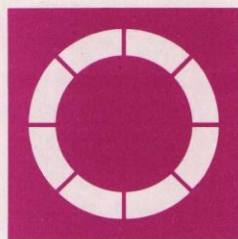


No. 48/66
5 Dec 66



Rutherford Laboratory Bulletin

General News

S.R.C. House Journal. The Council is going to publish a house journal and it is hoped that the first issue will appear in April, 1967.

Correspondents from the various establishments have been nominated and contributions to the journal from Rutherford Laboratory Staff should be sent to the local correspondent, H.F. Norris, Building R.20. Further information, including an offer of a book token valued at 2 guineas for a name for the journal, is given in a circular which is being displayed on notice boards.

RADIATION PROTECTION NOTICE. This is now Period - 13, Colour Strip - Red (on $\beta\gamma$ and fast neutron films). Please check that you are wearing the current film badges.

VISITORS A party of 40 members of the Royal Holloway College Physical Society will visit the Laboratory on Saturday, 10 December.

LECTURE THEATRE BOOKINGS. Staff are reminded that all bookings for the Lecture Theatre should be made through H.F. Norris Bldg R.20, Ext 484. Requests should be made in writing giving as much notice as possible, and stating the facilities required.

MISSING EQUIPMENT. The following item of equipment has been reported missing:

Avometer Model 8 Ser. No. 93189-659

Anyone knowing the whereabouts of this item is asked to contact, Dr. J.T. Hyman, R.25, Ext 378 or F. Harden, R.1 Ext 6114.

OVERSEAS VISITS. Mr. D.R. Moore to Paris, 4-7 Dec, to attend the next European meeting on vacuum standards.

Dr. H.H. Atkinson, Dr. S.F.J. Read and Dr. D.J. Nicholas, to Saclay, 4-11 Dec, to attend a colloquium on polarized targets and ion sources.

Mr. P. Wilde and Mr. M.H.J. Baylis, to the U.S.A. 5-15 Dec, to visit Scientific Data Systems Ltd., and Data Products Corp, returning via Stanford Univ. and M.I.T.

Dr. G. Manning, to CERN, 5-7 Dec, to attend EEC Meeting

Mr. J.D. Lawson to Switzerland and Italy 5-14 Dec, to discuss the superconducting magnet programme, cyclotron central orbit studies, etc, at CERN, and to see the sector focused cyclotron at Milan.

Dr. G.H. Stafford, to CERN, 7-8 Dec, to attend NPRE Meeting.

EDUCATION AND TRAINING CENTRE AERE Two series of courses in writing will take place during 1967.

The first course in "Clear Writing" will be held from 16-20 and 23-27 January. A "Seminar on Effective Writing" (4 day course) will be held later. Further information can be obtained from Mrs. M.C. Gould, Personnel Group, Bldg R.20 Ext 575.

Machine Schedules

NIMROD Period 2 - Cycle 9 (22.11.66. - 13.12.66)

Machine Physics; High Energy Physics (ϕ , K⁺, K⁻ and π)

Full details of Cycle 9 were given in Bulletin No. 46/66

P.L.A.

Date	Team	Experiment
5-9 Dec	RHEL & QMC 1	(p-He ⁺) Polarisation Measurements
10-16 Dec		Maintenance and Setting up

Internal Events

Mon, 5 Dec, 11.15 a.m.	Nimrod Lecture Series	Dr. K.J. Barnes (Imp. Coll.)	Form Factors from Current Algebras at Infinite Momentum
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Wed, 7 Dec, 10.00 a.m. - 12.30 p.m. Lecture Theatre: Walter LeCroy, President of the LeCroy Research System Corporation of New York who is on a brief tour of Europe, will give a talk on fast electrons, followed by discussion. A repeat of this talk for those unable to attend in the morning will be given in the Main Conf. Room, R.1 commencing at 1.45 p.m. Owing to the limited accommodation in the conference room it is hoped that most people will attend the morning session if possible. Members of the Universities of Oxford, Cambridge, Birmingham, Bristol, Southampton and London have been invited. Literature on the LeCroy Corporations instrumentation should be available shortly from H.F. Norris, Bldg R.20 Ext 484.

