

### OPEN DAY

It is proposed to hold a joint Open Day for the Electronics, General Physics, Health Physics and Medical Divisions on the afternoon of Saturday, 29th May, 1954, so that members of these Divisions may have the opportunity of showing their guests something of the work of the Establishment.

All members of the Scientific, Administrative and Industrial Staff working in or attached to the four Divisions are invited to attend the Open Day, but owing to the necessity for limiting overall numbers each person will be allowed to bring only one guest. Guests must be restricted to close relatives or members of the Establishment.

The Open Day will last from 2.30 p.m. to 6.0 p.m., and tea will be served in the Canteen from 3.30 p.m. until 4.30 p.m. Tickets for tea will cost 1s.6d. each. They must be obtained from your D.A.O. not later than 24th May.

You are requested to complete the attached acceptance form and return it to your D.A.O. as soon as possible, but in any case not later than Monday, 10th May.

A programme giving details of demonstrations, etc., will be issued with the admission tickets.

A.E.R.E. Harwell  
30th April, 1954  
H. 18309a

Mr. D. W. Fry invites

Mr. B. G. Loach

and guest to the General Physics Division  
Open Day to be held jointly with Electronics,  
Health Physics and Medical Divisions on  
29th May at 2.30 p.m.

OPEN DAY

Saturday 29th May, 1954.

PROGRAMME

The Open Day will commence at 2.30 p.m. but for the benefit of people who arrive by early transport Hangar 7 will be open from 2 p.m.

Visitors are free to visit exhibits in whichever order most appeals to them, but in order to avoid unnecessary congestion in any particular place it is strongly recommended that they follow one of the routes suggested in this programme.

A site plan will be displayed in the entrance to Building 150.

Tea will be served in Building 150 from 3.30 p.m. to 4.30 p.m. in two sittings, one at 3.30 p.m. and one at 4.00 p.m. Guests with yellow tea tickets are requested to go to the early tea and those with white tickets to go to the second tea.

All visitors must leave the Establishment by 6.0 p.m.

WILL YOU PLEASE FOLLOW ROUTE. D

Except for specified dangerous or restricted areas, all buildings occupied by General Physics, Electronics, Health Physics and Medical divisions will be open from 2.30 to enable members of the staff to show their visitors round their own particular buildings and laboratories.

The following exhibits and demonstrations have been arranged:-

#### GENERAL PHYSICS

- HANGAR 7 X (a) The 110" Cyclotron will be open. A diffusion cloud chamber will be demonstrated.
- (b) The large electron-magnetic separator with an exhibition of separated isotopes will be open.
- X (c) The ion source group have provided a spectacular spark discharge. A charge of ten million volts is discharged through a spark 20 feet in length.
- X (d) 45 MeV Linear Accelerator  
This machine, in the first shelter on the right, after entering H.7 from the west door, has been built completely at Harwell.
- X (e) Valve work  
High power valves designed and assembled at Harwell are on view in the klystron shelter second shelter on the right hand side of the west door, and also in Lab. 127 on the first floor, north side balcony.
- BUILDING 9.3 A wide range of radiographs.
- BUILDING 36.2 Members of the glassblowing group will give a demonstration.
- BUILDING 153 An X-Ray set will be shown and an electron microscope will be working all the afternoon.

#### ELECTRONICS DIVISION

The instruments and apparatus designed and produced in the Electronics Division for the detection and measurement of radioactivity have wide applications in the Atomic Energy Project, research departments of universities, in hospitals and in industry both in the United Kingdom and abroad. Many of these may be seen in the exhibits staged by the other Divisions in addition to the following somewhat specialised exhibits.

#### Building 6

##### X Digital Computer &c.

The Computer is an electronic machine for doing highly repetitive arithmetical calculations. Although much slower and smaller than the much-publicised "electronic brain" it operates without attention at night and during the week-end. Desk calculators are mechanical aids to calculation.

7, 8, 6  
36 7/2 (3)  
10.  
220.  
364.  
393.  
347.

Building 154

Basement      Age Determination Equipment

Archaeological specimens containing carbon (e.g. wooden relics) can be accurately dated by measuring their radioactivity. The equipment shown is a prototype of that being made for use in the British Museum.

Room 111      Isotope and Medical Applications  
(Upstairs -  
West End)

(a) In some cases of thyroid disease, radioactive iodine is used for treatment.

This substance concentrates in the gland, and the actual size and position of the thyroid can be found by the use of this scanning and recording machine, which draws a picture of the distribution of the radioactive parts.

