

Beginning with this issue, The MATS Flyer's Outstanding Unit feature assumes this title to avert confusion with existing MATS and USAF awards.



APCS

THE Air Photographic and Charting Service, commanded by Brigadier General Robert W. Hall, was one of the four MATS sub-commands which completed 1963 accident free. For APCS it was a significant accomplishment, lowering a rate of 4.12 to zero. When considering the nature of the APCS mission, it was even more meaningful.

The aircraft operations of APCS are consolidated in the 1370th

Photo-Mapping Wing at Turner AFB, Georgia. This unit, commanded by Col. K. S. Young, has a mission to accomplish precision aerial mapping photography, electronically controlled aerial mapping photography, and aerial electronic geodetic survey (HIRAN). During 1963, APCS crews flew over 22,000 hours, accomplishing 70,000 linear miles of mapping photography and 85 HIRAN lines. They flew daily sorties over the Amazon

Many APCS Aerial Survey Teams transit troubled areas of the world, requiring special measures to protect aircrews and equipment. The markings on the RC-130 shown in the photograph below are typical of designations connecting the APCS aircraft with the local government.



BRIG GEN ROBERT W. HALL

Jungle, photographed the uninhabited Andes Mountains, measured distances between remote Pacific islands and covered the rugged Owen Stanley Mountains of New Guinea.

Two Mapping & Charting Squadrons provide the aircrews for these missions. The 1371st operates the RB-50, C-54, and C-47 types and has been accident-free since 1959. The 1375th flies RC-130, CH-21 and H-43 aircraft. The 1370th Field and Organizational Maintenance Squadrons provide aircraft maintenance.

To accomplish assigned projects, the 1370th PMW deploys aircrew and support personnel on Aerial Survey Teams (ASTs) for 6 month periods of TDY. During 1963, AST 2 operated RC-130s from Bogota, Colombia; AST 4 deployed to Ethiopia with RC-130s; AST 5 flew RB-50s, H-21s and a C-47 from Atkinson Field, British Guiana and Belem, Brazil; AST 6 flew RB-50s from Ramey AFB, Puerto Rico; AST 7 operated RB-50s, C-54s and H-43s from Port Moresby, New Guinea; AST 8 flew RB-50s from Hickam AFB, Wake and Midway Islands; and AST 9 flew RC-130s from Lima, Peru.

Other areas of operation within recent years were: Clark AB, Philippines; Eielson AFB, Alaska; the

The MATS Flyer

Canal Zone, Nicaragua and Guatemala; Andersen AFB, Guam; Keflavik, Iceland; Goose AB, Labrador; Thule AB, Greenland; Havana, Cuba; Athens, Greece, plus countless locations within the contiguous U.S.

These world-wide scientific operations necessitate a great variety in mission operations and create massive logistic requirements as the aircraft are unique to the areas in which they operate. Survey teams are far removed from MATS channel traffic, supply lines and command posts. The teams are self-sufficient and aircraft commanders are endowed with responsibilities unknown in other USAF units.

Through concerted study by supply personnel, known use items are identified and stocked in portable mission kits which open to form stock bins. Availability of replacement parts without overstocking is a great consideration in keeping the ASTs operating economically, yet safely.

The APCS mission requirements taxed their airframes to the limit. Single engine H-21s, loaded to max gross with cargo for all-but-inaccessible HIRAN ground stations, skimmed along jungle tree-tops with little chance of finding suitable clearings for emergency landings. Turbine-powered H-43Bs hauled the supplies to high altitude stations in the rugged New Guinea mountains. Aged RB-50s struggled up to 43,000 feet altitude (two hours at METO power to climb) to accomplish electronic survey measurements. Versatile C-54s made in-flight pickups of film capsules from isolated ground stations. Reliable C-47s made touch-and-go landings on remote jungle airstrips between 150 ft high trees, then flew across the field to check the depth of the ruts before committing themselves to a full stop landing. Loaded RC-130s encountered problems operating from 13,000 ft field elevations—the performance charts didn't go that high!

