

industry research and technology

WEEKLY

REPRODUCTION AUTHORIZED

Brussels, 22 June 1971
No. 104

** The Commission of the European Communities recently replied to a written question from Mr Glinne, a Belgian member of the European Parliament, concerning a possible transformation of the British company of ROLLS-ROYCE into a mixed multinational and European company.

The Commission recalls that it considers aerospace to be one of the sectors of advanced technology in which there are minimum levels of industrial, financial and technological capital below which profitable operation is difficult. In view of the present structure of this sector, the Commission would welcome the formation of transfrontier European aerospace companies. The problems raised cannot be effectively examined from a Community standpoint without a certain dovetailing of industrial policy. Hence it would not be possible to study a problem of this type thoroughly without taking into account the prospects of an enlargement of the Community.

** Too little is still known of the risks and advantages involved in the use of nuclear techniques. Research on RADIATION PROTECTION is being carried out by the Community (see "Industry, Research and Technology" No. 98) and has recently been included

../..

This bulletin is published by the Directorate General Press and Information of the Commission of the European Communities

For further information please apply to the

Commission of the European Communities
Directorate-General for Press and Information
Division for industrial and scientific information
200, avenue de la Loi
1040 Brussels - Tel. 35 00 40

or any of the Information Offices of the European Communities (list inside cover)

The information and articles published in this Bulletin concern European scientific cooperation and industrial development in Europe. Hence they are not simply confined to reports on the decisions or views of the Commission of the European Communities, but cover the whole field of questions discussed in the different circles concerned.

PRESS AND INFORMATION OFFICES OF THE EUROPEAN COMMUNITIES

1 BERLIN 31
Kurfürstendamm 102
tel. 886 40 28

GENEVA
72, rue de Lausanne
tel. 31 87 30

LUXEMBOURG
Centre européen du Kirchberg
tel. 479 41

ROME
Via Poli, 29
tel. 68 97 22 à 26

53 BONN
Zitelmannstraße 22
tel. 22 60 41

THE HAGUE
22, Alexander Gogelweg
tel. 33 41 23

NEW YORK 10017
155 East 44th Street
tel. 212 MU 20458

SANTIAGO DI CHILE
Edif. Torres de Tajarar-Apt.
Torre A, Casilla 10093
Avda Providencia 1072
Tel. 43872

1040 BRUSSELS
200, rue de la Loi
tel. 35 00 40

LONDON SW 1
23, Chesham Street
tel. 235 4904/07

PARIS 16e
61, rue des Belles-Feuilles
tel. 553 53 26

WASHINGTON, D.C. 20037
2100 M Street, N.W.
Suite 707
tel. (202) 296-5131

in a MULTIANNUAL PROGRAMME ON BIOLOGY AND HEALTH PROTECTION drawn up on 21 June by the Council and allocated a total budget of 17,335,000 units of account over a period of five years. A supplementary programme on the adaptation of nuclear techniques to agriculture and medicine, in which West Germany, Italy and the Netherlands will participate, has been allotted a total of 5,610,000 units of account over a five-year period. Details are given in ANNEX 1.

- ** The production of electrical energy at competitive prices, with no fuel-supply problem and no serious risk of nuclear accidents or of radioactive pollution - such are the advantages to be expected from fusion reactors. For some time, therefore, the Community has been encouraging and coordinating research on CONTROLLED THERMONUCLEAR FUSION (see "Industry, Research and Technology" Nos. 57, 71 and 102). A five-year programme of research on controlled thermonuclear fusion and plasma physics, which had been awaited for more than three years, has now been adopted by the Council. Details of this programme and of this research, which is of key importance for the Community's future, are given in ANNEX 2.
- ** The Commission of the European Communities thinks it would be desirable for projects of advanced technology such as the Concorde not to be undertaken in future except as part of a joint overall policy of technological development. This was one of the points made in a reply to a written question from Mr Glinne, a Belgian member of the European Parliament, concerning the Anglo-French project for the Concorde supersonic aircraft. The text of the Commission's reply is given in ANNEX 3.
- ** The General Consultative Committee of the Joint Research Centre met in Paris on 16 June to consider the basic options relating to a Community MULTIANNUAL RESEARCH PROGRAMME (see "Industry, Research and Technology" No. 102).

../..

Another meeting is planned for 30 June, and should enable the General Consultative Committee to study a paper which it will by then have received from the Director-General of the Joint Research Centre, Mr Caprioglio; it is thought that the Committee will be able to pass an opinion on this paper at a further meeting on 13 July.

The task is essentially to select the fields on which it would be useful and advisable to concentrate the Joint Centre's activities, and then to consider specific projects and the means required to implement them.

It will be recalled that the General Consultative Committee of the Joint Research Centre was created as part of the reorganization of the Centre (see "Industry, Research and Technology" No. 80), and is composed of three representatives of each Member State, drawn respectively from the civil service, scientific circles and business and industry.

