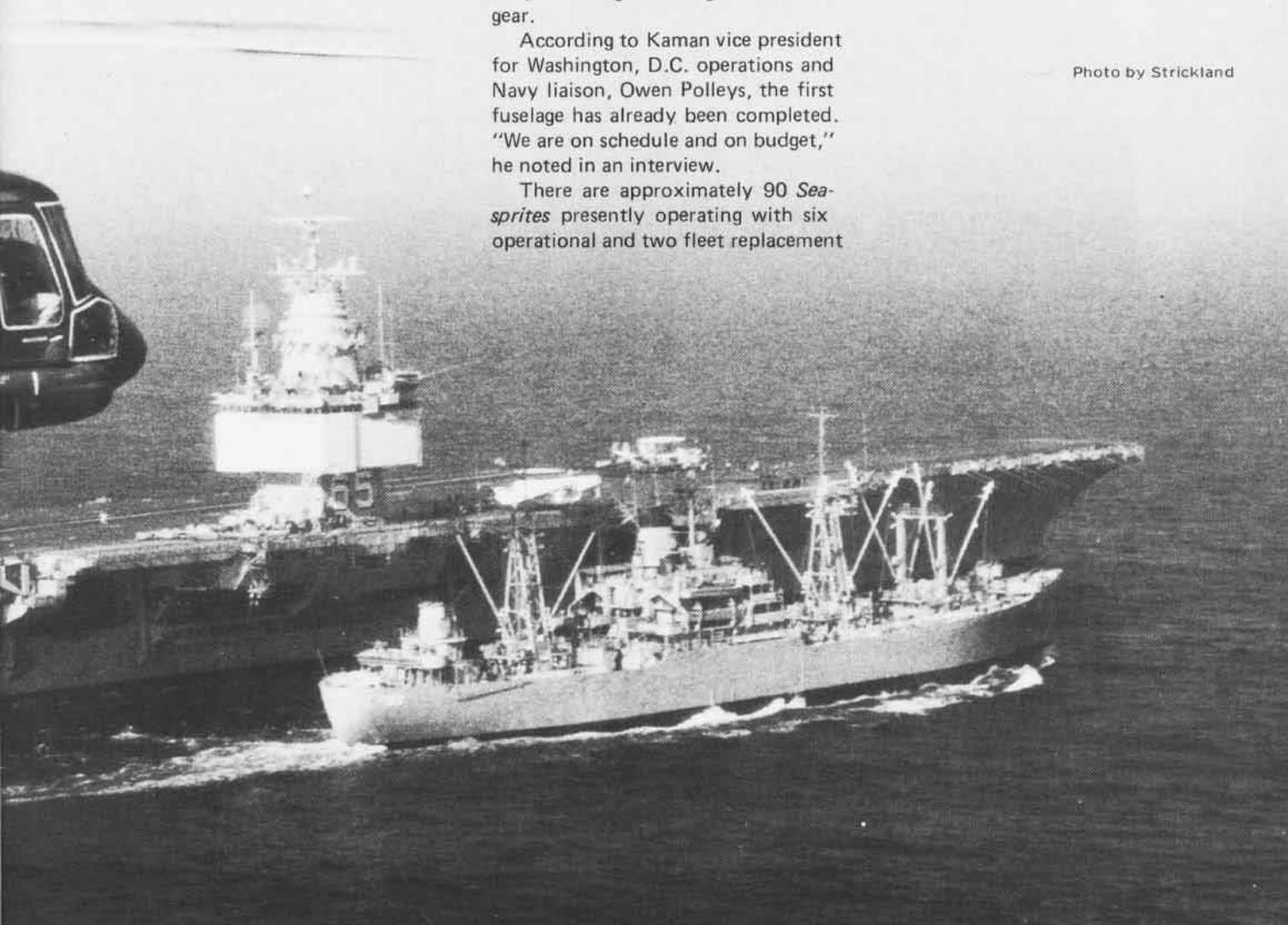
There are approximately 90 *Seasprites* presently operating with six operational and two fleet replacement

squadrons. With the infusion of the new SH-2Fs over a five-year period, the Navy does not anticipate any changes in number or composition of active duty squadrons. However, transition of two Naval Air Reserve squadrons from the SH-3D *Sea King* to the SH-2F is anticipated, as is formation of one and possibly two new squadrons.

According to Cdr. Christian the new SH-2Fs coming off the line will differ little from those already in the fleet. Improvements such as the composite main rotor blades are already in effect in the fleet.

"The *Seasprite* was ahead of its time when first introduced to the fleet," says Cdr. Christian. "It is a reliable helicopter with an exceptional rotor system that gives it very smooth flight characteristics compatible with use as a weapons platform and vehicle to deploy ASW gear. It's going to be around for a long time to come." ■

Photo by Strickland



Seasprite

By Harold Andrews

The adaptability and growth capability of the H-2's basic design have brought it successive new roles over the 25 years since the initial HU2K-1s were ordered in late 1957. The H-2's current effectiveness in meeting fleet mission needs, operating from DE-1052 *Knox*-class frigates, as well as other larger surface combatants, has resulted in Navy orders for new production deliveries.

The new helicopters will be the first to be built in the SH-2F configuration, the current inventory having been converted from earlier versions as part of the LAMPS (light airborne multi-purpose system) ASW program.

Originally designed to fill the Navy's need for a carrier-based utility/rescue helicopter, Kaman's design, which took advantage of the then newly available turboshaft, was the winner of a 1956 Bureau of Aeronautics competition. Ordered as the HU2K-1 under the old designation system, it was Kaman's first single rotor/tail rotor design, although it did continue the use of their servo-flap rotor control system. Powered by a single G.E. T58 turboshaft engine, it could pick up multiple survivors as a rescue aircraft or carry up to 12 passengers in a utility role. With a retractable main landing gear, a watertight hull and inflatable flotation bags, it brought greatly expanded capa-



UH-2A

bility to the helicopter utility squadrons when it entered service beginning in 1963. By then, it was redesignated UH-2A.

Early service indicated that a twin-engine variant would offer considerable improvements in utility and operational safety, resulting in one test aircraft being converted to flight test a twin T58 installation, followed by two prototype UH-2Cs which flew in 1966. By this time, production of 190 single-engine UH-2As and Bs had been completed and the "production" UH-2Cs were ordered as conversions of delivered aircraft, entering service in 1967. While drive system limits prevented use of the full power of the two T58s, considerable improvement in "hot and high" performance and an increase in overload gross weight enhanced the *Seasprite's* effectiveness in its utility/rescue role.



HU2K-1
"Testing Mods"

During the early sixties, several flight test programs were conducted. They used the early H-2 test aircraft and included the installation of a single auxiliary jet engine for higher speed operations and various armament systems. Many of these were Army-sponsored.

Experience with UH-2As equipped with armor plate and guns for combat search and rescue in Southeast Asia, as well as experience with the various armament experiments, led to the development of the HH-2C with a chin turret and several airframe and propulsion system improvements, including a new four-bladed tail rotor. These entered service in 1969. Subsequent unarmed versions incorporating the other improvements were HH-2Ds.

The advent of the LAMPS program brought about the final metamorphosis of the H-2 to the SH-2F of today. Initially, HH-2Ds were modified to test systems for both the ASW and antiship missile defense roles. With the 1970 decision to use the H-2 for the "interim" LAMPS role, the SH-2D configuration was established with provisions for the various ASW systems, including a radome under the nose. HH-2D trials on USS *Sims* with suitable deck modifications demonstrated the H-2's operational suitability on board the *Knox*-class frigates while indicating the desirability of some airframe changes, such as moving the tail wheel forward.

Initial deployment of the SH-2Ds by early 1972 was followed by trials of two YSH-2Es with large chin radars and other improved equipment. How-



HH-2D
"Radar Test"

ever, the final LAMPS configuration, the SH-2F, followed that of the SH-2D with a new main rotor system, the tail wheel moved forward and other system improvements. Selection of the larger SH-60B for the LAMPS MK III left the SH-2F as the only helicopter suitable for continued use in the LAMPS role on *Knox*-class frigates and other unmodified larger surface combatants.

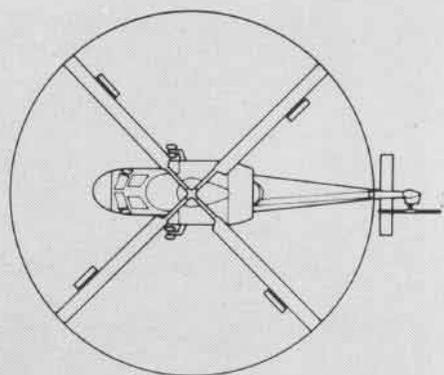
With the number of SH-2Fs projected to be available in future years, the Navy's mission needs could no longer be met, leading to the reinstatement of *Seasprite* production and its projected use to at least the end of the century. ■



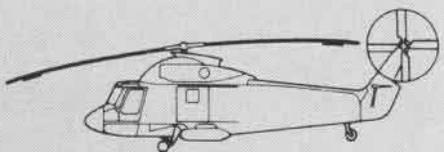
Length	52'7"
Height	15'6"
Rotor diameter	44'
Power plant	Two T58-GE-8F 1,350 shp
Maximum speed	168 mph
Service ceiling	22,500'
Radius	445 miles



YSH-2E



SH-2F





Full-time Civilians, Part-time Navy Pros

Sea Cadet Edward Schwierzke under the watchful eye of a plane captain (out of photo), guides a VP-91 Orion into a parking spot. Photo above, AX2 M. Trayhan, a reservist with VP-91, gets a closer look at the cockpit in one of the squadron's P-3B aircraft.



The key is people. In Naval Air Reserve Patrol Squadron 91, the key is people who shift with surprising ease from full-time civilians to Navy professionals.

As part of Reserve Patrol Wing, Pacific, flying out of NAS Moffett Field, Calif., their job is to support the Navy's antisubmarine warfare mission, explains skipper Commander James McMahon. "The thing that makes us unique is that 90 percent of our people are volunteers who are highly experienced and professional in their Navy jobs."

A commercial airline pilot, McMahon normally drills once a month with the other 73 officers and 269 enlisted personnel in the squadron. To make the most of aircraft, trainers and classroom space, VP-91 is divided into two wings. Intent on a high degree of readiness, they frequently contribute additional hours to the usual weekend drill time. "For the reservist to be a viable asset, one weekend a month is not enough," says Cdr. McMahon.

