



NIMROD FAMILIES DAY
10 JUNE 1978

The Laboratory will be open to staff and their friends from 2pm to 5pm.

Cars should be parked outside the Laboratory.

Light refreshments are available in the Restaurant R22 from 3pm to 5pm.

The following is a brief description of the various exhibits which are on show - with their location and instructions on access. Larger maps of the site will be in R1 entrance and R22.

HEP DIVISION

Scanning and measuring laboratory - R1 East Wing

These activities are concerned with the measurement of experimental data which has been recorded on photographic film in bubble chambers or spark chambers at Rutherford and various other laboratories around the world. The measurements are transmitted to a computer for detailed analysis.

Experiments K20 K15 π 12 K17 π 11 and T1 - Hall 1 and Hall 3

There are 6 different experiments on show. They are all experiments measuring the parameters of particle interactions. The experimental equipment is often basically the same for all these experiments, but, in detail, differs considerably depending on the type of reaction being studied. The equipment is well worth seeing to appreciate the scale and complexity of these experiments. The whole program is contributive to the understanding of the structure of matter.

NEUTRON BEAM RESEARCH UNIT - Room 1d R20

The Neutron Beam Research Unit provides support for research by university scientists using neutron scattering. Much of this assistance is in the form of the development of new instruments and techniques, and this is being increasingly directed towards the exploitation of the spallation neutron source which is to be built at the Laboratory.

One of the exhibits on display will show a new method for constructing a position sensitive neutron detector which uses a fibre-optic coding. There will also be a mock-up assembly of the target arrangement of the new spallation source, as well as a computer simulation of one of the types of experiment which will be carried out on this facility when it becomes operational.

INSTRUMENTATION DIVISION

The Physics Apparatus Group provides design manufacturing and commissioning facilities for special nuclear physics apparatus for use by experimental teams. R12
R9

The Electronics Group designs special nuclear electronics for use by experimentalists in all branches of physics. R35
R18

Atmospheric Physics. The display boards illustrate projects in which the Laboratory is concerned on the NASA Nimbus series of satellites. - Computer Area R1.

Energy Activities at the Laboratory include the construction of a windmill system, instrumentation to provide measurement facilities for monitoring and comparing 20 houses with different insulation standards, and a chemical heat storage system. All are illustrated. A possible power generation system, based on the bombardment of deuterium-tritium pellets by heavy ions is also illustrated. - R1 Foyer.

NIMROD DIVISION

Visitors to the Nimrod area can see the Magnet Hall, 15 MeV Injector, Power Supplies and other associated areas before dismantling begins.

Entrance to the Magnet Hall is via the North Tunnel, (adjacent to R52) or via the 15 MeV Injector (R5).

The large rotating plant and converter installations required to power Nimrod are on view in buildings R3 and R4 and Nimrod Main Control Room and the Mechanical and Electrical Workshops can be found through the main entrance to R2 and via the Display Area.

Experimental Halls 1 and 3 (R6 and R55) house the apparatus required for High Energy Physics experiments and are accessible through the main external doors of the buildings.

The 70 MeV Injector, which is at present undergoing modifications for use on the new Spallation Neutron Source, is open to visitors and can be found next to the 15 MeV Injector in R5.

LASER

Enter the new laboratory from the south side - opposite R25.

The exhibit consists of a 1/15" scale model of the laser installation and display boards which describe the involvement with the universities, the work of the Laser Division, some recent experimental results and plans for the future development of the facility.

TECHNOLOGY DIVISION

Major items of experimental apparatus are designed and built by Technology Division - usually novel, one-off systems needing a certain amount of research and development, or exploiting special techniques such as superconductivity or very low temperatures.

The two polarized targets on show, built for the Nimrod programme, are a good example. Their cryostats work at half a degree from absolute zero, and use a trick from solid state physics to cool the target nuclei down to a few millikelvin.

The Technology Division exhibits mirror the new diversity of the laboratory's work, with projects for microcircuit fabrication and microwave astronomy, engineering and energy, as well as for high energy physics, of course.

Electron Beam Lithography	R1 EBL (access via east end R1)
Millimetre wave telescope	R1 Foyer
Energy storage	R1 Foyer
Superconductivity and magnets exhibition	R25 Heavy Duty Lab
Magnetic Levitation demonstration	" " " "

Regenerative compressor	R25 Heavy Duty Lab.
Rheometry, Fluidised bed	" " " "
Low speed alternator (for windmill)	" " " "
Workshops, coil winding area	" " " "
Ultrasonic remote control demonstration	" " " "
Computing, interactive graphics demonstration	R25 Terminal
Polarized targets (K20, π12)	Halls 1 & 3
Plastics, resin and chemistry laboratory	R34
Glass blowing exhibition.	

SRC COMPUTING FACILITIES

The computing exhibits will be mainly shown on the first floor of building R26, but will be supported by a film show in the Colloquium room on the ground floor of R27. The Interactive Computing Facility computers - the Prime 400 and the GEC 4070, will be available for visitors to use through terminals in the terminal pool close to the entrance of R26. A number of computer programs to test the skill of visitors will be available, including Ballistics and Hunt the Wumpus. In addition, the graphics display equipment, adjacent to the computers will also be available for visitors to use under direction. The large batch computers, the IBM 360/195 computers, will be working normally, but conducted tours by members of staff will be arranged so that the size of the computer installation can be appreciated.

Film Show: Two half-hour sessions will be held during the afternoon at 2.30 and 3.30 pm to show some examples of computer-generated films, and these will be introduced by a film made for BBC's "Tomorrow's World" showing how the various operations are carried out in order to produce the completed film.

Finally, display boards will be set up at various parts of the installation describing both the batch and interactive computing facilities made available by SRC throughout the UK.

ENGINEERING & BUILDING WORKS DIVISION - R1 Foyer and R18.

The Council Works Unit has an exhibition of views, sketches and photographs with descriptions of new buildings and electrical and mechanical work for SRC establishments all over Britain with special emphasis on a proposed new telescope.

In the Electrical/Mechanical Workshop there is a display of substation 11Kv oil filled circuit breaker, photographs of substations and switchrooms, a display of electrical/mechanical test and indicating equipment and a demonstration of the operation of plant alarm panel from test switch.



RUTHERFORD LABORATORY

