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NAVAL AVIATION NEWS

42nd Year of Publication

DECEMBER 1960

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PHANTOM II SCORES AGAIN

'Good Bird,' signals Cdr. John F. "Jeff" Davis, F4H Project Officer, after setting unofficial record with the Phantom II. On 25 September, just 20 days after it beat the official 500-km closed course record by 400+mph (NANews November), Cdr. Davis wrapped the F4H around the 100-km course in 2 minutes 40.9 seconds for a speed of 1390.21 mph, 222.87 over the official record.

■ COVER

Underbelly view of Gruman A2F Intruder shows external fuel tanks which will give attack plane greater range, and tilting tailpipes (dark shapes) which allow short take-offs and landings. Intruder was rolled out 29 April at Bethpage, Long Island, and by this month had completed its Navy Preliminary Evaluation. Next step is BIS Trials by Navy at Patuxent.

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FORTY-SECOND YEAR OF PUBLICATION, DECEMBER 1960

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■ THE STAFF

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NAVAL AVIATION NEWS

Marine AIO's to Return
Will Occupy Second Seat in F4H-1

Airborne Intercept Operators will return to the cockpit of Marine Corps fighters with the arrival of F4H *Phantom* aircraft. The AIO post died with the phasing out of F7F *Tigercats* and F3D *Skyknights*.

Marine Corps Bulletin noted that past experience had demonstrated the advisability of the fighter team concept: the pairing of a pilot and a radar operator.

Corps Headquarters determined that both crew members should be officers. Plans call for the use of new warrant officers with past experience in the radar operator's field. Aerial scope watchers will be assigned MOS 6730 and the title Airborne Combat Information Officer.

Thirty-one warrant officers will be selected for AIO duty in fiscal 1961. Personnel selected will get basic warrant officer training at Quantico, airborne intercept operator training at Glynco, and F4H radar operator training with one of the Navy's replacement air groups.

Additional Marine warrant officers will be selected for training as radar operators during fiscal 1962, 63 and 64, depending on needs.

Warrant operators presently serving in other occupational fields may apply for the program if they are under 35, have passed a flight physical exam, and have a minimum GCT of 110.

MAD Search of Salt Lake
Locates a Lost Air Force Hustler

High in the Rocky Mountains an Alameda-based *Neptune* recently demonstrated a new ASW capability. It all started when a B-58 came "unglued" in the vicinity of Great Salt Lake and the Air Force requested Naval aid in locating the wreckage.

A VP-9 crew headed by LCdr. H. R. "Pete" Johnson swept the lake with their Magnetic Airborne Detector equipment, successfully locating the wreckage in 40 feet of water.

Air Force representatives expressed appreciation for saving them days, or possibly weeks, of "dragging."

Trophy Winners Announced
NAS Seattle Scores Double Coup

NAS SEATTLE scored double honors in this year's Naval Air Reserve competition, winning the Edwin Francis Conway Memorial Trophy as the most efficient station in the command and the Chief of Naval Air Reserve Training Trophy as the most improved station. (Picture is on page 27.)

It was the first time in the command's 15-year history that one station earned both awards in one year.

Secretary of the Navy William B. Franke was scheduled to make the presentations during the annual military inspection of the station October 1, conducted by RAdm. Arnold W. McKechnie.

NAS OAKLAND won second place in the Conway Trophy competition. NARTU NORFOLK was third. Runners-up for the Chief of Naval Air Training Trophy were NAS OLATHE and NAS SOUTH WEYMOUTH.

Squadrons winning Noel Davis Trophy awards as most proficient in their type in the Naval Air Reserve were VF-931 at NAS WILLOW GROVE, VA-831 at NAS NEW YORK, VS-751 at NARTU LAKEHURST, VP-742 at NARTU JACKSONVILLE, VR-872 at NAS OAKLAND, HS-773 at NAS LOS ALAMITOS, Naval Air Reserve Maintenance Unit 891 at NAS SEATTLE, Air Wing Staff 77 at NAS LOS ALAMITOS, Air Intelligence Reserve Training Unit 662 at NARTU ANACOSTIA, and Bureau of Naval Weapons (Aeronautics) Reserve Training Unit 661, Anacostia.

Navy E awards will be presented to enlisted personnel of activities, squadrons and units winning the awards.

DEDICATION OF TOWERS FIELD *was the highlight of NAS Jacksonville's 20th Anniversary celebration. The widow of the late Adm. John H. Towers unveiled the dedication plaque to the Naval Aviation pioneer. Above, left to right, are VAdm. C.P. Mason (Ret), first C.O. of the station, VAdm. Wallace M. Beakley who represented SecNav William B. Franke, RAdm. Kenneth Craig, ComFairJax, Jacksonville Mayor Burns, Mrs. Towers, and Capt. J. R. Reedy, C.O. of Jax.*

Heroism of Two is Cited
Africa, Okinawa Scenes of Deeds

Two aviation petty officers have been decorated for peacetime heroism on opposite sides of the earth.

At Bucknerville, Okinawa, Senior Chief Aviation Electronics Technician Edward F. Salter of Patrol Squadron Four earned the Navy-Marine Corps Medal for battering open a locked door to enter a burning building in which a child was trapped.

He struggled through the dense smoke and fire, searched the entire building before locating the boy under a bed in the back room, and started out of the building with the child. Finding his way blocked by high flames, he smashed a bedroom window and handed the child out to safety.

Salter barely escaped before the building was engulfed completely in flames.

At Agadir, French North Africa, Air Controlman first class James B. Thweatt earned the Navy Commendation Medal in the wake of an earthquake. He took over the duties of French air controllers after seven of their number had been killed.

Arriving aircraft found the airport in chaos because of the lost controllers. Aids to navigation were out of operation and the control tower had been damaged.

Thweatt used French radio equipment to gain control of the many planes arriving with precious relief cargo and departing with injured survivors. He worked without sleep for 48 straight hours.

While he was talking airplanes in and out, a second quake damaged the tower so badly that Thweatt was forced to work outside. When the building did not collapse, he re-entered the tower and continued controlling aircraft in daylight and darkness.

Presently stationed at NAAS New Iberia, La., Thweatt was in the initial Navy rescue unit sent to Agadir by Naval Activities at Port Lyautey.

Grumman W2F-1 Accepted
Designed for Intercept Control

The Navy accepted the W2F-1 *Hawkeye* aircraft on 28 October.

A carrier-based, early warning and intercept control, twin-engine aircraft, named after a fictional early American scout, *Hawkeye* is designed to protect task forces from airborne attack by detecting and evaluating the full nature of the attack in advance of the minimum lead time necessary for interception and destruction of high Mach number attacking aircraft.

Incorporated in *Hawkeye* is an Airborne Tactical Data System (ATDS), consisting of auto-detection radar, airborne computers, a memory and high speed data link system. This system collects, stores, collates and relays information, and gives *Hawkeye* automatic direct command and intercept control. Failures in the ATDS can be bypassed by using alternate modes of operation in its automatic processes.

Through the ATDS system, *Hawkeye's* crew will identify, track, and evaluate the attack, and relay this information through high speed data links to a Naval Tactical Data System at task force headquarters. The NTDS receives, assembles and displays this information before command officers for decision making, providing a complete picture of the total tactical situation. NTDS also collects data from other detection sources, including submarines, land-based and surface ship radar.

Hawkeye can also be delegated the responsibility of making its own command decisions in protecting an assigned sector.

Independent of NTDS, *Hawkeye's* high speed data links can carry information directly to interceptors, ordering a rendezvous with attacking aircraft at a precomputed location.

Hawkeye, which carries a crew of five, is powered by two T-56-A8 Allison turboprop engines which are fitted into its high fixed wing.

VMA-121 is Judged Best
Wins Commandant's Trophy for '60

VMA-121 has been named winner of the Commandant's Aviation Efficiency Trophy for fiscal 1960. The rotating trophy is awarded each year to the squadron judged best in the performance of its mission and for its achievements in flight safety.

Now a unit of the First Marine Aircraft Wing, VMA-121 was rotated to the Western Pacific in January. While attached to the Third Wing, its home station was MCAS El Toro.

In carrier qualifications aboard the *Ticonderoga*, VMA-121 qualified 26 pilots in 342 accident-free landings.

Squadron pilots flew 6155 hours in A4D attack planes during the past year. The squadron, or its detachments, operated from 11 airfields in five countries, and operated 161 days away from its home base.

VMF(AW)-114 was 1959 winner.

FIRST EXPERIMENTAL MODEL *of the Chance Vought F8U Crusader is presented by its maker to the Navy for further presentation to the Smithsonian Institution in Washington. Admiral James S. Russell, Vice Chief of Naval Operations, accepts plane and log books of its test flights from Charles J. McCarthy, CVA board chairman. Watching are Dr. Remington Kellog, left, acting Secretary of Smithsonian, and test pilot John Konrad, who flew plane from Dallas to D. C.*

GRAMPAW PETTIBONE

Red Hot Ride

A flight of six Marine AD-5N's was enroute from their home station to a nearby bombing range, cruising at 6000 feet. Suddenly the flight leader's wingman came up on the radio, told him he was trailing smoke from the port side of his engine nacelle and advised him to return to base.

The flight leader broke off, his wingman trailing him, and started a slow let-down. He called the tower and declared a deferred emergency, then requested and was cleared for a straight in approach.

He was on 100% oxygen, so he couldn't smell any smoke and none had been visible to him up to this point.

At about 14 miles from the airfield as he was descending through 2000 feet, the port side of the aircraft seemed to burst into flames! With flames racing past the canopy, he pulled the mixture all the way back and cut the switches. Within a few seconds, flames burst into the cockpit near his left foot! He popped the canopy and thought of bailing out, but decided against it because he would have to go through a wall of flame. He felt that 1500 feet was too low for a safe bailout, and he was afraid his chute had already ignited from the flames now roaring near the cockpit deck.

His legs were badly burned as he nosed the AD over sharply and dove for the water. He now put his feet up on the instrument panel, but of necessity had to keep his hands in the fire to handle the stick. Ditching was the only answer—and it had to be fast.

Pulling back on the stick, he leveled the AD off just off the water and then pulled back hard. The tail hit first, then the nose dug in and swerving wildly to the right, the stricken AD came to a halt. As it settled deeply, the fire was extinguished.

Getting rid of his lap belt and shoulder harness, the badly burned pilot, with great pain, eased himself over the side into the water. With great difficulty owing to his burned hands, he inflated his Mae West and got out of his chute harness.

When rescued by helo a short time later, he was found to have both arms and legs of his flight suit burned away, his APH-5 charred, his visor warped by heat, and Mae West badly burned and melted although it still worked properly. Even the flares on his Mae West were deeply charred on the outside. He'll be a long time in the hospital, but he made it!

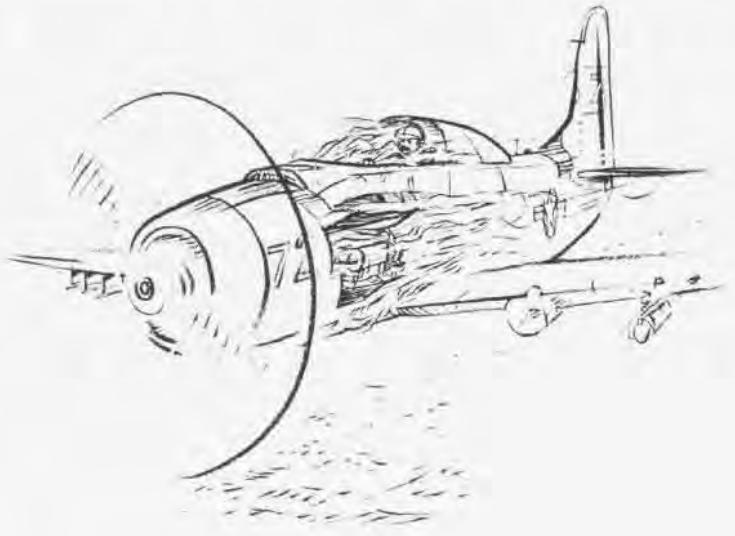
Grampaw Pettibone says:

Jumpin' Jehosophat! I think every man who flies dreads most the thought of fire and nearly always figures he'd get out and do it pronto. It took real guts to stick this one out right to the water with the fire burning his gear right off him all the way down!

One thing he forgot—the fuel selector—that would have killed or at least cut down the fire. I'd have bailed out, but it was his decision to stay, and he made it a good one.

If he'd kept his altitude while returning home, he would have had enough to feel he could safely bail out. Then he could free fall until well clear.

Surely this man is a real "Never give up" Marine! No panic here.

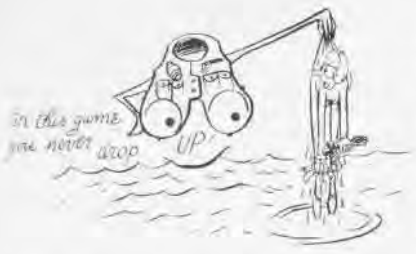


Memo from Gramps

All year long Gramps burns his eyes out readin' carbon copies of survivors statements in helo rescue flight surgeons' reports. Some of these fellers turn in pretty candid stories, and lots of 'em are just plain sittin' ducks for a good yarn.

Some pilots (land-based types), who NEVER wear a Mae West, loudly assert, "I can swim a mile," and then cruise blithely along 10 miles off shore on good old Victor 139. Others (ship board types) ALWAYS wear their Mae

ILLUSTRATED BY Osborn



West and literally dozens of 'em have been snatched out of the water by a helo, heavily waterlogged what with trying to orally inflate their Mae West. The trouble? No bottles, caps not screwed on tightly, a used-up bottle that he "meant to replace" before the hop, or just a worn-out seam or two in a vital spot.

One thing Gramps would like to suggest: Check that Mae West NOW and before EVERY hop, THEN hit your other check-off list—four-leaf clover sealed in plastic, rabbit's foot, lucky bullet (the one that had your number on it), Tiki carving, lucky coins, and all other essentials.

The Mae West will keep you afloat longer than all that kind of stuff.

Poor Headwork

A UF-2 was scheduled to fly cover and act as communications liaison for a helicopter on a flight from Argentia to Harmon AFB in Newfoundland.

The pilot arrived at the flight clearance desk promptly at 0800, found that the helo had already departed on a VFR clearance and that his own copilot, not being aware of his assignment to the flight, had not shown up. Since the weather was reported VFR at both Argentia and Harmon, with a weak cold front across his route, he elected to make the flight VFR without a copilot, his plane captain riding the right hand seat.

The take-off and first hour and 15 minutes of the planned one hour and 45 minute flight were uneventful. The UF-2 was cruised at 1000 feet until some low clouds were encountered. Altitude was then decreased to 500 feet but the weather kept closing in. A 45° left turn was made to remain over nearby Lake Victoria, and as the aircraft steadied on the new course, ceiling and visibility dropped to zero-zero in heavy fog.

The pilot started to climb and had just added climb power when he suddenly saw the ground and trees very close and dead ahead!

As he pulled back on the yoke, the UF struck the ground in a nose high altitude with enough force to knock the pilot's radio headset off his head.

Amid the roar of the impact and a great screeching of tortured metal, the UF bounced back into the air! Tearing through the tree tops, it became safely airborne again. The pilot kept full power on and climbed up on instruments until he became VFR at about 4000 feet on top of the overcast.

Here the crew donned their parachutes and inspected the damage. The starboard wing tip float was gone, the radome was gone, the whole hull from the nose wheel aft was gouged out, and there were huge rips on the starboard side of the fuselage.

Harmon AFB was contacted by radio, informed of the trouble and asked to foam the runway for a possible wheels-up landing. The UF landing gear had been lowered by means of the emergency system, but only the port main wheel and nose wheel came down and locked.

As the pilot orbited Harmon for the next three hours, the plane crew chopped a hole in the wheel well and finally forced the damaged starboard main wheel mount to the down position. It was heavily damaged, and they advised the pilot it might not hold.

After an SNB had been launched from Harmon to inspect the damage, the UF pilot decided to fly back to his home base with the SNB as escort.

Here again the runway was foamed and a good approach and landing were made. The UF touched down in the foam, and the pilot used reverse pitch on the props and full power to slow down rapidly. At the end of the foamed area, the starboard wheel gave way and the UF swerved to a gentle stop on the runway, a strike.