They start most of their weekend drills on Friday evenings with the aircraft simulators and go on to weapons systems training. The rest of the weekend is spent on the heavy flight schedule and other associated training. Squadron executive officer Commander Dan Baldwin points out that

despite the reserve status the reserve aircrews must maintain the same NATOPS requirements, personnel qualification standards and flight hour currency as active duty Navy crews. "Our people have to accomplish a lot in just two days a month," says Baldwin, a 15-year Navy veteran, who also is a Naval Flight Officer, P-3B Tactical Coordinator, and civilian mechanical contracting firm partner.

The wealth of talent in the reserve squadron is evident in the prior experience of its members. AXCS Mack Seitz points out, "All of our personnel have been in a Pacific Fleet squadron. When someone leaves active duty, he may walk across the hangar and ask about joining us." Also based at Moffett Field are six active duty patrol squadrons, with whom VP-91 shares aircraft parking and hangar space.

In February 1981, the squadron received a boost in the form of the newer P-3B (Tac/Nav Mod) *Orion* with updated electronic and computer systems. "With the new computer systems, these aircraft are in many ways as effective as the baseline P-3C in the active fleet," says AW1 Milton Moser. Moser is one of 93 active duty TAR personnel who serve full time to keep equipment ready and help train reservists during drill weekends.

The squadron flies operational

missions at home on a monthly basis and continuously during the annual two weeks active duty for training. In 1982 they operated during the two-week period as part of the Pacific patrol community, flying in and out of Cubi Point in the Philippines; Okinawa, Japan; and NAS Moffett Field. In the same manner in which the unit is divided for weekend drills, the wing spent 15 days working closely with their active duty counterparts.

"There is a lot of talent here," says Lieutenant Stephan Spiva, VP-91 maintenance officer, explaining that the squadron has more second-term personnel than most fleet squadrons. "If the squadron was activated in response to an emergency, I feel we would play a significant role because of our high state of readiness."

The squadron's talent and motivation are reflected in the achievement of the highest (C-1) readiness rating level in the reserve P-3 program. The squadron has also flown over 51,000 accident-free hours and, on three consecutive occasions, VP-91 aircrews have won the Commander Patrol Wing Pacific/Lockheed-sponsored ASW Crew of the Quarter award.

"It is amazing that most of these people are civilians 28 days a month," points out Commander John Wytsma, the squadron's TAR officer-in-charge. "They are truly dedicated." ■



Left, maintenance personnel work on a P-3 engine in the spacious former lighter-than-air hangar at NAS Moffett Field. The hangar is so large that VP-91 shares the facility with three active duty squadrons. Above, a P-3B from VP-91 turns up for another mission.

Frozen in Time

Story and Photos by PH3 Jeff Wood

For 28 years, the twisted, mangled remains of a U.S. Navy P2V-5 *Neptune* lay buried under Myrdalsjokull Glacier, a massive mountain of ice on Iceland's rugged southern coast.

The VP-18 *Neptune* BuNo 124901 and its crew of nine left the NATO base at Naval Station, Keflavik, on December 17, 1953, on a routine reconnaissance patrol mission. They did not return.

Rescue teams were dispatched but heavy snow storms and 50-knot gales hampered their efforts as they battled against the unrelenting forces of nature to reach the crash site and rescue any survivors. After many unsuccessful attempts, a helicopter succeeded in landing on the glacier on Christmas Eve. The rescue team dug eight feet down through the ice and managed to recover one body. However, rapidly deteriorating weather conditions made all further attempts impossible, and in a short time snow and ice had obliterated all traces of the crash site.

Over the years, the natural movement of the ice, along with meltdown, carried the P2V-5 wreckage nearly three miles from its original point of impact, bringing it to the surface



Lt. Hinman straddles a crevice on a glacier in Iceland during the search for debris.



Far left, a mangled old typewriter gives evidence of days gone by amid the 29-year-old wreckage of a P2V. Left, SK1 Mark Favor scales a crevice wall on a glacier in Iceland to retrieve a pyrotechnic device.

about 500 yards from the glacier's edge.

The wreckage was spotted in October 1981 by farmers tending their sheep in the area north of the village of Vikverji, and they alerted the local police chief. The recovery operation was set in motion when the Icelandic Civil Aviation Authority notified the Iceland Defense Force at Keflavik. With winter closing in, a ground rescue team from the local Icelandic Lifesaving Association was sent to the scene and brought the bodies of the remaining eight Navy crewmen down to the edge of the glacier. There, they were taken aboard a USAF HH-3 *Jolly Green Giant* helicopter for transportation to Keflavik, and then home to their final resting places in the United States.

The *Jolly Green Giant* helicopter had experienced great difficulty in landing near the edge of the glacier because of a strong northerly wind blowing off the ice. Once again, the bitter weather ended any further attempts to examine the wreckage and retrieve whatever armament might have been aboard the P2V-5.

This past summer, on a clear sunny

day, an HH-3 helicopter once again returned to Myrdalsjokull Glacier carrying, among other personnel, three U.S. Navy ordnance demolition experts. The mission of the EOD team of Lieutenant Mike Hinman, SK1 Mark Favor and PR3 Scott Adams was to disarm the ordnance scattered about in the trail of debris that was left behind as the fuselage of the aircraft gradually moved down the glacier from the scene of the crash. The demolition team was accompanied by Commander Jeff Cullison, the regional officer in charge of construction; Lieutenant Roger Hanson, a VP-26 flight surgeon; and First Lieutenant Faron Thompson, the helicopter copilot.

The helicopter flew through the mountain pass and landed in the soft moss at the foot of the glacier. About 700 yards up the dangerously cracked and creviced mountainside of ice lay the remains of BuNo 124901.

The weather shifted. The winds increased and a cold rain began to fall as the men used crampons to scale the slick, frozen mountainside, following a trail to the crash site which took them over narrow ice bridges with

crevices on either side, 10 to 20 feet deep.

They searched through the wreckage inch by inch for nearly four hours until increasingly fierce winds raised fears for a safe departure. The men gathered together all the explosive ordnance they had found — various pyrotechnics, smoke bombs and some Mk 3 practice bombs — and carefully stacked it in a glacial depression.

Lt. Hinman and SK1 Favor prepared to dispose of the ordnance as the others began the treacherous trip down the icy trail, carrying two 50-caliber machine guns that had also been found. Hinman completed wrapping explosive charges around the ordnance and set a detonation timer. The men had all reached safety at the bottom of the glacier when the blast went off, sending huge chunks of ice careening through the air. The sound echoed and re-echoed through the mountains.

Inside the helicopter on the flight back to Keflavik, warmth and dryness replaced the damp chill felt by each of the men. They had brought to completion the mission which had begun nearly 29 years before. ■

ARAPAHO

By James J. Mulquin

For a number of years, there has been considerable Navy and Marine Corps interest in the potential of merchant ships as emergency aviation platforms for certain military missions. That interest was underscored by the successful application of commercial hulls — container ships, passenger liners, North Sea car ferries, etc. — by the Royal Navy in last year's Falklands crisis. As rising costs and resource commitments have reduced the Navy's access to commissioned ships, studies are being made to determine the feasibility of utilizing the Merchant Marine in emergency collateral aviation missions, convoy defense, offshore patrol, logistics support, mine warfare and amphibious assault.

A significant step forward was made in October 1982, with the successful feasibility testing of the new ARAPAHO system — a portable modular aviation facility suitable for container-type ships — a product of the Naval Air Systems Command's Research and Technology Group. Following a lengthy period of functional and flight testing at the Naval Air Engineering Center (NAEC), Lakehurst, N.J., the entire deployable installation — some 59 tractor-trailers worth — was transported to the Norfolk International Terminal, Norfolk, Va., and loaded aboard the partially activated container ship *Export Leader*.

Operating under tow, the 18,000-ton *Export Leader* became a temporary sea-going landing platform for seven Navy and Marine Corps helicopters. Over a 40-hour period at sea, 178 day and 45 night landings were logged. The operation included four basic types of helicopters and involved not only Navy and Marine Corps pilots and flight crews but officers of four other nations. Aircraft received standard maintenance and servicing on board. Some 3,700 gallons of JP-5 aviation fuel were transferred to at least four of the participating helicopters. In addition, it was demonstrated that the ARAPAHO hangar can house four SH-3H *Sea Kings* or equivalent numbers of similarly sized aircraft at sea.

Aircraft employed during the sea



GOES TO SEA

Two Naval Air Test Center SH-3 Sea Kings perform touch-and-go landings on the flight deck of the ARAPAHO-equipped commercial container ship Export Leader last fall.



trials included a pair of SH-3H *Sea Kings* and a UH-1N from the Naval Air Test Center (NATC), Patuxent River, Md.; a CH-46E *Sea Knight* assigned to HMX-1, MCAS Quantico, Va.; a CH-46D from HC-6, NAS Norfolk, Va.; an SH-2F LAMPS MK I *Seasprite* from VX-1, NAS Patuxent River; and an HH-1K *Huey* gunship from the Naval Reserve's HAL-4, NAS Norfolk. Landings and takeoffs were made from the two ARAPAHO deck spots during daylight operations. Each spot is approximately 64 feet by 100 feet and considerably more *forgiving* than the best of the so-called small ship platforms. Night landings were confined to the No. 1 spot which had been equipped with standard deck lighting and accommodated approaches from port or starboard side. In addition to recoveries on the designated spots, a number of landings were made at the "1½ spot" to examine deck adaptability. Navy Captain B. V. Witherspoon, head of NATC's Rotary Wing Branch, was responsible for flight testing.

Observers from Chile and the Netherlands were on board to witness the tests. Pilots and flight officers from the United Kingdom, Australia, Canada and the Federal Republic of Germany made trial landings and takeoffs in NATC aircraft.

