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PLANS FOR FIRST BRITISH SATELLITE EXPERIMENT USING SCOUT

Scientists from Great Britain and the National Aeronautics and Space Administration have recently completed a series of meetings leading to agreement on the suitability of the proposed experiments for the first British satellite. They also have agreed on the practicability of flying them on a Scout vehicle to be launched by NASA in about a year.

In addition, a number of informal joint discussions about the scientific instrument payload for a second UK Scout satellite have also been held in recent months. A final choice of experiments for the second satellite will be made shortly.

These joint projects are an outgrowth of the offer made by NASA to provide launching facilities for experiments of mutual interest prepared by scientists of other countries. This offer was made through the U. S. National Academy of Sciences delegate to COSPAR last year.

The initial satellite, designated International Ionosphere Satellite S-51, or more shortly U.K. No. 1., is to be roughly spherical in shape, nearly 2 ft. in diameter. Four telemetry antennae will transmit in the 136-137 Mc/s band to ground stations...
either directly from the instrument payload, or from a tape recorder which has stored data gathered during the orbit. This tape recorder will play back when commanded by suitable ground stations, one of which will be in the U.K. at the Radio Research Station, Slough. The experimental data will be available first to the U.K. scientists responsible for the instruments in the satellite.

Several watts of electrical power will be generated by 4 paddles carrying solar cells, and will be used to charge a system of batteries in the satellite. This power supply will be designed to operate for a year, after which time the radio transmitters will be switched off.

The structure, telemetry system, tape recorder and power supplies are responsibilities of NASA.

Scientific instruments are being designed and made in Britain. They will include a Birmingham University electron density experiment, part of which will be carried on a boom which will swing out radially from the satellite after launch. A similar boom will carry a probe electrode for one of the University College, London experiments. The cosmic ray detector of Imperial College, London, will be mounted on the spin axis of the satellite, immediately behind the spherical detector of the University College ion mass spectrometer.

This Scout satellite will be launched from Wallops Island, Va., into an orbit which will carry it over the United Kingdom. It will be stabilized by spinning about its axis.