

RUTHERFORD LABORATORY BULLETIN

No. 90, for the week commencing Monday, 24th September, 1962

VISITORS

A party of scientists from the U.S.S.R. is expected to visit the United Kingdom from 25th September to 9th October, under an exchange agreement with the U.K.A.E.A., to discuss nuclear physics and high energy physics. They will visit A.E.R.E. and the Rutherford Laboratory on 26th, 27th and 28th September and again at the end of their tour.

The following visitors will be at the Laboratory from 26th to 28th September inclusive, for discussions on shielding experiments with Dr. R. H. Thomas of the Bubble Chamber Group: Dr. A. Citron, Dr. L. Hoffmann, Dr. J. Geibel and Dr. Goebel from C.E.R.N., Geneva; Dr. C. Passow, Dr. J. Seetzen and Dr. Bathow from D.E.S.Y., Hamburg; Dr. H. Schultz from the College of Technology, Hanover, and Dr. C. D. Zerby from the Oak Ridge National Laboratory, Tennessee. Anyone wishing to contact any of the above should inform Mrs. S. Clare, Building R.1, Exten. 517.

VISITS ABROAD

Mr. J. J. Hughes of the Inspection and Progress Department will visit the Oerlikon Engineering Co., Zurich, on 24th-26th September for final inspection of quadrupole beam-handling magnets for Nimrod.

Mr. J. H. Smith of the Inspection and Progress Department will visit Messrs. E. Haefely and Co. Ltd., Basle, on 26th-28th September for discussions on the manufacture and inspection of power supplies for the above magnets. He will also visit Messrs. Brown Boveri and Co. Ltd., Baden, in connection with the Nimrod Power Supply rectifiers.

CONFERENCES

The Royal Institute of Public Administration are holding a one-day conference on "Preparation for Administrative Responsibility" on Saturday, 6th October at 10.15 a.m. in the Cockcroft Hall, A.E.R.E. This should be of interest not only to administrators, but also to scientists and engineers. Details may be obtained from Mr. K. H. B. Frere, Exten. 2880, A.E.R.E.

EXTERNAL COURSES

The Northampton College of Advanced Technology, London E.C.1., will hold evening lecture courses on "Recent Advances in Microwave Valves", "X-ray Crystallography", and "Semiconductor Compounds", and a part-time day course in "Optical Instruments", all commencing in October, 1962.

An evening course on "Programming and Control Languages" will be held by the London School of Economics, Houghton Street, London W.C.2., on Tuesdays at 6 p.m.-7.30 p.m., commencing 2nd October.

Full details of the above courses may be obtained from Mr. P. J. Clare, Personnel Branch, Building R.20, Exten. 495.

INTERNAL EVENTS

Mon., 24th Sept., 11.15 a.m., Conf. Room., Bldg. R.1.	Nimrod Lecture Series	Dr. A. Segar	K1 and K2 Separated Beams at C.E.R.N.
Mon., 1st Oct., 11.15 a.m., Conf. Room., Bldg. R.1.	Nimrod Lecture Series	Dr. G. H. Stafford	A View of the International Conference on High Energy Physics held in Geneva, July, 1962.

/Continued overleaf

INTERNAL EVENTS (Cont'd)

Evening Lecture Series

The first of the lectures on "Fundamentals of Accelerators" will be given by Mr. T. R. Walsh at 5.30 p.m. on Tuesday, 25th September in the Main Conference Room, Building R.1. The opening programme of the series has been slightly modified since the recent circular, as follows:-

Tues., 25th Sept.	: Mr. T. R. Walsh	Particle Dynamics I
Tues., 2nd Oct.	: Dr. W. Galbraith	High Energy Physics
Tues., 9th Oct.	: Mr. T. R. Walsh	Particle Dynamics II

EVENTS AT A.E.R.E.

Tues., 25th Sept. : "SL-1 Accident, phases 1 and 2". 40-minute U.S.A.E.C. colour film on the accident at the National Reactor Testing Station at Idaho. 2.15 p.m. in the Cockcroft Hall. (Outer gate open, inner gate manned). Tickets, limited in number, are obtainable from Mr. C. L. Roberts, Admin. Office, Building R.1, Exten. 258.

Thurs., 27th Sept. : Demonstration of Electronic Equipment by Southern Instruments Ltd. 10.30 a.m.-3.30 p.m. at the rear of the Social Club.

EXTERNAL EVENTS

24th-28th Sept. : International Factory Equipment Exhibition, Belle Vue, Manchester.

24th-29th Sept. : 21st International Commercial Motor Transport Exhibition, Earls Court, London.

26th Sept.-5th Oct. : International Heating, Ventilating and Air Conditioning Exhibition, Olympia, London.

Thurs., 27th Sept. : One-day Exhibition of New Electronic Laboratory Apparatus by A.P.T. Electronic Industries Ltd., Byfleet, Surrey. 10 a.m.-5 p.m. at the Clarendon Laboratory, Parks Road, Oxford. (Details are given on notice-boards).

27th-28th Sept. : Society of Chemical Industry Symposium on "Techniques of Polymer Science", at London.

Fri., 28th Sept., 4.15 p.m., Queen Mary College, London.	Colloquium	Mr. D. G. Bate	Some Problems of Plasma Acceleration.
---	------------	----------------	---

Building R.1.

B. E. KINGDON

21st September, 1962.

RUTHERFORD LABORATORY BULLETIN

No. 91, for the week commencing Monday, 1st October, 1962

VISITORS

Dr. Lloyd Smith of U.C.R.L., Berkeley, will visit the Laboratory on 1st-2nd October for discussions with the Director and Mr. Walkinshaw.

Dr. A. Roberts of the Argonne National Laboratory and C.E.R.N. will visit the Laboratory on 2nd-3rd October for discussions on high energy physics with Dr. W. Galbraith.

VISITS ABROAD

Mr. W. Walkinshaw, Dr. R. Taylor and Mr. J. Gardner of the Theoretical Group, together with Mr. J. M. Dickson, Mr. K. Batchelor and Mr. A. Carne of the P.L.A. Group will visit C.E.R.N. on 9th-12th October for discussions on high energy linear accelerators. Mr. Dickson will also visit Saclay, Paris, for discussions on polarised proton sources.

ATTACHMENT

Professor W. E. Burcham, F.R.S., Professor of Physics at the University of Birmingham, will be attached to the Laboratory as a visiting scientist for a period of approximately one year as from Monday, 1st October. His interests lie in the fields of both nuclear and elementary particle physics. His office will be Room 1.38, Building R.1, Ext. 524.

CONSULTANTS

Professor D. G. Kendall and Mr. C. Strachey have been appointed consultants to the Atlas Computer Laboratory as from 1st September. Their sponsor is Dr. J. Howlett.

CONFERENCES

The Institution of Electrical Engineers are holding a symposium on "Plastic Insulated Mains Cable Systems", on 1st and 2nd November, 1962.

The Institute of Physics and the Physical Society will hold a one-day symposium on "Education in Vacuum Science and Technology" at Brunel College, Acton, on Wednesday, 29th May, 1963. Offers of short contributed papers are invited.

Details of the above events may be obtained from B. E. Kingdon, Building R.1, Ext. 484.

INTERNAL EVENTS

Mon., 1st Oct., 11.15 a.m., Conf. Rm., Bldg. R.1.	Nimrod Lecture Series	Dr. G.H. Stafford	A View of the International Conference on High Energy Physics held in Geneva, July, 1962.
Tues., 2nd Oct., 2 p.m., Conf. Rm., Bldg. R.1.	Lecture	Mr. J.P. McMahon (Victoreen Instrument Co.)	The Victoreen 3-D Pulse Height Analyser.
Tues., 2nd Oct., 5.30 p.m., Conf. Rm., Bldg. R.1.	Evening Lecture Series	Dr. W. Galbraith	High Energy Physics.
Wed., 3rd Oct., 4 p.m., Conf. Rm., Bldg. R.1.	Lecture	Dr. D.J. Clark	The U.C.L.A. 50 MeV Cyclotron.

contd. overleaf/

EVENTS AT A.E.R.E.

Thurs., 4th Oct., 5.45 p.m.,
Reactor School.

A.S.E.E.
Lecture

The I.E.E. Wiring
Regulations.

EXTERNAL EVENTS

1st-5th Oct.: International Heating, Ventilating and Air Conditioning
Exhibition, Olympia, London.

2nd-10th Oct.: Business Efficiency Exhibition, Olympia. (Tickets may
be obtained from B. E. Kingdon, Building R.1, Ext. 484).

B. E. Kingdon

Building R.1.