External Events

Mon, 5 Dec, 5 p.m.	Phys. Dept. Colloq.	Dr. B.O. Seraphin (ONR Washington)	Band Structure Analysis from Electro-reflectance Studies on Semiconductors
Mon, 5 Dec, 4.45 p.m.	Phys. Colloq.	Prof. J.A. Krumhansl (Cornell Univ. and Dept of Theor. Phys. Oxford)	The Phonon Boltzmann Equation and Second Sound in Non-metallic Crystals
Tues, 6 Dec, 7.30 p.m.	ASEE Lecturettes	Gliding - By B.A.A. Philpott Amateur Radio - By T. Bingham Education - By S. Lynch	Vacuum Physics or Technology (CEGB, Marchwood)
Wed, 7 Dec, 2.15 p.m.	Surface Phys. Grp	Mr. R.M. Bloomer (CEGB, Marchwood)	Field-Effect Transistors
Thurs, 8 Dec, 7.30 p.m.	IERE Reading Meeting	R.G. Bailey	
The following lectures etc, will be given at the IEE, Savoy Place, London during the current week:			
Mon, 5 Dec, 5.30 p.m. :	"Temperal Development of Spark Breakdown in Nitrogen and Air", by D.J. Tedford & O. Farish		
Tues, 6 Dec, 5.30 p.m. :	6th UKAC Annual Lecture - "Our Unstable Economy: Can Planning Succeed?", by Prof. J.R.N. Stone, Cambridge		
Thurs, 8 Dec, 5.30 p.m.	"High-Voltage Switchgear", discussion opened by C.J.O. Garrard		
Fri, 9 Dec, 5.30 p.m. :	"Ratings of Single-Phase Watthour Meters for Domestic Premises", discussion opened by L.B.S. Goids.		

EVENTS AT A.E.R.E.

Tues, 6 Dec, 2 p.m.
Conf. Rm, Bldg 8.9

Theor. Phys.
Div. Seminar

Dr. M.H. Macfarlane
(Oxford)

The Nuclear Shell Model

Thurs, 8 Dec., 2 p.m.
Conf. Rm, Bldg 8.9.

Joint Applied
Maths Grp Seminar

Dr. R. Taylor
(RHEL)

Putting Experiments on Line to a Central
Computer at the Rutherford Laboratory

Social News

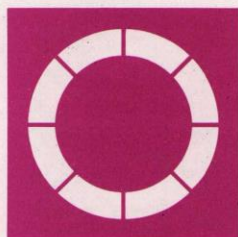
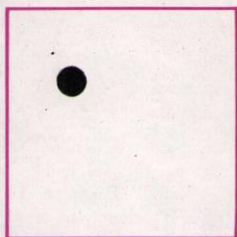
RECORD SOCIETY 12.30 p.m. Tuesday, 6 December, Lecture Theatre

Pot-Pourri of Light Classical Music with a Viennese flavour

CHRISTIAN FELLOWSHIP 12.35 p.m. Thursday 8 December Lecture Theatre. David Chapman, chartered electrical engineer, introducing "Gospel Recordings" - how the Gospel goes out on gramophone records. All are welcome.

Rutherford Laboratory
2.12.66.

H.F. Norris Ext 484
Scientific Admin Group
Building R.20



Rutherford Laboratory

Bulletin

Supplement to Bulletin No. 48/66

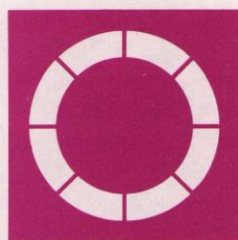
Postponement of Talk

The talk to be given by Walter LeCroy on fast electronics on Wednesday, 7th December has been postponed until Thursday, 15th December, Full details will be given in the next Bulletin.

Rutherford Laboratory
4.12.66.

H.F. Norris
Scientific Admin Gp
Building R.20

No. 49/66
12 Dec 66



Rutherford Laboratory Bulletin

General News

RADIATION PROTECTION NOTICE. It is Period - 13 (Colour strip - Red for $\beta\gamma$ and fast neutron films). Please check that you are wearing current issue films.

Recently the Film Board in R.1. has been re-organised. Film number 135214 and 135230 have been reported missing from this board. All people issued with film badges in R.1 are asked to check that they are wearing the correct films.

MISSING. Two graphs showing calibration curves for carbon resistors at low temperature have been mislaid, possibly in the region of the library, on approximately Wednesday, 30th November. Anyone finding these are asked to contact D.C. Pickles, Bldg R.1, Ext 254.

FOUND. A fountain pen was found in the Lecture Theatre on Tuesday, 6 December. Please contact the Local Administration Office, off the Common Room, 1st Floor, Building R.1 for further details.

