

# Switzerland and space research

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## SWITZERLAND AND SPACE RESEARCH

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On 16th April last year, Switzerland became the first country to ratify her membership in the European Organization for Space Research (EOSR). Since then, the Netherlands has joined this organization, and it may now be considered certain that the European agreement will come into force on 1st January 1964. Thus the foundations required to permit close co-operation between the countries interested in space research and between their respective industries, have been laid on both the international and governmental levels. It is characteristic of the nature of the present branches of scientific research and their industrial repercussions that it is precisely in the field of space research — after a number of other specialized sectors — that international co-operation of an official character has been organized. Modern scientific research has developed to such an extent that very little can still profitably be undertaken by the private research laboratories of medium, large or even very large concerns; even the co-operation of very big concerns within the frontiers of a single country no longer suffices. Modern scientific research transcends national frontiers.

There are, of course, many cases in which economic organizations or individual private concerns seek and establish contacts with their opposite numbers in other countries and in this way organize international co-operation in the private sector. But there also exist fields of application of modern research and discoveries which, owing not only to their importance but also to their very nature, call for the conclusion of official international agreements for the drawing up of standard programmes, safety regulations, restrictions, etc. These measures apply equally to nuclear research and space research owing to the nature and the importance of the problems involved in these two branches. Even the most fanatical advocates of a liberal economy must therefore agree that it was essential to create a European inter-state organization in the field of space research and that Switzerland did right in adhering to it by the decision of her parliament. The ratification of state treaties of this kind by the government has the advantage of compelling public opinion to take an interest in these problems and to oblige the Federal Council to summarize its opinion and that of its advisers in a message to parliament. The message of the Federal Council dated 7th September 1962 on the "European Organization for Space Research" is well worth reading, showing as it does among other things the various reasons why Switzerland has to devote special attention to the problems of space research as a whole.

We should like to examine in particular the main industrial problem: Swiss industries must continually ensure that they are keeping abreast of scientific and technical progress and are among the leaders in the application of the new inventions and discoveries. They must take care to maintain a profitable and worthwhile production, less dependent than hitherto on large numbers of foreign workers. In order to do this, they must produce articles whose value represents a particularly high proportion of research and improvements, investment of capital and top quality specialized labour. Articles entering into this category generally belong to the fields most recently conquered by scientific research and represent the practical application of the results obtained. In order to fit in with the general trend towards world economic integration, Switzerland will probably have to abandon the production of many articles which no longer correspond to the criteria defined above and, on the other hand, to concentrate all the more on new types of production. For Swiss industrial concerns, this means that they will also have to devote special attention to the field of space research. However, this field is not so remote from the world and everyday industrial matters as many people imagine. It is not a matter of taking a trip to see what is on the other side of the stars or of building and launching giant satellite propelling rockets in Switzerland. But, as everyone knows, space vehicles contain an incredible quantity of instruments and apparatuses of the highest degree of precision which must furthermore be extremely small in size and weight. Now these exacting standards and requirements offer excellent scope for Swiss industries, accustomed to working with the highest precision, thinking in terms of the smallest dimensions and with the lowest margins. In addition, they offer a special opportunity for making the best use of the qualities of the Swiss watch-making industry and its manpower in a completely new field of freeing this industry from a dangerous concentration on a single category of goods, i.e. they afford the opportunity of diversifying production in the best sense of the word.

Thus has been created the official international framework of an activity in the field of space research and the application on the industrial level of new and interesting possibilities of work. The Confederation and the departments concerned acted very rapidly in this instance. It is a question now of the industries of the participating countries — in particular the Swiss precision industries — deriving the greatest possible advantage from the oppor-

tunities thus offered them. It will be necessary for Swiss concerns and associations to pay greater attention than before to this field of activity and to examine objectively what possibilities it offers them and their skilled labour. It would in fact be a great pity if these precision industries were to continue to go in for minor accessory work for foreign rockets and satellites. It is to be hoped that Swiss industry will rise above its modest subsidiary role and that institutions will be created, as far as possible by private enterprise, to act as links between the international organizations concerned and Switzerland's official organizations on the one hand, and private firms on the other. For this purpose, a federal consultative commission will soon be set up, composed of scientists and representatives of the Confederation and industrial circles; among other tasks incumbent on this commission will be that of helping to establish contact between the "European Organization for Space Research" — of which Switzerland is a member — and the economic circles concerned. This organization (and more precisely the representatives of the economy within it) should be able to count on the very keen interest of private enterprise, and it is to be hoped that the latter for its part will be able to set up a structure strong enough first of all to assume the role of partner and later to represent the interests of private concerns.