28th September, 1962

AKF

RUTHERFORD LABORATORY BULLETIN

No. 92, for the week commencing Monday, 8th October, 1962

VISITORS

The party of Scientists from the U.S.S.R. who are at present visiting the United Kingdom under an exchange agreement with the U.K.A.E.A. is expected to return to A.E.R.E. and the Rutherford Laboratory on 8th, 9th and 10th October.

A party of approximately 45 members of the Southern Branch of the Institution of Mechanical Engineers will visit the Laboratory on Saturday afternoon, 13th October, for a tour of the Nimrod area.

P.L.A.

During the recent shut down which commenced on 24th August, various modifications and improvements have been made to the P.L.A. Two adjustable quadrupoles have been fitted in Tank 3 to enable the direction and position of the proton beam to be controlled more precisely than has previously been possible. Improved R.F. level monitoring has been incorporated, as well as a system of monitoring the phases of R.F. between the tanks. The P.L.A. became operational again on Friday, 28th September.

The programme scheduled for the current week is as follows:-

<u>Date</u>	<u>Team</u>	<u>Experiment</u>
8th and 13th October	Clarendon Laboratory	Cross-Section Measurements, 0^{16} . ($p, p^{-\alpha}$).
14th-15th Oct.	Birmingham University	Polarization Measurements.

NIMROD MAGNET

Shakedown tests on the Nimrod Magnet will commence on Sunday, 7th October, and, for safety reasons, access to the Magnet Hall will be restricted to authorised personnel for a period of approximately one week commencing on this date. Passes previously issued are still valid. Any person requiring to enter this area who is not in possession of a pass should apply to Mr. R. G. Russell, Building R.20, Ext. 270.

CONFERENCES

The Borough Polytechnic, London S.E.1., will hold a one-day symposium on "Zone Refining", on Thursday, 18th October, 1962. Papers on metallurgical refining, the determination of impurities in ultra pure elements (including semiconductors), and the refining of organic compounds will be included.

The Institution of Electrical Engineers will hold their Second Symposium on Electronic Equipment Reliability at Savoy Place, London W.C.2., on 24th-26th October, 1962.

Details of the above events may be obtained from B. E. Kingdon, Building R.1, Ext. 484.

EXTERNAL COURSES

The following evening lecture courses are now being held at the College of Technology, Oxford, on the days indicated:-

"Electronics and Instrumentation", (Monday. Primarily intended for non-electrical engineers).

"C.T.R. Technology", (Tuesday).

"An Introduction to Microwave Electronics", (Tuesday).

"High Vacuum Technology", (Wednesday).

/Continued overleaf

EXTERNAL COURSES (Cont'd)

"Semiconductors and Transistors", (Wednesday).

"Solid State Physics", (Thursday).

"Electronics for Electrical Contractors", (Thursday).

Details of the above may be obtained from Mr. P. Clare, Personnel Branch, Building R.20. Ext. 495.

INTERNAL EVENTS

(There will be no lecture in the Nimrod Series during the current week).

Tues., 9th Oct., 5.30 p.m., Conf. Rm., Bldg. R.1.	"Fundamentals of Accelerators" (3rd. Lecture)	Mr. T. R. Walsh	Particle Dynamics II
---	---	-----------------	----------------------

Mon., 15th Oct., 11.15 a.m., Conf. Rm., Bldg. R.1.	Nimrod Lecture Series	Prof. P. T. Matthews (Imperial College, London)	A Review of High Energy Scattering.
--	-----------------------------	---	--

EVENTS AT A.E.R.E.

Tues., 9th Oct., 2 p.m., Conf. Rm., Bldg. 8.9	Theoretical Physics Seminar	Dr. P. G. Burke	Regge Poles and their Applications.
---	-----------------------------------	-----------------	--

Every Tues. & Thurs. from 9th Oct. 9.15 a.m., Conf. Rm., Bldg. 8.9	Theoretical Physics Lecture Series	Dr. B. Cooper (Approximately 16 lectures in all)	Ferromagnetic Resonance and Relaxation.
---	---	---	---

EXTERNAL EVENTS

Ending 10th October: Business Efficiency Exhibition, Olympia. (Tickets may be obtained from B. E. Kingdon, Building R.1, Ext. 484).

Building R.1.

B. E. KINGDON.

4th October, 1962.

RUTHERFORD LABORATORY BULLETIN

No. 93, for the week commencing Monday, 15th October, 1962

VISITORS

A party of 30 members of the Association of Oxfordshire Surveyors visited the Laboratory on Thursday, 11th October.

VISITS ABROAD

Mr. J. J. Wilkins, Head of the Nimrod Magnet and Beam-handling Group, and Mr. R. Sheldon of the Nimrod Engineering Group, will visit the Oerlikon Engineering Co., Zurich, on 16th-17th October for discussions on beam extraction magnets for Nimrod, and coils for particle separators.

Dr. R. H. Thomas and Mr. J. F. MacEwan of the Bubble Chamber Group and Mr. P.W. Simpson of the Radiation Protection Group will visit C.E.R.N. for two weeks commencing 19th October to participate in experiments on the shielding properties of steel at 10 and 20 GeV.

Dr. M. A. R. Kemp of the High Energy Physics Group returned on 2nd October from a sixteen-months' attachment to the Brookhaven National Laboratory, where he has been working on the Cosmotron. His office is Room 1-42, Building R.1, Ext. 218.

P.L.A.

The programme scheduled for the P.L.A. during the current week is as follows:-

<u>Date</u>	<u>Team</u>	<u>Experiment</u>
15th October	Birmingham University	Polarization Measurements.
16th-17th Oct.	N.I.R.N.S.	Neutron Time-of-Flight.
18th-20th Oct.	Queen Mary College and N.I.R.N.S.	Polarization Monitor Test.

EVENING LECTURES

Some confusion has arisen over the current series of Tuesday evening lectures on "Fundamentals of Accelerators". These form a complete course, aimed at broadening the understanding of the subject by people whose work is directly connected with accelerators. They are not a continuation of the short series of lectures on general aspects of physics, which was held earlier this year. This latter series will recommence on Thursday, 18th October. (See "Internal Events" below).

SUGGESTION AWARDS

At the first meeting of the Rutherford Laboratory Suggestion Awards Committee, held on 2nd October, 1962, the following awards were made:-

- Mr. C. Wallis, Patrolman - Two encouragement awards of £1.
- Mr. E. B. Iberson, Building R.8 - £5.
- Mr. D. A. Hutchings, Building R.5 - £2.
- Mr. H. Webb, Building R.9 - £3.

TRAINING COURSES

The Institute of Further Education at Abingdon are running a General Course (G2) during three evenings per week, designed to prepare students for the new O1 stage of the O.N.C., or the T2 stage of the Engineering Technicians' Course. Details may be obtained from Mr. F. Telling, Building R.1, Ext. 512.

LIBRARY NOTICE

The following books are missing from the Library, Building R.1:-

- E. Segrè - "Experimental Nuclear Physics". (Reference copy).
- J. J. Livingood - "Principles of Cyclic Particle Accelerators". (Reference copy).

Contd. overleaf/

INTERNAL EVENTS

Mon., 15th Oct., 11 a.m., Conf. Rm., Bldg. R.1.	Theoretical Lecture Series	Dr. P. G. Murphy	The Spins and Parities of Particles II.
Tues., 16th Oct., 5.30 p.m., Conf. Rm., Bldg. R.1.	"Fundamentals of Accelerators" Lecture Series	Dr. L.C.W. Hobbis	Linear Machines. (First of three lectures).
Thurs., 18th Oct., 11.15 a.m., Conf. Rm., Bldg. R.1.	Nimrod Lecture Series	Prof. P.T. Matthews (Imperial College, London).	A Review of High Energy Scattering.

(Please note the change of date for the above lecture).

Thurs., 18th Oct., 5.30 p.m., Conf. Rm., Bldg. R.1.	Evening Lecture Series	Mr. E.R. Harrison	An Introduction to General Relativity and Cosmology.
Mon., 22nd Oct., 11.15 a.m., Conf. Rm., Bldg. R.1.	Nimrod Lecture Series	Dr. M. Derrick (Clarendon Lab., Oxford).	Bubble Chamber Physics and the C.E.R.N. Conference.

EVENTS AT A.E.R.E.

Tues., 16th Oct., 2 p.m., Conf. Rm., Hangar 8.9.	Theoretical Physics Seminar	Dr. C.F. Clement	Direct Nuclear Reactions.
--	-----------------------------------	------------------	------------------------------

EXTERNAL EVENTS

Tues., 16th Oct., 4.45 p.m., Univ. of Southampton.	Physics Department Colloquium	Mr. E. G. Auld (Ex - Univ. of Brit. Columbia).	Solid State Particle Detection.
--	-------------------------------------	--	------------------------------------

16th-18th October: Engineering Industries Association Exhibition, New Horticultural Hall, London S.W.1. (Tickets may be obtained from B. E. Kingdon, Building R.1, Ext. 484).