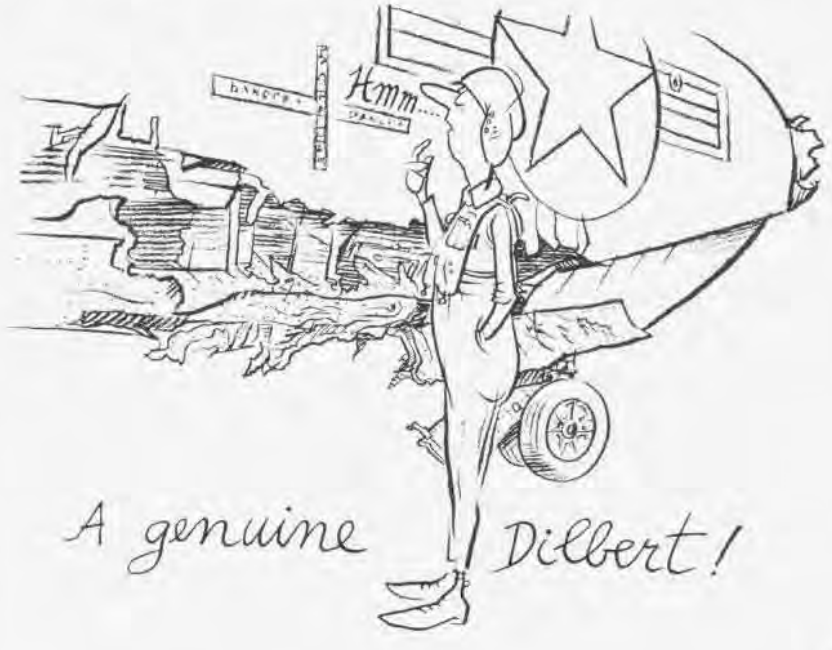
Grampaw Pettibone says:

Great balls of fire! This pilot must have lost his marbles! The weather portion of his DD-175 sure didn't read like a VFR clearance was warranted. Minimum ceiling enroute was forecast to be 400 feet at the cold front, visibility zero in fog in the front, maximum cloud tops 15,000 feet, light rain showers enroute, but both the destination and home field were VFR. This is hackin' it mighty thin. Being a "green card" pilot, he signed his own clearance.

After an impact like that, he was lucky to remain airborne and reach Harmon. Deliberately to fly 207 miles back home over desolate country with a heavily damaged plane was a GROSS error in judgment. The SNB couldn't help him if he went down, only mark the spot. Small comfort!

Aircraft as large as the UF-2 are meant to be flown by TWO pilots! Any deviation from this policy for the UF or any other multi-engine aircraft should be subject to the specific approval of the station or unit commanding officer.

Pilots who know all the loopholes in the rules generally end up diggin' their own graves.



Business Men Tour CVS-39

Ship Example for Harvard Course

Over 100 executives, representing national and international big business, surveyed the physical and administrative structure of a giant aircraft carrier as she lay exposed to the keel in a Boston drydock.

The men, all members of the Advanced Management Program at Harvard University, made the tour at the invitation of the USS *Lake Champlain* as an illustrative supplement to their Harvard studies. The Advanced Management Program at Harvard draws world-wide representation. The current group includes men not only from virtually every part of the United States but also from all over the world.

At the Boston Naval Shipyard, the executive group donned hard hats and goggles for a fish-eye view of the 40,000-ton antisubmarine warfare carrier which is in the drydock for a six-week overhaul period. The visitors were dwarfed by *Lake Champlain's* four 27,000-pound screws which propel the ship in excess of 30 knots. Officer guides from the shipyard staff conducted a tour of the massive carrier.

Once aboard the carrier, the executive group gathered in the officers' wardroom for films and lectures on the *Lake Champlain's* primary mission for the Navy. Capt. Ralph Weymouth, Commanding Officer, and Cdr. Landis E. Doner, the ship's executive officer, shared the briefing billet as they outlined the organization and function of the "Champ." Capt. Weymouth drew parallels between the ship's organizational structure and that of any large, multi-million dollar corporation here or abroad.

The tour of the USS *Lake Champlain* gave the executives a concise, thumbnail sketch of a unique form of management—administration of floating cities via the United States Navy.

USS SAINT PAUL *is thinking of changing her designation to seaplane tender. A seaplane bound for Iwakuni, Japan, after a typhoon evacuation from its base at Sangley Point, Manila, landed in Buckner Bay, Okinawa, when mechanical difficulties and winds forced it to burn too much fuel. Cdr. Jean L. Leslie, P5M skipper, decided on a cruiser-to-seaplane fuel transfer of 1100 gallons of avgas, reserved usually for the cruiser's copters. Then the P5M was on its way.*

Navy Test Stand Delivered

Hamilton Support Equipment Ready

Delivery of the first of an order of jet engine fuel control test stands designed and manufactured by Hamilton Standard's Ground Support Equipment department has been made to the U.S. Navy.

Shipped to NAS NORTH ISLAND, Calif., the stand will test and calibrate overhauled fuel controls of the Allison T-56 turboprop and GE T-58 turboshaft engines used on Navy aircraft. Among those powered by the T-58 is the Sikorsky HSS-2 amphibian antisubmarine helicopter.

Additional test stands will be sent to other Navy overhaul and repair bases under terms of a contract with Allison Division, General Motors Corporation, according to Edwin D. Eaton, manager of Hamilton Standard's Ground Support Equipment department. They will be used at NAS Alameda, Jacksonville, and Norfolk.

The stands were specifically designed to test the T-56's fuel control and temperature datum valve and the T-58 fuel control and pump assembly.

First Graduates of VS-30

Replacement Personnel for Fleet

Air Antisubmarine Squadron 30, the first squadron on the East Coast to train replacement personnel for Carrier Antisubmarine forces, graduated its first class of pilots and aircrewmen this fall.

With the recent reorganization of VS squadrons, VS-30 became a part of Carrier Antisubmarine Air Group 50 with the mission of providing operational replacement training to pilots, aircrewmen, and maintenance personnel en route to fleet squadrons. Courses are eight and five weeks for pilots and aircrewmen, respectively.

VS-30, homeported at NAS KEY WEST, is commanded by Cdr. J.M. Weeks.

Re-entry Will be Studied

Republic Adds New Wind Tunnel

Re-entry problems of vehicles traveling at speeds up to Mach 14 (9240 miles an hour) will be studied in a $750,000 hypersonic wind tunnel to be built by Republic Aviation Corporation at Farmingdale, Long Island.

The company begins construction of the facility late this year. It is known as a pebble-bed hypersonic tunnel, the name being derived from the fact that nearly a million ceramic pebbles a half-inch in diameter are heated to 3000° F. to pre-heat the air before it is forced through the various tunnel nozzles. The tunnel was designed in cooperation with Dr. Antonio Ferri, of the General Applied Sciences Laboratory.

The test section of the wind tunnel will be able to handle models up to a foot in diameter, a size considered large for a facility of this type.

Re-entry and flight trajectory phenomena of glide and lunar return vehicles will be studied under actual flight conditions from altitudes of 80,000 feet and speeds of 2000 miles an hour to 150,000-foot heights and velocities of up to 4500 miles an hour. According to the Republic scientists, this includes hypersonic aircraft, such space vehicles as Dyna-Soar and the *Mercury* capsule as well as air launched ballistic missiles and intermediate-range ballistic missiles.

Future design expansion features of the tunnel will extend its capability to an altitude range of 200,000 feet and velocities up to 13,200 miles an hour.

'PETE' FLIES THE X-15

A HISTORY dating back to 1944, stirred in with a liberal portion of engineering and scientific genius, plus generous doses of manufacturing talent, pioneering spirit and bravery is the recipe for a very sophisticated product—the X-15 research aircraft.

This bird is designed only for research. Its mission is to increase our knowledge of aerospace science and to give clues for its practical application. Some old aviation hands disagree, but others contend that here's a way to get a first-hand feel for the X-15: Set someone's desk model of this bird on its tail, and you'll see it for what it is, a rocket with a man in the nose.

The first of three X-15's was rolled out of North American Aviation's Los Angeles plant two years ago, October 15, 1958. Following NAA's Scott Crossfield's demonstration of its airworthiness, the bird has been flown by the Air Force's Major Robert M. White, the National Aeronautics and Space Administration's Joseph A. Walker and the Navy's LCdr. Forrest S. Petersen.

The X-15 is a more complex bird than a *Thor* or *Atlas* booster. It carries a man, his life support apparatus, and a complete rocket propulsion system. To carry this analogy farther, the X-15 doesn't take off on its own power but is launched from under the wing of a B-52. The B-52 can be considered a first stage booster and the X-15 a maneuverable, and controllable second stage. Both stages are fully recoverable and can be flying again within a few days.

As in the earlier research program, X-15 missions originate at the Air Force Flight Test Center, Edwards, California. The 65 square miles of Rogers Dry Lake at Edwards, dry 10 months of the year and concrete-hard, provide the largest natural aircraft landing field in the world. This is also the site of the NASA Flight Research Center, headed by Paul F. Bikle, which is responsible for conduct of the X-15 research program.

Although each flight plan is different, procedures are similar to those used on LCdr. Petersen's checkout flight on September 23, 1960. Three days previously, his flight was cancelled five minutes before launch because of trouble in the auxiliary power unit. Two years of training had been pointed to his second try, and he was ready to go.

Petersen is "Pete" to X-15 people. The 38-year-old Nebraskan, was assigned to the NASA Flight Research Center on Edwards Air Force Base in 1958 to represent the Navy in the program. He holds engineering degrees from the Naval Academy and Princeton University and is an honor graduate of the Naval Test Pilot School, qualifications with kinship to those of other X-15 pilots. Again, like his colleagues, he has sweated out months of training in the X-15 flight simulator, on the "Iron Cross" reaction control trainer, in the Navy centrifuge at NADC JOHNSVILLE, and in an especially configurated F-104 and T-33, all required before flying the X-15.

Following the cancelled flight on September 20, 1960,

LCDR. FORREST S. PETERSEN, *Naval Aviator at High Speed Flight Station, Edwards AFB, has made two successful flights in the X-15*

NUMBER ONE *rests on Rogers Dry Lake after a successful flight. An X-15 mobile control unit is behind rocket ship in background.*

By Matthew H. Portz
Western Representative, NASA

DISCUSSING PROGRAM *are X-15 pilots Neil A. Armstrong, John B. McKay, Joseph A. Walker, LCdr. Forrest S. Petersen, left to right.*

the B-52 and X-15 had to be de-mated to locate and correct the trouble. Mated again on the 22nd, the 24-hour countdown was resumed. Technical and crew briefings where all participants resolved any questions about their particular duties had been previously completed, but a final briefing for flight and operations crews was run through again.

The flight plan for pilot checkout and familiarization called for launch at 0.82 Mach at 45,000 feet over Palmdale Omni on a heading of 030° magnetic. Immediately upon launch, all eight chambers of the engines were to be lighted and an 8° climb initiated, followed by a pushover to ½g and level flight at 50,000 feet with acceleration to 1.6 Mach.

The plan went on. "After entering a 12° left turn, roll out on heading of 270° magnetic and accelerate to 1.9-2.0 Mach . . . . Initiate a 2.5g left turn, maintain to burnout . . . . After turn toward High Key, jettison remaining propellants, slow to 220 knots or mild buffet and evaluate handling characteristics . . . . Check ventral armed, pressurize tanks . . . 300 knot landing approach, jettison ventral, flaps and gear down . . land . . . Planned launch weight 33,800 pounds; landing weight 14,400 pounds."

At 0745 PDT, Friday, September 23, 1960, Capt. Jack Allavie and his crew boarded the B-52. Pete climbed into the X-15 at 0800. The canopy was closed and locked. Joe Walker, and Capts. Bob Rushworth and William R. Looney manned the two F-104's and the F-100 flying chase.

B-52 engines started at 0845, and the big bomber with the black bird under its wing rolled out the taxiway toward the take-off position. At 0910, Allavie released brakes for his one minute take-off run. Walker, Rushworth and Looney were next off on chase.

Ground observers were soon straining to follow the flight through the clear desert air as the loose grouping of bomber and fighters worked through their 41-minute climb to launch altitude and position.

Meanwhile, Jim Love's and Clyde Bailey's crew having no immediate duties gathered close to the sound truck to hear occasional transmissions between the planes and Flight Control. Fire trucks, rescue equipment and the pilot's dressing van in which Pete would be de-suited after landing, took up their positions at the edge of Rogers Dry Lake.

Intermittently there were transmissions between the pilots and Milt Thompson (former Naval Aviator), controlling the flight from NASA Flight Control where Paul Bikle, Tom Finch, his X-15 Project Manager, and other scientists follow the flight progress. Here, in a room not unlike a carrier's CIC, all data are fed into banks of recorders, and radar and telemetry chart flight progress. Command decisions are made here.

At the five-minute warning by Allavie, Pete turned on his auxiliary power units which had caused the cancellation Tuesday. Function was normal now. He checked his generators, hydraulic pressure and electrical power—all O.K.

More checks—propellants, data, X-15 oxygen and others —followed the four and three minute warnings. The launch light was on.

The one minute warning—engine master switch on . . . prime switches on . . . ventral jettison armed . . . Pete gave his final O.K. for launch.

B-52 pilot Allavie began the final countdown, "Five, four, three, two, one, drop."

The X-15 made a clean break as it fell away. The time was 0952. Ground observers could see the trail as Pete reported start of all eight rockets and the X-15 darted ahead of its escort.

Four minutes of power were scheduled. The X-15 was accelerating through 1.6 Mach at 50,000 feet according to plan, when, after three minutes, all eight engine chambers cut out. The automatic cut-off, a safety device, had shut them down. Both Pete and the flight plan had allowed for this contingency. He reduced speed while establishing a glide path to the lake. The chase fighters turned inside his arc and took positions on each side of the X-15 during landing approach.

Eight minutes after launch, at 1000, the bird touched down on the lake in a cloud of dust thrown up by the skids during the run out.

"That's a beauty, Pete!" called Joe Walker as his F-104 flashed past the now down-to-earth X-15. LCdr. Petersen had just become X-15 pilot number four.

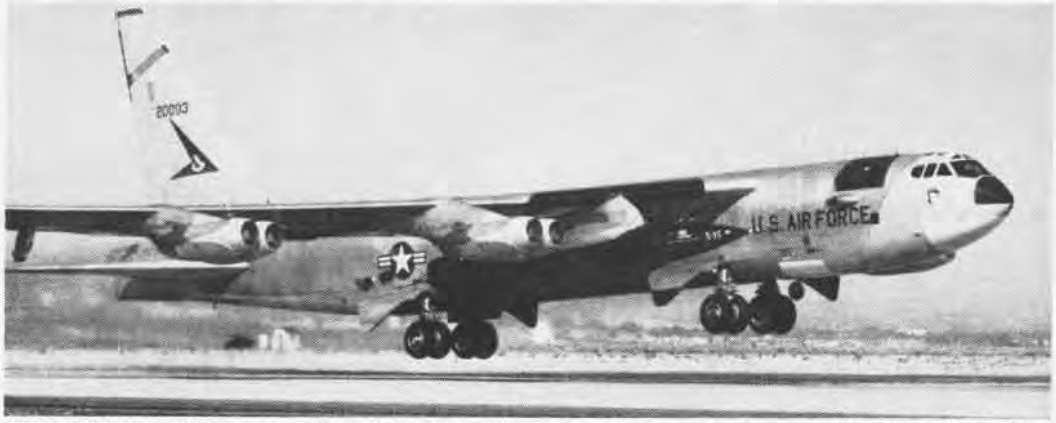
Next to pilot the X-15 are NASA's John B. McKay and Neil A. Armstrong, both former naval aviators, and the Air Force's Captain, Robert A. Rushworth. (At Naval Aviation News November 1st deadline, McKay had completed his first flights, but the others had theirs still ahead.)

PROJECT PILOT *Petersen, in X-15 cockpit for his first flight in September, is aided by Charles Littleton, left, Capt. R.E. Richardson.*

READY . . .

