

History of RAL

It was announced ^{by the Government} on 14th February 1957, that they intended to set up the National Institute for Research in Nuclear Science (NIRNS).

The following is an extract ^{from} ~~of~~ the statement made ^{to the House of Commons} by the Financial Secretary to the Treasury.

"The main object of the institute ~~is~~ will be to provide, for common use by universities and others, facilities and equipment which are beyond the scope of ~~the~~ individual universities and institutions carrying out research in the nuclear field."

The institute was constituted with ^{distinguished} members from the universities, University Grants Committee, Royal Society, Atomic Energy Authority and D.S.I.R., and had the Rt. Hon. Lord Bridges, G.C.B., G.C.V.O., F.R.S. as its Chairman.

The Institute decided to establish their first laboratory, Rutherford High Energy Laboratory, on a site made available by the Atomic Energy Authority next to the AERE,
Harwell

The principal feature of the new laboratory was to be a 7 GeV proton synchrotron, the general design of which was approved by the Institute. The Atomic Energy Authority was given the responsibility for the detailed design and construction of the synchrotron, which was transferred to RHEL in early 1959. Also inherited from the A.E.A. was 50 MeV proton linear accelerator in an advanced stage of construction.

Dr. T.G. Pickavance was appointed as Director of the RHEL. Initially he controlled a very small staff ie a Group Leader in charge of the proton linear accelerator, and a Secretary.

From 1960 onwards NIRS activities increased dramatically. The Proton Linear Accelerator was completed and commissioned for experiments in April 1960 and was of great value in the pre - Nimrod era. ^{However,} the construction of Nimrod was the main activity of the laboratory. The first injection of protons into the completed machine took

place on 16th August 1963, and acceleration to 7 GeV was attained about 2 weeks later.

Alongside the construction of the accelerator was a programme for building equipment for particle physics research. NIRENS funded 3 bubble chambers ^a ie ^{a 1.5 metre} 1.5 hydrogen bubble chamber, ^a 1.5 ^{metre} heavy liquid bubble chamber and ^a 80 cm helium bubble chamber.

In 1961, the Institute agreed to manage "a very fast electronic digital computer" - the Ferranti Atlas computer. The Atlas Computing Laboratory was built adjacent to the RHEL and was ~~a~~ basically a separate entity, except for admin. purposes it was part of RHEL. Dr. J. Howlett was appointed head of the Atlas Computing Laboratory.

~~Reve~~ By 1965, NIRENS had a Governing Body with 18 members, 7 committees and approximately 1130 staff.

As part of the reorganisation of government support of civil scientific research the Science Research Council was established

on 1st April 1965. It was composed of NIRS; the part of DSIR concerned with post-grad training + university research grants; the Radio + Space Research Station (later the Appleton Lab); Royal Greenwich Observatory; and Royal Observatory, Edinburgh.

Three boards were set up to advise the Council on particular subject areas - 1) Astronomy, Space and Radio, 2) Nuclear Physics and 3) University Science + Technology. When the SRC organisation was modified in 1969 to accommodate the growing importance of engineering, the University Science + Technology Board split into a Science Board and an Engineering Board. To further demonstrate the importance of engineering in 1981 the SRC became the Science and Engineering Research Council (SERC).

Also 1969 also saw a change in the Directorship of the Rutherford Laboratory, as Dr. T. G. Pickavance became Director of the Nuclear Physics Division in London office; his place was taken by Dr. G. H. Stafford.

The setting up of the Neutron Beam Research Unit (NBRU) in 1971 restored an area which had been important during the NIKENS era, and also commenced the future diversification of the Council.

During the 1970's, funding played an increasingly important role in the way in which the

Laboratory's shape developed. It was apparent

that there would be ~~not~~ insufficient funds ^{either} for replacing Nimrod or ^{Two events shaped the future of} running it. ~~the~~ the lab: the

support of high energy physics was concentrated

at
Rutherford
5, 1974

at Rutherford Laboratory; and the U.K. became

a partner in the Institute Laue-Langevin (ILL) at

Grenoble. This latter event opened the door which would use Nimrod equipment ^{for the} when phasing out in 1978 for the Spallation Neutron Source proposal.

In 1976 the Council decided to concentrate

the major central computer facilities at

Rutherford and so the Atlas Computer

Laboratory ^{est'd in 1961} became part of the Rutherford

Laboratory, as the Atlas Computing Division

The Central Laser facility began full

operation in 1977 and two-beam compression

was achieved in April.

The closure of Nimrod was ~~the~~ one of the major events of 1978. In the 14 years it had been operating ^{Nimrod} ~~it~~ had provided 60,000 hours of beam time and ^{over} 80 major experiments were completed. Nimrod is not completely dead, however, as it is being converted into a new high intensity pulsed neutron source (SNS)

The Central Laser Facility continued to produce important results and ~~there are~~ plans to upgrade the facility to provide 6 high power beams ⁽¹⁹⁷⁹⁾ came ^{to fruition} ~~about~~ in 1979

The end of 1978 saw the Council decide to merge the ~~East~~ ^{East} ~~Appleton~~ Rutherford and Appleton Laboratories. This decision was based largely on two ^{important} factors: 1) the Engineering Board's widening the scope of its radio propagation work and the introduction of work on communications systems, and 2) the problems of providing proper support for the national space science programme required

for the 1980's from the relatively limited resources available at ^{the} Appleton ^{Laboratory}. The laboratories were formally merged on 1st September, 1980.

Since the merge[†], the activities of the laboratory have been very broad, including particle physics, space research, laser research, and computing technology. The design of SNS has been completed and about $\frac{1}{3}$ of the new equipment has been ordered. The experimental programme is due to start in 1984. Work has continued on space research: the ground station for the Infra-red Astronomical Satellite (IRAS) project is fully installed and ready for launch this year; the IUE and Ariel V/1 ^(until its decommissioning on 24.2.82.) satellites continued to provide new data; and the Starlink project provides ^{an} image processing + data reduction facility for UK astronomers. RAL is also supporting the Solar Maximum Mission, which is observing solar activity and experiments to be launched on the Space Shuttle facility using Spacelab. •

The programme of terrestrial research includes

studies of the of Earth's surface, the oceans and the atmosphere.

~~1981~~ In 1981 the laboratory also had another change in Directorship. Dr. G. H. Stafford left his post as Director - General of the two laboratories and was replaced by Dr. G. Manning as Director and Professor J. T. Houghton as Deputy - Director.