16th-19th October: Institute of British Photographers Conference and Exhibition, Central Hall, Westminster, London S.W.1.

Wed., 17th Oct., 5.30 p.m., Savoy Place, London W.C.2.	I.E.E. Lecture.	Mr. J. A. Ratcliffe	The Sun, the Earth and Radio.
Wed., 17th Oct., 6 p.m., Keppel St., London W.C.1.	Brit. I.R.E. Computer Group Meeting	Discussion	Standard Logical Elements.
Fri., 19th Oct., 4.15 p.m., Clarendon Lab., Oxford.	Colloquium	Dr. D.H. Parkinson (R.R.E., Malvern)	Infra-Red Spectroscopy at Low Temperatures.
Fri., 19th Oct., 5 p.m., Univ. of Edinburgh.	Physics Colloquium	Prof. A.W. Merrison (Director, N.I.R.N.S. Electron Laboratory)	Problems of the Weak Interactions.

NEWS FROM C.E.R.N.

Professor G. Puppi of Bologna University is to replace Professor G. Bernardini of Rome University as Member for Research in the C.E.R.N. Directorate. (Details are given in C.E.R.N. Press Release PR/32/62 which may be seen in the Library, Building R.1).

B. E. Kingdon

Building R.1,
12th October 1962.

MAS

RUTHERFORD LABORATORY BULLETIN

SPECIAL ISSUE

John James Wilkins

The Laboratory mourns the death of John Wilkins in a car accident. He was killed instantly on October 17th when a car in which he was a passenger collided with a truck in Zurich, Switzerland. He was returning from an official visit to Messrs. Oerlikon, who lost one of their staff in the same accident.

John Wilkins was a highly valued colleague and friend. He was one of the principal architects of Nimrod, and carried responsibility for the Nimrod magnet from the beginning. He was also responsible for the beam handling programme and research on high magnetic fields. Previously he worked on the design of the proton linear accelerator.

He worked on radar at T.R.E., and after the war was a founder member of the Malvern accelerator group, where he designed parts of the Glasgow synchrotron and later engaged in research on photonuclear processes with the Malvern synchrotron using the nuclear emulsion technique.

John Wilkins leaves a widow and two young sons who have our deepest sympathy.

T. G. Pickavance

Building R.1
18th October, 1962

RUTHERFORD LABORATORY BULLETIN

No. 94, for the week commencing Monday, 22nd October, 1962

MR. R. SHELDON

Laboratory staff will be glad to learn that Mr. R. Sheldon of the Nimrod Engineering Group, who was injured in the road accident at Zurich on 17th October, is due to return home on Saturday, 20th October.

VISITORS

Dr. J. H. MacMillen, Program Director for Physics at the National Science Foundation, Washington, will visit the Laboratory on Wednesday and Thursday, 24th and 25th October.

NIMROD MAGNET POWER SUPPLIES

During the period 7th-12th October this plant operated according to programme for "magnet shakedown" purposes, and for preliminary commissioning checks on the ripple filter equipment. This six day period proved to be by far the most intensive period of pulsing carried out to date.

The following operational information may be of interest:-

Total running hours $69\frac{1}{2}$

Total pulsing hours 58 ($50\frac{1}{2}$ of these at standard pulse + 15%)

Total number of pulses ... 74,785 (72,270 of these at standard pulse + 15%)

The opportunity was taken to make a number of checks and measurements to give more information about various aspects of power plant behaviour.

P.L.A.

The programme scheduled for the P.L.A. during the current week is as follows:-

Date	Team	Experiment
25th-26th Oct.	Birmingham University	P.P.S. Tests
28th-29th Oct.	Birmingham University	Polarization Measurements

ZGS INJECTOR

News has been received from the Argonne National Laboratory, Illinois, that the first beam of protons from the linac injector for the ZGS machine (Zero Gradient Synchrotron) was obtained on Tuesday, 16th October. A current of approximately 2 milliamps was accelerated to the design energy of 50 MeV.

The ZGS injector performance requirements are very similar to those of the Nimrod injector, except for the difference in energy. The synchrotron itself is designed for 12.5 GeV and is expected to be operational at about the same time as Nimrod.

LIBRARY NOTICE

The following books are missing from the Main Library, A.E.R.E. The last known location was at the Rutherford Laboratory. Would anyone who has any knowledge of their whereabouts please contact Mr. I. C. G. Sewter, Librarian, Building R.1., Ext. 384.

- (i) L. C. Jackson - Low Temperature Physics (Ha. 21699)
- (ii) Robertson et al. - Laboratory Glass Blowing for Scientists (Ha. 12931)
- (iii) Wilson & Littauer - Accelerators (Ha. 26837)

INTERNAL EVENTS

Mon., 22nd Oct., 11.15 a.m., Conf. Rm., Bldg.R.1.	Nimrod Lecture Series	Dr. M. Derrick (Clarendon Lab., Oxford)	Bubble Chamber Physics and the C.E.R.N. Conference.
Tues., 23rd Oct., 5.30 p.m., Conf. Rm., Bldg.R.1.	"Fundamentals of Accelerators" Lecture Series	Dr. L. C. W. Hobbis	Linear Machines II
Thurs., 25th Oct., 10.30 a.m., Conf. Rm., Bldg.R.1.	Talks will be given by Dr. N. D. West and Mr. K. Batchelor on the recent Linac Conference at Brookhaven, and by Dr. H. Atkinson on the Microwave Device Conference at the Hague.		

INTERNAL EVENTS (Contd.)

Thurs., 25th Oct., 5.30 p.m., Conf. Rm., Bldg.R.1.	Evening Lecture Series	Mr. J. D. Lawson (First of two lectures)	An Approach to some Quantum Mechanical Concepts.
Mon., 29th Oct., 11.15 a.m., Conf. Rm., Bldg.R.1.	Nimrod Lecture Series	Prof. A. Salam (Imperial Coll., London)	Symmetries, New Particles and Weak Interactions.

EVENTS AT A.E.R.E.

Mon., 22nd Oct., 2.15 p.m.,
Tues., 23rd Oct., 11.15 a.m.,
Wed., 24th Oct., 12.45 and
4.15 p.m. Cockcroft Hall.

Further showings of "The World of Semi-Conductors", the
40-minute A.E.I. film. (No tickets required. The gates
will be manned for the morning showings on 23rd and 24th
Oct.)

Tues., 23rd Oct., 2 p.m., Conf. Rm., Hangar 8.9	Theoretical Physics Seminar	Dr. E. D. Thompson	Adiabatic Approach to Spin Waves.
Thurs., 25th Oct., 2 p.m., Cockcroft Hall	Culham Laboratory Coloquium	Dr. A. G. Hearn	The Imprisonment of Radiation in Plasmas.

EXTERNAL EVENTS

Tues., 23rd Oct., 2.30 p.m., 21 Banbury Road, Oxford.	Nuclear Physics Seminar	Dr. D. Eccelshall (A.W.R.E.)	Multiple Coulomb Excitation.
Tues., 23rd Oct., 7.30 p.m., Belle Vue Hotel, Cheltenham.	Soc. of Instrument Technology Lecture.	Mr. R. E. Fischbacher	Ultrasonic Flowmeters.
Wed., 24th Oct., 4.30 p.m., University Coll., London.	Physics Department Seminar	Dr. P. G. Burke (A.E.R.E.)	The Low-Energy Scattering of Elec- trons and Positrons by Hydrogen Atoms.
Wed., 24th Oct., 6 p.m., 1 Birdcage Walk, Westminster, London S.W.1.	I. Mech. E. Presidential Address	Mr. J. H. Pitchford	The Consulting and Advisory Role of the Engineer of Tomorrow.
Wed., 24th Oct., 7 p.m., Keppel St., London, W.C.1.	Brit. I.R.E. Lecture	Dr. A. von Engel (Clarendon Lab.) (A.G.M. of Corporate Members at 6 p.m.)	An Introduction to Plasma Physics.
Thurs., 25th Oct., 3.30 p.m., Wantage Research Lab.	Isotope Research Div. Talk	Dr. Pamela Rothwell (Birmingham Univ.)	Van Allen Radiation Belts.
Fri., 26th Oct., 4.15 p.m., Clarendon Lab., Oxford.	Colloquium	Prof. H. Bondi (King's College, London)	Gravitational Theory.

Building R.1,
19th October 1962.