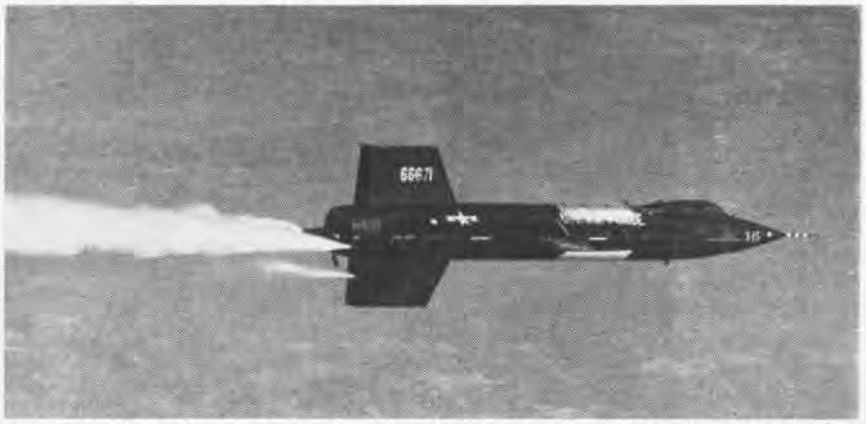
IN PREPARATION *for flight, rocket engine mechanics inject liquid rocket fuel into X-15's tanks, left, creating a ground fog in the early morning light, center, and check their work for accuracy, right. Fueling is done with rocket ship slung under wing of bomber.*

AIM . . .



NESTLED UNDER WING *of parent B-52, X-15 lifts off from five-mile concrete runway at Edwards AFB. Launched at 45,000 feet altitude, the sleek X-15 will come to a landing on the natural airstrip of Rogers Dry Lake.*

FIRE!



DROPPING *from pylon under B-52 wing, rocket engine ignites; X-15 flies under own power.*

SURGING AHEAD *of mother vehicle, X-15's rocket engine increases its speed from .82 Mach to Mach 2 in seconds. Rocket ship consumes 19,400 pounds of fuel between launch and landing.*

In any craft as advanced as this one, there are bound to be some highly-publicized records resulting from routine flights. These are natural fall-outs only incidental to the research program for which it was designed. Joe Walker flew 2196 mph on August 4, 1960 and Maj. Bob White reached an altitude of 136,500 feet a week later on August 12. Both flights were records, and done with the "small" XLR-11 engine with less than a third of the thrust of the "big" XLR-99 engine soon to be operational.

ANCESTRY of the X-15 began in 1944, ancient history for many current *Naval Aviation News* readers. That year Ezra Kotcher, Wright Field scientist, Hartley Soule and John Stack of the National Advisory Committee for Aeronautics (now part of NASA), the late Lawrence D. Bell and Robert Woods of Bell Aircraft and others saw the need for specifically-designed research airplanes to explore the then unknown transonic flight regions. Forward thinking leaders in the Air Force and Navy agreed. The Congress appropriated the necessary money, and the Air Force entered into a contract with Bell to build the XS-1 rocket research plane. Concurrently, the Navy contracted with Douglas to build the turbojet-powered D-558-1.

The XS-1, later named X-1, made its first powered flight December 9, 1946 at Muroc, now Edwards, California, in the hands of Bell pilot Chalmers Goodlin. The D-558-1 first flew at the same place on March 15, 1947 with Douglas pilot Gene May at the controls. Later that same year on August 20 Cdr. Turner Caldwell set a speed mark of 640 mph in the D-558-1, and five days later Marine Maj. Marion Carl took it to 650 mph. This was soon topped on October 14, 1947 by Capt. Charles Yeager rocketing through the "sound barrier" for the first time in the XS-1 at more than 760 mph.

More research aircraft came along later—the Douglas X-3 and D-558-2, the Northrop X-4, the Bell X-5, then the Bell X-1A, X-1E and X-2. These too provided the aeronautical sciences with milestone flights. Scott Crossfield, then with NACA, piloted the D-558-2 to 1328 mph, over twice the speed of sound on November 20, 1953; Capt. Yeager put the X-1A to 1650 mph on December 12, 1953, and Major Arthur Murray achieved over 90,000 feet in the same bird on June 4, 1954. September 7 and 27, 1956 saw the late Capts. Iven Kincheloe and Milburn Apt take the X-2 to 126,200 feet and 2094 mph respectively.

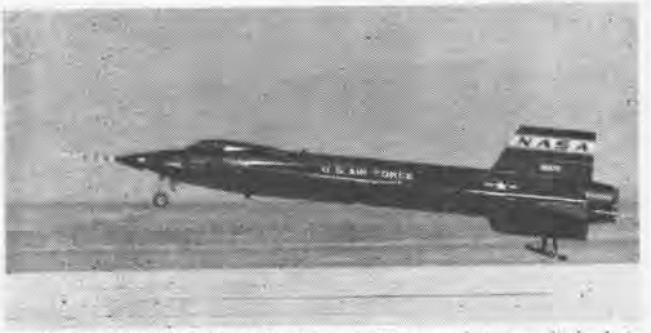
Each of these specially-built craft made its contribution to making possible the high-performance military and civil aircraft in production today. The X-15 is their logical successor. The log books of those days feature five names still closely associated with the research airplane program. These are Crossfield, Walker, McKay and Armstrong, at Edwards, and Maj. Murray who honchos X-15 management for ARDC.

IN MONITOR CONTROL *section, project engineers' attention is focused on radar recording device which plots X-15's flight position.*

The NACA Langley and Ames Aeronautical Laboratories and High Speed Flight Station in 1952 commenced studies to determine the problems expected in flight at the fringes of the atmosphere as well as means to explore them. The resulting recommendation was a piloted, rocket-powered research airplane capable of very high speeds and altitudes to permit exploration of aerodynamic heating, stability and control, and piloting problems under these conditions.

In June 1954, NACA, USAF and Navy representatives agreed to a future cooperative research program to reach objectives similar to these recommendations. The new joint program called for the design and building of a research airplane to investigate hypersonic aerodynamics, structural characteristics under aerodynamic heating conditions, the effectiveness of reaction type controls and piloting problems under weightless conditions. Primary funding would be provided by the Air Force with help from the Navy. The NACA would provide the facilities of its laboratories and research direction of the program. Results would be available to all participants. Thus was born the X-15 program as it remains today with NASA, NACA's successor organization, assuming its role.

Late that year invitations were issued to industry. Manufacturer's proposals were evaluated during the next sum-



FLYING AT 190 KNOTS, *LCdr. Petersen brings rocket aircraft back to earth. It skids on skis for about a mile after initial touchdown.*

NOSE WHEELS *bite into the dust of Rogers Dry Lake as X-15 slows down. High landing speed requires extremely sturdy landing gear.*

mer and fall, and in December 1955 North American was given a contract to build the three X-15's. More laboratory design and performance studies were conducted during the next year. Actual construction began in 1957 under the direction of NAA's chief engineer, Harrison Storms. Charles Feltz, a Texan with king-size engineering know-how, headed the NAA project group organized to design the airplane.

The cockpit of the rocket with a man is conventionally located in the nose of the 50-foot fuselage. The aileronless 22-foot-span, F-104-shaped wings are located well aft close to the wedge-shaped tail which provides directional stability and control.

Small rockets on the wings provide roll control as well as pitch and yaw control in the nose. The tail contains speed brakes for use on reentry. The tail's lower ventral portion is jettisoned and recovered by parachute moments before landing to eliminate its striking the ground during the maneuver. The bird lands on skids, located under the tail, and on conventional twin nose wheels.

To withstand the 1200° F temperatures expected during reentry from high altitudes, the aircraft is sheathed in heat-treated Inconel X nickel alloy.

Instrumentation, 1600 pounds of it, to obtain the data for which the plane was built is located primarily in a compartment behind the cockpit. This payload includes 650 thermocouples, 140 pressure orifices, and 70 strain gages built into the airframe.

On his flight, Pete was flying the Number One aircraft. Both the Number One and Two have been flying with 16,000 pounds of thrust provided by two four-chambered XLR-11 engines. These are for use on an interim basis while awaiting availability of the 57,000 pound thrust, single chamber XLR-99 engine built by the same firm, Reaction Motors Division of Thiokol Chemical Corporation. The XLR-11 burns LOX and water alcohol while the XLR-99 burns LOX and anhydrous ammonia.

The program got a temporary setback on June 8, 1960. An explosion in the propellant tanks during a ground run of the "big" engine in the Number Three bird sent it back to NAA's plant for rebuilding. Number Two was then removed from flight status for installation of an XLR-99 while the Number One continued in the flight program. By the time you read this, several flights will probably have been made under "big" engine power in Number Two, although it had not powered a flight by 1 November.

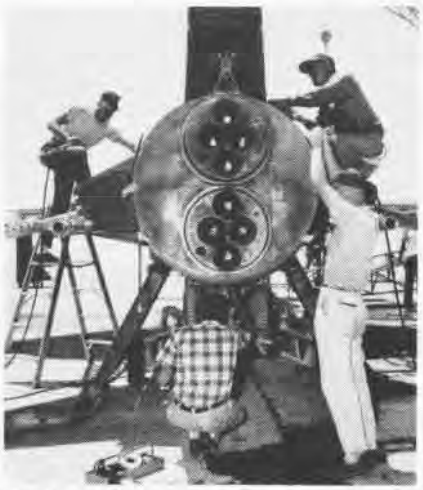
The "big" engine will extend the X-15's usefulness as a research tool to gather information on temperature and vehicle control at speeds up to about 4000 mph and altitudes to at least 50 miles.

Some confusion has existed over the X-15's altitude capability. It is designed to reach 250,000 feet—about 50 miles. Design temperatures of 1200° F are expected during the reentry from that height. While it may be possible to reach higher altitudes, this can only be determined as the program progresses.

Speed and altitude will be built up in increments with "big" engine operations during the next two or three years. These flights will be over the 485-mile High Range extending from Wendover Air Force Base, Utah, to Edwards Air Force Base. This special flight test range has tracking and communications stations at Ely and Beatty, Nevada, and in the NASA Flight Research Center at Edwards.

Before attempting to reach extreme altitudes on a ballistic type flight, level paths at speeds expected to be encountered on returning from an altitude mission will be flown. This will supply necessary information on critical temperature, stability, and control before trying the more difficult reentry maneuver from ballistic trajectory at these same speeds.

The big "ifs" and unknowns are what make research fascinating to scientists, and, they explain why a research program is needed. Manned spacecraft will have to cope with aerodynamic heating on reentry, and must be controllable at altitudes where airfoils are useless. It is vital to the space program to also learn the effects of extreme speeds and altitudes and relatively long periods of weightlessness on pilot performance and efficiency. While the X-15 is not a true spacecraft that will penetrate deep into space for long periods, it was conceived and designed to explore these space flight problems. We expect it to provide very helpful information in finding their solutions.



BACK ON DECK, *left, LCdr. Peterson is accompanied to pilot's van by Capt. R. E. Richardson and Roger J. Barnicki. Center, maintenance crew gives X-15 a post-flight going-over. Right, mechanics re-attach X-15 to underside of B-52 for its next scheduled flight.*

GRUMMAN PLANS SPACE OBSERVATORY

NASA has negotiated with Grumman Aircraft Engineering Corporation, Bethpage, L.I., N.Y., on a contract to develop a ton-and-one-half orbiting astronomical observatory.

Astronomers will use telescopes in the OAO space platform to study cosmic phenomena—X-rays, ultraviolet, and infrared rays—obscured to ground observatories by the earth's atmosphere.

The Grumman proposal, one of 11 submitted in July, was selected for negotiation for an approximate $23 million contract, not including the experiments.

Grumman proposed an eight-sided satellite, nine and one-half feet high and six and one-half feet in diameter. It will weigh about 3200 pounds, of which 1000 pounds are devoted to experimental equipment.

The OAO spacecraft will be a standardized shell containing stabilization, power, and telemetry instruments into which one or more separate experiments can be fitted for each flight. Astronomical equipment with reflecting mirrors up to 36-inches in diameter will be mounted in a cylindrical chamber running through its length.

Two flight model OAO's will be built under this contract, the first to be delivered in two and one-half years. NASA plans to launch the first OAO in late 1963 from the Atlantic Missile Range into a 500-mile circular orbit with an *Atlas-Agena B* vehicle.

OAO will have a stabilizing system to "lock" astronomical equipment on the star, sun, or planet it is observing. Using its fine pointing control, it will be able to track a star with an accuracy of one-tenth of a second of arc—roughly the equivalent of locking on to a basketball 500 miles away.

A satellite command system will receive ground signals to point and operate the satellite and its experiments. It will verify commands it receives and store commands for execution as long as two hours later.

A television tube will transmit pictures to ground stations to verify the direction in which the satellite is pointed.

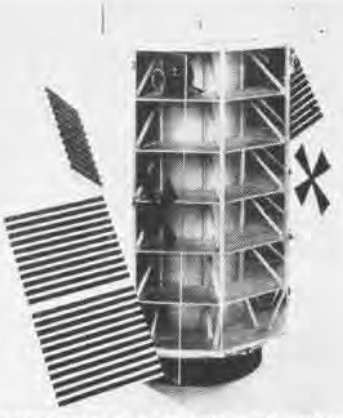
The telemetry system to transmit information from the experiments and on satellite operating conditions will send digital data and television signals on wide-band and information on experiments and monitors of the satellite's condition on narrow-band. A "memory" will store at least 100,000 bits of information from the experiments for later readout when the satellite is over ground stations.

NASA's Minitrack network will track the OAO radio beacon, command its experiments and receive its telemetry. Large dishes will be erected at several Mini-track stations.

Paddles covered with solar cells will generate the 350 watts of power required to operate the experimental and also the satellite equipment.

MODEL OF OCTAGONAL SHAPED SATELLITE

ARTIST'S CONCEPT OF OAO WHEN IN ORBIT



INTERIOR IS CONSTRUCTED OF ALUMINUM

USS Yorktown Lands Jets

ASW Carrier Qualifies 18 Pilots

Jet aircraft were catapulted from and recovered by USS *Yorktown* for the first time in a year as the ASW carrier qualified 18 pilots in a dozen aircraft.

In two days of operations off the West Coast, pilots of VA-126 and VCP-63 and 43 made touch-and-go landings, 171 trap landings, and 122 build up landings in three F9F-8's one A4D-2, and eight A4D-1's.

Normally jet carrier qualifications are made aboard attack carriers of either fleet or aboard USS *Antietam* in the Atlantic or the Gulf of Mexico.

Plenty of Water on the 'Ti'

Carrier Watermakers Prove Skill

Cdr. Howard W.A. Derling, Engineering Officer, and his watermaking engineers on the attack aircraft carrier *Ticonderoga* were so successful that the carrier operated six months without resorting to water hours.

The skill of the operators is evident in light of the fact that purification of up to 140,000 gallons of sea water a day is necessary to meet the needs of *Ticonderoga*. This is 25% more than the "rated" capacity of the evaps.

Despite the demanding calls for water and lengthy periods between ports, the evaporator crew, headed by William C. Burdette, Boilerman First Class, kept the water supply constant.

During the present cruise with the Seventh Fleet, the evaporators have produced about 30-million gallons of fresh water—nearly enough to float three ships of *Ticonderoga's* displacement. At water rates back home of four cents per gallon for distilled water, this amounts to a total of 1,200,000 dollars worth of water.

HUS OF VX-6 AND HUL-1 OF UTILITY SQUADRON COME TO ROOST ON BAY ICE BESIDE USS GLACIER IN THE ANTARCTIC

HELICOPTERS IN ANTARCTICA, PART TWO

By Scot MacDonald, JOC

WHEN THE SHIPS returned for the summer support of *Deep Freeze III* (1957-58), helicopters in USS *Glacier* and from VX-6 at McMurdo had their work cut out.

The ship plowed through ice-cluttered waters to Marble Point where tons of supplies were offloaded to support the survey party. VX-6 helos from McMurdo flew over to assist. They hovered over the flight deck where netted cargo was hooked on and flown ashore.

VX-6 now operated three HUS-1A's and an HO4S in the McMurdo area, two HO4S' at Little America, and one at Ellsworth. This was the season of great activity, for the International Geophysical Year was to commence on the first of July and would last until 31 December the next year.

Choppers from HU-1 and HU-2 were assigned to the icebreakers. From HU-1, one HO4S-3 and an HUL were placed in *Atka*, and two HUL's in *Burton Island*. HU-2 provided two HRS-3's in *Glacier* and two HUL's in *Westwind*.

On 1 December, *Atka* had a casualty. Her HUL, launching from the flight deck, attempted take-off before all tie-downs had been released. The aircraft crashed, caught fire, and injured two passengers. The plane was a strike.

Over at Little America, plans were underway for an historic event. December 7, 1957 was declared the "day of the helicopters."

LCdr. Kenneth P. Snyder—who had joined VX-6 in July 1956 from HU-2—boarded a Sikorsky helicopter and made a 440-mile non-stop dash from Little America to McMurdo in four hours, 40 minutes. An *Otter* provided cover in event of an emergency, but there was none.