Many of the ARAPAHO subsystems were exercised during this first underway test phase. These included the fire-fighting and aviation damage control systems, the aviation fueling/defueling system, indigenous power supply, lighting, and other functions. ARAPAHO features a pair of 250-Kva diesel generators and a complete electrical distribution unit sufficient for aircraft starting and servicing power, plus facility heating, venting, lighting and air conditioning. To conserve resources, personnel accommodation vans were not deployed, and regular ship's cabins were used to house most of the embarked personnel. Although the Sikorsky CH-53 *Sea Stallion* could not be demonstrated underway, a CH-53 had successfully completed eight landings and takeoffs several weeks



The container ship *Export Leader* at anchor with the James River Reserve Fleet, Virginia, before its ARAPAHO flight deck was installed.

Night landings on the *Export Leader* ARAPAHO flight deck completed the at-sea test of the system.

earlier at the ARAPAHO shore test site at NAS Lakehurst. At about 29,000 pounds, this is the largest aircraft to land on an ARAPAHO deck.

Truck shipments of the containers from Lakehurst to Norfolk prior to the deployment were spread over a two-week period. In an actual emergency, the transfer could be made within 48 hours. Actual loading time of the full ARAPAHO facility was about 11 hours. Work was accomplished with standard terminal trucks, pier-side gantry cranes and commercial handling equipment, just as is normally done with containerized freight. To test the simplicity of assembly designed into ARAPAHO, *stevedore crews received no special instructions or equipment for the loading phase.* At the conclusion of the test, ARAPAHO was removed in about eight hours. Once loaded aboard ship, the actual hookup, check-out and subsystem verifications were completed by a special NAEC deployment team, led by the Lakehurst project officer Frank Sinatra and his assistant Ed Williams.

ARAPAHO is virtually self-sufficient once aboard ship. Jet fuel is carried in standard, 5,000-gallon tanks, located on the stern and handled like hangar and flight deck modules. Only sea water is needed in order to charge the damage control system, including the overhead sprinkler array in the

hangar. Fresh water can either be tanked aboard or supplied by the host ship.

As installed aboard *Export Leader*, ARAPAHO weighed about 900 tons. This included the 18 hangar modules, hangar overhead and roller-curtain doors, aviation fuel farm, and nearly 13,000 square feet of flight deck. Estimates are that ARAPAHO, as presently configured, is adaptable to about 200 American and NATO-registry container-type freighters. With some modifications, it can be made compatible with hundreds of other open-deck merchant ships, such as

tankers and large bulk carriers, now in international service. While present testing has been confined to helicopters, there is considerable Marine Corps interest in expanded evaluations with the V/STOL *Harrier* attack aircraft now operating with four Marine squadrons. NATO officers are anxious to evaluate ARAPAHO with the standard foreign-built helicopters, such as *Lynx*, *Wessex* and *Gazelle*.

Prior to the sea trials, accelerated flight testing was conducted last September at Lakehurst with SH-3H, CH-46 and CH-53D models, day and night. Of 92 shore-site landings, 31



were flown at night, all without incident.

A number of dignitaries were flown aboard *Export Leader* to witness firsthand the initial underway trials in the Chesapeake Bay. Visitors included Vice Admiral Robert R. Monroe (Op-098), Rear Admiral C. J. Kempf (Op-05B) and Rear Admiral E. J. Hogan (Op-55).

It is estimated that of about \$15 million allocated to ARAPAHO over the past 11 years, \$8 to 9 million actually is represented in current hardware. Industry studies predict it would cost about \$11 million to build a

"bare" facility today, and another \$2 to 7 million to outfit it with mission-essential equipment (aviation spares, deployment consumables, special electronics, data handling equipment, etc.).

Special assistance was provided during testing by the Maritime Administration, Cerberonics, Inc., Cooper Stevedoring Company and Colonna's Shipyard of Norfolk. A major objective of the testing was to establish that ARAPAHO could in fact be easily shipped, readily loaded, and shown to be safe and compatible with a typical merchant ship. The presumption is

that in a wartime situation, access to Defense Department personnel and facilities would be impossible, hence the need to prove performance with a largely civilian work force. Conditions and personnel at Norfolk typified those expected at hundreds of NATO ports and shipping terminals. *Export Leader*, with her capacity to accept and deliver standard 40-foot freight containers, was representative of the NATO hulls that could become ARAPAHO host ships in North Atlantic combat.

By coincidence, just as *Export Leader* was tying up after returning to the pier, the British container ship *Atlantic Causeway* passed alongside. Readers may recall that the latter ship was the second major aviation conversion by the British government in response to the Falklands emergency. *Atlantic Causeway* has since been returned to regular commercial service after extensive combat duty with four or five types of helicopters and Royal Navy *Sea Harriers*. A sister ship, *Atlantic Conveyor*, was lost at sea following an air attack and is slated to be replaced by an even larger, more capable ship.

ARAPAHO was intended from the outset to be a supplemental capability that could be designed, built and tested in peacetime, with the option of mass production in periods of tension. It in no way offers an alternative to an aircraft carrier with its hundreds of aircraft, its catapults, arresting gear and elaborate support structure. ARAPAHO does, however, represent a serious effort to address the problem of the collateral air mission and provide workable, deployable facilities for a surge application in wartime. Studies have been proposed not only for use of the Naval Reserve but also privately-owned, commercial-type helicopters that could be recruited for emergency service in coastal waters or on international shipping routes. Other proposed studies would investigate a whole spectrum of potential uses, each involving some facet of sea-based aviation responsibility.

ARAPAHO represents the efforts being made by both the Chief of Naval Operations and Congress to develop new, practical methods to meet expanded defense requirements in an efficient, safe and combat-effective manner. ■



Admiral Arthur W. Radford

By Jeanne Gray Hamlin



Admiral Arthur W. Radford gave more than 45 years of distinguished military service to his country, spanning three wars — WW I, WW II and the Korean Conflict. During that time he progressed from Naval Academy plebe to Chairman of the Joint Chiefs of Staff, the highest ranking position in the United States Armed Forces.

Radford was born in Chicago, Ill., on February 27, 1896, and spent some of his earlier years in Iowa before receiving his appointment to the Naval Academy in 1912. Graduating from the Academy in 1916, he served aboard the battleship *South Carolina* as a “black shoe” during WW I until December 1918, after the signing of the Armistice. Assigned to staff duty, he managed to wangle orders to Pensacola in April 1920 for flight training — a dream he had had since early youth.

Radford was designated Naval Aviator #2896 in November 1920 and from that point on he served the interests of Naval Aviation as a “brown shoe.” Remaining in Pensacola until October 1921, he was assigned to the Flight Division of the newly established Bureau of Aeronautics in Washington, D.C.

In November 1923, he finally got a chance to go to sea again with aviation units aboard the tender *Aroostook* and later the battleships *Colorado* and *Pennsylvania*.

Shore duty followed at NAS San Diego from July 1927 until March 1929, when Radford left to head the Alaska Survey Detachment which made an aerial mapping survey

of Southeast Alaska’s forest and mineral resources.

Joining *Saratoga* in November 1929, he served in various capacities aboard the carrier for three years. Following this Radford had another tour with the Bureau of Aeronautics and then went back to sea duty as navigator of the tender *Wright* in August 1935. In June 1937 he became C.O. of NAS Seattle, a post he occupied until May 1940 when he returned to sea for one year as X.O. of the aircraft carrier *Yarftown*.

Radford’s next assignment was a crucial one. In December 1941, he reported to the Bureau of Aeronautics less than one week before the attack on Pearl Harbor. He became Director of Aviation Training and during the first years of the war when America was struggling to gather together her military strength, Radford (then a captain) organized and managed the Naval Aviation training program. This program turned out thousands of skilled pilots needed to spearhead the offensive against the enemy. He had an eye for innovative solutions to problems such as safety and took on a reserve lieutenant, Robert Osborn, to illustrate safety posters and publications with Dilbert cartoons.

Radford left Washington in April 1943 to serve in the Pacific as commander of a carrier task group and then as Chief of Staff under Vice Admiral John H. Towers, Commander of Naval Air in the Pacific. His task group made repeated aerial assaults against the Japanese on Tarawa, the Gilbert Islands and in other areas.



Saratoga



Yorktown

With aggressive determination, Radford organized and trained at sea the first carrier-borne night fighter teams which later proved their effectiveness in breaking up hostile torpedo attacks.

Returning to Washington in early 1944, he served as the Assistant Deputy Chief of Naval Operations (Air), helping to direct the Navy's Aeronautic Organization and the readiness of aviation units. He also had additional duty as alternate member of the Special Joint Chiefs of Staff Committee on the Reorganization of National Defense.

In November 1944, he went back to the Pacific to command one of the carrier task groups striking against the Japanese homeland.

At the end of the war Radford, again in Washington, D.C., was promoted to Vice Admiral and assumed duties as Deputy Chief of Naval Operations (Air). He assisted in planning the postwar Navy until February 1947 when he

*"The price of security
is adequate
preparedness for defense."*

became Commander of the Second Task Fleet under Atlantic Fleet Command.

Radford returned to the Navy Department in January 1948 as Vice Chief of Naval Operations and on April 2, 1949, he was appointed to the rank of Admiral. Later that month he was designated Commander in Chief, Pacific; Commander in Chief, Pacific Fleet; and High Commissioner, Trust Territory of the Pacific Islands.

His responsibilities were increased tremendously when the Korean Conflict began in 1950. Two strategic areas, the Marianas-Bonin and Philippines-Formosa areas were added to the Pacific Command. He was also given additional responsibilities in the military assistance programs in Southeast Asia.

Admiral Radford was appointed by the President in 1953 as Chairman of the Joint Chiefs of Staff. In 1955, he was reappointed for a second term.

In a hearing before Congress in 1957, he stressed the importance of maintaining our military alliance with other countries. This was at a time when the American people were questioning the cost and importance of the foreign aid program.

Upon his retirement in 1957, Admiral Radford was given a citation in recognition of his contribution to the security of our nation and the free world. It noted that "Admiral Radford consistently displayed a profound and inspiring knowledge of world events as they affected the military, economic and political security of the United States."

In 1973, Admiral Radford died of cancer at the National Naval Medical Center, Bethesda, Md. He is remembered for his brilliant military mind and political instinct and his role in integrating aviation into the fleet. He believed that "at sea there can be no separate air force and sea force. They must be integrated as one. The aircraft carrier is the concept of sea-air power that has been proven in combat." ■

NASA/Army/Bell Helicopter's experimental XV-15 vertical lift aircraft during trials on the USS Tripoli (LPH-10).