B. E. Kingdon

RUTHERFORD LABORATORY BULLETIN

No. 95, for the week commencing Monday, 29th October, 1962

ELECTRON LABORATORY

The Institute have applied to the Runcorn Rural District Council for outline planning permission to build the new Electron Laboratory at Daresbury in North Cheshire. The site which the Institute wish to develop is at present owned by Imperical Chemical Industries Ltd.,

VISITS ABROAD

Dr. P. G. Murphy of the High Energy Physics Group left on 27th October for a ten-day visit to C.E.R.N., to participate in an experiment on the proton synchrotron.

NIMROD MAGNET POWER SUPPLIES

On Sunday, 21st October the second 60 MVA motor-alternator-flywheel set was run up to speed for the first time. The erection of the set started early in September, and this first run met the programmed date. The set was run for twenty four hours on the 22nd and 23rd October, for mechanical checks and alternator dry out.

P.L.A.

The programme scheduled for the P.L.A. during the current week is as follows:-

<u>Date</u>	<u>Team</u>	<u>Experiment</u>
29th - 31st Oct.	Birmingham University	Polarization Measurements.
1st November	Queen's Univ., Belfast, & Westfield College.	(p-d) Polarization Measurements.
2nd-3rd November	N.I.R.N.S.	(p- α) Polarization Measurements.

LIBRARY NOTICE

The following book is missing from the Library, Building R.1, Ext. 384:-

Louis Segal - New Complete Russian - English Dictionary.

*INTERNAL EVENTS

Mon. 29th Oct., 11.15 a.m., Conf. Rm., Bldg. R.1.	Nimrod Lecture Series	Prof. A. Salam (Imperial College, London)	Symmetries, New Particles and Weak Interactions.
Mon., 5th Nov., 11.15 a.m., Conf. Rm., Bldg. R.1.	Nimrod Lecture Series	Dr. E. Taylor (A.E.R.E./C.E.R.N.)	Possible High Energy Scattering Experiments on Nimrod.
Tues., 30th Oct., 5.30 p.m., Conf. Rm., Bldg. R.1.	"Fund. of Accelerators" Lect.Series	Dr. L. C. W. Hobbis	Linear Machines III.
Thurs., 1st Nov., 5.30 p.m., Conf. Rm., Bldg. R.1.	Evening Lecture Series	Mr. J. D. Lawson (2nd of two lectures)	An Approach to some Quantum Mechanical Concepts.
Wed., 21st. Oct., 2.15 p.m., Conf. Room, <u>Bldg. R.1</u>	P.L.A. Group Seminar	Mr. N. Jones (Nuclear Data Inc., U.S.A.)	The Nuclear Data Range of Multi-channel Analysers.

EVENTS AT A.E.R.E.

Tues., 30th Oct.:	Exhibition of Containers for the Transport of Radio-active Materials.		
10 a.m. - 5.15 p.m.	Conference Room, Cockcroft Hall. (Gates manned, 12 p.m. - 2 p.m.).		
Wed., 31st Oct., 11 a.m., Conf. Rm. Hangar 8.	Theoretical Physics Lecture	Dr. A.M. Lane	Recent Development in the Theory of Nuclear Pairing Correlations and Collective Motion.
(The second of a series of approximately 7 lectures)			

EXTERNAL EVENTS

31st Oct. - 3rd Nov.: R.S.G.B. Radio Communications Exhibition. 10 a.m. - 9 p.m. daily, at the Seymour Hall, London W.1.

1st - 2nd Nov.: I.E.E. Symposium on "Plastic Insulated Mains Cable Systems." At Savoy Place, London W.C.2. (Application forms may be obtained from B. E. Kingdon, Building R.1, Ext. 484).

*(N.B.: Not in chronological order).

RUTHERFORD LABORATORY BULLETIN

No. 96, for the week commencing Monday, 5th November, 1962

VISITORS

✓ A party of eight members attending the U.K.A.E.A. Chief Draughtsmen's Conference at A.E.R.E. will visit the Laboratory on Friday, 9th November, for a tour of the Nimrod area.

VISITS ABROAD

Dr. P. J. Duke of the High Energy Physics Group will return to C.E.R.N. on 6th November to continue experimental work using the C.E.R.N. synchro-cyclotron.

✓ Mr. M. Snowden, Dr. C. M. Fisher, Mr. A. G. Wilson and Mr. J. Sparrow will visit the Ecole Polytechnique, Paris, on 7th-8th November for discussions on heavy liquid bubble chamber experiments. They will be joined by Mr. J. M. Scarr, who is at present on attachment to C.E.R.N.

Mr. B. C. W. Ward of the Nimrod Engineering Group will visit Baden and Geneva on 7th-14th November, for discussions on power plant tests with Brown-Boveri and C.E.R.N. engineers.

✓ UNIVERSITY COMPUTERS

The Inter-University Committee on Computing will hold its next meeting on 9th November at the Rutherford Laboratory. This is a Committee which correlates the computing requirements amongst all the Universities in Great Britain, and advises the Vice-Chancellors on all matters of policy connected with computation. The N.I.R.N.S. ATLAS Computer Laboratory has close links with this Committee.

P.L.A.

The programme scheduled for the P.L.A. during the current week is as follows:-

<u>Date</u>	<u>Team</u>	<u>Experiment</u>
8th-10th Nov.	N.I.R.N.S.	(p- α) Polarization Measurements.
11th-12th Nov.	Birmingham University	(p-p) Polarization Measurements.

✓ FELLOWSHIP AWARDS

✓ Details of the 1963 United Kingdom Awards for the Harkness Fellowships, for study and travel in the United States of America, are available from Mr. P. J. Clare, Personnel Branch, Building R.20, Ext. 495. The closing date for applications is 15th November, 1962.

Details of Graduate Fellowship and Assistantship Awards, offered by the English-Speaking Union of the Commonwealth and tenable in 1963-64 at Universities in the United States of America, may also be obtained from Mr. Clare. The closing date for applications is 3rd December, 1962.

✓ CONFERENCES

✓ The Institution of Electrical Engineers will hold the following meetings on the dates indicated:-

Symposium on "Transient, Fluctuating and Distorting Loads and their Effect on Power Systems and Communications" (February, 1963).

Conference on "The Design and Use of Microwave Valves" (September, 1963).

The British Institution of Radio Engineers will hold a Symposium on "Radio and Electronics Research in Great Britain" on 3rd December, 1962.

The Italian Society of Physics will hold the Second International Symposium on "Residual Gases in Electron Tubes" at Milan, on 12th-15th March, 1963.

Details of the above events may be obtained from B. E. Kingdon, Building R.1, Ext. 484.

contd./

INTERNAL EVENTS

Mon., 5th Nov., 11.15 a.m., Conf. Rm., Bldg. R.1.	Nimrod Lecture Series	Dr. E. Taylor (A.E.R.E./C.E.R.N.)	Possible High Energy Scattering Experiments on Nimrod.
Tues., 6th Nov., 5.30 p.m., Conf. Rm., Bldg. R.1.	"Fund. of Accelerators" Lect. Series	Dr. L. C. W. Hobbis	Linear Machines IV.
Thurs., 8th Nov., 5.30 p.m. Conf. Rm., Bldg. R.1.	Evening Lecture Series	Mr. R. S. Pease (Culham Laboratory)	Experiments on the Problems of Controlled Thermonuclear Reactions.
Mon., 12th Nov., 11.15 a.m., Conf. Rm., Bldg. R.1.	Nimrod Lecture Series	Prof. J. Hamilton (University College)	The Decay of K-Mesons.

EVENTS AT A.E.R.E.

Tues., 6th Nov., 2 p.m., Conf. Rm., Hang. 8.9.	Theor. Phys. Division Seminar	Dr. R. D. Lawson	Quasi-particles in Nuclear Physics.
Wed., 7th Nov., 3.30 p.m., Cock- croft Hall. (Outer gate open, inner gate manned).	Health Phys. & Med. Div. Colloquium	Dr. J. Baarli (C.E.R.N.)	Dosimetry Problems in Connection with Operation of Large Accelerators.

Fri., 9th Nov.: Mobile Exhibition by Chilton Electric Products Ltd. (including circuit-breakers, rotary switches and copperweld earthing rods). 10 a.m.-5.30 p.m., adjacent to the Social Club.