(By courtesy of "Swiss Industry and Trade" Review.)

#### SWITZERLAND'S CONTRIBUTION TO NUCLEAR SCIENCE

The new "Dragon" reactor, at the Winfrith nuclear centre (G.B.), has just been put into operation.

The machine for loading and unloading the fuel, which is an important part of the plant, was made in Geneva and assembled at Winfrith by SECA Ltd., a firm formed for the job by two big Swiss engineering concerns, Sécheron Ltd. and Charmilles Ltd. The machine was submitted to very severe tests, both in the works during preliminary assembly and at the time of the final assembly in the reactor chamber. The quality of the workmanship and the running tests carried out at high pressures and temperatures, corresponding to the operating conditions of the reactor, were entirely satisfactory.

[O.S.E.C.]

#### IMPORTANT SWISS AID FOR TURKEY

The agreement just concluded at Ankara between Switzerland and Turkey for carrying out a milk-industry programme constitutes the first step in the rational development of the great possibilities that Turkey, a country rich in pasture-land which however has lain neglected for centuries, offers in this field.

Turkey's five-year economic development plan provides for the creation of seven or eight sectors of the milk industry, two of which are to be set up in 1964. From the outset the Turkish Government had requested Switzerland's assistance, a request to which Switzerland readily responded. The agreement between the two countries relates to a joint scheme under which Switzerland will supply equipment and technical assistance. The latter will consist in granting fellowships for studies in Switzerland and sending experts to train Turkish supervisors in Turkey.

The scheme has two complementary aspects. Kars, with its vast grass-covered plains, is the chief centre of dairy production. However, since its development is checked by the lack of outlets, the Kars industry will be supplemented by that of Istanbul, the major centre for the consumption of dairy products in Turkey. At Kars itself a plant will be built for the production of powdered milk and of bulk butter and cheeses. These primary products will be transported to the various centres of consumption. Istanbul in turn will be equipped with a plant for processing milk from the neighbouring areas and, since local production is insufficient, refilled milk powder at Kars. Other products will also be handled, such as butter, cheese, ice-cream and the famous Turkish yogurt, reputed to be the best in the world. It is estimated that 100,000 litres of milk will be produced at Kars and the same amount processed at Istanbul.

Swiss experts and technicians will be in charge of managing and running the new industry. The Kars plant will be equipped with a modern Swiss school devoted to the technique of Cheese-making.

The cost of these schemes will amount to about 6.5 million Swiss francs (\$1.6 million). Out of this sum, 500,000 Swiss francs (\$120,000) will be donated by the Swiss Government. The rest will be supplied under long-term credit insurance contracts, at a low rate of interest.

[O.S.E.C.]

## IT HAPPENED IN THE CANTON OF SOLOTHURN

The thirteenth volume of statistics compiled from the census of 1960 deals with the Canton of Solothurn. Between 1950 and 1960, the 132 Communes and 10 districts increased by 17.6%, and for the first time the number of inhabitants went above 200,000 (by 816). In 110 years, the population has grown by 188%. Thirty-six Communes show decreases, with the lowest minus 21.9%. Ninety-six Communes register increases, with the highest plus 59.3%. On 1st December 1960, 9.6% of the population were foreigners amongst whom seven-tenths Italians.

In 1860, out of every thousand inhabitants 861 were R.C., in 1960 577. On the other hand, the Protestant population has increased from 138 per thousand to 393.

The latest figures to hand regarding foreigners in the Canton of Solothurn show that on 31st August 1963 nearly 30,000 aliens (of whom 5,137 children) lived there.

In May, the electorate of the Canton accepted four proposals. One Bill provides new hunting and shooting

regulations. A second concerns changes in the building laws and allots the Canton the right to plan cantonal roads. The third legislates for special teachers' training courses, and the fourth legalises Church and public holidays.

Building activities on Solothurn territory increased in 1963 to 275.79 million francs as against 227.53 in the previous year. The extension and renovation of all the cantonal hospital buildings are progressing. To comply with the Federal decree to reduce building, a special commission has been formed to supervise the building programmes.

The big project known as the "Jura waters correction" is advancing according to plan. The aim is to lower the level of the lakes by 2.5 metres and to dehydrate the swampy surroundings. In all parts of the Canton, water purification schemes are being realised slowly but surely. The Communes of Nuglar and Dornach are now equipped with modern waste water plants. A working party for the protection of the Aare has been formed.