By Roy A. Grossnick and Gwen Rich



Naval Aviation History Office staff (l to r): Roy Grossnick, Clarke Van Vleet, Gwen Rich and YNSN Marlene Turner.

Some of the Naval Aviation Insignia approved by OP-05D2 during 1982 are displayed throughout the Review.

The Navy's newest carrier, USS Carl Vinson (CVN-70).



1982 The Year in Review

The saga of Naval Aviation entered its 72nd year in May of 1982. Continuing technological advances, which have been characteristic of Naval Aviation since its inception, were evident during 1982: the F/A-18 Hornet completed its first fully automatic landing on a simulated carrier deck; a new tactical air reconnaissance pod system for the F-14 completed its first deployment; the AV-8B Harrier II made its first preliminary evaluation flight; a new advanced Harpoon missile was accepted; the XV-15 experimental tilt-rotor aircraft conducted its first ship-board operations; and a new aircraft tire made of guayule natural rubber was tested. Just a few of the many advances in Naval Aviation during 1982.

Naval Air received another operating base for its aircraft when USS Carl Vinson (CVN-70) was commissioned. The continuing evolution of the carrier was not only seen in the addition of Vinson but also in the modernization of older super carriers. Saratoga (CV-60) conducted her first sea trials since she entered the shipyard for a complete modernization and overhaul program.

The seagoing airfields carried their air power to all parts of the world. John F. Kennedy (CV-67) headed for a deployment in the Indian Ocean and, on returning to the Mediterranean, joined with the carriers Forrestal (CV-59), Independence (CV-62) and Eisenhower (CVN-68) to form the most powerful concentration of U.S. Naval Air power ever seen in the Mediterranean.

Woven throughout the 1982 review are the personnel in Naval Aviation, the backbone of the service, who are primarily responsible for the year's developments and accomplishments.

JANUARY

- 8 The F/A-18 *Hornet* made its first fully automatic landing on a simulated carrier deck field at Naval Air Test Center, Patuxent River, Md.
- 19 The Naval Aviation History Office (Op-05D2) celebrated its 40th anniversary. The office was established in the Bureau of Aeronautics and then transferred to the Deputy Chief of Naval Operations (Air) on August 18, 1943. It is responsible for collecting, documenting and preserving the administrative and operational history of Naval Aviation.
- 28 The new Limited Duty Officer Aviator Program, in which enlisted personnel can receive flight training and be commissioned, was inaugurated by Antisubmarine Warfare Aircrewman First Class Michael A. Gray and Chief Yeoman Douglas L. McGowan, Jr., when they completed their flight training and received their wings and commission. This was the first time that noncommissioned officers completed flight training since

the Naval Aviation Cadet (NavCad) program ended in 1968.

FEBRUARY

- 3 USS *John F. Kennedy* (CV-67) transited the Suez Canal from the Mediterranean Sea to the Red Sea, the largest warship ever to pass through the Canal. *Kennedy* was en route to the Indian Ocean for an extended deployment.
- 13 Fighter Squadron 84 (VF-84), stationed aboard USS *Nimitz* (CVN-69), returned to Norfolk from the Mediterranean, completing the first operational deployment of the tactical air reconnaissance pod system (TARPS) on the F-14 *Tomcat*. TARPS is designed to be carried by the F-14 for low to medium altitude photo-reconnaissance missions.

MARCH

- 5 The Navy assumed command of the government plant representative office at McDonnell Douglas Corporation's St. Louis, Mo., facilities. The Navy replaced the Air Force plant representative

office which had been responsible for contract administration at the McDonnell Douglas plant for the past 11 years.

- 13 The Navy's newest carrier USS *Carl Vinson* (CVN-70) was commissioned. *Vinson* is the third ship of the *Nimitz* class and the Navy's fourth nuclear-powered carrier.
- 16 The Vice President announced the U.S. Navy would be actively working with U.S. Customs officials and the U.S. Coast Guard to curb the influx of drugs into the United States. The Navy's E-2C *Hawkeye* aircraft became a permanent participant in helping to detect drug smugglers.
- 22 The third test flight of the Space Shuttle *Columbia* lifted off from Kennedy Space Center with Marine Corps Colonel Jack R. Lousma as mission commander and Air Force Colonel C. Gordon Fullerton as pilot. After conducting various experiments and tests of *Columbia's* instruments, the Space Shuttle returned to Earth at White Sands, N.M., on March 30.

APRIL

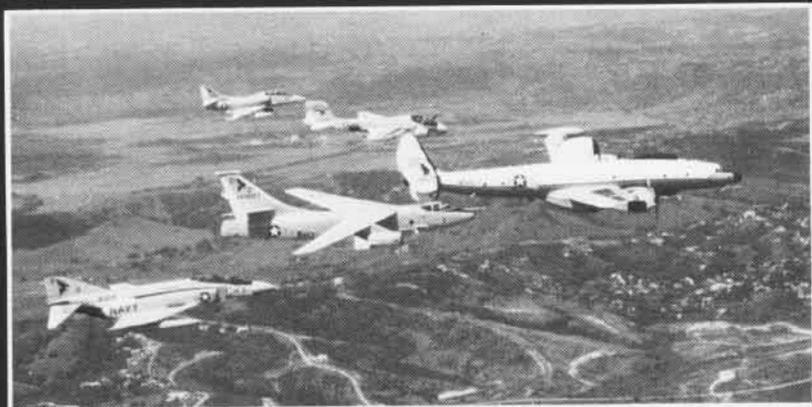
- 17 The new guided missile frigate USS *Stephen W. Groves* (FFG-29) was commissioned. The ship is named for Ensign Groves, Naval Aviator No. 8487. He was posthumously awarded the Navy Cross for extraordinary heroism while flying with VF-8 off *Hornet* at the Battle of Midway on June 4, 1942.
- 18 The 40th anniversary of the Doolittle raid on Tokyo, celebrated with a flyover of Washington, D.C., on April 14 by four rebuilt B-25 aircraft. The Tokyo raid B-25s were launched from the carrier *Hornet* (CV-8) on April 18, 1942. General Doolittle, USAF (Ret.), was on hand to greet the aircraft and pilots after the flyover.
- 30 Marine Helicopter Training Squadron 303 (HMT-303) was established. HMT-303's mission is the training of personnel for the UH-1N and the AH-1J and T aircraft.

MAY

- 22 Marine Corps Aviation celebrated its 70th anniversary. On this date 70 years ago First Lieutenant Alfred A. Cunningham, USMC, was assigned to flight instruction and, subsequently, this date became recognized as the birthday of Marine Corps Aviation.

JUNE

- 2 The AV-8B *Harrier II* made the first flight of its Navy Preliminary Evaluation. This advanced version of the AV-8 is designed to have twice the performance of its predecessor.
- 7 The Navy received an advanced version of the *Harpoon* missile called the Block 1B *Harpoon*. The new missile has an improved radar-guidance system and is capable of flying at lower altitudes than the initial *Harpoons*, which were delivered to the fleet starting in 1977. The new capability reduces the risk of detection by defense radars. The

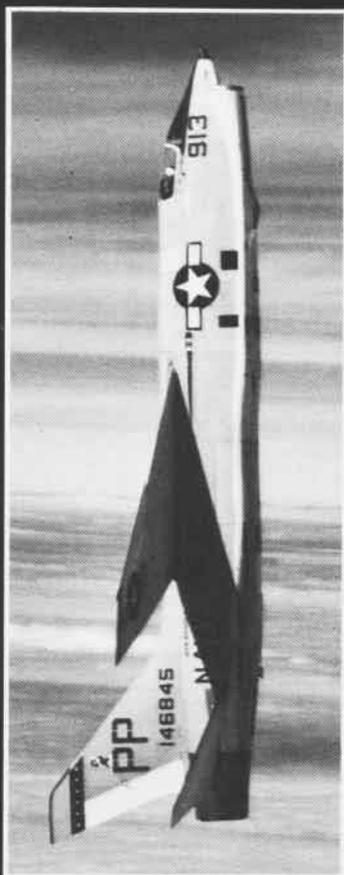


The Navy's last C-121 was retired from active service. It had been assigned to VAQ-33.



The new AV-8B Harrier II undergoing Navy Preliminary Evaluation.





Two eras came to a close with the disestablishment of VFP-63 and the end of the F-8 Crusaders' active fleet service.

Harpoon is programmed to be the Navy's basic antiship weapon for the rest of this century.

- 25 The history of the Navy's C-121 (previous designations include PO, WV R70 and R7V) ended after 33 years of service when the last *Warning Star* (other popular names were *Constellation*, *Super Constellation* and *Super Connie*) was retired from active service with VAQ-33. The *Constellation* began its naval career in August 1949 and served in a wide variety of roles and missions during its active duty with the Navy.
- 30 The last active duty photographic squadron, VFP-63, was disestablished. VFP-63's disestablishment also brought to a close the era of the F-8 *Crusader* squadrons on active duty in the Navy. The only F-8 and photographic squadrons still in existence are reserve squadrons VFP-206 and VFP-306, NAF Washington, D.C.
- 30 Chief of Naval Operations Admiral Thomas B. Hayward, the Navy's number one aviator, retired. Admiral Hayward, the 21st CNO, assumed the position on July 1, 1978. He was a graduate of the Naval Academy, Class of 1944, and was designated a Naval Aviator on July 26, 1950. Admiral James D. Watkins has taken over the Navy's top military post as Chief of Naval Operations.

Late June The greatest concentration of U.S. Naval Air power in the Mediterranean Sea occurred when the battle group of the carriers *Forrestal* and *Independence* joined forces with *Eisenhower* and *John F. Kennedy* during the latter part of June. After steaming together in the eastern Mediterranean Sea for several days, *Forrestal* and *Independence* relieved *Eisenhower* and *Kennedy*, the latter sailing home to Norfolk after a long deployment.

JULY

- 4 The last test flight of the Space Shuttle *Columbia* ended with a

perfect landing on a concrete runway, a first for *Columbia*. The spacecraft was piloted by Naval Aviator Captain Thomas K. Mattingly II and retired Air Force Colonel Henry W. Hartsfield.