Atka's luck was not good in *Deep Freeze III*. Already having experienced a strike with the HUL, her HO4S crashed at Little America while flying in a semi-whiteout condition. There were no injuries, but the HO4S, too, was a strike.

When work was completed in the Ross Sea area, *Atka* and *Burton Island* took a westerly course to Wilkes Station where the helicopters made reconnaissance flights and cargo airlifts.

But helos weren't through flying at Little America. There was a tricky rescue flight before the winter night.

An IGY scientist studying the ice barrier, stood on the cornice of the ice cliff. It would not support his weight and down into the floe-cluttered water he plunged. Uninjured, he lifted himself onto a small floe as two men launched a rubber raft while a third raced for help. The raft reached the scientist, but after he climbed aboard, the raft was caught by tide and wind and was driven close to the barrier and out to sea.

An HO4S came to the rescue. Cdr. John W. Franke, pilot, did not have much room to maneuver his craft. His plane captain, Don Foreman, AD1, swung out of the helicopter and radio-directed the pilot until all three men were brought aboard.

In Deep Freeze IV, VX-6 operated an HUS-1A at McMurdo, Little America and Ellsworth. This, the final calendar year of the 18-month-long IGY, was a concentration of activity. Theoretically, on 31 December 1959, the squadron would be out of a job and probably disestablished. Later formation of the U.S. Antarctic Re-

search Program, however, and a nod from Congress assured the continuation of scientific studies in Antarctica.

At McMurdo, the sun rose briefly in August 1958. Air operations had already begun with frequent helicopter trips to the ice landing strip.

On the second day of sunlight, LCdr. Frank D'Andrea and Ltjg. Murray Wright, accompanied by three passengers and plane captain Henry Barnes, AD2, flew to Wilson-Piedmont glacier, opened a lunch basket

UNLOADED FROM TOWLE, HELO TAKES OFF

and had a picnic, "basking in the 'warm' rays of the polar latitudes." It broke the monotony of the long dark night and boosted the morale of the camp.

At Ellsworth in October, the helicopter made frequent flights to gather reconnaissance data on projected trail operations.

Center of activity at Little America was the support of two over-snow traverses, one from Byrd Station and another to McMurdo.

Army Maj. Merle Dawson again led the trail blazers. Approaching McMurdo, he entered a heavily crevassed area in which two sleds were lost and two men were injured.

USS *Glacier*, enroute to McMurdo from Terra Nova Bay in company with the *Staten Island*, encountered ice up to 20 feet in thickness. Ship-based helicopter kept up round-the-clock reconnaissance flights in an effort to untangle the ships from the pack. Pilots flew to sea, returned, hovered, and radioed directions towards leads to the officer of the deck.

No one could forsee the tragedy in early October outside Hallett Station. A C-124 flying in from Christchurch crashed, killing six. Only

VX-6 HELO ON DUNES NEAR MCMURDO

seven survived. The accident occasioned one of the most daring and heartbreaking flights of the operation.

LCdr. Potter volunteered to fly an HUS-1A to the area and evacuate the injured. In company with a squadron UC-1 *Otter*, he flew the 350 miles to the bay ice at Hallett. From there he shuttled nearly 30 miles to the scene of the crash, flying in medical men and flying out survivors.

The terrain in which he flew was mountainous and the landing area was an angle on a sloping glacier.

When all injured were lifted to the bay ice where another C-124 stood by, LCdr. Potter returned to the mountains, to the center of a crevasse area, where a land-rescue party, attempting to reach the crash, was stopped. They, too, were rescued by the intrepid pilot.

In January, RAdm. David M. Tyree made an inspection trip of Antarctic bases. He was appointed to relieve RAdm. Dufek as Commander, Task Force 43. LCdr. Potter was flying the admiral in the area of Marble Point when he received word via radio that an *Otter* had crashed on take-off.

He swung over to the land camp and made a series of shuttling runs between there and McMurdo Sound, carrying the four survivors (one died shortly after reaching McMurdo's sick bay) and the body of the fifth man.

In May 1960, LCdr. Potter was called "front and center" after a squadron personnel inspection at Quonset Point. Before the assembled officers and men, Capt. Munson read the citation from the Secretary of the Navy which awarded the helicopter pilot an Air Medal "for meritorious achievement in aerial flight during Operation *Deep Freeze* in Antarctica."

By January, ice conditions at McMurdo had become dangerous, and the VX-6 long-range aircraft were ordered to return to New Zealand. Helicopter and *Otter* flights continued to be flown by the wintering party until darkness forced them to shut down. The last flight of the season was flown 21 May 1959 in a helicopter piloted by LCdr. James R. Lacroix and Ltjg. Richard R. Fuller. The continent settled down to the winter night.

In the early days of *Deep Freeze 60* (the code name was changed to agree with the fiscal year), VX-6 at McMurdo urgently required another helicopter. A Sikorsky HUS was flown from Charleston, S.C. to Quonset Point where it was dismantled and crated. Then stored in the belly of a C-124, it was flown 12,000 miles to the ice.

LCdr. Potter, whose skill as a pilot is legendary, proved less proficient in the operation of D-4 forklifts. As the HUS was pulled through the maw of the C-124, the pilot aimed his machine at the stern of the helicopter to assist its unloading. The contact caused minor damage which was repaired by VX-6 maintenance men.

With the disestablishment of Little America V at the end of the IGY and the transfer of Wilkes and Ellsworth stations to Australia and Argentina, respectively, helicopter flights were launched by U.S. pilots in the McMurdo Sound and Bellingshausen Sea areas during *Deep Freeze 60*.

In mid-October 1959, a nine-man party consisting of eight scientists and one Navy driver-mechanic started

AVGAS IS PUMPED DURING WINTER NIGHT

on a 1550-mile oversnow traverse of Victoria Land plateau. VX-6 helicopters and *Otters* provided air support, flying in supplies and establishing fuel and food caches along the route.

The trail party, wending its way up Skelton Glacier to reach their first cache, entered a crevassed area and ran into bad weather. The caravan stopped and radioed VX-6 for help.

Two helicopters, flown by Cdr. Krebs and LCdr. Potter, arrived with Mr. George Toney, USARP representative, and LCol. Dawson aboard. Victoria Land Traverse party in an HUS. On the return flight his helo developed engine trouble about 100 miles from McMurdo.

Plane captain Dave Maguire attempted on-the-spot repairs in -45° F. temperature. A defective engine oil cooler would not permit the oil to pass freely, causing the oil to overheat. Repairs could not be made successfully and the helo made an effort to return to base.

Enroute, the plane was forced to land six times, approximately every 10 to 12 miles, to permit the oil to cool. The flight back took an hour and a half.

Maguire took it philosophically. It was the same helo flown to McMurdo in the C-124. "We usually run into little problems like this," he said. "It's just not used to cold weather."

Two days earlier, the flight might have caused more embarrassment. The same craft made a local inspection flight in the McMurdo area. Aboard were "nine stars": Adm. Herbert C. Hopwood, Pacific Fleet Commander; VAdm. W. M. Beakley, Deputy Chief of Naval Operations; and RAdm. Tyree. Admirals Hopwood and Beakley were observing the operations.

Even that flight had its exciting moment. In flight, the starboard hatch popped loose with an ear-splitting noise. Swinging out from the ship, it nicked a tip of one of the rotor blades. The pilot dropped to retrieve the door and the military passengers aboard accepted the incident with equanimity. But a newspaper reporter going along to cover the flight considered it exciting stuff.

Only *Deep Freeze III* was fatality-free. In 60, a New Zealand traverse party, investigating the Cape Selbourne area, entered a field of crevasses. A SnoCat fell through the bridge of one, killing an Army lieutenant and seriously injuring two scientists. The men fell nearly 100 feet.

A distress signal was sent to the Victoria Land Traverse party some 200 miles away. It, in turn, relayed the message to a VX-6 *Skytrain* which was making the first South Pole trip of the season. RAdm. Tyree who was aboard had the word passed to McMurdo.

Immediately, an *Otter* and an HUS were dispatched to the scene. The injured were placed aboard the HUS (piloted by Potter) and returned to McMurdo for immediate medical attention and later evacuation to Christchurch in the squadron's R7V. The *Otter* remained until the body could be recovered.

Shipboard helos occasionally experienced troubles. Most of the difficulties were encountered while the ships were enroute to the ice.

Atka, for instance, nearly lost her three choppers when she was hit by a gale between New Zealand and McMurdo. One of them, an HUL, snapped a tie-down cable and rolled into the port safety net. The seas stayed so rough that a complete evaluation of damages could not be assessed until the ship stopped rolling. It was obvious, however, that the floats on the helicopter were quite heavily damaged.

FIRST ICE RECONNAISSANCE FLIGHT FROM USS GLACIER IN 1955

TAIL OF ONE HELICOPTER FRAMES ANOTHER IN THE WEDDELL SEA

Dawson, in Potter's helo, flew high and radioed directions to and delineations of the snow-covered crevasses detected from the higher vantage point. Cdr. Krebs hovered over the crevasses as Mr. Toney and David P. Maguire, AD2, planted 12-foot bamboo poles from which little black flags fluttered. Using the flags as guides, the party proceeded easily to the cache without further incident.

An unusual commitment was given VX-6 during *Deep Freeze 60.* Entomologists set up an intensive insect collection program at base camp and in the Ross Island area. Nylon nets were strung up to collect wind-borne insects which emerged from their rock shelters in search of food.

An *Otter* was fitted out with especially designed gear and made several "bug runs" weekly. Later in the season, helicopters were also to be rigged for bug runs.

In late October, Cdr. Krebs experienced a case of a "hiccupping helicopter." He was resupplying the

FAMILIAR ICEBREAKER SIGHT IS LSO BRINGING COPTER ABOARD

THIS HU-2 DETACHMENT KEPT HELOS OPERATING FROM EDISTO

At about the same time, *Eastwind* pulled into Panama enroute to New Zealand. Drums of fuel lashed on her flight deck broke loose during a storm in the Atlantic. Her HUL port float tube assembly was damaged beyond repair. The fuselage fin assembly of her HRS-3 also was wrecked beyond salvation. Numerous tears and punctures in the skins of the aircraft attested to the violence of the storm. The ship was delayed about three days while the helos were put in safe flying condition at Albrook AFB.

Atka was the first to arrive at McMurdo. Detachment 70 from HU-2 did no flying on the trip because all deck space was stacked high with cargo. Ltjgs. Jack Bolton and Gene Pellerin, the pilots, found the inactivity boring. They made up for it later.

Shortly after *Eastwind* arrived, a VX-6 helo experienced another case of flying doors. When the pilot lowered to retrieve it, propwash and surface wind combined to lift the door into the rotor blades.

Fortunately the aircraft was then on deck, and no other damage was sustained. Pilots from the HU-2 detachment offered to airlift new blades to the downed chopper so that it could get into an operating status as quickly as possible.

Until the VX-6 chopper was repaired, *Eastwind* helos took on the thrice daily "chow runs." Air Force C-130's were now on the ice. Most of the support crews stayed on the barrier in Jamesway huts and tents, and it was several days before galley facilities were installed to feed the men. In the meantime, food was prepared at the camp and flown to the strip.

With the arrival of the cargo ship *Arneb* at McMurdo in early January, speed of offloading became increasingly important. Bay ice covering the sound was deteriorating rapidly. VX-6's Lt. Ben Hooper speeded up activities by airlifting stevedores and working parties from base camp to shipside and return. These runs cut four hours off the workday for each man.

Eastwind helos had two more experiences in ice country before they were through with Operation *Deep Freeze 60*. Aboard were an HRS-3 and an HUL-1 flown by Ltjgs. Donald J. Dunne, Francis M. Dreessen, and Jere S. Carter from HU-2's detachment 73.

Cargo transfer shuttle runs were undertaken by Det. 73 pilots at Hallett Station in a grueling two hours of turnarounds. On one of the hops, the HUL engine cut out and a controlled landing was made. But attempting to reach a level unobstructed spot, the tail rotor struck some stacked cargo and twisted on impact. The helo was recovered from the beach by an LCVP after dismantling the tail section and skids.

The second incident was much happier. In late February, after completing a series of aerial photographic missions in the McMurdo area, *Eastwind* escorted the USNS *Towle* and headed for home. On her route to the ice, her HO4S flown by Ltjg. Dreessen landed a small party at Scott Island, the first party to visit the ice-capped volcanic rock in 50 years.

Atka made two trips to the ice during the *Deep Freeze 60* ops. On her last trip, she, too, visited a remote island. Her mission was to deliver urgently needed stores, mail and fresh meat to Campbell Island between Scott Island and New Zealand. Her copter became the first helo to land there.

As *Atka* was the first in, she also was the last out. In mid-March she arrived at McMurdo in what Lt. Hooper described as "stinking" weather. Gusting winds, blowing snow, low visibility and 20°F. temperatures made flying difficult.

Lt. Hooper airlifted the last mail to arrive on the continent and, because conditions were so poor, shut down his aircraft. A short time later, word was received that tractor-hauled sleds laden with last minute cargo were lost. He launched again, found the train some mile and a half from the ship, and returned to base, awaiting better weather.

A few days earlier, he flew another "hairy" flight, reminiscent of Cdr. Kreb's "hiccupping helicopter."

He went out to resupply a small oversnow traverse being made on the Ross Ice Shelf. The traverse embarked to investigate an area known as Discovery Deep and to test out two new, especially designed SnoCats. Discovery Deep is a spot on the floor of the sea discovered in a previous operation. The traverse set out to delineate its shape and depth.

Ten miles on the return leg, his plane's oil supply overheated, so Lt. Hooper returned to the traverse to make repairs. When this proved fruitless, he asked the party to radio McMurdo of his trouble and his intention to return in a leap-frog pattern. UHF and VHF radios in the plane also experienced malfunction.

Shortly after spotting the trouble with the oil flow, he secured cabin heat for the rest of the five-hour

trip in order to conserve fuel, turning it on at brief intervals to defrost his windshield.

Unknown to Lt. Hooper, the traverse party also developed radio difficulties and only occasional garbled messages reached McMurdo.

The helo flew for five to ten minute intervals and landed when the oil temperature raised, remaining on deck till it cooled. Toward the end of the flight, the forced stops became longer and more frequent. The helicopter was forced down 18 times in a 90-mile stretch, at least 30 miles of which were an area deeply creased with crevasses. It returned to McMurdo just as an *Otter* was taxiing for a search and rescue flight.

"The scaredest I got," said plane captain Charles O. Stevens, AD2, "was when we were forced down in a small patch of ice and snow surrounded on three sides by crevasses. I don't remember when I was so cold or so nervous."

To the helo pilots in the icebreakers *Glacier* and *Burton Island* came the plum exploring assignments in 60.

Glacier proceeded to Little America V (briefly reactivated) to pull out retrograde equipment destined for an oversnow traverse to Byrd Station and by ship to McMurdo. She then continued to McMurdo where she helped carve a channel through bay ice.

On her voyage through the pack, she used a relatively new wrinkle in ice reconnaissance—television. Ens. T. H. Howarth, Jr., and other pilots from HU-1 flew over the ice-filled waters with a TV cameras mounted in the cabin of the Bell copters. Flying ahead of the ship, the camera scanned the ice pack, transmitted a picture to the ship, enabling the officer on watch to select the most likely looking lead. This system was tried with some success in the 1958 Arctic operations.

In early January, *Glacier* headed for New Zealand and a yard period to replace a propeller blade which had broken off. About a month later, she rendezvoused with *Burton Island* to probe the unconquered Bellingshausen Sea. Ice encountered by the ships proved even tougher than expected.

Arriving in the Bellingshausen area near Fletcher Island, the ships encountered a 20-mile stretch of wind-driven heavy ice that frustrated further probe. Helos were sent aloft to search for leads. Aerial surveys disclosed that an area charted on current maps as Thurston Peninsula is in reality an island.

Word came from the Chief of Naval Operations ordering *Glacier* to rush to the assistance of SS *San Martin* which was enroute to Ellsworth Station to relieve the wintering party.

Of more pressing urgency was the evacuation of the seven-man station in the Marguerite Bay area. Two of the men were reported in need of prompt medical attention. As *San Martin* attempted to pierce the pack at the northern tip of Adelaide Island, she became beset for days and the building pressure of the ice pack threatened to pinch off her hull.

Glacier, 700 miles away, rushed to her aid. *Burton Island* accompanied *Glacier* until she was out of the pack and in open water. *Burton Island* then was pulled from the rescue race to conduct more scientific studies in the area.