EXTERNAL EVENTS

Mon., 5th Nov., 4.45 p.m., H.H. Wills Phys. Lab., Bristol.	Physics Dept. Colloquium	Dr. J. J. Quenby (Imperial College)	Cosmic Rays and Trapped Particle Experiments in the Satellite "Ariel".
Tues., 6th Nov., 2.30 p.m., 21 Banbury Road, Oxford.	Nuclear Physics Seminar	Dr. D. Radojčić (Oxford Univ.)	Antiproton Annihilation.
Tues., 6th Nov., 6.30 p.m. Wellcome Bldg., Euston Rd., London, N.W.1.	Plastics Inst. Lecture	Mr. R. N. Lewis	Progress in Epoxide Resins.
Wed., 7th Nov., 4.30 p.m., Univ. Coll. London.	Physics Dept. Seminar	Dr. E. Taylor (A.E.R.E./C.E.R.N.)	High Energy Nucleon- Nucleon Scattering.
Thurs., 8th Nov., 2.30 p.m., Cavendish Lab., Cambridge.	Theoretical Physics Seminar	Dr. A. M. Lane (A.E.R.E.)	Isobaric States of Heavier Nuclei.
Thurs., 8th Nov., 3.30 p.m., Wantage Research Lab.	Isotope Res. Div. Talk	Mr. J. McCann	Particle Accelerators.
Fri., 9th Nov., 2.30 p.m., 10 Parks Road, Oxford.	Applied Maths. Seminar	Dr. J. T. Stuart (N.P.L.)	Recent Developments in Thermal Convection.

12th-17th Nov.: Public Works and Municipal Services Exhibition, Olympia, London.

Building R.1.
2nd November, 1962

B. E. Kingdon
Scientific Administration.

RUTHERFORD LABORATORY BULLETIN

No. 97, for the week commencing Monday, 12th November, 1962

JOHN WILKINS' MEMORIAL FUND

Mr. Mullett has asked that the following notice be brought to the attention of Laboratory staff:-

There has already been some discussion about a memorial and the form that it might take. Two suggestions are, a plaque and (or) a portrait, and there may well be other possibilities more personal to John's family. The immediate thing however is to establish a fund and to do this Messrs. Egginton, Higgins and Woodall have agreed to join with me as a kind of committee with Mr. Woodall acting as treasurer. We shall be happy to talk to people and to receive contributions.

VISITORS

Dr. S. Komagata, Member of the Japanese Atomic Energy Commission and former Chairman of the Japanese Atomic Energy Research Establishment, and Mr. S. Tamiya, Scientific Liaison Officer at the Japanese Embassy, London, will visit the Laboratory on Monday, 12th November.

P.L.A.

The programme scheduled for the P.L.A. during the current week is as follows:-

<u>Date</u>	<u>Team</u>	<u>Experiment</u>
12th-17th November	Birmingham University	Proton-Nuclei Polarization Measurements.

CONFERENCE

The Institute of Physics and the Physical Society will hold a Conference on "High Magnetic Fields, their Production and their Applications" at Oxford University on 10th-12th July, 1963. Contributions on the following topics are invited:-

The generation of high magnetic fields,

- (a) by means of normal conducting materials,
- (b) by means of superconductors.

Properties of solids in high magnetic fields; to include optical, magnetic and transport properties.

Correspondence regarding the programme should be addressed to: Dr. N. Kurti, Clarendon Laboratory, Parks Road, Oxford.

MATHEMATICS COURSE

A group of three lectures on "Uses of Chebyshev Polynomials" will be given by Professor C. Lanczos of the Dublin Institute for Advanced Studies, at the College of Technology, Hatfield, Herts., on Tuesday, 20th November, 1962. Details are given on the 2nd Floor notice-board at the east end of Building R.1.

INTERNAL EVENTS

Mon., 12th Nov., 11.15 a.m., Conf. Rm., Bldg. R.1.	Nimrod Lecture Series	Prof. J. Hamilton (University College)	The Decay of K-Mesons.
Tues., 13th Nov., 5.30 p.m., Conf. Rm., Bldg. R.1.	"Fund. of Accelerators" Lect. Series.	Mr. D. A. Gray	Synchrotrons I.
Thurs., 15th Nov., 5.30 p.m., Conf. Rm., Bldg. R.1.	Evening Lecture Series.	Dr. H. London (A.E.R.E.)	Superconductivity.
Mon., 19th Nov., 11.15 a.m., Conf. Rm., Bldg. R.1.	Nimrod Lecture Series	Prof. R. Dalitz (Chicago and Cambridge Univ.)	Elementary Particle Resonant States.

/Cont'd overleaf

EXTERNAL EVENTS

12th-17th Nov: Public Works and Municipal Services Exhibition, Olympia, London.

Tues., 13th Nov., 2.30 p.m., Imperial Coll., London.	Theor. Physics Seminar	Dr. H. C. Corben (S.T.L., Los Angeles)	Relativistic Quantum Theory of Particles of Variable Mass.
Tues., 13th Nov., 2.30 p.m., 21 Banbury Road, Oxford.	Nuclear Physics Seminar	Mr. I. Hall (Oxford Univ.)	C^{12} and Astrophysics.
Tues., 13th Nov., 4.45 p.m., Univ. of Southampton.	Physics Dept. Colloquium	Dr. R. G. Scurlock	Report on the 8th International Low Temperature Con- ference, London.
Tues., 13th Nov., 6.30 p.m., Univ. of Southampton.	I.E.E. Lecture	Mr. A. R. Boothroyd	Charge Definition in Transistor Parameters.
Tues., 13th Nov., 5.30 p.m., Savoy Place, London W.C.2.	I.E.E. Lecture	Messrs. J. C. West and B. V. Jayawant	New Linear Oscillating Motor.
Thurs., 15th Nov., 6.15 p.m., Univ. of Birmingham.	Brit. I.R.E. Lecture.	Dr. D.B.G. Edwards	Recent Developments in Computer Storage.
Thurs., 15th Nov., 2.30 p.m., Cavendish Lab., Cambridge.	Theor. Physics Seminar	Prof. S. Mandelstam (Birmingham University)	Branch Cuts in the Complex L-Plane.
Fri., 16th Nov., 2.30 p.m., Cavendish Lab., Cambridge.	Theor. Physics Seminar	Mr. J. Gunson (Birmingham University)	Analyticity and Unitarity for Many- Particle Processes.

Building R.1.
9th November 1962.

B. E. Kingdon
Scientific Administration

MAS

RUTHERFORD LABORATORY BULLETIN

No. 98, for the week commencing Monday, 19th November, 1962

VISITORS

Dr. G. K. Green, Mr. J. Spiro and Mr. I. Polk of the Brookhaven National Laboratory, New York, will visit the Rutherford Laboratory on 22nd and 23rd November.

A party of about 30 members of the Engineering Society, West Ham College of Technology, will visit the Laboratory on Wednesday, 21st November.

VISITS ABROAD

Mr. A. C. Sherwood of the A.E.R.E. High Energy Physics Team at the Rutherford Laboratory will be attached to C.E.R.N. for approximately 13 months commencing 25th November, to participate in experiments on the proton synchrotron.

NIMROD VACUUM SYSTEM

The first production Header Vessel for the Nimrod Vacuum System arrived at the Laboratory on Friday, 9th November from the manufacturers, Marston Excelsior Limited of Wolverhampton, and is at present in the Vacuum Testing Compound of the Experimental Area. The vessel is about 50 feet in length and is of similar material and construction to the inner and outer vessels, except that it has thicker walls to withstand the higher atmospheric loading. Vacuum tests are expected to start in about one week's time.

CONSULTANT

Dr. A. N. James of the Nuclear Physics Research Laboratory, Liverpool University, has accepted an appointment as Honorary Consultant to the National Institute, for a period of three months commencing 1st November, 1962. Dr. James is at present in the U.S.A., where he attended the recent Gatlinburg Conference on "Research with High Intensity Meson-Producing Accelerators", on behalf of the Institute, and will also visit various high energy laboratories.

P.L.A.

The programme scheduled for the P.L.A. during the current week is as follows:-

<u>Date</u>	<u>Team</u>	<u>Experiment</u>
22nd - 23rd Nov.	N.I.R.N.S.	(p - α) Polarization Measurements.
24th - 25th Nov.	University College London	Polarimeter Calibration and Background Measurements.
26th Nov.	N.I.R.N.S.	(As above)

SUGGESTION AWARDS

At a meeting of the Rutherford Laboratory Suggestion Awards Committee held on 29th October, 1962, the following awards were made:-

Mr. F. J. Welch, Building R.12	£2	
Mr. E. B. Ibersen, Building R.8	£5	
Mr. A. H. Spurway, Building R.1	£1	encouragement award.
Mr. C. E. Webb, Building R.12	£1	encouragement award.
Mr. P. Seager, Building R.1	£1	interim award.

INTERNAL EVENTS

Mon., 19th Nov., 11.15 a.m., Conf. Rm., Bldg. R.1.	Nimrod Lecture Series	Prof. R. Dalitz (Chicago and Cambridge Univ.)	Elementary Particle Resonant States.
Tues., 20th Nov., 5.30 p.m., Conf. Rm., Bldg. R.1.	"Fund. of Accelerators" Lect. Series	Mr. D. A. Gray	Synchrotrons II.

