

MISSILES

First TV-guided flight for Maverick

The Air Force's Maverick air-to-ground missile, which is guided by a miniature television camera in its nose, has successfully completed its first guided flight test.

In the test at the Air Force Missile Development Center at Holloman Air Force Base, N.M., the missile was launched from an F-4D Phantom jet at an Army tank. This is the first time that a Maverick, complete except for warhead, has been fired at a target.

To aim the missile, the pilot of the aircraft flies toward the target until it appears on a TV screen in the cockpit; he then locks the missile's guidance system onto the image. Once the Maverick has been launched, the pilot can veer away while the missile continues independently, using an electro-optical homing device in its nose.

The missile, built by Hughes Aircraft Co., Culver City, Calif., was first launched from the air Sept. 15, but without its guidance system.

NAVIGATION

StarLifters get Category II landing system

The entire fleet of C-141 StarLifter jet transports operated by the Air Force has now been equipped with an automatic landing system approved by the Federal Aviation Administration for landings with visibility ceilings as low as 100 feet and forward visibility of as little as 1,200 feet.

These visibility minimums, known as FAA Category II, are primarily safety constraints, although the system is capable of controlling approaches automatically all the way to touchdown. Plans are also being made to use one specially equipped C-141 to gather data on landing systems for Category IIIA, which allows aircraft to operate with zero ceiling and 700-foot forward visibility on the runway.

The system has been installed in a total of 279 StarLifters, including all those operated by the Military Airlift Command and four assigned to the Air Force Systems Command for special test programs.

AIR TRAFFIC CONTROL

Radio backup supplements landlines

An emergency communications system is being built for the Federal Aviation Administration to keep air traffic controllers from losing touch with en-route aircraft.

At present, communication is maintained by radio between an aircraft and the nearest of the FAA's long-range radar sites, and from there by cable to the nearest of the 21 air route traffic control centers serving the continental United States. But the cables are subject to breakage, involving complicated alternate relaying procedures during the several hours necessary to restore the break.

The new system will provide a network of very-high-frequency and ultra-high-frequency transceivers that use no ground cables and can be activated in an emergency at the push of a button. The first phase of the project will

provide coverage for about half of the area of each of the 21 centers; full coverage will follow with the availability of funds. The FAA hopes to eliminate the cables in the primary system as well later on.

APOLLO APPLICATIONS

Test booster becoming workshop mockup

A test version of the third stage of the Saturn 5 booster has begun conversion into a mockup of the Apollo Applications Program's orbiting workshop (SN: 1/3, p. 21) for use in dynamic and acoustic evaluations.

Once the modifications are completed at the McDonnell Douglas plant in Huntington Beach, Calif., the stage will be returned to the National Aeronautics and Space Administration's Marshall Space Flight Center in Huntsville, Ala. There the strength and integrity of the altered booster will be evaluated prior to construction of the actual workshop.

AIR POLLUTION

Five-year plan for cutting jet smoke

The Air Transport Association has set Dec. 31, 1974, as a target date by which all of its member airlines are to have smoke-reducing devices fitted to the engines of their Boeing 727 and 737 and McDonnell Douglas DC-9 jet airliners.

All three aircraft, of which a total of 1,012 are scheduled to be in service by the target date, are powered by the Pratt & Whitney JT8-D engine. The development effort that led to the smoke-cutting devices, which improve the engines' combustion, has also led to greatly reduced exhaust smoke from the more recent engines in the Boeing 747, McDonnell Douglas DC-10 and Lockheed L-1011. These will add 290 more aircraft to the 27 ATA member airlines by 1974.

Despite the ATA timetable, air pollution officials have indicated that the job can be done more quickly. Administration officials this week told the airlines that the air cleaners must be installed by 1972, under threat of punitive legislation.

COMMUNICATIONS

More data from Aerobee

A telemetry antenna, developed for the Aerobee sounding rocket, can provide increased data transmission rates for rockets and space vehicles.

The antenna was developed by Aerojet-General Corp. in response to the Army's decision to add the S-band, from 2,200 to 2,300 megahertz, to rocket operations at White Sands Proving Ground in New Mexico. The antenna, says Aerojet, is adaptable for all research rocket, missile and spacecraft applications.

The antenna consists of a flat copper band around the rocket's circumference. Besides offering improved transmission rates, it creates less atmospheric drag than the multiple protrusions of former designs.

In its first application, the antenna was used to transmit to earth television pictures of the sun from an Aerobee 150 rocket. The S-band has permitted video signals more than 15 megahertz wide to be used.