- 7 In a change of command ceremony, Mr. Walter Wagner became the Naval Air Systems Command's first civilian project manager. Mr. Wagner relieved Captain John E. Hock, Jr., as project manager for the E-2/C-2 airborne tactical data system.
- 13 Lieutenant Commander Barbara Allen Rainey, the first woman to be designated a Naval Aviator, was killed in an aircraft accident during a training flight. She was an instructor with Training Squadron Three when the accident occurred.
- 30 Ensign Jannine Weiss became the first enlisted woman to receive her wings and commission under the new Limited Duty Officer Aviator Program.
- 31 The last Guided Missile Unit (GMU-41) was disestablished after 29 years of service. GMU-41 was established on May 11, 1953, with a varied mission. It provided missile training and technical support to ships and squadrons, and supported units involved in test and evaluation of missiles and associated equipment in the fleet environment.

AUGUST

- 1 *Naval Aviation News* published the second list of those selected and approved by CNO for enshrinement in the Hall of Honor at the Naval Aviation Museum, Pensacola, in 1983. The six new selectees include three Navy officers, one Coast Guard officer, one Marine Corps officer and one civilian. They are Admiral Marc A. Mitscher, USN; Admiral Arthur W. Radford, USN; Vice Admiral Charles E. Rosendahl, USN; Commander Elmer F. Stone, USCG; General Roy M. Geiger, USMC; and Mr. Glenn Martin.

- 2 The XV-15, Bell Helicopter's experimental vertical lift aircraft, piloted by Navy test pilot Lieutenant Commander John Ball and Bell's test pilot Dorman Cannon, conducted its first at-sea ship-board landings and takeoffs on USS *Tripoli* (LPH-10). A tilt-rotor aircraft, the XV-15 has a conventional fixed wing, with engines and rotors mounted on the wingtips, which are capable of swiveling to provide either vertical or horizontal flight.
- 5 The Naval Air Test Center successfully completed tests on the first aircraft tire made entirely of guayule natural rubber. The Good-year tire was mounted on the right main landing gear of an F-4J *Phantom II* and subjected to a series of maximum gross weight takeoffs and landings. Maximum weight for the test aircraft was 56,000 pounds.
- 8 The Chief of Naval Operations established the first Naval Plant Representative Office (NavPro) in a foreign country. The new Nav-Pro's duty will be to administer United States' contracts with Australian companies that are involved in building the F/A-18.

SEPTEMBER

- 2 Vice Admiral Robert F. Schoultz assumed the position of DCNO (Air Warfare). He is the 23rd person to hold the post since it was established on August 18, 1943. VAdm. Schoultz is also the first person to concurrently hold the post of DCNO (Air Warfare) and the honorary title of "Gray Eagle."
- 24 The Naval Air Systems Command awarded to McDonnell Douglas, teamed with British Aerospace and Sperry, a pre-full-scale development contract for the undergraduate jet flight training system (VTXTS). The VTXTS is designed around the British Aerospace *Hawk* with appropriate simulators, academics, a training management system, and support equipment.

- 30 Acting as executive agent for a tri-service program, the Naval Air Systems Command signed a \$400,000 contract with the Gila River Indian Community of Sacaton, Ariz., to research, develop and establish a prototype domestic guayule rubber industry in the United States. The Army, Navy and Air Force are supporting this tri-service effort to develop a domestic guayule rubber industry, thus reducing U.S. dependence on supplies of 100-percent imported natural rubber. Potential military applications for guayule rubber are aircraft tires, jet engine mounts, hydrophone arrays, truck tires, tank treads, submarine acoustic tiles and medical supplies.

OCTOBER

- 1 Master Chief Avionics Technician Billy C. Sanders assumed the duties of Master Chief Petty Officer of the Navy. He is the second person with an aviation background to hold the position since it was established on March 1, 1967. Master Chief Thomas S. Crow, who preceded Sanders, was the first.
- 1 Helicopter Tactical Wing One was established at NAS Norfolk. The new wing consists of HC-6, HC-16, HM-12, HM-14 and HM-16. It is responsible for the administrative and operational activities of these helicopter squadrons with regard to training, material support and overall readiness. Captain John Osberg is its first commander.
- 1 VR-53 Det Dallas was redesignated VR-59, which has been assigned the C-9 *Skytrain II* and continues to carry out its mission of logistics airlift support for the fleet.

- 7 ARAPAHO at-sea testing was completed at the Norfolk International Terminal, Norfolk, Va., when the 18,000-ton container ship *Export Leader* — configured with the portable modular aviation facility — returned to port after having logged 178 day and 45 night helicopter landings. See "Arapaho Goes to Sea" on page 30 for more details.

- 9 The guided missile frigate *Aubrey Fitch* (FFG-34) was commissioned at Bath Iron Works. The ship is named for Admiral Aubrey Wray Fitch who was a WW II Naval Aviator, the second Deputy Chief of Naval Operations (Air) and the first Naval Aviator to serve as Superintendent of the Naval Academy.
- 16 USS *Saratoga* conducted her first sea trials since entering the shipyard as the first carrier to undergo the carrier service life extension program (SLEP). She is completing the final phase of the modernization and overhaul program, and will be back to active fleet operations in early 1983.
- 28 This is the 30th anniversary of the first flight of the A-3 *Skywarrior*, affectionately known as the *Whale*. The aircraft has been in the fleet since 1956 and has been used as a heavy bomber, radar trainer, electronics reconnaissance platform, a tanker, a tanker-electronics jammer, a photo-reconnaissance platform, a dedicated electronics jammer, an airborne weapons test bed and as a VIP transport.

NOVEMBER

- 11 The first operational flight of the Space Shuttle was launched with astronauts Vance Brand, Robert Overmyer, William Lenoir and Joe Allen aboard. Astronauts Brand and Overmyer are former Navy and Marine Corps aviators. This was the first time four astronauts were aboard the Space Shuttle for a flight. Previous test flights conducted by the Space Shuttle *Columbia* carried only two astronauts.

DECEMBER

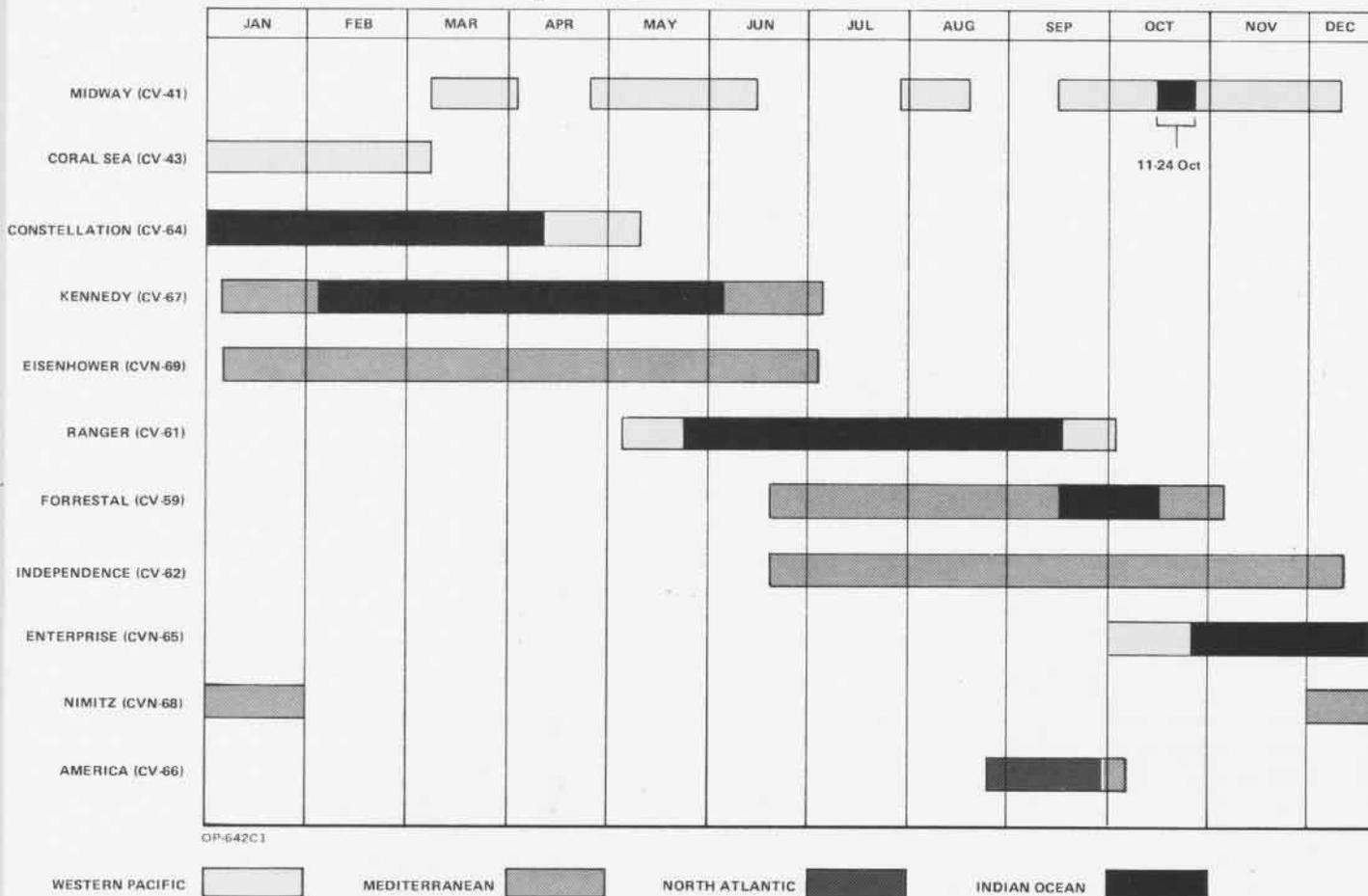
- 15 *Naval Aviation News* celebrated its 65th year of publication. It is the Navy's oldest periodical in continuous print and one of the oldest aviation magazines in the country. The magazine originally began as a weekly bulletin published by the Chief of Naval Operations.



Top clockwise, the Eisenhower, Forrestal, Kennedy and Independence Battle Groups joined forces and became the largest show of U.S. Naval Air power ever seen in the Mediterranean.