(Continued Overleaf)

INTERNAL EVENTS (Cont'd)

Thurs., 22nd Nov. 3.30 p.m., Conf. Rm., Bldg. R.1.	Lecture	Mr. J. A. Fox	Engineering Design of the Electron Synchrotron Resonant Magnet System.
Thurs., 22nd Nov., 5.30 p.m., Conf. Rm., Bldg. R.1.	Evening Lecture Series	Dr. G. H. Stafford	The Production of Polarized Protons by Atomic Beam Techniques.
Mon., 26th Nov., 11.15 a.m., Conf. Rm., Bldg. R.1.	Nimrod Lecture Series	Dr. W. Galbraith	The 1962 C.E.R.N. Instrumentation Conference.

EVENTS AT A.E.R.E.

Tues., 20th Nov., 2 p.m., Conf. Rm., Hangar 8.9.	Theor. Physics Seminar	Prof. R. Dalitz (Chicago and Cambridge Univ.)	Recent Work in Hyper-nuclear Physics.
--	------------------------------	---	--

EXTERNAL EVENTS

The Oxford National Productivity Year Committee are holding their first public meeting on Monday, 19th November at 7.30 p.m., in the Town Hall Assembly Room, Oxford. The principal speakers will be: Lord Franks (Provost of Worcester College, Oxford) on "The Shape of Industry Tomorrow", and Mr. Victor Feather (Assistant General Secretary of the T.U.C.) on "Trade Unions and Industrial Progress".

Tues., 20th Nov. : I.E.E. and I.Mech.E. Discussion on "Components Used in Automatic Control Systems". Commencing 10 a.m. at 1, Birdcage Walk, Westminster, London S.W.1. (Registration is necessary).

Tues., 20th Nov., 4.45 p.m., Univ. of Southampton.	Physics Dept. Colloquium	Dr. C. Whitehead (A.E.R.E.)	Acoustic Spark Chambers.
Wed., 21st Nov., 5.30 p.m., Savoy Place, London W.C.2.	I.E.E. Discussion Meeting	—	Microminiaturisation.
Thurs., 22nd Nov. 2.30 p.m., Cavendish Lab., Cambridge.	Theor. Physics Seminar	Dr. J. C. Polkinghorne (Trinity College, Cambridge)	High Energy Properties of Perturbation Theory.
Fri., 23rd Nov., 4.15 p.m., Clarendon Lab., Oxford.	Physics Colloquium	Prof. A. W. Merrison (Director, N.I.R.N.S. Electron Laboratory)	Problems of the Weak Interactions.
Mon., 26th Nov., 7.15 p.m., Great Western Hotel, Reading.	I.E.E. Lecture	Mr. G. T. Shepherd	Nuclear Power Stations with Particular Reference to Design, Construction and Commissioning Problems

Building R.1.
16th November, 1962.

B. E. Kingdon
Scientific Administration

RUTHERFORD LABORATORY BULLETIN

No. 99, for the week commencing Monday, 26th November, 1962

VISITS ABROAD

The Director, accompanied by Mr. Mullett, Mr. Walkinshaw, Dr. Stafford and Mr. Snowden, will attend a meeting of the European Accelerator Study Group at the Frascati Laboratory, Rome, on 3rd-5th December.

✓ Dr. C. M. Fisher, Dr. K. Rangan, Mr. R. Elliott and Mr. K. J. Mc Kee of the Bubble Chamber Group left for C.E.R.N. on 23rd November, to participate in a heavy liquid bubble chamber experiment. They are due to return on or around 10th December.

Dr. J. J. Thresher of the High Energy Physics Group returned on 14th November from a nineteen months' attachment at U.C.R.L., Berkeley, U.S.A., where he has been working on the Bevatron. His office is at present in Room 2.84, Building R.1, Ext. 443.

P.L.A.

The programme scheduled for the P.L.A. during the current week is as follows:-

<u>Date</u>	<u>Team</u>	<u>Experiment</u>
26th Nov.	N.I.R.N.S.	(p- α) Polarization Measurements
27th-28th Nov.	University College London	Polarimeter Calibration and Background Measurements.
29th Nov.	Birmingham University	Proton-Nuclei Polarization Measurements.
30th Nov.-1st Dec.	Queen's Univ., Belfast, and Westfield College	(p-d) Polarization Measurements.
2nd-3rd Dec.	N.I.R.N.S.	(As above for 26th Nov.)

LECTURES

✓ A series of five lectures on "Electrical Breakdown in Vacuum" will be held at the Laboratory on Thursday, 6th and Friday, 7th December. The lectures will be given by Dr. R. Hawley, Dr. R. Craik and Mr. A. Maitland of the C.A. Parsons Nuclear Research Centre, Newcastle-upon-Tyne, and Dr. P. A. Chatterton of the Rutherford Laboratory. Staff wishing to attend are asked to notify B. E. Kingdon, Ext. 484, from whom further details may be obtained.

CHART OF THE NUCLIDES

X Copies of a new edition of the Chart of the Nuclides are available from the Library, Building R.1.

NATIONAL SAVINGS

g Savings Certificates from Salaries Cycle No. 64, ending 30th November, 1962, will be available for collection from the Cash Office, Building R.20, on Wednesday, 5th December. Cycle No. 65 commences in December, 1962, and new subscribers are invited. The closing date for applications is Tuesday, 27th November.

/Continued Overleaf

INTERNAL EVENTS

Mon., 26th Nov., 11.15 a.m., Conf. Rm., Bldg. R.1.	Nimrod Lecture Series	Dr. W. Galbraith	The 1962 C.E.R.N. Instrumentation Conference.
Tues., 27th Nov., 5.30 p.m., Conf. Rm., Bldg. R.1.	"Fund of Accelerators" Lect. Series	Mr. J. D. Lawson	Synchrotrons III. (Principles of Strong Focusing).
Wed., 28th Nov., 2 p.m., Conf. Rm., Bldg. R.12.	P.L.A. Group Seminar	Mr. D. Smith (King's College, London)	Slit Scattering.
Thurs., 29th Nov., 5.30 p.m., Conf. Rm., Bldg. R.1.	Evening Lecture Series	Dr. J. M. Valentine	How Old is the Earth?
Mon., 3rd Dec., 11.15 a.m., Conf. Rm., Bldg. R.1.	Nimrod Lecture Series	Dr. A. M. Segar	Interaction of 1.5 GeV/c K ⁻ in Hydrogen.

EVENTS AT A.E.R.E.

Tues., 27th Nov., 2 p.m., Conf. Rm., Hangar 8.9.	Theor. Physics Seminar	Dr. E. J. Squires (Cambridge University)	Can I Calculate the Mass of the Photon?
--	------------------------------	--	---

Thurs., 29th Nov.: Technical films on glass-blowing: "Looking into Glass" (30 mins.), and "Pyrosil" (20 mins.), 11.30 a.m. in the Cockcroft Hall. (No tickets or passes required).

Thurs., 29th Nov., 5.45 p.m., Reactor School.	A.S.E.E. Lecture	Staff of Messrs. Laurence Scott & Electromotors Ltd.	Stator-Fed Variable Speed A.C. Motors.
---	---------------------	--	--

EXTERNAL EVENTS

Tues., 27th Nov., 2.30 p.m., 21 Banbury Road, Oxford.	Nuclear Physics Seminar	Dr. J. C. Taylor (Cambridge University)	On $p-w$ Mixing.
--	-------------------------------	---	------------------

27th-30th Nov.: Corrosion and Metal Finishing Exhibition, Olympia, London. (Tickets may be obtained from B. E. Kingdon, Ext. 484).

Wed., 28th Nov., 4.30 p.m., University College London.	Physics Dept. Seminar	Prof. G. F. Chew (U.C.R.L., Berkeley)	The S-Matrix Theory of Strong Interactions.
--	-----------------------------	--	--

28th-30th Nov.: Third International Reinforced Plastics Conference, London. To be followed on 4th-7th December by an Exhibition at the Seymour Hall, London W.1. (Details of both events may be obtained from B. E. Kingdon).

Thurs., 29th Nov., 2.30 p.m., Cavendish Lab., Cambridge.	Theor. Physics Seminar	Dr. L. Castillejo (Birmingham University)	Collective Motion in Nuclei.
--	------------------------------	---	---------------------------------

Mon., 3rd Dec.: Brit. I.R.E. Symposium on "Radio and Electronics Research in Great Britain". Commencing 2.30 p.m. at the School of Hygiene and Tropical Medicine, London, W.C.1.

Building R.1.
23rd November, 1962.

