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** THE MINISTERS RESPONSIBLE FOR TECHNOLOGY IN THE EUROPEAN COMMUNITY COUNTRIES and in NINE OTHER INTERESTED EUROPEAN COUNTRIES (United Kingdom, Ireland, Norway, Denmark, Austria, Spain, Portugal, Sweden and Switzerland) ought to be in a position to meet in June or July of this year to decide upon the steps to be taken to organize a scheme of EUROPEAN SCIENTIFIC COOPERATION on the basis of the Aigrain Report (see "Research and Technology" Nos. 30 and 39). The Community's Council of Ministers has decided, in preparation for these ministerial discussions, to propose to the nine interested countries that seven expert groups should meet in April 1970 to examine desirable lines of cooperative action in the seven sectors of data processing, telecommunications, abatement of nuisances, metallurgy, new means of transport, meteorology and oceanography, and to study the project to set up a Joint Computing Centre for the Exploitation of Meteorological Research.

In the meantime the Aigrain Group is continuing its work, more especially on the COLLATION OF THE MEMBER COUNTRIES' RESEARCH BUDGETS AND PROGRAMMES (see "Research and Technology" No. 39).

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** After obtaining the opinion of the European Parliament, the Community's Council of Ministers has finally adopted the EURATOM RESEARCH AND INVESTMENT BUDGET FOR 1970. This budget is the same as the draft text drawn up on 19 January last (see "Research and Technology" No. 40) except for an additional appropriation of 100,000 u.a. destined to cover the costs of any studies concerning the reorganization of the Joint Research Centre. In particular, appropriations of 48.63 million u.a. are earmarked for the carrying out of the 1970 research programme, i.e., 23.50 million for the joint programme (financed by the Six) and 25.13 million for the supplementary programme (financed only by the countries directly concerned).

** THE TOTAL TURNOVER OF THE FIVE BIGGEST AEROSPACE COMPANIES IN THE EUROPEAN COMMUNITY AND THE THREE MAJOR BRITISH COMPANIES is less than that of a single American firm. This emerges from a survey (carried out by the Italian firm SORIS on behalf of the Commission of the European Communities on the aerospace industry in the Community as compared with those of Britain and the United States. A short analysis of the survey will be found in ANNEX 1.

** THE REORGANIZING OF THE JOINT RESEARCH CENTRE is at present undergoing thorough study by the Commission of the European Communities, who will probably send the Council of Ministers an initial paper on the subject during April. The Commission also intends to obtain the opinion of eminent Community scientists and possibly to call in private enterprise organization or management consultants, so as to obtain a clear view of the structural changes required in the general context of the current reorienting of research in the Community.

At the same time the groundwork for the drafting of the MULTIANNUAL RESEARCH PROGRAMME is going ahead, in the light of the acknowledged priority (see "Research and Technology" No. 36) accorded to the development of cooperation on ADVANCED REACTORS and the need for an early decision on setting up European URANIUM ENRICHMENT facilities.

** THE CERN PROJECT for a 300 GeV accelerator falls outside the competence of the Commission of the European Communities and no Commission experts took part in the work of the European Committee for Future Accelerators. Although it is difficult for the Commission to give an opinion on the scientific value of this project, it can confirm the project's VALUE from the standpoint of EUROPEAN SCIENTIFIC COOPERATION.

Such, in substance, is the Commission's reply to a question by Mr Cele, a Dutch member of the European Parliament. The Commission also gives a table, to be found at ANNEX 2, of the expenditure by Member States on research in fundamental nuclear physics and on basic and applied research in the field of nuclear energy.

** The Community is to open negotiations with the British authorities on the extension for two years of the AGREEMENT FOR COOPERATION BETWEEN EURATOM AND THE UNITED KINGDOM on the peaceful uses of nuclear energy; the agreement is due to expire on 3 February 1971.

** At a recent meeting, the national experts of the Community countries who, with the Commission of the European Communities, form the Consultative Committee on Programme Management (see "Research and Technology" No. 44) for HIGH TEMPERATURE GAS REACTORS (HTGR) expressed their opinion on the work performed at the Joint Research Centre's Ispra and Petten establishments. Stressing the PROMISE of the high temperature reactor, the experts asked for this type to be brought rapidly up to the INDUSTRIAL STAGE. In the meanwhile they recommend continuation of the work in hand in the sectors of reactor physics, technology, materials and fuels, and the maintaining of CLOSE COLLABORATION between research centres and industrial concerns.

** The Committee of Experts on AUTOMATION AND REMOTE CONTROL of the European Coal and Steel Community (CECA) has held meetings at Liège and Brussels. In particular, it considered the problems of the propagation of radio waves underground; it appears that a practical solution may soon be found for UNDERGROUND TELECOMMUNICATIONS. The Community experts also dealt with the various research projects on remote control and inspection at the

coal face, as regards both support work and cutting devices, sectors in which conclusive partial results have already been obtained.