OVERSEAS VISIT. Mr. J.A. Fox, to CERN 14-19 Dec, to discuss a proposal to power the 300 GeV machine with an entirely static power supply.

Machine Schedules

NIMROD Period 2 - Cycle 10 (13.12.66. - 17.1.67)
(There will be a Christmas shut-down from 24-28 Dec.)

1. Machine Physics
2. High Energy Physics

Team	Beam	Experiment	Data
RHEL	K7	K ⁻ p polarization measurements	Data
Hydrogen Bubble Chamber Collaboration	K1	K ⁻ p and π^- p runs	Data
AERE/QMC	π^+	A study of Σ^0 decay	Setting up
P.L.A.			
Date	Team	Experiment	
10-16 Dec		Maintenance and Setting up	
17-20 Dec	Oxford U.	Pick-up Reactions using Polarized Protons	

Internal Events

Mon, 12 Dec, 11.15 a.m. Nimrod Lecture Series Prof. H. Ticho Peripheralism in the Reaction $pp \rightarrow p\pi^+ p\pi^-$ (UCLA)

Wed, 14 Dec, 2 p.m., Nimrod Proposal Lecture Dr. W.W. Neale and Dr. J.G. Rushbrooke (Cambridge) A Proposal for Experiments with Hyperon Beams

Thurs, 15 Dec., 10.00 a.m. - 12.30 p.m., 2.00 p.m. - 4.30 p.m. Lecture Theatre. A talk, postponed from Wed, 7 Dec, by Walter LeCroy, President of the LeCroy Research System Corporation of New York, on fast electronics. The afternoon session will be a repeat of the morning talk and discussion, for those people unable to attend in the morning. Literature on the LeCroy instrumentation is now available from H.F. Norris, Bldg R.20, Ext 484.

LECTURE COURSE. The first two lectures in a series of three on, "Regge Poles in High Energy Scattering" to be given by Dr. R.J.N. Phillips (AERE), will be on Tues, 13 Dec, and Wed, 14 Dec, at 11.00 a.m. in the Lecture Theatre.

Please note change of time from that given in a notice dated 22 Nov, also that the third in the series has had to be re-arranged, the actual date being unknown at time of going to press.

Mon, 19 Dec, 11.15 a.m. Nimrod Lecture Series Prof. J.D. Jackson (Univ. of Illinois) Remarks on Peripheral Interactions below 10 GeV.

DEMONSTRATION. A demonstration of the Philips 400-Channel Pulse-Height Analyser, Type 111.500 will be given by the M.E.L. Equipment Co., Ltd., Crawley, in R.25 Conf. Rm, 3-4.30 p.m. on Thurs, 15 Dec. (Details from B. Kingdon Bldg R.20)

External Events

Mon, 12 Dec, 4.45 p.m. Phys. Colloq. Prof. J.A. Krumhansl (Cornell Univ. & Dept of Theor. Phys. Oxford) The Phonon Boltzmann Equation and Second Sound in Non-metallic Crystals

Mon, 12 Dec, 6 p.m., IEE/E Lecture D.J. Hewitt Quality and Reliability
2 Savoy Place, London W.C.2

The following lectures will be given at the IEE, Savoy Place, London during the current week:

Wed, 14 Dec, 5.30 p.m.: "Linear Induction Motors for Low Speed and Standstill Application", by G.F. Nix and Prof. E.R. Laithwaite.

Wed, 14 Dec, 5.30 p.m.: "Light Emitting Diodes", discussion open by A.E. Brewster and P. Selway.

Thurs, 15 Dec, 5.30 p.m.: "Thermoelectric Materials", by G.E. Hare and H.J. Goldsmid.

EVENTS AT A.E.R.E.

Tues, 13 Dec, 2 p.m. Theor. Phys. Div. Seminar Dr. W.G. Burns & Mr. E.J. Jones The New Harwell Variable Energy Cyclotron and some proposed Track Effect Studies in Radiation Chemistry.

Anyone wishing to attend should give at least 48 hours advance notice by ringing 72-3228

Thurs, 15 Dec, 2 p.m. Joint Applied Maths Mr. E.J. York Applications of Distorted Triangle Meshes to Solving Elliptic P.D.E.s
Conf. Rm, Bldg 8.9 Grp. Seminar

EVENT AT THE ATLAS LABORATORY

Mon, 12 Dec, 2.30 p.m. Talk Prof. L.J. Mordell (Cambridge) Diophantine Equations of the Type $ax^3 + bx^2y + cxy^2 + dy^3 = e$ having no Rational Solutions.

