THE ORGANISATION

Roy Gibson ESA's Director-General

Who makes the decisions?

FINAL approval for ESA's scientific projects is granted by the Science Programme Committee (SPC), the body responsible to the ESA Council for running the science programme within the financial limits set by the Council. Each member state is represented on the SPC by its own delegates and is allowed one vote in any decision.

Projects for final selection are put to the SPC by the Director-General, Mr Roy Gibson. He is advised by the Science Advisory Committee (SAC) and four working groups: the astronomy working group (AWG), the solar system working group (SSWG), the materials sciences working group (MSWG) and the life sciences working group (LSWG). Experts appointed by the Director-General and acting in their own personal capacity, sit on each advisory body. The MSWG and LSWG were recently created. The two areas of science they serve are new to ESA. One life scientist, one meteorologist and four representatives of the astrophysical and geophysical sciences sit on the SAC. Its meetings are attended by the chairmen of the working groups.

The executive recommends that new project proposals are screened by the working groups. The money spent on early studies is authorised by the Director-General.

If preliminary studies are successful, the Director-General may recommend that a project be considered by the SPC. The SPC will then decide whether or not to go ahead. When a project has been approved, ESA puts out a call for proposals for experiments.

Although there is no formal link between the working groups and the SAC, in practice they work together quite closely. Typically, out of 10-20 project proposals put before the working groups, 5-6 will be passed on to the SAC and three on to the SPC. On average the SPC chooses one major project for development every one and a half to two years.

So far, the SPC has only approved one experiment in the materials and life sciences, the Sled for Spacelab, to be funded out of the mandatory science budget. The rest of the experiments approved in these disciplines are for the first Spacelab payload and are being paid for in individual countries and out of the Spacelab budget.

As well as vetting individual project proposals, the working groups and the SAC discuss overall policy for the science programme. In 1976, for example, the AWG and SSWG both produced reports on the science and projects needed in their respective fields up to 1990. About once every four years, the SAC also discusses plans for the future, such as it did last week.

Responsibility for seeing that the science programme is put into practice rests with Mr Ernst Trendelenburg, Director of Scientific Programmes. His responsibility now includes future science programmes. To speed up decision-making, he would like to see the number of early studies cut, especially those for projects which are obviously unsuitable for further development from the outset. □

Four steps to get a project off the ground

A SCIENTIFIC mission proposal which has been studied by the relevant working group and found scientifically worthy will go through four 'stages' before it is finally approved and the spacecraft is built. Each stage is independent of the others so that the mission can be scrapped at the end of any one without breaking contracts or jeopardising the money which would be spent in the subsequent stages. Most projects which go beyond phase A, however, are completed. The steps in a mission's development are as follows:

Mission definition or assessment. This is a study stage to define the mission and its payload. It is done under the direction of ESA by seven to ten scientific experts in the mission's field of study. They measure the interest shown in the mission by the scientific community in Europe, assess its scientific soundness and the ability of European universities and institutes to build instruments capable of achieving its scientific objectives. They also predict what sort of system will evolve, how

● turn to next pag

The cost: where the money comes from, where it goes

ESA'S TOTAL budget for 1978 is about 530 mau (one mau is roughly US $1.3 million). Of this, 75.5 mau is to be spent on the science programme, about 80 mau on the general budget and the rest on Spacelab, Earthnet and applications programmes such as telecommunications satellites, Meteosat and the development of ESA's own launcher, Ariane.

The science budget and part of the general budget are mandatory. Each member state contributes to them in proportion to its gross national product. Thus, in 1976, Belgium contributed 3.48%, Denmark 2.26%, France 21.20%, Germany 25.25%, Italy 13.23%, the Netherlands 5.34%, Spain 4.44%, Sweden 4.46%, Switzerland 3.56% and the United Kingdom 16.47%. So far all ESA's scientific missions have been conducted through the mandatory programme, even though, in principle, nothing excludes a group of interested member states from funding an optional one.

The mandatory part of the general budget funds 'basic activities' such as the technological research programme at ESTEC, the salaries of some headquarter's staff, the documentation centre at Frascati and the infrastructure. In 1978 it amounted to about 54 mau. The rest of the general budget is for facilities which cannot be charged to any particular programme such as the cost of buying the agency's headquarters in Paris and the cost of running the Ariane's launch pad at Kouru in French Guiana.

All of the science budget is spent on building spacecraft and very large instruments such as those for Spacelab or large observatory-type free-flyers, and on maintaining facilities for tracking them and receiving data. Most of the experiments on board satellites, however, are built in universities and institutes and are funded out of national funds for scientific research.

In 1971 the mandatory science budget was fixed at 28 mau. In 1978 that level is 75.5 mau and in 1979 it is expected to be about 79 mau. As scientific satellites cost between 50–100 mau, and some of them even more, this level of funding means that ESA can build one every one and a half to two years.

The capital cost of launches is not the only expense, and already the science budget is almost fully accounted for until the end of 1980. It is proving difficult to find the 2 mau needed to keep Cos B, ESA's cosmic ray satellite launched in 1975, operating for another year. This sum has not already been included in next year's budget because Cos B has exceeded its expected lifetime. □