PROSPECTS for a large-scale demonstration to show how satellites can improve the quality of voice communication for the airlines now appear bleak, at least within the next five years or so.

At the latest Aerosat Council meeting in Washington on September 15-16 the Federal Aviation Administration said that it could not support the space segment—the satellites and launch vehicles—of the Aeronautical Satellite programme "because of inadequate funding."

The decision to terminate Aerosat, at least in its present form, was taken by Mr R. L. Beam of the US Department of Transportation, who is also chairman of the Aerosat Council, the programme's executive body. Beam did not go so far as to suggest that Aerosat should be abandoned, (the policy which many if not most Americans would probably have welcomed); instead, he proposed that the programme revert to the status of feasibility studies to be conducted within the framework of the present Aeronautical programme. The American delegation will put forward proposals at the next Council meeting on December 7-8. As a result of the long delays, this step was becoming inevitable anyway. The engineering design of the satellite had begun to fall some way behind current practice, and to some extent any demonstration would have undersold its capabilities.

Europe in fact had already been investigating the application of improvements through small-scale industrial and internal research.

Aerosat was far along the road to responsibility for the satellite when Comsat General (the three partners' technical services manager) awarded General Electric a nominal holding contract for two satellites. These were to be launched by Delta 3914 rockets at the end of 1979 and mid-1980 to provide an experimental service over the North Atlantic, the most densely travelled international air route.

Work on Aerosat began in 1971, although it had been under discussion already for several years. The problem since the earliest days was how the US could finance America's share. This snag never confronted Europe, whose branchchild Aerosat was, because as an experimental or at most pre-operational satellite it was automatically supported by the ESA governments and no private capital was involved.

But for America the situation was different: as a communications satellite Aerosat was regarded as just an extension of current techniques. Accordingly, it could not be operated by NASA as an experimental programme in the same way as, for example, Landsat. Originally, the FAA's efforts to assume responsibility for the system (with, of course, government money) were foiled by the Office of Telecommunications Policy (OTP), which directed the FAA to delegate responsibility for buying and operating the US part of the network to a commercial agent.

Comsat General was appointed by ESA as its US partner and agreed in principle to finance America's share of the space segment, provided that the FAA guaranteed to lease capacity on the satellite. But a dispute arose between the company and the FAA on how much the space segment would cost, a factor which in turn controlled the leasing charges. This deadlock was broken in January last year when the OTP, breaking with traditional American commercial practice, authorised the FAA to make advance payments to Comsat General beginning in 1976. Aerosat seemed to be out of the wood.

But earlier this year the FAA's accountants advised that the organisation's Aerosat budget was insufficient to cover costs in the event of a cancellation, and this set the scene for last month's announcement.

US lack of enthusiasm has long been apparent. The FAA was privately concerned that the satellite would have absorbed a large part of its R&D budget for several years. The airlines were unenthusiastic if not outrightly antagonistic to satellites. Though conceding the possibility of improved voice quality, they argue that the cost of the installation and maintenance of the airborne equipment and the increase in user charges would outweigh the benefits. With fewer flights over the North Atlantic than predicted a decade ago, but with better navigational facilities such as inertial navigation, they feel that improved voice communication is a luxury they cannot afford until their finances have improved.

Back-up OTS to be launched next June

WITHIN hours of losing OTS last month, ESA had begun preparations for launching the back-up Orbital Test Satellite in June next year. A spare was ordered in December 1973 along with the main spacecraft, and it became a potential spare also for Marots when this maritime communications satellite was ordered a year later from the same group of European companies.

The 50 per cent share in the OTS bus which is held by the Marots organisation is now being bought back with the insurance money that ESA will get after the OTS launch failure; another spare will be built for Marots.

The NASA team set up to investigate the accident conferred for the first time on September 16. Chaired by George Hardy, manager of the Shuttle solid rocket booster programme at the Marshall Centre, it comprises six other high NASA officials and two observers from the USAF (which runs the launch services at Cape Canaveral) and ESA. Unofficial reports indicated late last week that the team is concentrating on nine possible causes, six associated with the boosters and three with the booster motors.

The Delta launch programme will continue in the meantime. The next flight, scheduled for October 13, will carry two International Sun-Earth Explorers, ISEE-A and -B, built respectively by NASA and ESA. It will be followed on November 3 by ESA's Meteosat. Both missions will use Delta 2914s, which are unlikely to be affected by any action decided for the 3914.

OTS was originally designed around the 2914 and its launch scheduled for December 1976, exactly three years after contract award. But in 1973 ESA decided to take advantage of the 3914 then being developed privately for RCA's Satcom, which was too heavy for the earlier rocket. ESA accordingly postponed the launch to June 1977, deliberately permitting a six-month slip to allow the incorporation of improvements to OTS. The space agency says that the satellite was built on cost and on time.

Total OTS programme cost is 55 million Accounting Units (about $66 million). This is some 15 million AU above the 1973 cost, the increase being attributable to inflation (13 million AU) and improvements (2 million AU). ESA took out $29 million in insurance to cover the launch and the cost of buying back from Marots its share in the back-up satellite.

Roger Bacon is away.