

# Project Muddy Hill

By LCDR Robert Zafran, USN (Ret.)

I was a newly commissioned United States Navy Ensign sporting the Golden wings of a Naval Flight Officer (NFO), when I received orders to report to the Weapons Systems Test (WST) Division at the Naval Air Test Center Patuxent River, Maryland in June 1966. Upon arrival at NATC, I met four Naval officers and several enlisted personnel who were also assigned to a newly formed research and development program called Project Muddy Hill. Funded by DoD's Advanced Research Project Agency (ARPA) and Naval Air Systems Command (NavAir), Muddy Hill was under the operational command of the WST branch of NATC. Muddy Hill's purpose was to equip an SP-2H Neptune (Buno 135582) ASW aircraft, later designated a NP-2H, with the newest state-of-the-art, electro-optical and special sensors, and then test and evaluate these sensors in a nighttime developmental and operational scenario in Southeast Asia.

Along with several of the Muddy Hill officers and enlisted personnel, I was sent to factory and university classes to learn the fundamentals of infrared detection, low illumination television, starlight scope, terrain following radar, electronic counter measures, and active magnetic anomaly detection systems. In September I joined the Muddy Hill contingent at the LTV Electro-Systems Inc. in Greenville Texas. E-Systems was a prime government contractor that modified government and military aircraft under special contract for such agencies as ARPA, CIA, USAF, etc. E-Systems had been working on the Muddy Hill aircraft (now painted with a high-gloss, "Black Widow Black" paint) for some months, installing and ground testing the newly installed electro-optical and radar/camera systems.

The Muddy Hill NP-2H retained its recognizable P-2 Neptune configuration with the exception of two, five foot long, 30 inch diameter pods pylon-mounted on either side of the nose section, a six foot long, 30 inch wide fairing aft of the rear exit hatch, and a seven foot long probe

extending forward from the top of the nose section which supported the angle of attack probe necessary for the Terrain Following Radar system.

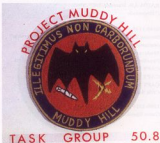
The existing APS-20 radar radome was modified to incorporate the Forward Looking Infrared (FLIR) system that was capable of being scanned from the horizon to 20 degrees aft of nadir. A small fairing just forward of the MAD boom housed a Fairchild Instruments, horizon-to-horizon, 70mm film format reconnaissance camera. The additional fairing just aft of the rear floor exit hatch now housed the Stereo, Downward Looking Infrared

ASW and navigation equipment. The E-O sensor station was installed in the forward section on the flight deck, the navigation station was the center location, and the Electronic Counter Measures (ECM) station was at the aft location. The navigation station was composed of an integrated navigation suite consisting of a B-52 inertial guidance/navigation computer, Litton LN15 inertial system, APN-92 Ioran C, and an APN-122 Doppler groundspeed/drift navigation system. The transmitter for the Active Magnetic Anomaly Detection (AMAD) was a 36-inch coil of solid copper wire mounted directly behind the aft observer seats at 25 degrees to the vertical. The wing fuel tanks were filled with orange-colored, polyurethane reticulated foam to prevent sloshing of the aviation fuel and to minimize the possibility of wing fires initiated by small or medium caliber ground-fire.

Between August 1966 and June 1967 crewmember training and systems installation and flight testing was conducted. Flight operations utilized the E-Systems runways and ground facilities and the surrounding Greenville countryside. Additional operations were conducted at Fort Hunter Liggett Proving Grounds on the central coast of Northern California. In July 1967, the project relocated to WST at "Pax River" for pre-deployment preparations.

The aircraft, with an aircrew of six departed NATC in late July 1967, followed by the remainder of the 41 project personnel (USN, USAF, USMC, Civilian Contractor, and U.S. Civil Service) components and equipment via USAF MAC transportation to Udorn Than Royal Thai AFB, located in the northeastern sector of Thailand, just south of the Mekong River forming the Thailand-Laos border. Udorn RTAFB was to be the project's base of operations for the next four months.

Muddy Hill came under Commander in Charge, Pacific Fleet Task Group 50.8. It operated from the Air America compound at Udorn. Avionics systems test, road reconnaissance crewmember training and low-level, aerial reconnaissance,



NP-2H, shown here, "was" an SP-2H Neptune.

(DLIR) systems. The port circular nose fairing housed the Low Light Level Television (L3TV) system and the starboard circular nose fairing contained the APN-153 Terrain Following Radar (TFR) system.

Controls and displays for the electro-optical systems were mounted on the flight deck in place of the previously ex-

