

AIRCRAFT PROPULSION

U.S. engine picked for European airbus

A U.S.-built engine, the General Electric CF6-50A, has been chosen for the multi-nation European A-300B airbus (SN: 4/5, p. 327).

The engine, a high-bypass turbofan developing 49,000 pounds of thrust, was selected earlier this year by four European airlines to power their version of the U.S.-built McDonnell Douglas DC-10 tri-jet liner, as well as by two U.S. supplemental carriers. Three major U.S. airlines have ordered the DC-10 with the smaller, 40,000-pound-thrust CF6.

Though the British Government elected to pull out of the A-300B project, Britain's Hawker-Siddeley Aviation is building part of the structure. France, Germany and the Netherlands are also participating.

INTERNATIONAL PROGRAMS

Delta launches military comsat

Britain's first military communications satellite, called Skynet, was launched from Cape Kennedy, Fla., Nov. 21, in the first use of a Delta booster since an investigation was begun of the rocket's three recent costly failures (SN: 9/13, p. 212).

The investigation, initiated early in September, followed the loss, due to booster malfunctions, of two Intelsat III satellites and the Pioneer E deep space probe. The mishaps have been attributed to seemingly unrelated causes, which have been corrected, but the investigation continues.

The Skynet satellite, first of two, was built for Britain by a U.S. company and launched by NASA. It is in a synchronous orbit off the east coast of Africa, and can link up with the U.S. Initial Defense Satellite Communications System.

AERONAUTICAL RESEARCH

NASA and Army to share facilities

An agreement that will expand U.S. capabilities in low-speed aeronautical research has been signed between the National Aeronautics and Space Administration and the Army Materiel Command.

The agreement provides for joint use of existing NASA test chambers, wind tunnels and other facilities by both agencies at the Langley Research Center in Hampton, Va., and the Lewis Research Center, Cleveland.

Four years ago, a similar agreement resulted in the establishment of the Army Aeronautical Research Laboratory at the NASA Ames Research Center at Moffett Field, Calif. That effort will also be expanded under the new policy.

CELESTIAL MECHANICS

Apollo 12 booster orbits earth

The top stage of the Saturn 5 booster that sent Apollo 12 to the moon has gone into a large, elliptical orbit around the earth, rather than flying by the moon into a sun-circling path as intended.

On past flights, residual propellants have been vented from the S-4B stage to give it enough push to fly within about 3,160 miles of the moon, whose gravity would speed the rocket free of earth's influence and into a heliocentric orbit. The Apollo 12 booster, however, passed about 4,600 miles from the moon, so that it did not gain enough extra speed.

Instead, it ended up in a huge earth-centered path that should initially carry it as far as 552,000 miles from earth and no nearer than 93,000 miles.

The reason, according to NASA, is that that engineers directing the so-called sling-shot maneuver exercised their option to use the Saturn 5's own guidance system for the feat instead of ground tracking information. The guidance system performed to within its specifications, officials say (they rule out any influence of the lightning that struck the spacecraft shortly after lift-off), but still not well enough to get the booster within the lunar fly-by corridor.

AIR SAFETY

Infrared device checks positions

An infrared tracking device that responds to an aircraft movement of as little as three and a half feet at a distance of eight miles is being turned to the cause of safety over airports.

Called a telecroscope, the instrument was originally developed for use in weapons research. It has been adapted by England's Civil Aviation Flying Unit to track and record the position of aircraft during checking of radio navigational aids.

The telecroscope system has already been purchased by Brazil, South Africa and East Africa, and parts of the equipment by West Germany, Switzerland and Australia; Canada, New Zealand and Yugoslavia have also expressed interest.

One particular beneficiary will be the Civil Aviation Flying Unit itself, which is using a pair of Hawker-Siddeley 748 aircraft as flying laboratories to test some 40 instrument-landing systems currently in use at United Kingdom airports; the number of systems will soon be increased to 60.

SPACE POWER SYSTEMS

Long-life radioisotope capsules

Metal radioisotope capsules that can be used in a space environment for five years or more at a temperature of 2,000 degrees F. are being developed for the Atomic Energy Commission.

The capsules, designed to hold fuel elements that provide heat energy for electrical power generation in space stations, lunar bases and spacecraft, are under development by North American Rockwell Corp.'s Atomics International division in Canoga Park, Calif. They could also be used for lighthouses, undersea laboratories and other applications.

In prototype tests, one capsule withstood the 5,000-degree heat of a solid-propellant rocket blast, while others have been heated to 1,200 degrees and fired into a block of granite at 350 feet per second to simulate earth impact of a landing spacecraft.