In the meantime, *San Martin* got her choppers in the air. They flew a series of flights to General Belgrano Station and evacuated the seven men. Then she waited, for there was nothing else she could do. *Glacier's* progress was hampered by snow and poor visibility.

There was a second sounding of the distress call; this time from the *Kista Dan*, under charter to Britain. She became beset some 25 miles from *San Martin*. Aboard was Sir Vivian Fuchs on a British expedition to reopen the base on Stonington Island.

On March 5th, *Glacier* plowed through the ice and freed the Argentine vessel which headed north for Buenos Aires. *Glacier* then turned to free the *Kista Dan*. Two days later the American icebreaker reached the British ship which had been beset for 13 days.

But the men at Ellsworth were not so lucky. Unable to be reached by either icebreaker or by their helicopters, the men resignedly remained at the isolated station for a second consecutive year. They will be evacuated during the coming austral summer.

(In five seasons of *Deep Freeze*, helicopter-icebreaker teams have been very effective in rescues. Perhaps the most noteworthy was in flood relief in South America two seasons back.)

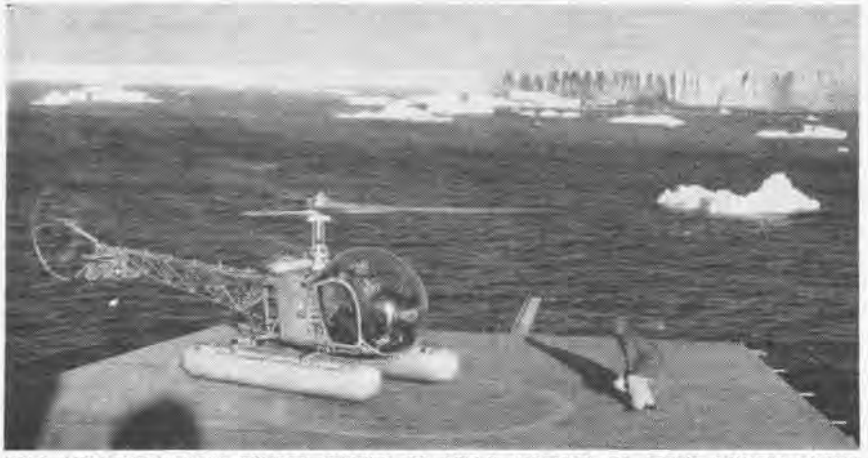
"Despite several unfortunate incidents occurring through the years in Operation *Deep Freeze*," said Capt. Munson of VX-6, "helicopters are indispensable in the Antarctic.

"Experience has taught us that in SAR capability and performance helicopters have earned an honored place in Antarctic operations. Any man who has been downed on the ice or experienced difficulty on oversnow traverse parties will testify to that."

What's in the future for helicopters in Antarctica?

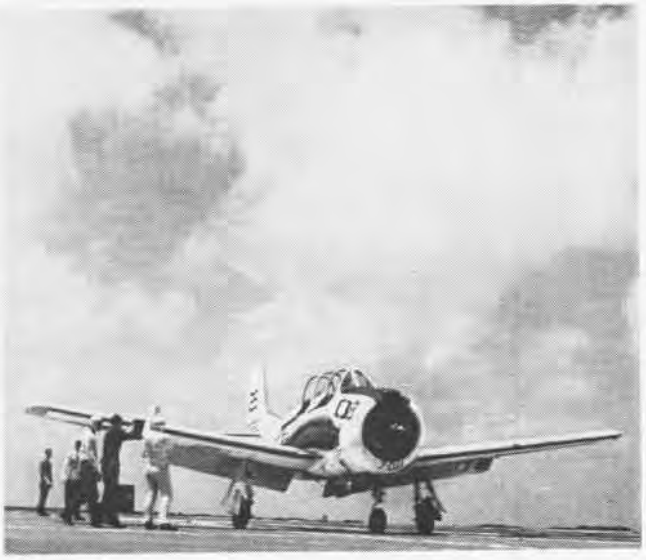
"It is conceivable that VX-6 may obtain a 'flying crane' type helo to assist in ship offloading operations. Considerable thought is given to this but no decision has been made as yet," said Capt. Munson, adding:

"The squadron and ships will continue to fly helos in Antarctica as long as Operation *Deep Freeze* supports scientific studies conducted there."



HELO LIFTS MEN FROM TENDER CURTISS TO LITTLE AMERICA TO SPEND WINTER NIGHT

ACTIVITY ABOARD USS ANTIETAM



Since 21 April 1957, USS Antietam, commanded by Capt. Paul E. Hartman, has been a busy carrier; her spacious flight deck, a familiar site to thousands of student aviators engaging in their first carrier flight operations. As of 22 September, Antietam had qualified 3,817 basic and advanced students who made 61,098 landings and 5,693 catapult shots. Antietam's lifetime count of arrested landings is 82,000. In one recent period, she logged 20,093 consecutive accident-free landings.

NO PLACE FOR MISTAKES

"CHANCE is a fool's god—don't depend on it" and "Always be sure; never leave it to guesswork" are among six quotations in the Parachute Rigger's "Bible," a personal code of conduct for men who provide a lifeline between sky and earth.

Consider VAP-62's Parachute Riggers at NAS JACKSONVILLE. In 12 years of Navy service as a rigger, Ted Moore, PRC, has personally packed two chutes that saved two lives. He had packed some 8500 chutes, a score he ran up when he packed 25 chutes daily for more than a year in Jax.

Chief Moore has made three successful jumps since his initiation into the clan of riggers and can readily vouch for the sensations involved.

Currently four Riggers tend VAP-62's man-carrying chutes and 22 drag chutes. The drag chutes are used to slow the squadron's A3D-2P's in landing. Chief Moore supervises Bill Hawkins, PR2, Richard Cofsky, PRAN, and Peter McDonald, AN. They are responsible for the maintenance and repair of various chutes, oxygen breathing apparatus, survival equipment, and all flight clothing. In other words, the squadron pilot or crewman is the chute rigger's number one dependent.

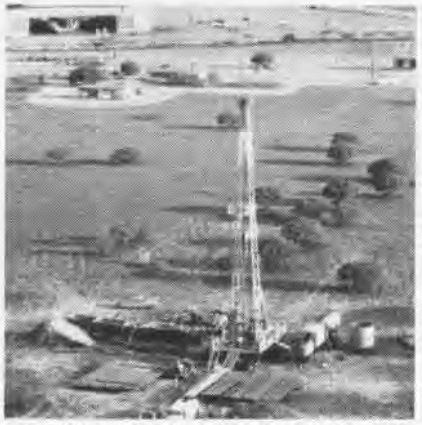
The term "roman candle" is applied to a parachute that refuses to billow, streaming instead like a thick rope of whipped cream above an unlucky jumper. The usual cause of this malfunction stems not from improper packing, but from an act of nature which keeps riggers continually busy and accounts for most of their working day. The little devil in question is static electricity.

Many cloth materials, particularly silk (which has not been used in chute-making for the armed forces in over 11 years), produce stationary electrical charges owing to friction, which causes the fabric to cling to itself. This condition also applies to the all-nylon parachutes of today. Once every two months chutes are unpacked, hung in the humidified drying tower and then repacked.

When the chute has lasted seven years or when it is no longer fit for life saving, it is used as a cargo chute. A modern-day man-carrying chute costs approximately 250 dollars, but what that 250 can do when needed!

A serious business? Consider maxim #10 of the Rigger Code: "Every time a Rigger makes a mistake or an oversight, there is another potential murderer loose. See it isn't YOU!"

MOORE DEMONSTRATES FITTING HARNESS



GAS WELL RIG IS FIRST AT CHASE FIELD

Chase Field in Texas Style

Two Dry Gas Wells are Drilled

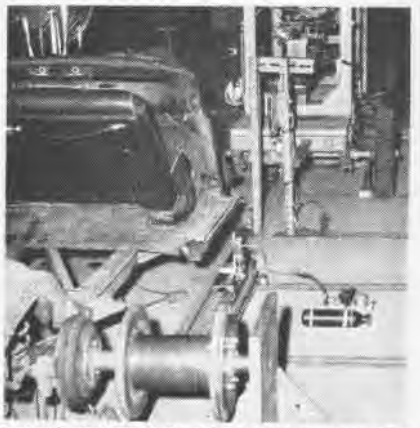
NAAS CHASE FIELD at Beeville, Tex., has really gone Texas! The air station can now boast of having producing gas wells within its boundaries.

Under a contract between the Department of Interior and the Jake L. Hamon Co. of Dallas, two dry gas wells have been drilled on the base. The first, Federal No. 1, was started 16 September and drilled to a depth of 3050 feet. It has an estimated potential of 10 million cubic feet of dry gas.

After setting pipe in the well, Flournoy Drilling Co. crew completed operations and moved the drilling rig to the site of the second well.

Federal No. 2 went as scheduled to 3100 feet before setting pipe in the second successful well.

The contract with the Hamon Company is for five years, with some of the royalties from the wells going to the Department of the Interior. The new wells pose no hazard to safety.



DYNAFLOW JUNKER DRIVES TEST 'HOT-ROD'

Ingenuity Pays a Dividend

In Johnsville's Operation Hot-Rod

Little time, little money, and a big problem resulted in "Operation Hot-Rod." The Engineering Development Laboratory at the U.S. Naval Air Development Center, Johnsville, Pennsylvania, had the job of determining the trouble and designing a "fix" for the Mk. 8 tow reel used with the AD-5Q.

At first, other test engineers thought engineer George Shaw was joking when he suggested they buy an old junker automobile with dynaflow. He wasn't, and the result was "Operation Hot-Rod."

They bought the junker for $100, stripped it, and mounted it in the lab with a drum on a rear wheel. It solved the problem. All conditions of pay-out and rewind drag could be simulated.

For fast acceleration, they revved up the engine and then selected "drive." For rewind they put the selector in neutral and used the car brakes to give just the desired value of drag.

In fact, the "hot-rod" proved so effective that it has become a permanent piece of laboratory test equipment.

MYTH OF MAIL BUOY EXPLODED

MAIL BUOY watches are being stood regularly aboard submarines operating off Florida—and not by recruits.

It began when patrol plane commanders of VP-16 were bombarded by radio questions from submarines they worked with on ASW training maneuvers.

"How's the world situation? The campaign? Who won such and such a ball game? What's moving on the stock market?"

VP-16 fliers sympathized with their undersea compatriots who stayed on station some 400 miles offshore for a week or more at a time without current news. And they did something about it.

Parachute rigger W. M. Carter gathered up some expendable ordnance cans which would hold about a dozen rolled-up newspapers. He painted them red for easy visibility, and rigged each with a small cargo parachute.

Nowadays the procedure goes something like this. Aboard individual submarines of Squadron Four at dawn the word is passed:

"Now hear this. Post the mail buoy watch." Two sailors wearing Mae West life preservers and carrying a long boat hook emerge from the conning tower and work their way forward to the bow of the submarine.

On the *Neptune*, the pilot's voice comes over the intercom: "Prepare to drop mail buoy." To the submarine he says: "Widow, this is Galaxy Thirteen. Stand by to receive mail buoy."

The *Neptune*, flying at 150 feet, maneuvers slightly ahead of the submarine. The bomb bay opens and the red can drops out and drifts down to the sea. As the submarine glides up to the bobbing red object, seamen engage the shroud lines with their boat hook and haul it aboard. Once, when the cannister eluded the hook, a willing diver went over the side for it.

The recovery crew returns to the conning tower, the hatch slams shut, and the submarine dives. Inside the sub the mail buoy is opened, the newspapers are taken out and distributed to the crew.

The game of cat-and-mouse begins, with the *Neptune* hunting the submerged submarine. Submariners catch up on the latest international, national and local news—and the latest quotations from the stock exchanges—as they have their morning coffee.

The oldest myth of the sea has been exploded—that of the mail buoy watch. Since sailing ships, recruits have been duped into searching the horizon for that elusive item, but now, courtesy of VP-16, it is there.

LTJG. R.C. TRUAX AND W.M. CARTER, PR1, DISPLAY A MAIL BUOY RIGGED FOR DROP

400 MILES AT SEA, A P2V-5 NEPTUNE OF VP-6 CROSSES BOW OF SUBRON FOUR SUBMARINE AND PREPARES TO DROP MAIL BUOY

CAPT. FLEMING PRESENTED 'SAFE BANNER'

VA-34 Wins CVG-3 Award

Holds 'Staysafe Banner' 2 Months

Blue Blasters of VA-34, commanded by Cdr. Mike C. Griffin, received the CVG "Staysafe Banner" for the second consecutive month. Presentation ceremonies were held on the bridge of the USS *Saratoga* by the commanding Officer, Capt. A.F. Fleming.

The CVG-3 Staysafe Program, inaugurated by Cdr. E.F. Dankworth, Jr., CAG-3, encourages safe practices and rewards safe performance on an intra-squadron basis in Air Group Three.

VA-34 accumulated the greatest number of safety points in the following categories: Flight deck and line, shop and maintenance, personnel, and the "Drive Safe" campaign. The banner award is retained for a month. Then it is passed on to the next winning squadron.

VA-46 Gets 2N Allowance

Cecil Squadron Returns from Med

Attack Squadron 46 has received a full allowance of A4D-2N *Skyhawks*. The first five were delivered in August and the 12th in September.

The -2N is a modification of the A4D-2. It enables the pilot to fly his attack mission in marginal weather conditions, increasing the plane's overall effectiveness.

A navigational radar system permits the pilot to "see" obstructions in his flight path and to pick out prominent terrain features while flying through clouds at tree-top level.

VA-46 was last deployed aboard USS *Franklin D. Roosevelt* in the Med.

The "Clansmen" are members of CVG-1. Cdr. H. J. Tate is skipper.

VALIANT VALIONS *of VA-15 wear colorful garb purchased piece by piece in Mediterranean ports of call, on flight deck of USS Franklin D. Roosevelt. The outfits consist of green vests and berets, white scarfs, gloves and shoes, and orange flight suits. VA-15 is a crack AD Skyraider outfit and a component of Carrier Air Group One, based at NAS Jacksonville, Fla.*

Safety Conference is Held

Navy, Marines, CVA Discuss F8U

Flight Safety officers of F8U squadrons met with Chance Vought safety engineers at Dallas to discuss ways of reducing the already-low accident rate of the supersonic fighter.

More than 40 representatives from Navy and Marine Corps fleet commands, Bureau of Naval Weapons, Flight Test Center, and the Naval Aviation Safety Center attended. Maj. C. H. Coppedge of the Safety Center was the chairman of the conference.

Presentations covered carrier qualification, ordnance and gunnery, all weather operations, human engineering, electronics maintenance, airframe maintenance, post engineering test flights, stall/spins, high altitude zooms, and flight handbook emergency procedures.

Safety records for the past fiscal year show the F8U fighter had the lowest accident rate of any current Navy or Marine Corps fighter, despite the fact that it has higher performance.

CAPT. J.D. ARNOLD, *C.O. of Naval Air Material Center, Philadelphia, is surrounded by civilians who have served the government a total of more than 400 years. Holding certificates of retirement are, left to right: J.J. Cloney, 42 years; Frank Guarini, 41 years; J.S. Moran, 42 years; W.G. Wertley, 42 years; Harry Butch, 33 years; H.L. Albritton, 40 years; Anthony Appolonia, 40 years; Israel Brown, 42 years; P.S. Jones, 40 years; Gilford Knowles, 40 years.*

TWO DECADES AT ELIZABETH CITY

MARTIN P5M MARLIN IS POISED TO ENTER PLACID PASQUOTANK RIVER FOR TAKE-OFF TO BERMUDA WHERE MOST P5M'S ARE BASED

By Jack Williams

THIS YEAR marks the 20th anniversary of the Coast Guard Air Station at Elizabeth City. On the sprawling bank of Davis Bay which opens into the Pasquotank River, the tradition of Coast Guard Aviation has been upheld at the North Carolina site.

The air station was first authorized in 1938. Selected by the Coast Guard's Number One Aviator, Cdr. Elmer F. "Archie" Stone, holder of the world's speed record for amphibians and co-pilot-navigator of the NC-4 trans-Atlantic flight in 1919, the location was ideal in relation to the New York and Miami bases, Cape Hatteras and possible areas of enemy action in time of war.

Groundbreaking on the 300 acres of land was begun in January 1939. A first class sea and landplane air station was built with three concrete runways, each 3000 feet long and 100 feet wide, a seaplane ramp, a boatdock, the steel hangar and the present BOQ building.