B. E. Kingdon
Scientific Administration

CMP

RUTHERFORD LABORATORY BULLETIN

No. 100, for the week commencing Monday, 3rd December, 1962

P.L.A.

The programme scheduled for the P.L.A. during the current week is as follows:-

<u>Date</u>	<u>Team</u>	<u>Experiment</u>
3rd-6th Dec.	N.I.R.N.S.	(p- α) Polarization Measurements.
7th-8th Dec.	University College London	Measurement of Depolarization in Proton-Proton Scattering.
9th-10th Dec.	Birmingham University	Proton-Nuclei Polarization Measurements.

BRITISH WELDING RESEARCH ASSOCIATION

The National Institute is now a member of the British Welding Research Association. This entitles Laboratory staff to use the Association's advisory services on any welding problems. Mr. P. Bowles has been nominated the Institute's official representative. The Association's monthly publication "The British Welding Journal" may be seen in the Library, Building R.1.

LIFTING EQUIPMENT

The Safety Officer has asked that the following notice be brought to the attention of staff:-

Lifting equipment which is unregistered or overdue for inspection may be in a dangerous condition. In an intensive effort to locate any unregistered and missing items, the co-operation of all members of staff is sought by the Safety Section during the period of the Lifting Equipment Safety Fortnight, 3rd-14th December. Full details are given on Notice-Boards and in the Safety Section Displays.

INTERNAL EVENTS

Mon., 3rd Dec: Mobile Exhibition by I.V. Pressure Controllers Ltd., 10 a.m. - 4.30 p.m. (Adjacent to Building R.19).

Mon., 3rd Dec., 11.15 a.m., Conf. Rm., Bldg. R.1. Nimrod Lecture Series Dr. A. M. Segar Interaction of 1.5 GeV/c K⁻ in Hydrogen.

Tues., 4th Dec., 5.30 p.m., Conf. Rm., Bldg. R.1. "Fund. of Accelerators" Lect. Series Mr. E. J. Jones Cyclotrons I.

Thurs., 6th and Fri., 7th Dec.: Series of five lectures on "Electrical Breakdown in Vacuum". Commencing 9.15 a.m. each day, in the Main Conference Room, Building R.1. (Details may be obtained from B.E. Kingdon. Ext. 484).

Thurs., 6th Dec., 5.30 p.m., Conf. Rm., Bldg. R.1. Evening Lecture Series Dr. R. G. Moorhouse What is an Elementary Particle?

Mon., 10th Dec. 11.15 a.m., Conf. Rm., Bldg. R.1. Nimrod Lecture Series Mr. J. Burren Data Processing and Instrumentation for High Energy Physics. (A survey of developments in spark chambers, bubble chambers, and computing techniques).

contd./

EXTERNAL EVENTS

- Mon., 3rd Dec.: Brit. I.R.E. Symposium on "Radio and Electronics Research in Great Britain". Commencing 2.30 p.m. at the School of Hygiene and Tropical Medicine, Keppel Street, Gower Street, London W.C. 1.
- Mon., 3rd Dec., 5.30 p.m., Savoy Place, London W.C. 2. I.E.E. Discussion Meeting "Plugs, Sockets and Inter-connections" (The discussion will be opened by Mr. N. E. Hyde).
- Tues., 4th Dec., 2.30 p.m., 21 Banbury Rd., Oxford. Nuclear Physics Seminar Mr. J.G. Rushbrooke (Oxford University) High Energy Neutron-Proton Scattering.
- Tues., 4th Dec., 4.45 p.m., Univ. of Southampton. University Phys. Soc. Lecture Dr. L. Essen (National Physical Laboratory) High Precision Time Measurements.
- Tues., 4th-Fri., 7th Dec.: Reinforced Plastics Exhibition. At the Seymour Hall, London W.1. (Tickets may be obtained from B. E. Kingdon, Ext. 484).
- Thurs., 6th Dec., 3.30 p.m., Wantage Research Lab. Isotope Research Div. Talk Mr. S.C.L. Bartlett (A.E.R.E.) Patents for Inventions.
- Fri., 7th Dec., 11 a.m., I.E.E., Savoy Place, London W.C. 2. Inst. Phys. & Phys. Soc. and Brit. Ceramics Soc. (Details from I.P.P.S., 47 Belgrave Square, London S.W. 1.) One-day discussion on "Thermal Shock".
- Fri., 7th Dec., 5 p.m., Univ. of Edinburgh. Physics Colloquium Dr. J. Byrne Gamma-ray Polarization.
- Mon., 10th Dec., 4.45 p.m., H.H. Wills Phys. Lab., Bristol. Physics Colloquium Dr. B. H. Bransden (Glasgow University) Some Applications of Regge Poles.

EVENTS AT A.E.R.E.

"Analysis by Mass", a 27-minute A.E.I. colour film on mass spectrometers will be shown on Mon., 3rd Dec. at 10.15 a.m. and 1 p.m., and on Tues., 4th Dec. at 1 p.m.* and 3.15 p.m. in the Cockcroft Hall. (*No passes required for this showing).

- Tues., 4th Dec., 2 p.m., Conf. Rm., Hangar 8.9. Theor. Physics Seminar Prof. A. Abragam (Saclay and Oxford Univ.) Dynamic Polarization of Nuclei.
- Wed., 5th Dec., 3.30 p.m., Conf. Rm., Bldg. 364. Health Phys. & Med. Div. Colloquium Mr. W. Abson Some New Health Physics Instruments.

Building R.1.

B. E. Kingdon

30th November, 1962.

RUTHERFORD LABORATORY BULLETIN

No.101, for the week commencing Monday, 10th December, 1962

VISITORS

✓ Dr. G. Manning of A.E.R.E., who is at present on attachment to C.E.R.N., is expected to visit the Laboratory on 10th-14th December, for discussions on experiments with Nimrod.

Dr. P. H. Standley of the Proton Synchrotron Division, C.E.R.N., will visit the Laboratory on Friday, 14th December. Anyone wishing to see Dr. Standley should contact Miss S. Alcock, Building R.1., Ext.418.

A party of delegates attending the IAEA Symposium on Neutron Detection, Dosimetry and Standardization, to be held at A.E.R.E. on 10th-14th December, will visit the Laboratory on Wednesday, 12th December.

VISITS ABROAD

Mr. D. H. Lord and Mr. R. A. Lawes of the Bubble Chamber Group will visit C.E.R.N. on 9th-13th December, for discussions on the H.P.D. Project (bubble chamber track measuring device).

✓ Mr. J. R. J. Bennett of the Cyclotron Group will visit the Saclay and Orsay Laboratories, France, on 11th-13th December to discuss ion sources in connection with the Variable Energy Cyclotron Project.

Mr. H. R. McK. Hyder and Mr. A. E. Pyrah of the Electrostatic Generator Group are expected to visit High Voltage Engineering (Europa), Amersfoort, Holland, for one week commencing 17th December, in connection with the Oxford Electrostatic Generator Project.

NIMROD MAGNET POWER SUPPLIES

✓ The complete rotary plant, two motors, two alternators and two flywheels, ran up to speed on a common shaft system for the first time on Wednesday, 21st November. The two alternators were then correctly phased and the rotary plant again split between the two flywheels. This was to enable one motor-alternator-flywheel set to be available for the second "magnet shakedown" period, lasting from 26th to 30th November.

The following operational information for this five day period may be of interest:-

Total running hours 71
Total pulsing hours 59 (47 of these at standard pulse +15%)
Total number of pulses 56,872 (51,604 of these at standard pulse +15%)

(Staff are reminded that anyone wishing to take visitors to the Motor-Alternator House or the Rectifier House should apply to Mr. H. C. Brooks, Building R.20, Ext.300, or to Mr. B. C. W. Ward, Building R.20, Ext.250).

P.L.A.

The programme scheduled for the P.L.A. during the current week is as follows:-

<u>Date</u>	<u>Team</u>	<u>Experiment</u>
10th Dec.	University College London	Measurement of Depolarization in Proton-Proton Scattering.
11th-15th Dec.	Queen's Univ., Belfast, and Westfield College	p-d Polarization Measurements.

CONSULTANTS

✓ Professor J. C. Gunn of Glasgow University has been appointed a Consultant to N.I.R.N.S. Electron Laboratory with effect from 1st November, 1962. His sponsor is Professor A. W. Merrison.

Dr. A. B. Clegg of the Department of Nuclear Physics, Oxford University, has been appointed a Consultant to the Rutherford Laboratory with effect from 1st December, 1962. His sponsor is Dr. G. H. Stafford.

contd./

B.B.C. BROADCAST

Mr. E. R. Harrison of A.E.R.E., who is attached to the Rutherford Laboratory, will give a talk entitled "Magic Numbers of the Universe" on the B.B.C. Third Programme, at 8 p.m. on Wednesday, 12th December.