- ** THE USES, OTHER THAN FOR ELECTRICITY GENERATION, of high temperature nuclear REACTORS were discussed by experts from the various STEEL RESEARCH CENTRES in the Community at a meeting in Brussels arranged by the Commission of the European Communities. A report now being prepared will analyse the development to be expected of the traditional integrated steelworks (up to about 1980), taking into account the influence of kWh and coke prices, the use of pre-reduced ores and new energy sources, and will examine the feasibility of utilizing nuclear energy for direct reduction processes.
- ** Questions relating to the SAFETY OF THE ARDENNES NUCLEAR POWER PLANT (SENA - Chooz) due to the changes made to the pressure vessel internals were the subject of an experts' meeting at the end of February. The reactor is being refuelled for resumed start-up. Criticality is expected in March.

The Aerospace Industry in the Community, the United
Kingdom and the United States

The combined turnover of the five biggest aerospace firms in the European Community and the three major British firms amounts to only 92% of the turnover of a single American firm. It should also be remarked that the five Common Market firms produce 74.5% of the Community's output, while the three British firms account for 87.4% of British national production.

This emerges from a survey of the European Community's aerospace firms in comparison with those of the United Kingdom and the United States, carried out by the Italian BORIS company on behalf of the Commission of the European Communities. This survey, which should be published in the near future, covers the whole sector, including research and development, production, labour, market and prospects.

The aerospace sector is characterized by its vigorous R&D activities and by the leading role played by the government authorities as financing bodies. Research and development expenditure in this sector rose, in the Community, from 0.10% of the gross national product in 1966 (195 million dollars) to 0.23% in 1967 (941 million dollars). In 1967, therefore, it exceeded the United Kingdom's expenditure (688 million dollars) thus reversing the 1966 situation. To this considerable effort the governments of the Community countries contributed to the tune of 89%.

If we compare Europe with America in this field, the first thing to observe is that the size of the American firms enables them to mass-produce on a large scale at speed, which means economical production.

Yet the gap between the European and American firms must be viewed not only from the standpoint of their size, but as a whole: the total production value in 1967 was 1,758 million dollars for the Community countries, 1,610 million for the United Kingdom, and 23,258 million for the United States.

It must further be noted that inside the aerospace sector, space activities, rather than the aircraft industry, are closely linked with research and development. In this field, the industry's activity in Europe has been so far limited to the construction of one or more prototypes, so that the United States are a long way ahead. In spite of the considerable efforts accomplished by the EEC (211 million dollars in 1967 and an average annual growth rate of 37 million dollars between 1964 and 1968), the forecast is that space expenditure will amount in 1980 to about 0.1% of the Community's GNP, a level attained by France in 1967, but still scarcely higher than American expenditure during their first five years of space activities (1959-63).

As to the aircraft market, there are some figures that are worth quoting. Work demand (not counting the Iron Curtain countries) for commercial jet aircraft should amount to an 89,584 million dollar market between 1968 and 1980. On the military side market forecasts are difficult, but the value of the military airfleet as long ago as 1967 was 10,275 million dollars for the EEC, 5,083 million for the United Kingdom and 40,650 million for the United States.

Expenditure by Member States (in million u.a.) and per
head of population (in u.a.) in 1968

	Fundamental nuclear physics (high, medium and low energies)		Fundamental and applied research in the nuclear energy field	
	Total exp.	Exp. per head	Total exp.	Exp. per head
<u>Germany</u>				
- National (State and Länder)	11.6 (DESY)	0.20	190	3.25
- CERN	15	0.26	-	-
- Euratom	-	-	22.5	0.38
<u>Belgium</u>				
- National	2.2 (IISN)	0.23	10 (CEN)	1.04
- CERN	2.5	0.26	-	-
- Euratom	-	-	7.4	0.77
<u>France</u>				
- National (civil and military)			898 (CEA)	18
- CERN	13.8	0.27	-	-
- Euratom	-	-	22.5	0.45
<u>Italy</u>				
- National	12.3 (INFN)	0.23	39.7 (CNEN)	0.74
- CERN	7.4	0.14	-	-
- Euratom	-	-	17.2	0.32
<u>Netherlands</u>				
- National	0.9	0.07	24.6	1.92
- CERN	3	0.23	-	-
- Euratom	-	-	5.2	0.4

NB 1) Owing to overlapping between the various laboratories it is impossible to separate fundamental research expenditure in the field of high energy physics from that in the low and medium energy field.

2) The expenditure on fundamental nuclear physics is not included in the expenditure for fundamental and applied research in the field of nuclear energy (except in the case of France, where for lack of more precise information the overall government subsidies to the CEA are quoted).