On 15 August 1940, the base opened officially under the temporary command of Lt. Wm. B. Scheibel. The air station had three commissioned officers, two chiefs, 50 enlisted men and three planes. A fourth plane arrived on the 16th with Naval Aviator, Lt. Richard L. Burke, who took command of the station. One of the original officers was the present commanding officer, Capt. A. E. "Bill" Harned, then a lieutenant, junior grade. He is a pioneer in international search and rescue techniques.

Two days later, August 18, the station made its first patrol flight to survey the flood region of the Roanoke River. Its next 12,307 flights were made without a single fatal accident. The early fliers were engaged in am-

CAPT. HARNED, C.O., STUDIES THE COCKPIT OF THE 'HERCULES'

NEW LOCKHEED 'HERCULES' IS REPLACING 'FLYING FORTRESS' (R)

PBY-5 CARRIES A DROPPABLE LIFEBOAT

bulance, administration and rescue flights, aerial map-making for the Coast Guard and Geodetic Survey, and an intense search for illicit stills.

On 1 November, 1941, the Navy took over operations. Patrol operations were constantly increasing with the demands of neutrality enforcement. Then came 7 December 1941 and the inauguration of anti-submarine patrols.

The grand old Hall boats, short-take-off flying boats, assumed unfamiliar roles and carried depth charges. The overloaded JRF *Goose* and the J4F *Widgeon* also looked out of place searching the steamer lanes and offshore approaches to the Chesapeake capes. The 13 pilots, equipped with only 10 unarmed planes, were frustrated by the daily sinking of merchant vessels. Flaming hulks drifted with the gulfstream as German subs lurked off the "graveyard of the Atlantic" in search of new prey.

The first armed planes, which arrived on 22 January 1942, were single-engined J2F-5's, noisy biplane amphibians only slightly advanced over the JF-2 Cdr. Stone had flown to a speed record of 191.796 mph in 1934. The J2F-5's were designed for observation and scouting, not for submarine warfare. By the time the first combat patrol planes were obtained in December, 1943, the submarine danger had almost subsided.

There had been rescues too numerous to mention, some too grim to retell. For one of these the commanding officer, Lt. Burke, received his second Distinguished Flying Cross. He braved, in an old Hall boat, giant swells to capture seven German survivors from the sub *Dergin*, which had been sunk by an Army plane.

Activity increased in 1942. An air squadron of the 34th Coast Artillery Brigade was assigned to Elizabeth City, and the Navy used the field for blimp operations until its own station was completed at nearby Weeksville. British squadrons striking out for Bermuda were based at Elizabeth City while Navy and Marine Corps fighters and attack groups practiced there day and night. The Navy constructed a patrol plane base of 100 buildings on the north end of the field and operated PBM's and fast PV-2's. Free French divebomber (SBD's) and Russian patrol plane squadrons (PBY's) based and trained there. As facilities of the station grew, runways were extended, the longest to 7200 feet.

About the same time Metalsmith Frederick H. Denio and Aviation Machinist Mate Harold J. Both, designed the "provision bomb" or food bomb. They adapted a practice water bomb as a water-tight container filled with 20 pounds of provisions. The first of these bombs was used in an emergency rescue 4 July 1942 by a Hall boat crew.

Coast Guard operations included thousands of flight hours in 1943-44 and 782,000 air miles. Tens of thousands of planes and vessels were identified, and many assistance and ambulance flights were made. More than 10 million square miles were covered in 3200 different flights. The activities provided the pattern for air-sea-rescue long before it became a well established Coast Guard operation.

VOUGHT OS2U3 WAS STURDY SUB-HUNTER

The last antisubmarine patrol was flown 17 October 1944. Prior to this date combat air crews were drilled in the VP-6 training program for the Greenland patrol under the direction of Cdr. E. J. Suydam, who relieved Cdr. Burke in May of 1944. At that time air-sea-rescue training operations were begun with PBY *Catalinas*.

As a central unit in the Eastern Sea Frontier, the Elizabeth City Air Station under Cdr. Stanley C. Linholm, devoted its energy to developing search and rescue activities. It became the largest SAR unit with 55 aircraft, most of which were in a special rescue squadron. The squadron coordinated its operations with surface units assigned to the squadron.

After WW II, the Coast Guard's vision in pioneering the development of the helicopter for rescue operations was rewarded by the transfer of the helicopter development unit from Floyd Bennett Field, Brooklyn, to the Elizabeth City Air Station. Cdr. Frank Erickson, Lt. Stuart Graham and Lt. Dave Oliver were instrumental in developing this project which extended the helping hand of the Coast Guard.

Their efforts paid off in September 1946 when a Belgian Sabena airliner crashed in the muskeg near Gander Lake, Newfoundland. Only 18 of the 44 persons aboard survived and 14 were stretcher cases. LCdr. Larry Davis, commander of the Argentia Air

UF MAKES RUN ON PASQUOTANK RIVER, COMPLETE WITH WHITE FINISH, INSTEAD OF SILVER, AND MARKINGS IN ORANGE 'DAYGLO' PAINT

DR. ANDREW HORNE, USPHS, AND CREWMAN CARRY LITTER PATIENT

LCDR. AL FLANNAGAN, USCG, DEVELOPED 'OPERATION TUGBIRD'

Detachment, led an Army-Coast Guard team down shallow streams and hacked a path through thick woods while Elizabeth City and New York air crews loaded a C-54 transport with dismantled helicopters. Within six hours the plane arrived in Newfoundland. The helicopters were reassembled and readied for flight to the disaster area. The rescuers made 45 missions bringing out the survivors to an awaiting Coast Guard PBY.

In April 1946, a headquarters unit was established in the hangars of the former Consolidated Aircraft Company modification center in the southeast corner of the field. This USCG Aircraft Repair and Supply Base, the largest industrial plant in the area, overhauls all Coast Guard aircraft and supports a world-wide logistics system. Formerly the Navy, Marine Corps and the CGAS in San Diego overhauled Coast Guard aircraft. Capt. Thomas F. Epley now commands the base which has 185 enlisted men, 21 officers and 250 civilian employees.

For many of the post-war years, the Navy had stationed a GCA Unit at the air station. Before it was transferred, it had handled more than 30,000 approaches without incident. Soon another Navy GCA Unit will be stationed at the air base.

In 1957-58, Coast Guard airmen developed Operation *Tugbird*, proving through exhaustive tests that vessels in distress could be towed by helicopter. LCdr. Al Flannagan, base engineering officer, was one of the skilled pilots in these experiments.

Newer whirlybirds have been pressed into service with faster and better fixed-wing aircraft: the Grumman *Albatross*, the Martin *Marlin*, the Fairchild C-123 and the new weight-lifting wonder, the Lockheed *Hercules*, a speedy, four-engined prop-jet with long range and high altitude capabilities. In a 90-day period, the station's crews fly a million miles of logistics, dispatch planes to all parts of the globe, and conduct scores of rescue missions under dangerous foul-weather conditions. Intercepts follow "Mayday" calls on the air, a flying ambulance service is provided "outer bankers" and sailors at sea, and electronic bearings are taken on distressed ships and aircraft.

To Capt. Harned, *Semper Paratus* means "round-the-clock-readiness," just as it did to preceding commanding officers, Capt. Ed Fahey, Capt. Donald B. MacDiarmid (consultant to the former NACA), Capt. A. J. DeJoy and their predecessors, Burke, Suydam and Linholm.

There's an old Coast Guard Aviation motto, chilling in its message, "You've got to go out, but you don't have to come back." That isn't the last word. Every Coast Guard pilot as he drops down to the surface to provide a platform for shipwreck and plane crash survivors threatened by icy waters can say, "Don't worry! We'll make it back, too!" ★★★

NEWLY OVERHAULED HO4S IS NOW READY TO MAKE TEST FLIGHT

THE 370-KNOT HERCULES HAS A GROSS WEIGHT OF 135,000 LBS.

Weekend Warrior NEWS

PERFECT LANDFALL ON DIAMOND HEAD IS SCORED BY NAVIGATOR OF VP-873 NEPTUNE

NAS Oakland

HSS-1 helicopter crewmen of Oakland's HS-871 got realistic ASW training during two weeks active duty when they worked with S2F's and P2V's on a large scale ASW operation.

Practice attacks on 'enemy' submarines were termed successful by the tactical commander.

Meantime, Oakland's patrol squadron, VP-873, became the first station squadron to spend active training duty in Hawaii. Five P2V-5F's flew navigation and ASW missions during their stint at NAS BARBER'S POINT, Hawaii.

NARTU Norfolk

Miss America for 1961, Nancy Anne Fleming, visited Norfolk for the Oyster Bowl football game and visited NARTU NORFOLK. She was made a member of the ASW unit (honorary) and presented a Grumman S2F *Tracker* model by Cdr. H.S. Perry, X.O.

She also received a certificate and wings, making her an honorary member of NARTU NORFOLK, whose four ASW squadrons fly the *Tracker*.

NAS Los Alamitos

ASW headlines were made at LosAl when a regular Navy Carrier Air Group and the station's third fleet ASW squadron were formed.

Elements of the new air group will be VS-23 which was based at Los Alamitos, newly commissioned VS-25, and HS-4, based at Ream Field.

Cdr. D.W. Hazelton was named commander of the air group and commanding officer of VS-25.

The commissioning brings the total of Los Alamitos-based fleet units to four; the new carrier air group, VS-23, VS-25, and VS-27. The latter is expected to return to LosAl this month.

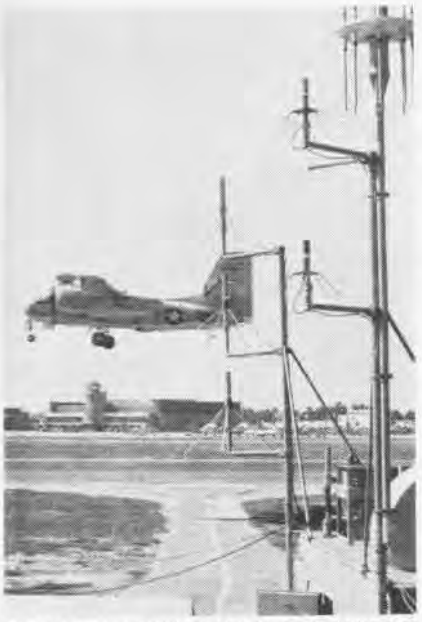
CVSG-55 and VS-25 were commissioned in September. RAdm. Robert L. Townsend, Commander Carrier Division 17, put them in commission.

Also at LosAl, the 60,000th GCA landing has been made. The milestone in station flight operations came more than 12 years after GCA Unit No. Five was formed.

Responsible parties for number 60,000 were Ltjg. James Quinn, pilot of an S2F *Tracker*, Ltjg. Eugene Normand, co-pilot, crewman James House, AT2, and John Struyvesant, AO3. GCA director Caulkins was on deck.

MISS AMERICA BECOMES ASW SUPPORTER

LOSAL WEEKENDERS ARE GREETED BY GAG PROP ON ONE OF STATION'S A4D-1 SKYHAWKS



S2F MAKES 60,000TH LOSAL GCA LANDING

NAS New York

Members of VR-833 spanned 40,000 miles during two weeks active training duty as they took part in a NATO exercise with their R5D's. They hauled more than 22 tons of supplies to Oerlandet, Norway; Bally Kelly, Ireland; Rota, Spain; St. Mawgan, England; and Lossiemouth and Edinburgh, Scotland as part of a tactical supply group during their deployment.

Some pilots flew from West Malling RAF Base, 29 miles from London, to bases near Paris and Frankfurt.

The exercise was part of a regular cycle of NATO training. It included fleet tactics, ASW maneuvers, mining and mine sweep operations, and convoy escort duty by units of the fleet.

Ships and planes from Belgium, Canada, France, the Netherlands, Norway, Portugal, and the United Kingdom participated with United States units.

NARTU Anacostia

Winner of Patrol Squadron 23's Man-of-the-Year Award at NARTU ANACOSTIA for the third consecutive time, Joseph W. Vickers, Jr., AD1, this year must share the honor with a lady in the squadron.

His competitor was Wave Rebecca Connick, YN2, who stacked up points by faithful participation in squadron training functions.

A lineman with the Eastern Maryland Shore Service Company, Vickers lives 91 miles from NARTU. He has a four-year perfect attendance record.

DUPLICATE AWARDS TO NARTU WINNERS

NARTU Memphis

Chief Petty Officer Cecil S. Bright was named honorary inspecting officer at NARTU MEMPHIS for the ceremony in which his son Larry was graduated from recruit training in the Six-month Naval Air Reserve program.

Bright is an 18-year Navy veteran.

CHIEF BRIGHT INSPECTS HIS SON'S RIFLE

He told the recruits: "The eyes of the fleet will follow your progress, as we will here at the Naval Air Reserve Training Unit.

"A continuation of the exemplary manner in which you performed here will insure success in the Navy."

NARTU Lakehurst

Air Antisubmarine Squadron 751 of LAKEHURST has been selected as the nation's top reserve ASW squadron for the second straight year.

Cdr. Joseph H. McGuinness, squadron commander, accepted the Noel Davis trophy and authorization for each man in his squadron to wear an "E."

In addition to maintaining flight proficiency, members of VS-751 receive on the job training in maintenance, electronics, and other fields.

VS-751 is one of four ASW squadrons assigned to NARTU LAKEHURST.

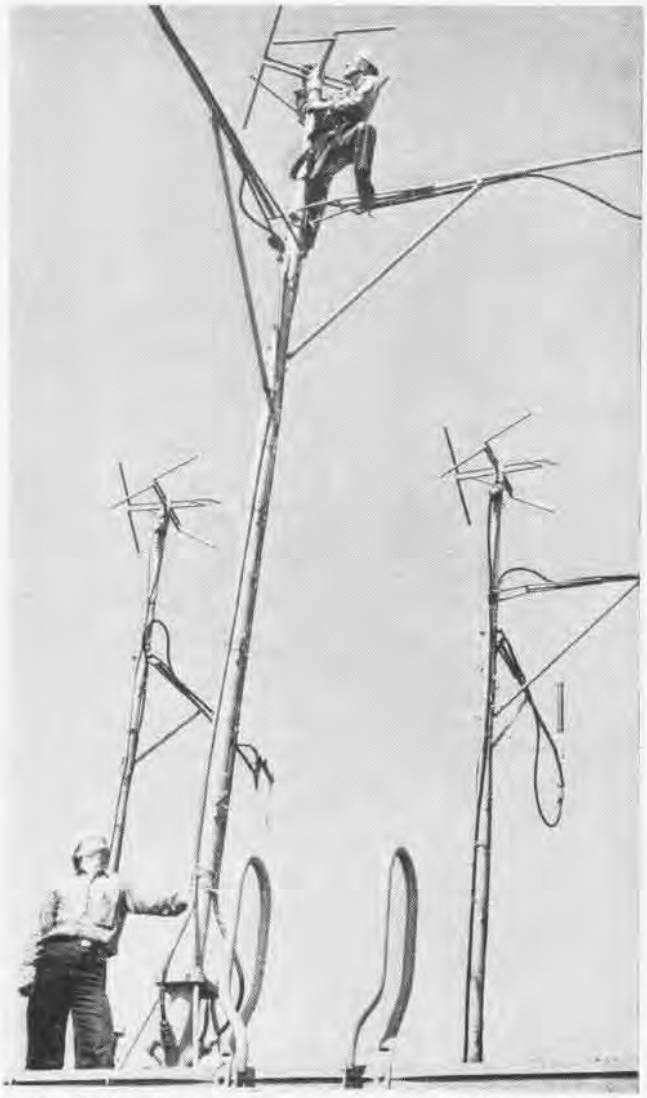
NAVYMEN MAKE CONVERSATION WITH LONDON TOWER BEEFEATER

CAPT. SANGER ACCEPTS CONWAY TROPHY FROM HON. FRED BANTZ

GROUND ELECTRONICS

Miramar Electronics Men are Skilled Pro's

By Jim Russell, JOCA



B. M. FORD, *ET2, at the top, and B. G. Ford, ETNSN, inspect one of 13 sets of multiple antennas atop the HF and VHF receiver building.*

VOICE COMMUNICATIONS between pilot, tower and GCA operators are almost as indispensable in modern aviation as the wings on the planes.