INTERNAL EVENTS

Mon., 10th Dec., Nimrod Mr. J. Burren Data Processing and
11.15 a.m., Conf. Lecture Instrumentation for
Rm., Bldg.R.1. Series High Energy Physics.
(A survey of developments in spark chambers, bubble chambers, and
computing techniques).

(There will be no further lecture in the Nimrod Series until Monday,
7th January, 1963).

Tues., 11th Dec. : Exhibition of Stabilised Transistorised Power Supplies, by
the Belix Co. Ltd., 10 a.m.-4 p.m. in Conference Room No.4, Building R.1.

Tues., 11th Dec., "Fund. of Mr. E. J. Jones Cyclotrons I.
5.30 p.m. Conf. Accelerators"
Rm., Bldg.R.1. Lect. Series (Postponed from 4th December)

(Further lectures in this Series will be given by Mr. E. J. Jones
on 18th Dec. : "Cyclotrons II", and by Mr. A. J. Egginton on 8th
and 15th Jan., 1963 : "High Energy Beams, I & II").

Wed., 12th Dec., P.L.A. Dr. C. F. Coleman Pick-up Reactions
2 p.m., Conf. Group (A.E.R.E.) at 30 and 50 MeV.
Rm., Bldg.R.12. Seminar

Thurs., 13th Dec., Evening Dr. P. G. Murphy The Development of
5.30 p.m., Conf. Lecture High Energy Physics.
Rm., Bldg.R.1. Series

Tues., 18th Dec. : Exhibition of Oscilloscopes by Telequipment Ltd., 10.30 a.m.-
4.30 p.m. in the Conference Room, Building R.20.

EXTERNAL EVENTS

Mon., 10th Dec., Physics Dr. B. H. Bransden Some Applications
4.45 p.m., H. H. Wills Colloquium of Regge Poles.
Phys. Lab., Bristol.

Tues., 11th Dec., Theor. Prof. R. H. Dalitz The Hyperon-Nucleon
2.30 p.m., Imperial Physics (Chicago and Interaction.
Coll., London S.W.7. Seminar Cambridge Univ.)

Tues., 11th Dec., I.E.E. Mr. A. R. Owens Teaching Electronic
6.30 p.m., Univ. Lecture Circuit Techniques.
of Southampton.

Wed., 12th Dec., Royal Mr. B. Parkin Glass Fibre
6 p.m. John Adam Soc. Arts Reinforced Plastics.
St., London W.C.2. Lecture

Thurs., 13th Dec., Brit. I.R.E. Mr. A. E. Crawford Recent Developments
6.15 p.m., Univ. Lecture in Piezo-Electric
of Birmingham. Transducers.

Tues., 18th Dec., I. Mech. E. Mr. D. W. Berry and Precise Measurement
7.15 p.m., Small Lecture Mr. S. C. Bottomley and Alignment on
Town Hall, Reading. (Hilger & Watts Ltd.) Large Machines and
Structures.

Building R.1,
Rutherford Laboratory

B. E. KINGDON

7th December, 1962

RUTHERFORD LABORATORY BULLETIN

No. 102, for the period Monday, 17th December, 1962 - Monday, 7th January, 1963

VISITORS

A party of twenty one members of the engineering lecturing staff of the Reading Technical College will visit the Laboratory on Thursday, 3rd January.

VISITS ABROAD

The Director will visit Geneva on Wednesday, 19th December, to attend a meeting of the C.E.R.N. Council.

Mr. P. J. Finney of the High Energy Physics Group will visit C.E.R.N. for approximately three weeks, commencing 2nd January, to participate in emulsion experiments on the proton synchrotron.

Mr. P. Bowles and Mr. G. N. Venn will visit C.E.R.N. on 6th-9th January, to discuss engineering support required for high energy experiments.

SYMPOSIUM

A Symposium on Theoretical Physics will be held at the Laboratory from Monday, 17th to Wednesday, 19th December. Over thirty theoretical physicists from the Universities, A.E.R.E. and C.E.R.N. will be attending.

P.L.A.

The programme scheduled for the P.L.A. during the next three weeks is as follows:-

<u>Date</u>	<u>Team</u>	<u>Experiment</u>
17th Dec.	Birmingham University	Proton-Nuclei Polarization Measurements.
22nd-24th Dec. (noon)	University College London	Measurement of Depolarization in Proton-Proton Scattering.
27th-29th Dec.	(Machine Operations)	
3rd-5th Jan.	King's College, London	Slit-Scattering Measurements.
6th-8th Jan.	Queen Mary College	Si ²⁹ (p-d) Asymmetry Measurements.

JOHN WILKINS' MEMORIAL FUND

Staff may wish to be reminded that donations to the Memorial Fund for John Wilkins can be made to Mr. W. W. Woodall, Room 1-47, Building R.1, or to Miss Mahoney, Room 1-46. Contributions will also be gladly received from any of Mr. Wilkins' friends outside the Laboratory.

The Informal Committee headed by Mr. Mullett would be grateful for any suggestions on the form the memorial should take.

HONEYWELL CONTROLS LTD.

The new telephone number of the Honeywell Electronic Data Processing Division is METropolitan 9581. The address and telegraphic address remain unchanged.

INTERNAL EVENTS

Tues., 18th Dec. : Exhibition of Oscilloscopes by Telequipment Ltd. 10.30 a.m. - 3.30 p.m. in the Conference Room, Building R.20.

Tues., 18th Dec., 5.30 p.m., Conf. Rm., Bldg. R.1.	"Fund. of Accelerators" Lect. Series	Mr. E. J. Jones (Next lecture in this Series : 8th Jan.)	Cyclotrons II.
--	--	---	----------------

(Continued Overleaf)

INTERNAL EVENTS (Contd)

Thurs., 20th Dec., Evening
5.30 p.m., Conf. Lecture
Rm., Bldg. R.1. Series
Mr. E. R. Harrison The Atom and the Cosmos.
(Next lecture in this Series : 10th Jan.)

Mon., 7th Jan., Nimrod
11.15 a.m., Conf. Lecture
Rm., Bldg. R.1. Series
Mr. L. B. Mullett Progress on Nimrod.

EVENTS AT A.E.R.E.

Tues., 18th Dec., Theor.
2 p.m., Conf. Physics
Rm., Hangar 8.9. Seminar
Prof. G. F. Chew
(Berkeley and
Cambridge Univ.)
Strong Interaction Theory
without Elementary Particles.

Tues., 18th Dec., Culham
2 p.m., Cockcroft Lab.
Hall. Colloquium
Dr. J. A. Shercliffe
(Cambridge Univ.)
Magnetohydrodynamics Research
in the Engineering Dept.

Tues., 1st Jan., Theor.
2 p.m., Conf. Rm., Physics
Bldg. 8.9. Seminar
Dr. S. F. Edwards
(Manchester Univ.)
A New Method of Calculation
in Many-Body and Field
Theory.

EXTERNAL EVENTS

Mon. 17th Dec., 5.30 p.m. "The Measurement of Microwave Power and Impedance using
I.E.E., Savoy Place, the Hall Effect", "High Frequency Radiation Pressure",
London, W.C.2. and "A Microwave Electrostatic Wattmeter". (Prof. H.E.M. Barlow)

Mon. 17th Dec., Oxford National Film: "Change and Employment".
7.30 p.m. Coll. Productivity Speaker: Mr. H. J. Lucas (Regional Organiser,
of Tech., Oxford. Year Meeting T. and G.W. Union).

Tues., 18th Dec., I.Mech.E. Mr. D. W. Berry and Precise Measurement and
7.15 p.m., Small Lecture Mr. S. C. Bottomley Alignment on Large Machines
Town Hall, Reading. (Hilger & Watts Ltd.) and Structures.
(Non-members are welcome)

The following Brit.I.R.E. Meetings will be held at the London School of Hygiene and Tropical Medicine, Keppel St., Gower St., London W.C.1.:-

Symposium on "Vibration Testing Equipment". 5.30 p.m., Wed., 19th Dec.

Symposium on "Masers and Lasers". 10 a.m. - 5 p.m., Wed., 2nd Jan.
(Advance registration is necessary for the latter event).

7th-8th Jan.: I.P.P.S. Conference on "Nuclear Interactions at Ultra-High Energies".
At the H. H. Wills Physical Laboratory, University of Bristol.

14th-18th Jan.: Exhibition of the Institute of Physics and the Physical Society. At
the Horticultural Halls, Westminster, London S.W.1.

Building R.1,
Rutherford Laboratory

B. E. KINGDON

14th December, 1962.