OLD WORLD

SELECT COMMITTEE

No Space Policy

SUBCOMMITTEE B of the Select Committee on Science and Technology discovered this week that the Ministry of Aviation Supply has less than complete control over the development of Britain's policy for space research. Although that suspicion may have already been in their minds, members of the subcommittee were left in little doubt of its reality when they took evidence from Mr E. C. Cornford, Controller, guided weapons, Mr A. Goodson, Head of the Space Division, and Mr J. Lewis, of the R & D branch at the Ministry of Aviation Supply, during the first public meeting this session.

The witnesses told the committee that the Ministry of Aviation Supply plays a central, technical role in Britain's space activities, in that its chief function is to provide the space technology required by other departments for their own space purposes. The Ministry of Defence is, however, responsible for military communications satellites, the Department of Education and Science for scientific space research, and the Ministry of Posts and Telecommunications develops policies for civil communications by satellite. No amount of questioning by members of the select committee could bring out evidence to suggest that the programme which results from the deliberations of these various ministries has any real community of purpose, and Mr Goodson was even forced to admit that "there is no space programme which stands on its own merits".

The Ministry of Aviation Supply is, however, responsible for the development of Britain's policies for international co-operation in space research, and this was subject to extensive probing by members of the subcommittee. Mr Richard Brown, in particular, wanted to know whether the fact that expenditure on international space activities is now only about half that on national space research represents a change in policy—four years ago, the bias was the other way round (see Table 1). But Mr Goodson explained that the chief reason for the decrease in international research expenditure is that the British government decided in 1968 to leave ELDO, while much of the increased expenditure on the national space programme has been devoted to the development of the Skynet military communications satellite.

Mr Brown pointed out that one of the chief reasons why ELDO never developed into a viable organization is that many countries used the development of the Europa launcher as a means of getting some economic return for their obsolete defence rockets. He also believed that because ELDO is chiefly a procurement agency, which does not have much say in the development of satellites, its launchers are not necessarily the best ones for launching European satellites. He wondered whether the Ministry of Aviation Supply has got itself into a similar position with respect to the British space programme, in that it may be developing a launcher which nobody will want. But Mr Cornford did not agree. He said that Black Arrow is a small, cheap and simple satellite launcher which is tailored to the experimental programme that it is meant to serve. Development of the Black Arrow Launcher is solely the responsibility of the Ministry of Aviation Supply, but the Department of Education and Science will formulate its own policy for the experimental satellites that it may launch.

In their written evidence to the select committee, the witnesses confirmed that a launch attempt will be made later this year with the X3 satellite, carrying technological experiments (see *Nature*, **229**, 290, 1971), but that the Black Arrow launch which was scheduled for December 1971 had been put off because of difficulties with satellite development. The satellite was to contain two meteorological experiments and an attitude control experiment, and was intended to be a joint project between the Ministry of Aviation Supply and the Meteorological Office. In December 1970, however, the Meteorological Office backed out of the project, and it is now being reviewed.

Table 1 UK Expenditure on Space Activities

	£000s				
International civil programmes	1966/67 (1)	1967/68 (1)	1968/69 (1)	1969/70 (1)	1970/71 (Estimates)
ELDO (2)	12,540	8,750	9,640	8,170	1,840
ESRO (3)	3,850	4,500	5,000	5,200	5,450
INTELSAT (4)	800	600	1,040	1,030	1,130
Post/Apollo studies	—	—	—	—	230
	17,190	13,850	15,680	14,400	8,650
National programme					
Defence	3,500	4,000	10,700	5,360	6,730
Commercial satellite communications (Post Office Earth Terminals)	1,070	1,170	1,340	1,300	1,600
Scientific space research	2,230	1,960	2,350	2,930	3,930
Space technology and other expenditure not included above	2,770	3,170	4,110	3,830	4,640
	9,570	10,300	18,500	13,420	16,900
Total space	26,760	24,150	34,180	27,820	25,550

(1) Figures for these years represent actual expenditure.

(2) Contribution to the organization (limited to £11 million as from January 1, 1969.

(3) Includes £100,000 for applications studies in 1969/70 and a total of £400,000 in 1970/71 for applications studies, applied research and applications satellites (communications and aeronautical).

(4) INTELSAT figures are the United Kingdom quota payments to the Organization less United Kingdom revenue receipts from the Organization.

HIGH ENERGY PHYSICS

Nina Shines

THE Science Research Council is putting up £360,000 to exploit the synchrotron radiation that is generated by electrons in the Nina electron accelerator of the Daresbury Nuclear Physics Laboratory, near Manchester. This was announced on Tuesday and work has already begun at Daresbury on the new laboratory which is expected to be ready by mid-1972. At first, at least, it will have its greatest application in solid state physics.

Funds for the synchrotron radiation facility come under the Science Board of the Science Research Council rather than the Nuclear Physics Board which is responsible for the Daresbury laboratory and which must be hard pressed just now finding ways of pruning its requirements to make entry into the 300 GeV project easier. Rather the new facility is an instrument that chemists, biologists, and physicists outside nuclear physics will want to use, and it has the charm that they can be using the intense synchrotron radiation from the accelerator while the nuclear physicists are working unimpeded with the 5 GeV electron beam.

Up to now the synchrotron radiation that is emitted by electrons in circular paths (and so called because it was first observed in electron synchrotrons like that at Daresbury) has gone to waste, so to speak, in the Daresbury accelerator. Most of the money that has now been earmarked will go towards building an arrangement for the extraction of the light from the vacuum tube in which the electrons are accelerated without interfering with the beam and the provision of ancillary equipment such as spectrometers. But some of it will be available to finance experiments using the radiation that is made available.

When the new facility is built, it means that the SRC will have at its disposal a source of radiation at X-ray and ultraviolet wavelengths (5 Å to 2000 Å) that is more intense than can be obtained with