CARRIER DEPLOYMENTS IN 1982



1982 Reader Survey Results

The saying, "You never outgrow your need for strokes," is no less true for *Naval Aviation News*. The results of the most recent reader survey are in and the strokes are bountiful.

Publishing a magazine essentially involves a one-way flow of information from the writers and editors to the readers. Every two years, however, the tables are turned and the readers get an opportunity to communicate directly with the editors. The survey cards were distributed in the July 1982 issue and returned before October 1.

The overall results of the survey were particularly gratifying, not only because the number of responses was up 4 percent from the 1980 survey but because the feedback clearly indicates that *NA News* is serving its audience.

Surveys of this type are the only reliable means available for a military publication to determine the measure of its success and overall popularity.

The overwhelming majority of the respondents enjoy the magazine. The survey showed that 85 percent rated *NA News* good to outstanding while only .3 percent considered it unsatisfactory.

The 1,500-plus survey cards returned provided convincing evidence that *NA News* is reaching an interested and enthusiastic audience regularly on a monthly basis. The readers run the full breadth of the Navy, Marine Corps, government and civilian communities from flag-rank decision makers to airmen just beginning their first enlistments. The numbers show that within the Naval Aviation community nearly as many enlisted members read *NA News* as officers. Among the enlisted members who responded, 68 percent were second class through chief, while 71 percent of the officers were lieutenant through captain.

As was demonstrated in the 1980 survey, this last study indicates that most readers are mid to late career officers and middle management enlisted members. Among Marine Corps readers, the figures are roughly the same, i.e., 71 percent were captains through lieutenant colonels, and 77 percent of the enlisted members were corporals through staff sergeants.

In terms of likes and dislikes it is apparent that our readers enjoy the photography (a credit to our own journalist Chief Kirby Harrison), naval aircraft (written by Mr. Harold Andrews for more years than he's willing to admit), Gram-paw Pettibone (written by our ghost writer and illustrated by Mr. Robert Osborn), and feature stories (many of which come from contributors in the fleet).

Less popular portions of the magazine, but which nevertheless got reasonably good grades, are the insignia page, letters, professional reading, and the touch and go department. We are interested in suggestions on how to improve these to make them more appealing.

When asked for areas needing more coverage the respondents wanted more on squadrons; history; research, test and development; photo features; air stations and ships. The editors have already started to work on these subjects.

Improvements based on the feedback of the survey are being incorporated in this issue with a fresh layout of the departments and a new contents page format. The staff is also working on procurement of new equipment that will enhance the news aspect of the magazine by enabling us to shorten the lead time required before a story gets into print.

Until the 1984 survey, keep those cards and letters coming.

Reader Survey Statistics

Total cards received 1,516

	Rank/Rate	
Navy	RAdm.	3
	Capt.	75
	Cdr.	110
	Lt.Cdr.	123
	Lt.	79
	Ltjg.	22
	Ens.	15
	WO	10
	MCPO	12
	SCPO	22
	CPO	67
	PO1	121
	PO2	84
	PO3	49
E-3	42	
E-2	8	
E-1	5	
USMC	Gen.	1
	Col.	5
	Lt.Col.	10
	Maj.	19
	Capt.	17
	1stLt.	8
	2ndLt.	3
	E-9	2
	E-8	2
	E-7	3
	E-6	8
	E-5	7
E-4	11	
E-3	3	
E-2	1	
USAF	Col.	1
	Lt.Col.	3
	Maj.	1
	1stLt.	1
	2ndLt.	1
	MSgt.	1
USAFR	E-6	1
USA	Lt.Col.	4
	Maj.	2
	WO2	1
USCG	Capt.	1
	Cdr.	6
	Lt.Cdr.	1
	SCPO	2
	CPO	1
Retired Navy		144
Retired Civilians		9
Student		2

Civilian 156

Other (unidentified) 122

USNR		
Capt.		11
Cdr.		20
Lt.Cdr.		23
Lt.		11
Ltjg.		4
Ens.		7
WO		1
MCPO		8
SCPO		5
CPO		8
PO1		5
PO2		3
PO3		2
E-2		1

It should be noted that the total of numbers in any one category may not equal the total number of cards received, since many respondents did not completely fill out all the blanks.

As a student pilot, NANA News brought me quickly into the spirit of the Naval Aviation community.

"Our" magazine has been a favorite of mine for more than 30 years. My thanks for a fine team of professionals.

NANA News is a source of information I feel is unequaled. It gives me a chance to keep abreast of people, planes and items that were very close when I was on active duty.

Make it a weekly, I can't get enough.

1. Is NANA News readily available to you monthly?	Yes	1,384	
	No	147	
2. How often do you read the magazine?	Monthly	1,127	
	Frequently	233	
	Occasionally	71	
3. Rate how much you enjoy the following:			
	Very much	Some	Not at all
State of the Art	831	573	44
Grampaw Pettibone	1,086	320	75
Feature Articles	1,057	412	75
Naval Aircraft	1,198	263	17
People, Planes, Places	889	523	55
Touch and Go	693	677	80
Squadron Insignia	652	631	160
Letters	540	774	151
Historical articles	1,037	380	59
Professional reading	788	579	91
Photography	1,210	245	14
4. Areas on which you would like more coverage:			
	Ships	400	
	Squadrons	715	
	Research, Test and Development	627	
	People	335	
	Humor	361	
	Air Stations	479	
	Aviation Support Activities	242	
	History	673	
	Photo features	611	
	5. For me the magazine is _____ source of information on Naval Aviation.		
		Outstanding	1,014
Good		397	
Satisfactory		245	
Unsatisfactory		5	

Return of the Dogs

They're home. After a six-month Mediterranean deployment aboard the carrier *Eisenhower*, VF-143's *Dogs* are back on a short leash at their NAS Oceana home base.

It was an especially busy cruise for the squadron, starting with an Atlantic en route exercise, pitting Air Wing Seven from *Ike* against Air Wing Eight from *Nimitz*. Shortly after entering the Mediterranean, the *Dogs* flew their F-14s in an intensive air combat maneuvering exercise, involving 80 aerial engagements, against U.S. Air Force F-4 *Phantoms* flying out of Terrejon, Spain. Later the squadron flew long-range strikes against the French carrier *Foch*. They engaged in air combat maneuvering exercises against both French and Spanish pilots in several other training exercises.

A port call in Israel afforded the *Dogs* an opportunity to visit with Israeli pilots at Ramat David Air Force Base near Haifa. In return for this hospitality, VF-143 pilots invited their Israeli counterparts to visit the squadron aboard *Ike*. Later, a visit to Alexandria, Egypt, allowed the *Tomcat* squadron pilots and radar intercept officers a chance to visit with Egyptian air force pilots at Tanat Fighter Air Base near Cairo. A highlight of the visit was a flight exhibition by the Egyptian flight demonstration team in an air show at Tanat.

China Fleet Club Moving, Not Gone

Rare indeed is the old salt who remembers the WestPac cruises without recalling the old Royal Navy China Fleet Club and the hospitality of our British hosts at the Hong Kong facility. More than one U.S. Navy sailor has found a temporary home there on R&R from Vietnam or when left behind after an emergency sortie by his ship.

There have frequently been rumors that the club would be moved from its Wanchai residence of almost 50 years. Those rumors have now been confirmed. The club, along with the resident U.S. Navy Contracting De-

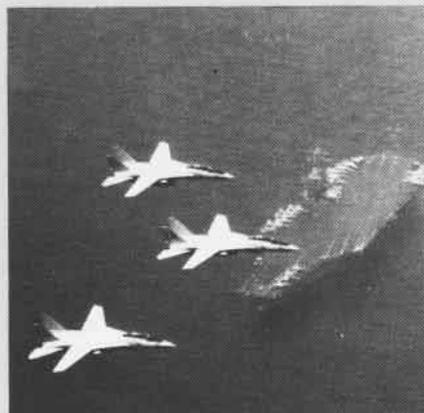
The old China Fleet Club was a landmark.



During the cruise, the squadron had its share of VIP visits, including Princess Sonja of Norway, the Crown Prince of Morocco, and U.S. Ambassador to the United Kingdom John J. Louis.

Milestones during the deployment included a Golden Tailhook award, more than 2,000 flight hours and approximately 1,000 arrested landings. Air crews, ordnancemen and technicians were rewarded with their 24th consecutive successful missile shot.

Shortly before the squadron's departure from the Mediterranean, Commander R. L. Ellis, Jr., relieved Commander D. E. Lovelady as skipper.



Three Tomcats from Fighter Squadron 143 fly over the carrier *Eisenhower* during a six-month Mediterranean deployment that included port visits to Israel and Egypt.

partment, is scheduled to move in the very near future to the new Sun Hung Kai Centre. The new building will have five floors assigned to the club, and U.S. Navy services will include a post office, Navy chaplain, and 20,000 square feet of concessionaire space.

The old, five-story club will go the way of many landmarks. It is scheduled for demolition and, according to officials at the contracting department, there is the possibility it will be replaced by a 30-story building.

But before WestPac veterans go into mourning for the old place, take heart in the fact that the Royal Navy's invitation to visiting U.S. sailors is as good as always. The next time you meet a member of the Royal Navy in some faraway port, thank him for the China Fleet Club and a lot of fond memories. Cdr. R. W. Norton, *Navy Supply Corps Newsletter*, November 1982.

Mayport Facilities Growing

In October last year, naval facilities at Mayport underwent realignment, with a change of control of the naval station from Commander Naval Air Force, U.S. Atlantic Fleet to Commander Surface Force, U.S. Atlantic Fleet, and redesignation of the airfield as a naval air facility.

Decision for the realignment was based on the significant buildup of the number of *Oliver Hazard Perry*-class guided missile frigates at Mayport, and growth of the naval station into a major support facility for surface ships.

Redesignation of the airfield reflects an increase in the number of light air-

borne multipurpose system (LAMPS) antisubmarine warfare helicopters which will deploy on ships home-ported at Mayport, Charleston and Norfolk.

The naval station will be commanded by a surface warfare officer who will report to ComSurfLant. The naval air facility will be commanded by an aviation officer reporting to ComNavAirLant through Commander Sea-Based Antisubmarine Warfare Wings, Atlantic, headquartered at NAS Jacksonville. The regional coordinator for both activities will be Commander Sea-Based Antisubmarine Warfare Wings, Atlantic.