(b) Demonstration on Luminescent Materials

South of      The finding of buried radioactive materials is demonstrated. Amateur prospectors  
Building 154      are invited to help.

Building 347.3

Room 5      Pulse Amplitude Analyser or Kicksorter

Demonstration of equipment for sorting out electrical impulses into 100 different sizes, and counting how many of each size have gone into the instrument.

Room 6      Transistor Applications

An experimental scaling unit using transistors, and a P.O. call-meter driven from another transistor. The power supply is obtained from the mains using germanium power diodes.

Count ratemeter using a transistor high voltage generator to provide for a Geiger tube and a transistor to detect the Geiger pulses and operate the meter. The whole is worked from a 5 volt deaf aid battery.

Room 14      Resin Test Equipment

In resin-testing, various solutions have to be circulated through the test specimen. This apparatus shows how this may be arranged to happen automatically without attention.

Room 25      Geological Electronics

Exhibition of a number of pieces of apparatus used for finding radioactive minerals in the surface rocks and deep down boreholes. New deposits of uranium are being discovered by these instruments in many countries.

Room 31      Model Shop

Exhibition of electronic apparatus constructed in the model shop, showing the insides of the boxes designed and made in the Division.

Demonstration of the sound waveforms of the voice by means of microphone and cathode ray oscillograph.

MEDICAL DIVISION

Building 364

Ground Floor      X-Ray Department

Demonstration of X-Ray apparatus and ancillary equipment including finger ridge and blood capillary photographic unit.

Room G.55      Autoclave

Used for the sterilisation of dressings, syringes, needles, etc.

Rooms G.37,  
G.52, G.53.      Physiotherapy

In the Physiotherapy Department there will be various items of equipment to be seen which will include:-

Wax bath

Exercise Wall Bars

Infra Red Lamps

Ultra Violet Lamp

Junior Short Wave Diathermy Set

and other items of interest.

First Floor      Haematology Department

1. Electronic Red Blood Cell counter and other mechanical aids for blood counts.
2. Various microscopical preparations of blood with photomicrographs.
3. Blood Grouping and the Rhesus Factor.
4. Methods used in Clinical Biochemistry.
5. The preparations of tissue sections for histological examinations.
6. The cultivation of bacteria and testing of sensitivity to anti-biotics such as penicillin etc., Simple agglutination tests for Typhoid, Dysentery etc.
7. The Vickers projection microscope.

Analytical Department

|                       |   |
|-----------------------|---|
| Room 1.13             | Beryllium Monitor                               |
| Room 1.16             | Air Sampler                                     |
| Room 1.16             | Mercury Monitor                                 |
| Room 1.16             | Tritium Monitor                                 |
| Room 1.17             | Fluorimeter                                     |
| Room 1.14<br>and 1.15 | Balances, pH meter<br>Counters, Absorptiometer. |

Surgery

Room 1.20      Benedict Metabolism Apparatus for Vital Capacity Tests.

This apparatus is used for testing the capacity of the lungs especially in the case of staff employed in the handling of Beryllium.

Room 1.20      Electrocardiograph

This machine records heart beats by means of electrical impulses and thereby detects any cardiac abnormalities.

HEALTH PHYSICS

Building 364

1st Floor

(1) Health Instruments

Working display of instruments used for health monitoring purposes, including hand and clothing monitors; air samplers; contamination detectors and monitors with a special medical application.

(2) Personnel Monitoring

This exhibit shows the methods employed to record the radiation exposure received by personnel; film badges and pocket electrosopes.

(3) Survey Group

Display of counting equipment, and recorders used in the survey of soil and vegetation for taking low level activity measurements to ensure that undesirable amounts of radioactive material do not accumulate on or around the site.

(4) Atmospheric Activity

Display of microscopes and micromanipulators used for handling minute dust particles.

Examples of auto radiographs used for detecting the presence of radioactive materials.

(5) Activity Dissemination

Display of equipment and experiments carried out to determine the manner in which the active cooling gases from the Harwell stack are diffused into the atmosphere.

In addition the following items will be available.

Reactor Engineering Hangar 10 X (a) BEPO, the larger of the Harwell reactors will be open.  
North Door.

Nuclear Physics (b) Neutron velocity selector.

Nuclear Physics Hangar 8 X (a) GLEEP, the first British Reactor  
X (b) VAN de GRAAF electrostatic Generator  
X (c) Electron Accelerator and Neutron Spectrometer.  
(d) H. T. generator.

Chemistry Division Building 220. X The main corridors and a laboratory will be open.

Metallurgy Building 393 X This is the most recently completed building on the site, the corridors and one laboratory will be open for inspection.