APCS crews are as versatile as their aircraft. Crew officers and NCOs assume all AST staff duties:



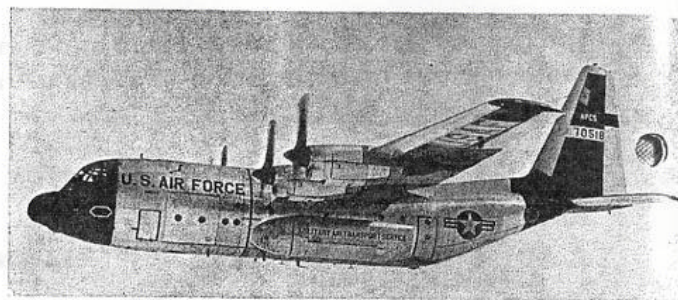
Operations, Maintenance, Supply, etc. As they frequently make operational stops at foreign airfields, aircraft commanders are faced with language barriers in working with control towers and in obtaining fuel and services on the ground. Crew members perform aircraft and photo equipment maintenance on the ground and in flight. Weather information is either not available, is unreliable, or there is again a language barrier. Fortunately, numbers are the same in most languages and the pilots soon learn to read sequence codes and make their own forecasts. Photo and HIRAN crew duties make the navigators some of the most versatile members of the crews. Their duties involve everything but navigation. They plan and direct the photo and HIRAN missions in the remote operational areas.

The APCS mission is unlike the transport mission, rescue mission, or weather recon track. The photo mission requires being over a specific point at a time when it is cloud free and at an acceptable sun inclination angle. The HIRAN mission requires being at a given point under proper atmospheric conditions, with electronic equipment precisely warmed, tuned and calibrated. The controlled photo mission requires a combination of both. A late takeoff, or an unnecessary abort does not mean merely a delay. The matter of a few minutes can mean total mission failure. Likewise, to accomplish the mission the aircraft must orbit enroute, either within a small area or along a photo line several hundred miles in length. These enroute delays must be con-



The single-engined helicopters employed by APCS have one of the most hazardous missions in the USAF, delivering supplies to inaccessible ground stations. Their crews are also ambassadors of good will, often bringing first sight of manned aircraft to isolated peoples. Versatile crews sometimes contract local people to haul parts to downed aircraft.





Geodetic survey mission requirements take 1370th PMW crews to remote regions. Above, left. Maintenance personnel repair an HH-43 engine in a New Guinea jungle clearing. Below. Personnel erect a ground station on the Greenland ice cap.



Continuously recomputed to arrive at the destination airfield with minimum fuel to meet requirements. Excess fuel means more time could have been spent accomplishing the mission. A fuel deficiency compromises crew and aircraft safety.

The APCS maintenance personnel are as ingenious as the aircrews. Engine changes have been accomplished with "A" frames constructed from poles hewn from

trees, combined with brute strength. Helicopters have been repaired in, then flown out of, small jungle clearings. In one case, the crew hired a native with an ox cart to haul parts to a downed aircraft.

To reduce the operational hazards, the 1370th PMW maintains an aggressive accident-prevention program. Squadrons hold weekly meetings, presided over by the aircrew standardization member for each respective crew position. Then all personnel attend a monthly wing or AST safety meeting, conducted alternately by wing and squadron safety officers. Flight-line maintenance personnel are included!

Airfields and areas of operations are surveyed prior to deployment of an AST. Departing aircrews receive pre-deployment standardization checks and are briefed on known hazards and operational problems. Route familiarizations are made when replacement crews deploy on continuing projects.

Monthly safety surveys of the

home base and ASTs are conducted along the guidelines of AFR 120-4 and MATS Supplements. In addition, the wing publishes a monthly survey theme, emphasizing areas such as OHR reporting, seasonal flying hazards, personal equipment, or command and supervision, which are to receive special attention that month. A list of questions to be asked individual wing personnel is published. This allows people to be forewarned and prepared — but they get educated during this self-preparation.

The 1370th PMW puts the "icing" on its accident-prevention program with emphasis on individual and unit recognition and awards. A "Squadron of the Month" award for the most effective accident-prevention program is an example.

The Air Photographic and Charting Service, in accomplishing its unique and hazardous mission accident-free during 1963, has truly earned the title AN EXCEPTIONAL UNIT.

Below. High trees surrounding helicopter pads make approaches hazardous. To reach these inland stations, H-21 crews follow jungle rivers to familiar landmarks, then fly time and heading across the indistinguishable jungle.