Going North With the Golden Dragons

Fourteen pilots and 34 maintenance personnel from VA-192's *Golden Dragons* recently became the first members of an active duty Navy A-7 *Corsair* squadron to participate in Operation *Maple Flag*, in Alberta, Canada. *Maple Flag* is one of three major NATO wartime scenario air exercises. The other two are *Red Flag* and *Tactical Air Movement*. *Maple Flag* began in 1977 at the Cold Lake Weapons Range which closely resembles many European countries in both terrain and weather conditions.

During the two-week, October exercise, *Dragon* pilots flew with or against a large variety of U.S. and Canadian aircraft, including the F-15, F-16, F-4, F-5, CF-104, FB-111, A-10 and B-52. More than 20 U.S. and Canadian squadrons participated in the exercise, including E-2 airborne warning and control system aircraft launched from U.S. bases.

Deployment of numerous prefab representations of military vehicles and aircraft enhanced the illusion of realism. Included were approximately 300 tanks, armored personnel carriers and various surface-to-air missile installations, placed at points over the 10,000-square-kilometer range. "The range was ideal," says Commander H. T. Rittenour, VA-192's skipper. "It is much larger than the range at NAS Fallon, and we had never been exposed to so many high-speed aircraft in the air at the same time."

The *Dragons* logged more than 90 sorties and better than 120 combat hours during the exercise. At the conclusion, base commander Colonel F. R. Southerland selected VA-192 as the squadron that had best exemplified the spirit of the exercise. He presented Cdr. Rittenour with his personal staff car flag bearing the red maple leaf. Lt. Scott Garfield

Members of VA-192 pose next to one of their A-7 Corsairs following Operation Maple Flag.



Awards

The *Fighting Aardvarks* of VF-114, NAS Miramar, were recently named the "Best in the West" for winning the fighter wing's second annual High Noon Gun Derby competition. The 1982 gun derby field was made up of eight Pacific Fleet F-14 *Tomcat* squadrons demonstrating their accuracy in target shooting. RAdm. George Furlong, ComFitAEWWingPac, presented the trophy which is given to the best West Coast fighter squadron for the previous year. C.O. Cdr. Jack Ensich received the trophy for the squadron.

Dallas-based HMH-777 recently received the Ensign Pierce Trophy for the most outstanding reserve helicopter squadron in 1981. Maj.Gen. Gregory A. Corliss, Commanding General, Fourth MAW, presented the award to Lt.Col. Neil Snider, C.O., who said he felt the trophy was justly earned by the active duty and reserve Marines who kept the squadron flying so well during the year.

Rescues

Guadalcanal (LPH-7), cruising in the North Sea under the command of Capt. Thomas A. Mercer, held an awards ceremony recently to recognize two landing signalmen for their heroic actions in averting a helicopter crash. On September 10, 1982, a CH-53A of HMH-777 was launched during normal operations but was unable to maintain flight. As the pilot attempted to land the aircraft, the left side extended past the deck edge and a crash seemed imminent. ABH2 Michael L. Tinklepaugh, flight deck supervisor, placed himself forward of the aircraft, and ABH3 Leslie A. Griffith, landing signalman enlisted, stationed himself as a backup. In spite of the danger to themselves, they directed the pilot back on board to safety with hand signals.

Members of HSL-36 Det Two, embarked aboard *Jesse L. Brown* (FF-1089), recently took part in the air-sea rescue of a crew member. The H-2 helicopter crew had just landed aboard the frigate after a routine flight when suddenly one of the ship's crew members, involved in the recovery of the helo, fell overboard. The H-2 crew consisting of Lts. Scott Fontaine and Edward Butler and AWAN Mark Castell launched immediately to attempt a rescue. The crewman had inflated his life preserver and signaled the helicopter that he was O.K. The rescue hoist was lowered from the helo. He was lifted aboard and returned to the ship, a little wet but none the worse for his ordeal.

Det Five of HSL-36, while operating in the Mediterranean, put in a long night of emergency duty recently. While embarked on *John Hancock* (DD-981), Det 5, flying LAMPS SH-2 number 330, transferred to *John Rodgers* (DD-983) to effect a medevac. With Det 5 aboard, *Rodgers* then sprinted ahead to close on *Bowen* (FF-1079) 170 miles away to pick up a possible appendicitis case. When in range, Lt.Cdr. James Radney, Ltjg. Jeff Greer and AW2 David Jeffres, in their *Seasprite*, picked up the ill sailor and an emergency leave passenger from *Bowen*. They then returned to *Rodgers* which was rapidly approaching the coast of Sicily and were soon able to transfer the patient from the ship to NAF Sigonella, for further treatment. The *Lamplighters* returned to *John Hancock* and to their daily routine after a job well done.

VP-4's Crew 10, home-ported at NAS Barbers Point, helped to rescue an 11-year-old boy recently from waters near Cocos Island in the Indian Ocean. The crewmen were on an overnight visit in Cocos and were preflighting their aircraft for return to Diego Garcia when they learned an 11-year-old boy, playing with friends near the reefs with paddle boards, had been swept over the reef out to sea. The crew searched for over two hours flying at an altitude of 500 feet. They finally sighted the boy, Nicky Christrives, who was rescued after spending more than three hours in the water. Crew 10 members were Lt.Cdr. Jim Bock, Lts. Mark Gardner, Gary Dye and Bo Roszel, Ltjg. Roger Rouleau, AD1 John Benning, AW1 Robert Wagner, AMH1 Charles Laba,

AT2s Mike Glover and Milt Anderson, AW2s Stephen Green and Darryl Ackerman, and AO2 Albert Ammon.



VP-4's Crew 10 with Nicky Christives after the boy's rescue. Ltjg. Bob Baker

Records

Cdrs. Mike Scott, C.O., and Tom Smisek, X.O., VC-13, NAS Miramar, piloted their *Skyhawk* over the squadron's 20,000th accident-free-flight-hour mark during an air combat maneuvering training flight.

Cdr. Snyder, C.O. of VF-1, deployed aboard *Ranger* in the Indian Ocean, achieved his 2,000-hour mark flying the F-14A *Tomcat*.

Cdr. Bill Fraser, operations officer at HC-11, NAS North Island, passed the 3,500-hour mark while flying the H-46 *Sea Knight*. He has amassed over 3,580 hours in 14 years of flying the helicopter.

Lt. Norman Edwards, operational test pilot and line division officer at Naval Air Development Center, Warminster, Pa., marked a milestone by completing 1,000 hours in H-53 helicopters.

Lt.Cdr. Del "Shadow" Curtsinger, one of the first NFOs to be assigned for training in the F-14A *Tomcat*, has passed the 2,000-flight-hour mark.

VA-56's Lt.Cdr. George Root and Lt. Steve Love were presented plaques by the Vought Corporation for 2,000 hours in the A-7E *Corsair*. Pilots who marked the *Midway* milestone of 300 traps were Lt.Cdr. W. Roberson and Lt. Bob Caulk. Cdr. John Marksbury, Lt.Cdr. George Root, Lt. Tim White and Ltjg. Mike Gallagher were honored for 100 *Midway* traps.

Change of Command

ASWOC 0273: Cdr. Anthony Adaschik relieved Cdr. Charles Cook.

ComLATWingPac: RAdm. James B. Busey IV relieved RAdm. Glen W. Lenox.

CVW-2: Cdr. H. R. Bourland II relieved Cdr. L. M. Telquist.

CVW-6: Cdr. Edward K. Andrews relieved Capt. James A. Lair.

CVW-9: Cdr. Austin E. Chapman relieved Cdr. John L. McWhinney.

CVW-15: Cdr. Thomas S. Slater relieved Capt. Haywood G. Sprouse.

HC-3: Cdr. John E. Mann relieved Cdr. Clinton W. Davie.

HS-6: Cdr. Lewis D. Madden relieved Cdr. Robert E. Leonard.

HMH-268: Maj. Charles Schoener relieved Lt.Col. Russ Verbael.

HMH-461: Lt.Col. H. A. Detering relieved Lt.Col. E. G. Noll, Jr.

LantFitWpnTraFac: Capt. Donald A. Gerrish, Jr., relieved Capt. Leonard J. Drude.

NARU Point Mugu: Capt. James M. Hickerson relieved Capt. William R. Hodge.

NavPro Bethpage: Capt. Roy R. Buehler relieved Capt. Richard L. Breckon.

VA-15: Cdr. B. L. Duff relieved Cdr. Mike B. Nordeen.

VA-27: Cdr. Joseph E. Hart relieved Cdr. Dennis V. McGinn.

VAQ-136: Cdr. Nickolai S. Kobylk relieved Cdr. William A. Dwinelle.

VF-41: Cdr. Mike Field relieved Cdr. Hank Kleemann.

VF-102: Cdr. W. W. Copeland, Jr., relieved Cdr. R. D. Schneider.

VMAT-102: Lt.Col. Thomas A. Bowditch relieved Lt.Col. Peter K. Davis.

VP-10: Cdr. David B. Bellamy relieved Cdr. Donald P. Hickman.

VP-46: Cdr. Dennis L. Solomon relieved Cdr. Peter D. Reiniger.

VP-69: Cdr. Brian McGuinness relieved Cdr. Gerard R. Welter.

VP-0167: Cdr. William C. Stedfield relieved Cdr. Robert A. Gall.

VRC-30: Cdr. Brent W. Jacobs relieved Cdr. Theodore K. Krohne.

VRF-31: Cdr. William T. Rosselle relieved Cdr. William C. Barney.

VT-22: Cdr. John E. Padgett relieved Cdr. Julian R. Lowe.

VT-27: Cdr. Thomas S. Lagomarsino relieved Cdr. William A. Snider.

NAVSAR Program

This letter is to inform you of a new and exciting development in the field of search and rescue (SAR) for the U.S. Navy. Under contract from the Naval Environment Prediction Research Facility, Daniel H. Wagner and Associates of Sunnyvale, Calif., have developed a computer program for the Hewlett-Packard 9845 which assists the SAR mission coordinator (SMC) in at-sea SAR operations. The Navy SAR (NAVSAR) program is designed to help the SMC in determining where to look for a survivor, the number of assets needed to obtain a certain probability of detecting a survivor, and how to distribute these assets in the search area. This program enables the SMC to do, in minutes and with greater accuracy, what normally takes hours even for the well trained.

