

## Making ESRO Ship-shape

THE European Space Research Organization is putting its house in order in preparation for the Third European Space Conference, which will take place in Bonn in June. The European Space Conference deals with the political aspects of a co-ordinated European space policy, and meets at least once a year at ministerial level. The previous meeting, at which Mr John Stonehouse, Minister of State for Technology, was Britain's principal representative, was held in Rome in July last year.

One of the outcomes of the Rome conference was that no new projects could be initiated by ESRO before the Bonn meeting, a decision expressing some dissatisfaction with the administrative and economic structure of ESRO. The new director-general of ESRO, Professor Hermann Bondi, who succeeded Professor Pierre Auger in November last year, sees as his main task the problem of getting ESRO into trim ready for the Bonn meeting. This involves the implementation of the findings of a report on the organization's structure, internal procedures and methods of work, prepared by a group of experts under the chairmanship of Mr. J. H. Bannier, a former chairman of the Council of CERN, the European nuclear research organization. The conclusions of the Bannier report included some reorganization of the managerial structure of ESRO, and the recommendation that the Council of ESRO should devote a greater proportion of its time to defining the policy and objectives of the organization. Professor Bondi is hoping that the reorganization at present under way will persuade the Bonn conference to lift the ban imposed last year.

Projects already in progress are not affected by the standstill. Three ESRO satellites are expected to be launched during 1968, and there is an extensive programme of small rocket launchings planned. A second attempt to launch the satellite ESRO-2 will be made in April—the first attempt failed because the third and fourth stages of the Scout launching rocket, fired from Vandenberg range in California, did not function. Although ESRO-2 was not placed in orbit, it transmitted signals up to eight minutes after the launch, an encouraging sign that the satellite itself was working correctly.

ESRO-1 will also be launched by a Scout rocket, probably in early October, followed in November by the launching of HEOS-A by a Delta rocket. HEOS-A will be ESRO's first satellite to be placed in a highly eccentric orbit, its purpose being the investigation of atomic particles and magnetic fields outside the magnetosphere.

Sounding rocket firings in 1968 will be based on ESRO's range at Kiruna, in northern Sweden. Most of the launchings will be from Kiruna, except four payloads which for scientific reasons cannot be launched at high latitudes. These experiments involve astronomical investigations which may be affected by auroras and studies of geophysical phenomena only observed at middle latitudes, and will be flown from a range in Sardinia.

The diverse experiments planned for the Kiruna flights include studies of auroral disturbances in the ionosphere, investigations of micrometeorites, and measurements of galactic X-rays. Perhaps the most interesting launching from the range in Sardinia will be an experiment to study the X-ray spectrum of the Sun,

using a Skylark rocket fitted with a device that keeps the rocket pointing at the Sun.

Although the Rome conference recognized that a merger of the three European space organizations—ESRO, ELDO and CETS (the European Conference for Telecommunications by Satellites)—was not yet possible, a unified European space organization is likely to emerge in the future. This problem will also be receiving much of Professor Bondi's attention in 1968.

## Threat to French High Energy Physics from our Paris Correspondent

THERE are unaccustomed signs of discontent at present among the 600 French physicists who are specialists in high energy physics and who are preoccupied by the uncertainty hanging over the future of their subject. There are petitions circulating and collecting signatures, animated meetings in laboratories and a good deal of lobbying along the corridors of power. The publication next month of the report of the Consultative Committee for Research can doubtless only aggravate this state of affairs.

The twelve "wise men" (two doctors, two economists, a mathematician, a chemist, three physicists, a scientific agriculturist, a business man and a sociologist) who make up this committee responsible for advising the government departments on scientific policy were asked a year ago to furnish recommendations on the future of high energy physics. One of the important issues in this study was obviously the decision relating to the plan for a 45 GeV proton accelerator. The committee has just presented to the government a document of some 30 pages summarizing the results of its work. This report analyses the present situation and is most complimentary about the excellence of the French teams, which have, in the committee's view, assured for themselves an enviable position, particularly in CERN.

This expression of satisfaction for the men themselves is accompanied by rather more stringent comments on material resources. "French physicists, who for some time have been at an advantage by comparison with their European colleagues, now find themselves making use of more old-fashioned and generally less powerful machines." After such a preamble, the report's conclusions are extremely surprising. The committee judges, in effect, that high energy physics has for a long time benefited from a priority which, if continued, would compromise the progress of other subjects, and therefore urges that the increases of expenditure and in the number of research workers between now and 1980 should be curbed. The spending on fundamental research should be generally cut from 17.3 per cent to 15 per cent—indeed, even to 13 per cent of the research and development budget during this period—and the ceiling for expenditure on particle physics should be pegged at 5,400 million francs instead of the 6,645 million francs which was thought to be the necessary minimum sum by the working party on large accelerators. The rate of growth in the number of physicists would be limited to 3 per cent (those most concerned with the matter were asking for 5 per cent).

On the question of the 45 GeV machine, the wise men did not make any categorical statements: they