The ground electronics section of the Operations Department at NAS MIRAMAR, near San Diego, is responsible in this field at one of the Navy's largest air stations. W. F. Riley, ETCM, is the electronics chief in charge.

With facilities spread out all over the station, plus homing beacons on Mt. Woodson and Camp Elliott nearby, ground electronics work at Miramar is comparable to that of a telephone company and a radio station combined. There are 12 VHF and 32 UHF sets, each tuned to a different frequency and kept constantly on that frequency with a crystal. Each uses its own independent antenna.

The UHF/VHF receivers and transmitters are housed in two separate buildings. The HF transmitter building serves as an unofficial headquarters for the electronics men.

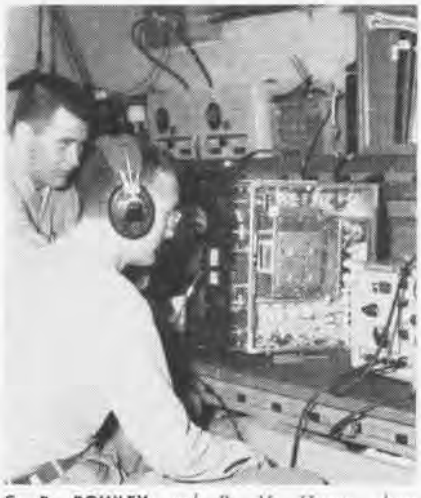
Control cables are the heart of Miramar's communication system. Thousands of miles of small wires with multicolored coverings weave an unseen spider web, with its center in a small unimposing "frame room" on the second floor of the operations building. Here the wires converge to mold the transmitters, receivers, controls and other electronic gear into one gigantic communications system.

A new panel of wires is being installed which, when finished, will increase Miramar's communications service. The work has gone on with no break whatsoever in current communications.

"We listen to the circuit, and if there is no carrier on it, we make the switch," Everett L. Evans, TE1, says. "It takes only a few seconds to make the transfer, so it can be done without interruptions."

It is the job of ground electronics men to install, maintain, repair, replace and inspect all the equipment. It is not a job for amateurs, strictly one for professionals.

G. C. BLACKBURN *loads a tape which is used to record all tower/pilot conversations.*



C. R. ROWLEY *and R. M. Howes align a receiver with a frequency meter.*

HOWLAND *and Moody demonstrate fast switch from one transmitter to another.*

DIAMONDBACKS *of VF-102 claimed a "Ford" first aboard attack carrier Forrestal (CVA-59) during their recent cruise in the Mediterranean. In 15 operating days, its 14 F4D pilots flew 538 hours and logged 342 arrested landings. Cdr. E. M. Cooke, C.O., and five other pilots flew 40 hours and made 25 arrested landings during the period. Twelve pilots qualified as 1960 Mediterranean Cruise Centurians.*

Air Group 16 Gets Skyhawk

New Outfit is Based at Cecil Field

Carrier Air Group 16 started receiving the first of its new aircraft with the delivery of an A4D-2 *Skyhawk* early in October.

Commissioned on 1 September, CVG-16 received its first plane when the A4D-2 was delivered to Attack Squadron 163. The *Skyhawk* was flown to Cecil Field by Cdr. Jack M. Hanerz, C.O. of VA-163.

Cdr. R.P. Coogan is the acting Air Group Commander.

The new air group is composed of VF-161, VF-162, VA-163, VA-164, and VA-165. All squadrons and the CAG are home-based at NAS Cecil Field with the exception of VA-165, based at NAS Jacksonville, Fla.

VF-161 and VF-162 are designated as all-weather fighter squadrons while VA-163 and VA-164 are designated as light jet attack squadrons. VA-165, flying the AD *Skyraiders*, is an all-purpose attack squadron.

Enterprise Skipper Named

Capt. dePoix to Head CVAN-65

Capt. Vincent P. dePoix has been named prospective commanding officer of the nuclear-powered aircraft carrier *Enterprise* which is fitting out in Newport News for commissioning next fall.

He served aboard the first carrier *Enterprise* as a member of Fighting Squadron Six in World War II. He also served aboard USS *Saratoga* (CV-3).

Now being instructed under the office of the Assistant Director of Naval Reactors, Atomic Energy Commission, Capt. dePoix will report to USS *Enterprise* some time next year.

Pine Island Brings Relief

Hong Kong Gets 'Handclasp' Goods

USS *Pine Island* (AV-12), commanded by Capt. John A. Ferguson, arrived in Hong Kong, carrying over 2500 pounds of clothing and medicine. Under the auspices of Operation *Handclasp*, the clothing and medicine, donated by residents of San Diego, were turned over to Rev. Walter de Velder and Rev. William R. Mulcahy, of the Hong Kong Serviceman's Guide Association, for distribution to the thousands of Chinese refugees in the resettlement camps there.

This is the second *Handclasp* delivery the large seaplane tender has made during her present deployment. While in Yokosuka, Japan, the first part of July, over 2500 pounds of goods were off-loaded for various missionary groups to meet special needs.

IN THE TRADITION *of Captain Kidd, the USS Norfolk (DL-1) successfully executed a kidnapping on the high seas during exercises in the North Atlantic. Ten minutes after Ltjg. Swink of VF-13 ejected from his F4D, the buccaneers scooped him up. Minutes later the ransom note was dispatched to the Shangri-La. Terms were reached, and the next morning a rendezvous was effected. Swink was delivered aboard by highline, but only after Norfolk's price was met: 75 gallons of ice cream. RAdm. T.H. Moorer (left) met Swink upon his arrival.*

GIFT TUNA FOR SUPPER ON TICONDEROGA

Pacific Waters are 'Pacific'

International Good Will Prevails

For attack carrier USS *Ticonderoga*, Pacific waters have turned out to be the scene of several unusual U.S.-Japanese goodwill encounters.

Operating with the Seventh Fleet, *Ticonderoga* often finds itself in close company with the numerous fishing boats that patrol deep waters. The ship's helicopter pilots have made it a practice to hover over the small craft and exchange friendly waves with their seagoing neighbors whenever there is a spare moment in the whirlybirds' busy operating schedule.

Obviously welcoming these extraordinary visits and a break in their monotonous routine, a crew of Japanese anglers recently motioned for helo pilot, Ltjg. D.U. Calvin, to lower his grappling hook. The outcome was a hookful of freshly-caught fish for the dinner tables of the crew.

To show their appreciation, *Ticonderoga* men prepared a small gift box which was lowered to the friendly seaman on a return trip. The token was accepted with waves and warm smiles.

It was the second time *Ticonderoga* has been treated to fresh tuna. Earlier that month *Ticonderoga* received three tuna when one of her helicopter pilots investigated a small fishing boat that appeared to be in danger of sinking. It turned out that the boat, laden with fish, was in no danger. However, the fishermen showed their appreciation of his concern by rewarding the pilot with three huge tuna.

RAPEC Saves Marine Pilot

China Lake Experts Get Report

The first successful emergency pilot ejection from a disabled aircraft has been credited to RAPEC (rocket assisted personnel ejection catapult) according to officials of the Naval Ordnance Test Station, China Lake, Calif.

Second Lt. R.H. Melville, USMC, of Attack Squadron 533, MCAS CHERRY POINT, N.C., bailed out from an A4D-2N jet aircraft. He reported his safe ejection and rescue to scientists and engineers at China Lake who developed RAPEC. "I'm sure glad your gear works," Lt. Melville told them.

The 23-year-old pilot, on a routine bombing run over Pamlico Sound, N.C., made an inverted maneuver when his controls jammed at 24,000 feet altitude. With the plane in a spiralling dive, he fought the stick for about six seconds. Completely thwarted in his efforts to salvage the aircraft, he pulled the RAPEC "pickle." Approximately 10 seconds later, he saw the plane crash into the sea 15,000 feet below.

Fishermen pulled Melville out of the ocean not far from his wrecked plane.

China Lake technicians were particularly interested in RAPEC's success.

RAPEC had adequately provided the eight-G force required to exceed the pull of the aircraft spin.

RAPEC also functions at ground level. It can safely eject a 200-lb. man 200 feet above the aircraft. Ninety knots or better of forward speed is its only limitation under these circumstances.

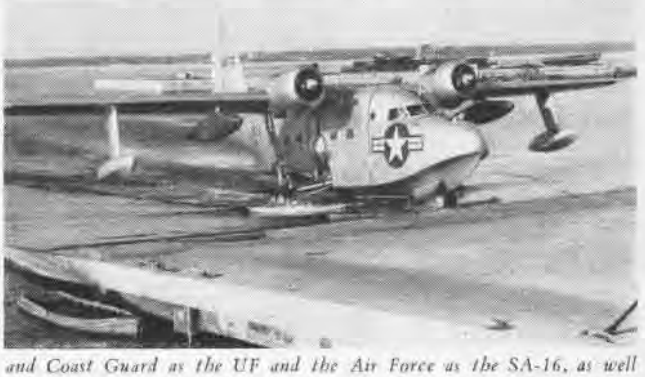
Final F8U-2 Joins the Fleet

But -2N Production Continues

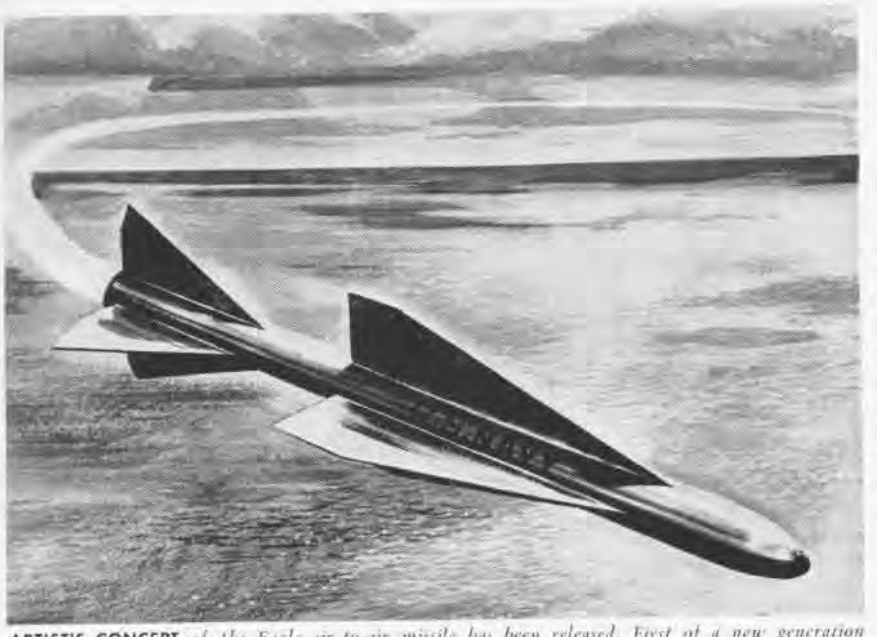
With the F8U-2N now in production on the assembly line, Chance Vought has delivered the last of the F8U-2 *Crusaders* to the Navy. It was flown out of Dallas by Lt. Charles Tinker of Ferry Squadron 32 for delivery to VF-103 at NAS OCEANA.

A number of F8U-2N's have already been delivered. After carrier suitability tests at NATC PATUXENT RIVER, the plane went aboard *Forrestal* for sea qualification on October 31st.

FORTITUDINOUS FDO, *Lt. A.C. Wartman, displays four-armed resolution of formidable duties on Ticonderoga as he phones, sips coffee, takes notes and directs changes on spotting board in Ti's busy Air Ops.*



GRUMMAN CSR-110 *Albatross, left, now being delivered to the Royal Canadian Air Force, is latest in amphibious aircraft that have been a mainstay of Grumman's business from the beginning. The Albatross was developed originally as the XJR2F-1, right, late in WW II and in the early post-war period. It has subsequently served the Navy and Coast Guard as the UF and the Air Force as the SA-16, as well as the air forces of 11 other countries. Improvements in equipment and redesign, including increased wing area, have kept the Albatross design up-to-date as an air-sea rescue airplane. Service airplanes also are being modified to incorporate these changes.*



ARTIST'S CONCEPT *of the Eagle air-to-air missile has been released. First of a new generation of long range missiles, Eagle will be able to attack enemy aircraft and missiles at all operating altitudes at great distances. It will be carried by Navy's Missileer aircraft.*

Designs New Survival Kit
Profits from Overnight in Swamp

Two years ago, SSgt. Stephen H. Sanderson of HMR-262 was flying as a crewman in a Marine helicopter when the machine was forced down in a North Carolina swamp because of a snowstorm.

He spent the entire night suffering in the damp cold while waiting for a motor convoy.

Remembering the unpleasant and unscheduled RON, he decided to do something. He designed a survival kit which now is approved by the Commandant as standard issue for helicopters.

The proposal Sanderson submitted to Col. K.B. McCutchen, his squadron commander, was for a kit to include:

A carrying kit, a pilot's survival kit, half a parachute canopy, a 5"-blade knife, a pocket knife, four cans of rations, two day-night distress signal flares, a reversible red and black poncho to be used for protection against the elements and signalling, a can of heat, a bottle of insect repellent, 50 feet of nylon shroud line, a two-cell flashlight and four batteries, a water storage bag, an axe, a saw, a packet of water-repellent matches, a road map of local areas, a bottle of sunburn lotion, an instruction packet, and a list of code forms used for ground-air signalling.

The kit was approved for squadron use, then submitted to the Commandant, who accepted it for the Marines.

YOUNGEST AND OLDEST *Beecherafts meet on the VT-6 ramp at NAAS Whiting Field. The evaluation of the "youngest" (left) is being paid at the expense of the Beech Company in the hope that Navy will find it another product which can equal the service record of "old Seven come Eleven" and its sisters. VT-6 is the 22nd custodian of SNB 4711 which O&R Pensacola verifies as the oldest SNB still flying. It was accepted May 1941 as a JRB and converted to an SNB in 1952.*

Launching Hazards Studied
Non-Radiological Data is Sought

The first comprehensive study of potential hazards involved in launching missiles has been begun under contracts let by the Pacific Missile Range, Point Mugu, Calif.

The Aeronutronic Division of the Ford Motor Co. is making a study of non-radiological hazards under a contract with the Pacific Missile Range while the Navy's Radiological Defense Laboratory at San Francisco will probe radiological dangers.

Aeronutronic's study will cover three types of hazardous toxic propellants, explosions, and acoustics. Effects of various climates and terrain upon each of these factors will be thoroughly explored.

The researches will not only survey the hazards, but also their prevention. The contract to Aeronutronic calls for a method of neutralizing toxic materials and for minimizing both explosion and noise hazards. Each type of hazard will be probed from all aspects.

New Simulator Exhibited
One Device Covers Several Planes

UDOFTT, described by RAdm. Rawson Bennett as "the most versatile [flight training] device in existence today and one that is expected to be the forerunner of an entirely new family of training devices," has been exhibited publicly.

The simulator permits training for a variety of airplanes by use of the same console and cockpit equipment. Long-titled Universal Digital Operational Flight Trainer, Tool, the device was developed by Sylvania Electric Products Inc. under a $2-million contract with the Naval Training Device Center.

When a flame-out was introduced into the UDOFTT during its public showing, Cdr. John H. Bahlman cut off all electrical circuits while the supersonic jet descended from 15,000 to 7,000 feet. He then restarted his engine in mid-air and brought the plane in for a safe landing.

UDOFTT currently may be geared to train pilots for a variety of current aircraft by substituting punched cards in the computer's magnetic core memories.

Simulation of hypersonic and orbital vehicles is one of the areas being explored for the Navy-USAF UDOFTT.

AND THERE I WAS...

Secruity Remains Intact

UP TO THEN, the watch had been quiet on Gate Two at NAS MEMPHIS. But when Marine Sgt. Eldred Coker saw the stranger emerge from the brush and saunter boldly up toward the gate house, his suspicions were aroused.

"Who goes there?" he demanded.

The silent intruder kept coming.

Alert to the possible security violation, Coker had left the guard station and met the visitor face to face.

Recognition!

Coker had only been removed from his native Oklahoma by four years Marine Service, so he immediately identified the stranger as a possum, and gave chase.

Up the side of the guardhouse climbed the possum. Immediately in pursuit climbed Coker. Atop the guardhouse they came face to face once more.

Pre-military experience hunting possums, coupled with Marine-taught respect for security gave Coker the upper hand. He seized the varmint, evicted him, and reported that the would-be invader had been repelled.

Carrier's Carrier Landing

SEAMAN Dan L. Sauerbier was standing a routine watch on the signal bridge of the carrier *Midway*, about 900 miles out of Hawaii. He spotted an unusual aircraft approaching the ship, obviously low on fuel and in danger of making a crash landing.

