

Odd Dahl honoured

In a simple ceremony in Bergen last year, Norwegian physicist Odd Dahl was presented with a special Honorary Stipend from the Royal Norwegian Council for Scientific and Industrial Research. The citation read 'for his contributions in the furtherance of research and technological development spanning a professional breadth and depth that places him in a special class, both nationally and internationally'.

Dahl played a crucial role in the early days of CERN, leading the machine group which in the 1950s was studying an accelerator 'for energies greater than 10 GeV and in particular the problems of building a scaled-up version of the Brookhaven Cosmotron'. A visit to Brookhaven convinced him of the value of the new principle of strong focusing and he set his sights on a new machine in the 20-30 GeV range which became CERN's Proton Synchrotron. Over 30 years later, this remains the hub of CERN's unique interconnected particle beam system.

Dahl is now retired and living at Skandia Aldershjem, Kong Oscarsgate 22, 5017 Bergen, Norway.

Odd Dahl 1898-1994

CERN lost another of its founding fathers when Odd Dahl died in Bergen, Norway, on 2 June at the age of 95.

With only a modest formal education, Odd Dahl had a remarkable career. At the age of 24 he was chosen by explorer Amundsen as a pilot for a polar expedition. To quote his later colleague Merle Tuve, "Fortunately the plane broke up during the attempt to take off from rough ice, so Dahl spent a couple of very long years making geophysical observations while locked in the ice off the New Siberian Islands."

During these ice-bound years, Dahl became a very competent instrument designer and maker. In 1926 this took him to the Carnegie Institute in Washington, DC, where he constructed, with Tuve and Lawrence Hafstad, one of the first Van de Graaf generators.

In 1936 he went to the Chr. Michelsen Institute in Bergen, where he built three Van de Graafs and a betatron. Immediately after the war, he became technical director for the construction of the first nuclear reactor to be built outside the original

nuclear powers.

Internationally known, Dahl was invited by Pierre Auger and Edoardo Amaldi in the spring of 1951 to help in the preparatory work for what later became CERN, and from summer 1952 Dahl led the group studying the Proton Synchrotron project. In the early 1950s, the original plan for the fledgling CERN Laboratory had been to build a Cosmotron-like machine to reach energies of 10-15 GeV. The challenge of setting up a coordinated design group with members scattered all over Europe suited Dahl well, who had used a similar approach in his work for a Norwegian-Dutch reactor.

Since the new machine was to be a scaled-up Cosmotron, Dahl, with Group members Frank Goward and Rolf Wideroe, went to Brookhaven in August 1952 to see the Cosmotron and discuss the new European project. During this momentous visit they found that a new idea for focusing particles had been discovered by Courant, Livingston and Snyder. This alternating gradient (AG) focusing would greatly reduce beam apertures and thus open the door to much higher beam energies.

Dahl at once saw the implications and convinced his group that this was the way to go. All effort was immediately switched. That autumn CERN's Council was also convinced, and one of the most important decisions in CERN's history was made. Intuition governed the choice more than knowledge, but the reliability of his intuition was a feature of Dahl's professional life. It would have been much easier (as other Laboratories did and later regretted) to have played safe. Had CERN gone for a 10-15 GeV scaled-up Cosmotron, its future would have been very different.

It was also a very unselfish decision for Dahl, because the whole nature of the Proton Synchrotron Group's work changed. Instead of being essentially an engineering group scaling up an existing machine based on well-established principles, it became a physics group studying the theory of accelerators, only later returning to engineering design.

To lead this demanded full-time commitment, which Dahl could not give, and he returned to Norway. The initial plan had been for Frank Goward to take over, but the latter's untimely death in 1954 led to John Adams becoming the obvious choice.

After leaving CERN, Dahl made

further reactor contributions. However his main subsequent scientific effort was his work in the design of payloads for scientific rockets launched in Northern Norway. He retained a key role in this international effort until his retirement at the age of 70, and even beyond, as a consultant.

Dahl has written his name into science history in many ways. However for CERN it is his crucial role in the PS which dominates, and with the machine, now 40 years after its inception still the focus of this remarkable Laboratory, it is with gratitude that we pay tribute to his memory.

Kjell Johnsen

Odd Dahl at 94.
(Photo Arne Nilsen - Bergens Tidende)

