

The European Organization for Nuclear Research (CERN) came into being in 1954 as a co-operative enterprise among European governments in order to regain a first-rank position in nuclear science. At present it is supported by 13 Member States, with contributions according to their national revenues: Austria (1.90%), Belgium (4.07), Denmark (1.95), Federal Republic of Germany (19.15), France (20.81), Greece (0.60), Italy (9.90), Netherlands (3.77), Norway (1.58), Spain (4.21), Sweden (4.15), Switzerland (3.23), United Kingdom (24.68). The budget for 1962 is 78 million Swiss francs.

The character and aims of the Organization are defined in its Convention as follows:

'The Organization shall provide for collaboration among European States in nuclear research of a pure scientific and fundamental character, and in research essentially related thereto. The Organization shall have no concern with work for military requirements and the results of its experimental and theoretical work shall be published or otherwise made generally available.'

Last month at CERN

For their work on heavy mesons and hyperons the French 'Académie des sciences' has awarded the **Cognacq-Jay prize** to seven physicists who were, and in some cases still are, members of the Physics Laboratory of the 'École Polytechnique' in Paris. It is a pleasure for CERN that the most of the prizewinners are now continuing their work here, either as staff members or as visitors.

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The cover photograph shows L. Magnani, F. Merger and B. Bruggeman, of the Accelerator Research Division, and H. Gentsch of the Engineering Division discussing a problem during the assembly of the 2-MeV electron storage-ring model, now nearing completion in the AR experimental hall. In the background M. Madmejahed, from Paris, operates the bridge crane.

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The physicists are :

Rafael Armenteros, member of CERN's Track Chamber Division,

André Astier, assistant director of the nuclear-physics laboratory at the 'Collège de France',

Jean Crussard, scientific director of the 'Saturne' division of the 'Commissariat à l'énergie atomique',

Bernard Gregory, professor at the 'École Polytechnique' and chairman of the CERN Track Chamber Committee,

André Lagarrigue, leader of the group operating the 1-m heavy-liquid bubble chamber from the 'École Polytechnique' at CERN,

Francis Muller, member of CERN's Track Chamber Division,

Charles Peyrou, Leader of CERN's Track Chamber Division.

Two 'world records' were announced from the **proton synchrotron** at the beginning of November, both achieved with the new **rri2** beam, which utilizes two of CERN's 10-m electrostatic separators, in conjunction with focusing and bending magnets, to provide particular kinds of particles separated from all others. **Kaons** of momentum **3.5 GeV/c** and **antiprotons** of **5 GeV/c** were obtained, the highest values for either particle yet reached anywhere. This beam was also used to give electrons of 600 MeV/c.

The accelerator itself was running well after its long shut-down, and during the first fortnight 215 hours were devoted to nuclear physics with only 4 V2 % lost as a result of breakdowns of one kind or another. The average **beam intensity** during this time was 4.2×10^{11} protons per pulse. This was in fact about the same as that obtained before the shut-down. Investigations had shown that previous measurements of beam intensity had over-estimated the values by about 15% and a **new calibration** is now in use. A similar recalibration has been carried out at the Brookhaven

alternating-gradient synchrotron, and the two groups concerned have agreed on a new 'international standard' :

1 AGS proton equals 1 CPS proton.

Later in the month the average beam intensity at the PS was higher and a new peak intensity of over 5.9×10^{11} **protons** was registered in one pulse.

On 12 October, **K. Green**, who led the team that built the AGS and is now in overall charge of this 33-GeV accelerator, arrived at CERN together with **J. Spiro** and **I. Polk**. They stayed for about a week, seeing for themselves how things were progressing here. During their visit the world's two largest accelerators were in direct contact for a while when a telephone call was made from the PS main control room to the AGS control room. This is another world 'first'.

At least part of the increased intensity of the PS beam has been obtained as a result of improvements to the 50-MeV linear accelerator (**linac**), which provides the input protons to the synchrotron itself. It is not so long since a beam of 20 mA was celebrated there with champagne, but now currents as high as **45 mA** are being obtained.

One result of the better internal beam was that the remarkable figure of 10^7 protons per pulse was obtained for the beam C5, which consists of protons of nearly full energy scattered out of the accelerator at a small angle.

In the **North hall**, the reconstructed kaon beam, **k3**, was giving separated kaons of 800-MeV/c momentum, though a number of breakdowns of the 81-cm hydrogen bubble chamber prevented its use to the full. The CERN **3-m electrostatic separator** incorporated in the second stage of the beam also gave some trouble at first, but with the bubble chamber out of action the opportunity was taken to remove the separator temporarily for internal cleaning. This separator, a model rather than a finished piece of equipment, was constructed by the Nuclear Physics Appa-