- ** The Commission of the European Communities will shortly present a series of new proposals concerning a joint ENERGY POLICY. This was stated to the European Parliament at Strasbourg on 10 June by Mr Haferkamp, Vice-President of the Commission of the European Communities with special responsibility for energy problems (see "Industry, Research and Technology" No. 97). In his opinion the present atmosphere of collaboration between the Commission and the national governments was conducive to the creation of a genuine Community policy.

- ** The increasing use of DETERGENTS plays a very serious part in environmental POLLUTION, particularly the pollution of water. For this reason, industry, in concert with the public authorities, has recently been moving increasingly towards the production of detergents containing biodegradable surface agents (i.e., detergents transformed to a large extent during the biological purification of waste water).

../..

In many countries measures have been, or are shortly due to be taken, by the public authorities with a view to limiting the use of non-biodegradable detergents. At present the regulations designed to ensure the biodegradability of detergents differ from one Member State to another, thus hampering trade within the Community. In order to remedy this situation the Commission of the European Communities has just forwarded to the Council a proposal for a directive on the HARMONIZATION OF LEGISLATION IN THE MEMBER STATES RELATING TO DETERGENTS.

The Commission proposes that the Member States should forbid the sale or use in their territories of all synthetic anionic detergents having a surface-agent degradability factor of less than 80%. In the event of dispute the Commission will have the biodegradability checked in one of the Community's specialist laboratories (see "Industry, Research and Technology" No. 92). In addition, a statement to the effect that the detergent conforms to Community regulations must appear on the outside of the package in which the product is marketed.

Since some Member States will have to change their legislations in order to implement the regulations proposed in the Commission's proposal, the European Parliament and the Economic and Social Committee of the European Community will have to be consulted.

** The Consultative Committee of the Coal and Steel Community (ECSC) gave its opinion on 11 June on three very important lines of research presented by the Commission of the European Communities, which require grants amounting to a total of 14 million units of account from ECSC revenue. The grants for COAL RESEARCH run to four million units of account, and those for STEEL RESEARCH to five million. Research projects in the SOCIAL FIELD, including a major research programme on health and safety in mines, were allotted five million units of account.

** Two studies on the INDUSTRIAL APPLICATION OF RADIATIONS AND ISOTOPES are to be carried out for the Commission of the European Communities. The first concerns the potential uses of nuclear methods in the Community's raw materials industry with a view to rationalizing the prospection and production of raw materials such as hydrocarbons, water and ores; the second relates to the present structure and economy of the Community's radiometric industry and the interdependence between this and other industries.

A Multiannual Biology and Health Protection Programme

The increasing use of nuclear energy results in an increase in ambient radioactivity and hence leads to an increase in the radiation dose received not only by scientists and technicians in nuclear centres, but by the population as a whole.

Estimates of this risk are still subject to arguments which may result in either a very favourable or a very hostile attitude to the nuclear industry. It is therefore of importance to consider as carefully as possible the extent of this risk and the measures of protection required.

In addition, nuclear techniques can play a vital part in the development of certain sciences, particularly agriculture and medicine. Research of this kind, which calls for major investments and a high degree of specialization, can best develop in the context of Community cooperation.

These facts enable us to understand the importance of the multi-annual programme on biology and health protection recently adopted by the Council (see "Industry, Research and Technology" No. 98).

This five-year programme is divided into two main parts, namely:

(a) Research on radiation protection

(programme totalling 17,335,000 u.a.)

The research on radiation protection conducted for some years now by the Community will be continued and developed under this programme.

ANNEX 1 p.2

In order to improve the organization of radiation protection, it is necessary to acquire the scientific and technical knowledge required for determining the permissible levels of irradiation in man and of contamination of the environment. Studies on the mechanisms of contamination of man and the environment, and on the short-term and long-term effects of radiation on men, animals and plants (including the factors governing the transfer and concentration of radioactivity through the food chain) will make it possible to determine the risks of radiation. Methods and instruments for measuring radiation and doses (dosimetry) will be developed at the same time.

(b) Research on the adaptation of nuclear techniques with a view to their application to agricultural and medical research

(supplementary programme in which West Germany, Italy and the Netherlands will participate, with a total budget of 5.61 million u.a.)

The possibilities opened up by the use of nuclear techniques to agricultural and medical research include the following:

Agriculture

- the radiogenetic manipulation of animal and vegetable cells with a view to the improvement of species;
- the preservation of foodstuffs by irradiation;
- the combating of harmful insects through the sterilization of the males by irradiation (method avoiding most of the drawbacks of insecticides).

Medicine

- the development of methods of scanning the human body, which have already resulted in immense progress in methods for diagnosing and treating numerous diseases;
- the measurement of elements of biological importance by neutron activation;
- the use of radioactive tracers (the tolerance threshold of the organism has still to be defined).