The stranger got in the groove and came in for a perfect landing.

Sauerbier raced down to the flight deck, picked up the bird, a carrier pigeon, and rushed him to sick bay for food and medical attention.

On the pigeon's leg was a band which proved he had flown all the way from Hawaii. When the bird was again "launched" from the 978-foot flight deck he carried a new band on his other leg, showing he had made an aircraft carrier landing and take-off.

Dog Bites Man, Dies

A JACKSONVILLE-BASED sailor was sitting with his fiancee on the front porch of her home, enjoying the summer night.

A stray dog approached the couple. The sailor, being friendly, extended his hand to pet the animal. Up snapped the dog's teeth, removing a piece of the sailor's hand.

The dog was captured and rushed to the city pound for rabies test. The sailor was treated for his damaged hand. After treatment, the sailor was released but the dog was held for further observation.

A week later the sailor was pronounced cured, but the city health department reported to Navy Jax that the dog was dead.

Hot Feet on Briny Deep

THIS EXCHANGE of messages was made between the destroyer *Cogswell* and the aircraft carrier *Hancock* in the Far East.

Cogswell to *Hancock*: INTERROGATORY AVAILABILITY SIZE 15½ SHOES OF ANY TYPE X MAN ORDINARILY GOES BAREFOOT BUT HOT DECKS THESE LATITUDES MAKE SHOES DESIRABLE.

Illustrations by Ltjg Neil O'Connor

Hancock to *Cogswell*: YOUR 282055Z X NONE AVAILABLE X CONDOLENCES TO BAREFOOT BOY ON BURNING DECK X HAVE GO-AHEADS AND FLIGHT DECK SHOES SIZE 12D, WITH TOES OUT EXTEND TO ANY SIZE X ADVISE.

Cogswell to *Hancock*: YOUR 290816Z X MAN SAYS COTTON PICKING FLIGHT DECK SHOES SIZE 12D TOO SMALL X AT PRESENT USING IMPROVISED SHOWER SHOES WRAPPED WITH ASBESTOS X INTEND SENDING JOB ORDER AIR MAIL TO NO SQUEAK YOUNG IN HONG KONG X BUREAU SUPPLIES AND ACCOUNTS WON'T LIKE THIS X ANY SUGGESTIONS APPRECIATED.

The *Cogswell* eventually visited Hong Kong and the barefoot sailor, a 210-pound, six-foot five machinist's mate third class, received his shoes.

And Hubby Was Speechless

A DENTIST serving aboard an attack carrier in the Pacific had his teeth cleaned . . . in his office . . . by his own wife.

Mrs. Robert J. Harland, a dental hygienist, sat Lt. Robert J. Harland down in the patient's chair aboard USS *Lexington* and started the tooth-buffer whirring. Families of other *Lexington* crewmen were content to watch air operations, a part of the carrier's dependents' cruise schedule.

But not Mrs. Harland! Capitalizing on the fact that many other wives would have given their eye teeth to be in the same position—that of being able to do all the talking while hubby's powers of articulation were limited to an occasional grunt and groan—she filed and scraped merrily.

Why is a Ship 'She?'

Because there's always a bustle around her, because there's usually a gang of men with her, because she has waist and stays, because it takes a good man to handle her right, because she shows her topsides, hides her bottom and, when coming into port, always heads for the buoys."—USS *Yorktown Town Crier*.

'All S2F' Syllabus Begun

Change Made to Improve Training

Naval Air Advanced Training Command has taken a significant step forward to produce a more fully qualified pilot. The "all-S2F" syllabus, as it is known, has been inaugurated at Training Squadron 28, NAS Corpus Christi, and is expected to reduce the amount of training necessary after a pilot reaches the Fleet.

Until September, all multi-engine students checking into the Advanced Training Command at NAS CORPUS CHRISTI went first into the SNB *Beechcraft* for instrument training; approximately a six-week course. After receiving their Standard Instrument Cards, these students then transferred to VT-28 for training in the S2F *Tracker*. There they were given familiarization, instruments, cross-country work and finally culminated their S2F training by carrier qualifying on the USS *Antietam* in the Gulf of Mexico. Based on the duplication in instrument work, the decision was made to combine the two syllabi.

Some drastic organization changes were required. Squadron allowances were changed for men and materials. Eighty-six flight instructors, 55 S2F aircraft and 470 men make VT-28 one of the largest squadrons in the entire Training Command. Most fleet S2F squadrons consist of 20 planes, 45 pilots and 200 men.

A student input of 10 per week is currently anticipated with students remaining on board approximately 16 weeks. This means that VT-28 will have in the neighborhood of 150 students. In terms of flight hours, this means the squadron will be flying 800 hours per week, even though some of the students will be spending their entire day in classrooms.

VT-28 is led by Cdr. O. T. Knight who assumed command on 1 May, when the squadron was commissioned.

New Contract to Lockheed

More GV-1 Marine Tankers Bought

Lockheed Aircraft Corporation has been awarded a $50.4-million contract for production of GV-1 assault tanker aircraft for the Marine Corps.

The contract is the third awarded to Lockheed for production of GV-1's which will be used for in-flight refueling. The GV-1 is a modification of the Air Force's C-130-B *Hercules*.

AMONG THE VIP'S *attending the Navy's Point Mugu Space Fair was comedian Danny Kaye, who is seriously interested in aviation. Left, Cdr. Alfred W. Chandler, Jr., explains to him the intricacies of a Navy jet pilot's helmet. Cartoon artist Nick Bourne discovers that a Navy missile display makes good "canvas" for popular "Mister Magoo" cartoon character. Because Mister Magoo and Point Mugu are pronounced similarly, they were appropriately together at the Space Fair.*

Hero's Son Receives Wings

Father Was Medal of Honor Winner

Marine First Lieutenant William D. Bauer was designated a Naval Aviator and received his wings of gold in ceremonies held in the office of RAdm. L. J. Kirn, Chief of Naval Air Advanced Training.

A graduate of the Naval Academy in 1958, Bauer was commissioned a 2nd Lieutenant. Then he entered Naval Aviation Training.

After being pinned by his mother, Bauer was congratulated by Adm. Kirn, a former classmate of Bauer's father at the Naval Academy. Bauer's father, Harold W. Bauer, was a graduate of the Naval Academy, Class of '30, and later became a fighter pilot. He was the holder of the Congressional Medal of Honor and an Ace, having downed more than 11 enemy aircraft. He had attained the rank of Lt. Colonel at the time he was killed during an engagement in the Pacific.

Lt. Bauer has received orders to Third Marine Wing, MCAS EL TORO.

MOTHER PINS ON LT. BAUER'S WINGS

Regulus I Unit Disbanded

UTRon One Absorbs GM Group One

With five years experience in *Regulus* operations logged, Guided Missile Group One has been disestablished at Barber's Point.

Personnel and tasks of the unit have been taken over by VU-1.

While most of the Group's officers and men were shifting into whites for the farewell ceremony, one unit launched and recovered *Regulus I* number 1246 for its ninth flight.

A4D's Refuel from GV-1

First Operational Group Plugs In

Operational in-flight refueling trials with the Lockheed GV-1 have been made by two pilots of Marine Aircraft Group 24. Earlier refueling missions had been flown by test pilots.

Maj. E. B. Summerlin and Capt. T. D. Brooks of VMA-533, flying A4D *Skyhawks*, plugged refueling probes into the gas lines of the *Hercules* in tests conducted at Dobbins AFB, Ga.

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Longbard, operation — May 30
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Upper air probed at Mugu Jan 29
Valley Forge launches *Skyhook* Apr 13
Victorious, HMS, and *Scimitars* Jul 34
Viet Nam gets *Skyraiders* Oct 30
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WF-2 *Tracer* goes to VAW-12 Apr 38
Weather reports, pilot Aug 17
Whirlybird as minesweeper Aug 20
Women try ejection seats Jan 34

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Young men, big brains Jul 12
ZP-3 top men Mar 35
ZPG-3W manufacturing Jan 24
"Zero" is their goal May 7

NO. 1 GERMAN *A/S Squadron is now two years old. Commissioned at RNAS Eglinton, North Ireland, it is commanded by LCdr. Paul Kriebel of Schlesuig, Germany. The squadron flies the British Fairey Gannet. Since it was commissioned, the squadron has taken part in many NATO exercises. Its pilots were all trained in this country by the United States Navy.*

LETTERS

SIRS:

We in Air Group Eight were duly impressed by VF-91's fine record aboard *Ranger* (VF-91 Returns on *Ranger*, *Naval Aviation News*, Oct. 1960, page 36). Naturally, this prompts us to quote a few similar figures from our recent seven-month Mediterranean deployment in *Forrestal*.

VF-103, also flying F8U-2's (and also completely night qualified), flew a total of 2751.3 flight hours and made 1643 landings.

Accomplishments of the other squadrons in the Group will also no doubt interest you:

Squadron	*Hours*	*Landings*
VF-102 (14 F4D-1)	2588.8	1614
VA-81 (12 A4D-2)	3050.4	1533
VA-83 (12 A4D-2)	2995.1	1461
VA-85 (12 AD-6)	4556.5	1514
VAH-5 (10 A3D-2)	3251.7	1004
VFP-62 (3 F8U-1P)	904.9	408
VAW-12 (4 AD-5W)	1546.1	494
VAW-33 (3 AD-5Q)	1288.8	401

The Air Group total for the cruise, then, was 22,733.6 flight hours and 10,072 landings.

Adding in flight time and landings of all other aircraft handled by the ship, we come up with a grand total for *Forrestal* of 23,353.5 flight hours and 10,219 landings.

Could it be that some all-time records for a peacetime deployment were set?

L. HEYWORTH, JR.
Cdr., CAG-8

†Editor: Records above were accomplished without the loss of a single pilot or enlisted man from the Air Group.

SIRS:

We recently were the proud winners of the Chief of Naval Operations Aviation Safety Award for fiscal 1960. Because of the great effort expended to accomplish the above feat, and because of our keen desire to keep the record straight, it is respectfully requested that the glaring error appearing in the last paragraph of the article in *Naval Aviation News* of October 1960, "Accident Rate Lowered," be corrected. The award went to VFP-62—not VAP-62.

C. A. CROW, JR.
Cdr., C.O. VFP-62

THERE SHE GOES! *A Terrier missile is off in a roar of dust and fire as it heads toward "enemy" aircraft during Operation Long Hall on San Clemente Island. The 1st Medium Anti-Aircraft Missile Battalion from 29 Palms, Calif., fired four missiles and scored four hits. The 29 Palms Marines joined with those from Camp Pendleton and El Toro for the major support exercise.*

A Corset in Your Future?

Device Might Save Fliers' Lives

A lady's corset is being adapted for pilots who may need to make high altitude escapes in the future.

The pilot's corset is a restraining system of inflatable bladders, netting, and straps that will draw him tight in his capsule to prevent injurious movements during his flight from danger. He will not be able to move a muscle within seconds after hitting the emergency escape button.

After the pilot pushes the emergency escape button, straps on his shoes, draw his feet inside the escape capsule, bladders around his arms, legs, body, and head inflate, and netting becomes taut.

The capsule doors close and the escape unit is pressurized, air conditioned, and ejected. As the capsule descends, parachutes open.

Only 10 seconds will have elapsed.

New Medical Facility Open

Radiation Exposure Lab Dedicated

The Navy's new Radiation Exposure Evaluation Laboratory, the first of its kind in the world, was dedicated at the National Naval Medical Center, Bethesda, Md., on 14 October 1960. The laboratory has been established in the Department of Radiology of the U. S. Naval Hospital.

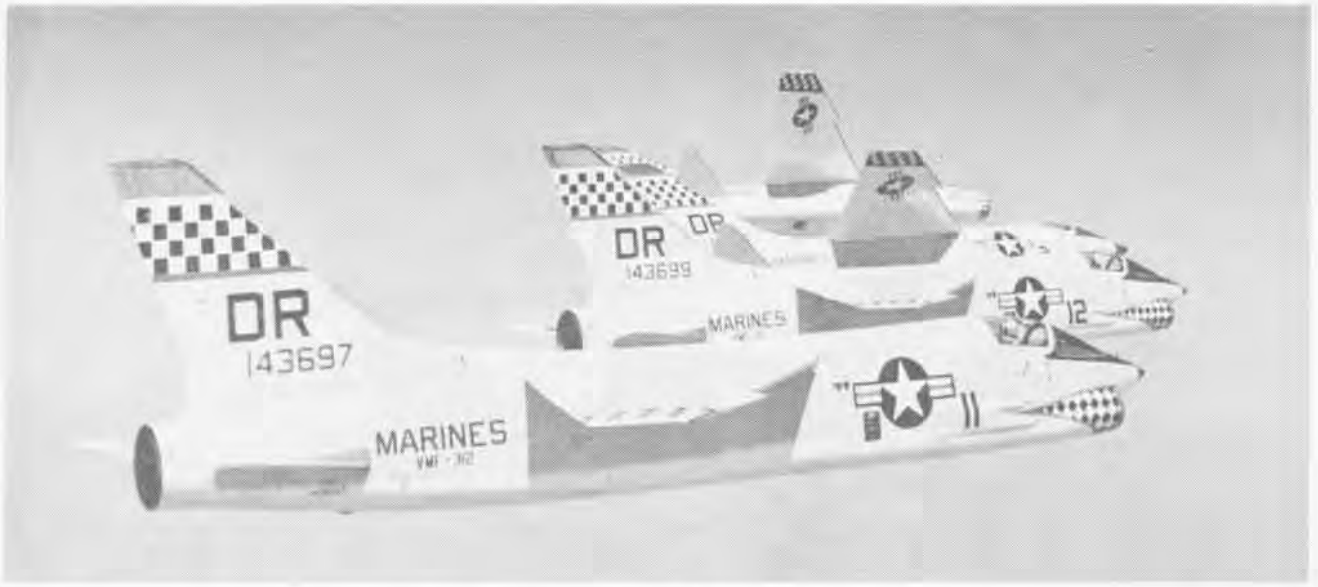
The laboratory will be a central point for the diagnosis and treatment of persons who have been or may have been exposed to radiation.

Assistant Secretary of the Navy for Research and Development, James H. Wakelin, Jr., was the principal speaker. The Surgeon General of the Navy accepted the Laboratory for the Navy's Bureau of Medicine and Surgery and then turned it over to the Commanding Officer of the Naval Hospital, Capt. Robert B. Brown, Medical Corps.

FIRST CLASS *of operationally qualified Fleet Replacement Pilots was recently graduated from HS-1's ASW helicopter course. Squadron skipper, Cdr. B.E. McMullen, observes class sign yellow sheets for last student flight.*

MARINE GySgt. *D. A. Edwards and Cpl. John Mrak hook up the Search and Rescue unit's new "airlift fire extinguisher" to a MAW-1 HRS copter while GySgt. H. P. Boyd signals the S&R pilot, Lt. L. R. Witt.*

LTJG. E.T. SPRINGER, *VS-26, brought his S2F in for a safe landing on USS Randolph with one engine feathered. He used a somewhat high and fast approach. Loss of oil pressure forced him to secure one engine.*



SQUADRON INSIGNIA

The Crusader is the fifth type jet to be operated by the Checkerboard Squadron which flew Corsairs for the first ten of its seventeen-year history. In WW II VMF-312 was officially credited with 60 kills in four months. In Korea, it was the first prop squadron to get a MIG. C.O. Maj. R. S. Rash is fourth from left, second row.

HATHAWAY HATH A GOOD WORD FOR IT

Cdr. C. G. Hathaway of NARTU Anacostia is shown delivering his 33rd Sea Power presentation. This rather remarkable stint was accomplished in a six-month period during off-duty hours and was rewarded with a CNO Certificate of Merit. Standing as we are on the threshold of the 50TH ANNIVERSARY OF NAVAL AVIATION, all of this is brought to bear with an obvious point in mind: You, too, can spread the good words on Naval Air in 1961—THE GOLDEN YEAR OF THE GOLDEN WINGS. Throughout the Navy, big plans are under way to spotlight the Anniversary in open houses, air shows, reunion, social and civic events and in coverage on radio, TV and in the nation's press. You don't need a rostrum—get the pitch on what's planned in your area, then help spread the dope. To your neighbor, church group, in the letter home or when you're ashore—talk it up! Make it a golden year of the golden word!

A PRODIGIOUS PAST A FABULOUS FUTURE