Copies of the program have been distributed to selected aircraft carriers and to the SAR Model Manager for evaluation. While these results are not yet in, they are expected to be positive since the program simply automates and refines principles and procedures presently used by both the Navy and Coast Guard.

Lt.Cdr. K. J. Sullivan
CNO SAR Model Manager
HC-16
NAS Pensacola, FL 32508

Ed's note: Thanks for the input. We invite our readers to go back to page 13 of *NANews*' November 1982 issue for another story on a similar computerized SAR system.

EA-6B Photo

Your inside front cover picture of the new EA-6B in the November 1982 issue doesn't look right. It's got the new paint scheme, but it doesn't have the correct external differences. I think you'll find it is an expanded capability version of the EA-6B. How do I know? I spent seven and a half years in type. Besides, it looks like my old outfit, the VAQ-133 *Wizards*.

AME1 Sanford E. Snyder
Navy Recruiting Station
111 N. Garfield Avenue
Manteca, CA 95336

Ed's note: We'll have to bite the bullet on this one. Our original caption information was incorrect. The aircraft is indeed an expanded capability version of the EA-6B, wearing the Navy's new tactical paint scheme.

A Grumman photographer snapped the shot of the Prowler over Deception Pass near NAS Whidbey Island in May 1982.

VSA

In your October 1982 listing of aviation-related organizations, I was disappointed that the Vintage Sailplane Association (VSA) did not appear. On first examination, there is no strong tie to Naval Aviation, but let me recount some details.

In 1929, Lieutenant (later Captain) Ralph Barnaby became the first American to break Orville Wright's 1911 record for duration by a powerless aircraft. He later organized a training program at Pensacola using Franklin PS-2 gliders to give aviators their primary training. During WW II, there were proposals for the Navy and Marine Corps to use amphibious assault gliders and several groups were trained using Schweizer LNS-1, Pratt-Read LNE-1 and Taylorcraft LNT-1 gliders. Today, the Naval Test Pilot School operates Schweizer 2-32s, designated X-26Bs.

VSA is chartered to preserve the history of powerless flight. Many members own and fly vintage sailplanes, while others are scale modelers or enthusiasts. The quarterly publication, *Bungee Cord*, is a historical journal which goes out to the membership. An annual meeting is held on Memorial Day at the National Soaring Museum, Elmira, N.Y. The 1983 exhibit will feature the WW II training gliders, and we are anxious to hear from anyone with knowledge of this activity to help gather background material for the display. Please call me at (301) 843-8818 or write:

Bob Storck, Editor/Archivist
Vintage Sailplane Association, Inc.
3103 Tudor Road
Waldorf, MD 20601

Air and Space Museum

Spend an afternoon at the movies at the Smithsonian's National Air and Space Museum (NASM), Washington, D.C. During the fall and winter months, lighter crowds mean shorter lines at the theater box offices. Currently, three IMAX 70mm films are being presented on a 70-foot-wide, 50-foot-high screen which, along with a sophisticated sound system, helps to create the sensation of flying for the spectators.

Flyers, the museum's newest film,

features the exploits of two fictional aviators in spectacular flying sequences and an exciting airborne stunt. *To Fly* takes the viewer on an aerial tour of America, from a balloon ascension in the 1800s to a venture into space. *Living Planet* explores the beauty and fragility of the planet Earth with breathtaking scenes of the Acropolis in Athens, India's Taj Mahal and the Cathedral of Chartres, France.

Also available to a visitor at NASM is a new exhibit of WW I art, which opened last November. Entitled "Henri Farre: The First Aviation Combat Artist," the exhibit is located in the museum's WW I gallery. With light touches of color showing an Impressionist influence, Farre captured views of the war that few people of his day had seen — the drama of a dogfight from the air, the heroism of a rescue at sea, and the excitement of a night flight.

The National Air and Space Museum, located at Sixth Street and Independence Avenue, S.W., is open from 10 a.m. to 5:30 p.m. daily. Admission is free.

Reunions, Conferences, etc.

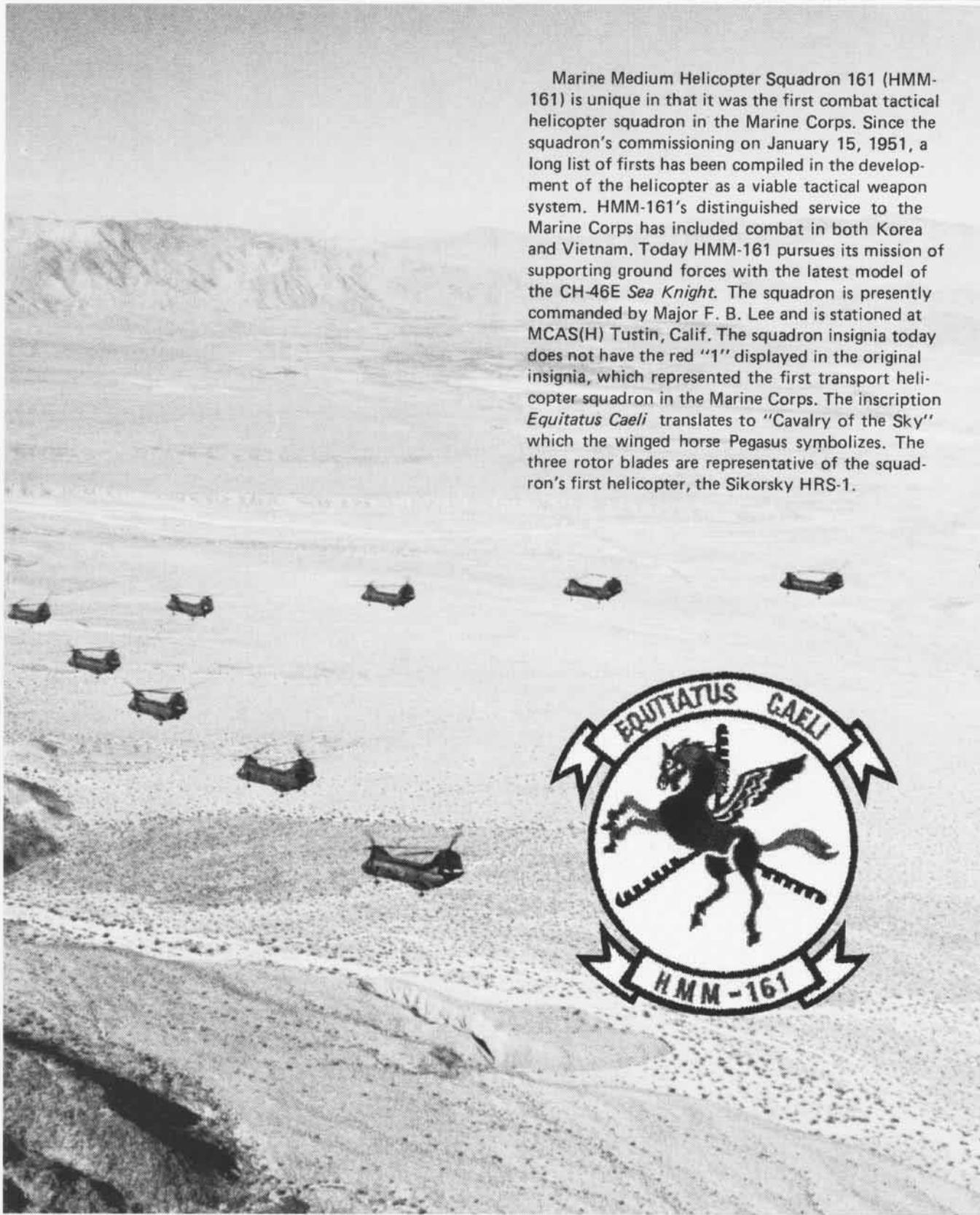
Anyone Who Flew PBMs Anywhere reunion, June 2, 1983, Holiday Scope, Norfolk, Va., in conjunction with the Association of Naval Aviation's annual symposium. Contact Bob Smith, 6468 West 85 Place, Los Angeles, CA 90045, (213) 645-1791.

USS Chantrelure AV-10 reunion, August 4-6, 1983, Oxnard Hilton, Oxnard, Calif. Contact: Mrs. Kenneth E. Boyd, Rt. 4, Box 145, Culpeper, VA 22701, (703) 854-5076.

CAG-17 (1943-45) and VF-18 (1943) reunion, Holiday Inn Scope, Norfolk, Va., in conjunction with the ANA's annual symposium, June 2-4, 1983. For details, write Cdr. James "Al" Chinn, 2558 Blaze Trail, Diamond Bar, CA 91765, (714) 598-1762.

Anyone Who Flew SB2Cs Anywhere reunion, June 2, 1983, Holiday Inn Scope, Norfolk, Va. Contact: Cdr. James "Al" Chinn, 2558 Blaze Trail, Diamond Bar, CA 91765, (714) 598-1762.

USS Essex (CV/CVA/CVS-9) reunion in Orlando, Fla., June 14-18, 1983, of the officers and men who served aboard the carrier. Contact Bob Morgan, 3841 S.W. 29th Place, Orlando, FL 32674, or Capt. Horst A. Petrich, 621 Robens Road, Virginia Beach, VA 23452.



Marine Medium Helicopter Squadron 161 (HMM-161) is unique in that it was the first combat tactical helicopter squadron in the Marine Corps. Since the squadron's commissioning on January 15, 1951, a long list of firsts has been compiled in the development of the helicopter as a viable tactical weapon system. HMM-161's distinguished service to the Marine Corps has included combat in both Korea and Vietnam. Today HMM-161 pursues its mission of supporting ground forces with the latest model of the CH-46E *Sea Knight*. The squadron is presently commanded by Major F. B. Lee and is stationed at MCAS(H) Tustin, Calif. The squadron insignia today does not have the red "1" displayed in the original insignia, which represented the first transport helicopter squadron in the Marine Corps. The inscription *Equitatus Caeli* translates to "Cavalry of the Sky" which the winged horse Pegasus symbolizes. The three rotor blades are representative of the squadron's first helicopter, the Sikorsky HRS-1.





NAVAL AVIATION NEWS