A Five Year Programme of Community Research on
Controlled Thermonuclear Fusion and Plasma Physics

The production of electrical energy at a competitive price, with no fuel supply problem and no serious risks of nuclear accident or radioactive pollution - such are the considerable advantages to be expected from fusion reactors.

These reactors will use fusion reactions between light atomic nuclei, mainly deuterium (an element always present in water in sufficient quantity) or of a mixture of deuterium and tritium (tritium being produced within the reactor itself).

The physical and technological problems involved in the construction of a fusion reactor are, however, far from solved. For fusion reactions to occur in sufficient number and in order to ensure that the electrical energy recovered exceeds the energy supplied and the energy lost by radiation, the fuel must be raised to enormous temperatures (about 100 million degrees Kelvin). At these temperatures the fuel exists in the form of an ionized gas - the plasma - and this plasma is very difficult to confine. Material walls cannot be used because of the high temperatures, and it is necessary to use magnetic fields, or more commonly electromagnetic fields, which are difficult to handle.

The creation, heating and confinement of the plasma for a sufficient period of time are forming the subject of intensive research in the United States, the USSR, the United Kingdom and the Community. The Community effort represents about 20% of the world total.

The Commission of the European Communities has endeavoured to promote research in this sector; it has taken steps to arrange the necessary coordination between projects in the various Member States

ANNEX 2 p.2

and has allocated work by a series of association contracts with the various national laboratories engaged in this research.

After an initial stage of basic research, the laboratories are moving into a new stage of applied research, necessitating the construction of increasingly large and expensive machines. Many lines of research are possible, and it is important to apportion work on them among the various laboratories so as to avoid dispersion of effort. The coordinating role of the Commission is thus particularly vital, but it is not enough in itself to ensure that the Community remains competitive in such a promising sector; to this end research activities must gradually prepare industry to play its part and take its place on the market.

Since the beginning of 1968, therefore, the experts of the Commission of the European Communities have recommended that the Community continue its action on controlled fusion under a joint multiannual programme. It will have taken more than three years, during which the annual renewal of programmes has been resorted to as a tide-over solution, for a multiannual programme to be finally adopted), despite the fact that there was unanimous agreement on the importance of the programme.

The Council has now drawn up a five-year programme of research and training on controlled thermonuclear fusion and plasma physics. This programme, which integrates virtually all the research pursued by the Community in this sector, is designed to coordinate appropriations which will total about 180 million u.a. during the period 1971-75, 46.5 million being borne by the Community and the remainder by the Member States.

The programme has been prepared jointly by the departments of the Commission of the European Communities and the laboratories of the Member States, and will cover the following five major sectors:

- research on general basic physics;
- the study of the confinement of plasmas in closed and open configurations;
- the production and study of very high density plasmas;
- the improvement of methods of diagnosis;
- technological research.

During the three first years of the programme, a maximum amount of eight million u.a. will be earmarked for the acquisition of equipment for priority projects (Stellarator, Tokamak, screw pinch, etc.).

The programme constitutes a link in a chain of long-term collaboration aiming ultimately at the joint construction of prototype fusion reactors.

CONCORDE

Reply of the Commission of the European Communities
to a Written Question from Mr Glinne, a Belgian Member
of the European Parliament

The Concorde is at present the most important aeronautical development in Western Europe. It concerns not only the two aviation firms directly engaged, but also other European firms, including Rolls-Royce and SNECMA, who are supplying the engines. This project has already enabled several European firms to master a number of new techniques at the design and production stages and will continue to do so in the future. Nearly 50,000 workers are engaged in the construction of the aircraft.

The Commission considers that it is the responsibility of the French and British governments, who have initiated and supported the project, to decide whether to construct Concorde on a commercial scale, bearing in mind all the data which they alone at present possess or are in a position to obtain, and if the decision to go ahead is made, to take all the appropriate measures to ensure its success.

At the same time the Commission considers, as it emphasized in the note which it sent to the Council on 11 November 1970 concerning a "joint Community project on scientific and technological research and development", that it would be desirable for projects of advanced technology such as the Concorde not to be launched in the future except in the context of an overall Community policy for technological development.

ANNEX 3 p.2

By a systematic evaluation of all the aspects of projects - economic and social requirements, available resources in manpower and money, existing and future technologies, restrictions imposed by environmental considerations, etc., choices could then be made or priorities allocated.

The recent decision of the British and French governments to pursue the Concorde programme removes for the present the need for intervention in order to salvage the project. As regards the Community, the Commission considers that the problems which face the aviation industry, including those which may be raised by the Concorde project - could be examined by the Industrial Policy Committee, proposals for whose creation have just been put forward. The Commission is actively pursuing preparatory studies in order that such an examination could take place as soon as possible.