

EUROPEAN LAUNCHER DEVELOPMENT ORGANIZATION— BEGINNING AND END

THE European Launcher Development Organization (ELDO) began with the abandonment by the United Kingdom Government of the development of the *Blue Streak* military rocket in April 1960. The rocket, which had been intended as a ballistic weapon with a range of 2,000 nautical miles, was built around two rocket engines of a type similar to that used in the American *Thor* and *Jupiter* rockets, but constructed and developed in the United Kingdom by Rolls-Royce, Ltd.

Before the decision to abandon *Blue Streak* was announced, studies had already begun of the potential usefulness of *Blue Streak* for civilian purposes. In September 1960, the United Kingdom, after suitable diplomatic preparation, invited a number of European countries to participate in an organization for launching satellites. The conference met in Strasbourg on January 30, 1961, and was attended by ministers from the United Kingdom, France, Belgium, Denmark, Germany, Italy, the Netherlands, Norway, Spain, Sweden and Switzerland. Observers attended from Austria, Canada, Greece and Turkey.

At this time the British Government was separately concerned in discussions with members of the European Economic Community about the feasibility of British entry into the Common Market. At the same time, too, initiatives were being taken to establish a European organization for launching scientific satellites (ESRO) the existence of which was not affected by the discussions on the future of ELDO.

At the Strasbourg conference in 1961 it was agreed that if a European organization for launching satellites were created, the first programme would be the development of a three-stage rocket based on British and French experience. The first stage of the rocket would be built by the United Kingdom, the second by France, the third stage and any satellites to be launched by other European countries. Tests of the complete vehicle would be carried out at Woomera in Australia.

It was also agreed at Strasbourg that any organization would be exclusively pacific and that all technical information arising out of the developments would be placed freely at the disposal of member governments. The British and French Governments agreed that their own experience would be placed at the disposal of the joint organization. (This raised the question, which has never been cleared up, of whether the British Government was entitled to place at the disposal of other European Governments information acquired under bilateral military agreements with the United States.)

At the first meeting it was also agreed that the estimated cost of the first programme—£70 million—would be spread over five years and would be shared between the participating countries on the basis of a third share by the United Kingdom and a division of financial responsibility among other countries in proportion to national income.

The Strasbourg conference was followed by a meeting in London in October 1961 at which Australia joined the participants. By this time it had been agreed that the organization should undertake a study of other possibilities than those based on the *Blue Streak* rocket. At this early stage it was plain that the estimated cost of £70 million for the first programme might not be realistic. It was further agreed that any expenditures exceeding this estimate would be divided among the member countries of any organization set up on a basis which might have to be negotiated within the organization at a later stage.

The formal convention of ELDO was opened for signature on April 30, 1962, and was promptly signed by Australia, Belgium and France, West Germany, Italy, the Netherlands, and the United Kingdom. Technical

and administrative committees were established as were headquarters in Paris. A number of legal difficulties arising from the lack of definition of the powers in international law of the preparatory committee was eventually overcome. Throughout 1963 plans were drawn up for an initial programme and finally it was agreed that the convention should become binding on its signatories on March 1, 1964. Because by this time it was plain that the Scandinavian countries, together with Austria, Spain and Switzerland, would not sign the convention, it was agreed that the financial responsibility of those countries would be shared between France, West Germany and the United Kingdom (which increased the British share of the total cost to 38.79 per cent, compared with 24 per cent for France and 22 per cent for West Germany).

By the beginning of 1965 it was plain that the original estimate of cost of £70 million would have to be exceeded. For one thing, the original plans were acknowledged to be over-optimistic, and in April 1965 it was recognized that expenditure of some £22 million more than the original estimate would probably be necessary. At the same time it was argued by the technical working group that the initial programme based on *Blue Streak* and upper stages with conventional fuel would have to be replaced by a programme called ELDO B, involving liquid hydrogen fuel, if desirable objectives were to be attained. It was estimated that the cost of this programme, in 1965, would bring the total to more than £140 million. Further refinements of the system suggested more recently by working parties of the organization would have involved costs rising to perhaps three or more times the original estimate of £70 million.

The implementation of the initial programme has involved so far the launching of one first-stage rocket (*Blue Streak*) from Woomera. The first launching of a rocket complete with upper stages had been planned for the end of 1967 at the earliest. The chances that the programme of satellite development and launching originally conceived could be completed within the five years set aside for the ELDO agreement have become increasingly remote.

British dissatisfaction with the rising cost of ELDO has been expressed openly in ministerial circles for at least eighteen months. It has also been pointed out that the time is long since past when the ELDO development could be usefully thought of as a basis for a European communications satellite system. The first ELDO ministerial meeting since the signature of the convention, held in Paris at the beginning of May 1966, ended inconclusively with a decision to allow a period for further consideration of proposed refinements of the ELDO system intended to increase the launching capability of the system, and for further consideration of the cost thereof. The British Government's decision to withdraw from the current ELDO programmes derives directly from that first ministerial meeting.

According to British sources, there is no reason why other European countries should be surprised at the British decision, which is expressed in the following form of words:

"For some time the Government has had serious doubts about whether or not it should continue to participate in the ELDO programmes. These doubts were centred on financial, technical and economic assessments of the initial programme.

"The Government has concluded after a very careful and detailed consideration of all the factors involved that the latest proposals for modifying the initial programme still do not constitute a sufficient basis for continuing United Kingdom participation in the activities of the Organisation, and it has so informed its partners."