Social News

CHRISTMAS CAROLS 12.35 - 13.05, Friday, 15 Dec, Lecture Theatre. The Christian Fellowship invites all to a Christmas Carol Sing Song with solos by Jimmy Darius (of P.L.A. Workshops)

This is not a "Service", a "Tub-Thumping Bible Punching Session" or a "Holy Huddle".

Song sheets will be provided - you provide the song!

RECORD SOCIETY 12.30 p.m., Tuesday, 13 Dec, Lecture Theatre.

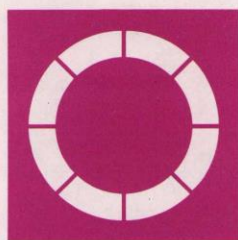
"Clarinet Jamboree" - with music purveyed by Acker Bilk, Sandy Brown, Terry Lightfoot and Archie Semple.

All the numbers on this disc were recorded between 8-13 Oct, 1959 and provide an ideal opportunity to hear and compare some of the best in British clarinet playing since the last war. The place of the clarinet in jazz has fluctuated over the years from the early days when it shared with the trumpet and trombone the front line, through the swing era when it lost some of its importance, and the bebop craze when it virtually vanished from the jazz scene, to the revival of the New Orleans style in the 'forties. No doubt, this recording, with its contrasting styles will bring back memories of the famous names of the past such as Goodman, Becket, Dodds, Noone, Shaw and Pee Wee Russell.

Rutherford Laboratory
9.12.66.

H.F. Norris Ext 484
Scientific Admin Group
Building R.20

No. 50/66
19 Dec 66



Rutherford Laboratory Bulletin

General News

FELLOWSHIP. Dr. J. Howlett, Director of the Atlas Computer Laboratory has been honoured with a Fellowship by special election at St. Cross College, Oxford.

NINA WORKS. NINA accelerated electrons for the first time on Friday, 2 December 1966 - just three years after the first bull-dozer moved onto the site. The design energy of 4 GeV has now been reached.

SCIENTIFIC ADMIN NOTICE. The next bulletin (No. 51/66) will be published a day earlier and will cover a two week period. Contributions for this issue should be sent to the Editor not later than Tuesday, 20 December.

RADIATION PROTECTION NOTICE. It is Period 13, Colour Strip - Red, for γ and fast neutron films. The next film period commences 28 December.

OXFORD COLLEGE OF TECHNOLOGY. "Introduction to Law", a course of six lectures for Scientists, Technologists and Business Executives. The lectures will be given on Tuesdays, at 6.0 p.m. in the Science Lecture Theatre, beginning 24 January 67. and the lecturer will be Mrs. B. Grant, LL.B. (Lond). Barrister-at-Law. Further details from H.F. Norris Bldg R.20 Ext 484.

EXTERNAL COURSES. Reading Technical College have arranged a number of short courses for the Spring term, commencing 10 January on, (1) Semiconductor Devices. (2) Industrial Electronics and (3) Transistor Practical Course. Further details from Mrs. M.C. Gould, Personnel Group, Bldg R.20, Ext 575.

OVERSEAS VISIT. Dr. L.C.W. Hobbis to CERN 18-20 Dec, to attend a meeting of ECFA Working Group 2.

Machine Schedules

NIMROD Period 2 - Cycle 10 (13.12.66. - 17.1.67)

Machine Physics; High Energy Physics (K7, K1 and π^+)

Full details of Cycle 10 were given in Bulletin No. 49/66.

P.L.A.

Date	Team	Experiment
19-20 Dec	Oxford U.	Pick-up Reactions using Polarized Protons
21 Dec	Space Research, Slough	Satellite Counter Tests
22 Dec		Accelerator Physics
23 Dec		Maintenance and Setting up

Internal Events

Fri, 16 Dec, 2.15 p.m. Lecture Theatre	Special Lecture	Prof. O. Chamberlain (Univ. of Cal.)	Polarized Target Experiments at Berkeley
Mon, 19 Dec, 11.15 a.m. Lecture Theatre	Nimrod Lecture Series	Prof. J.D. Jackson (Univ. of Illinois)	Remarks on Peripheral Interactions below 10 GeV.
Mon, 19 Dec, 2.15 p.m. Lecture Theatre	Nimrod Proposal Lecture	Dr. D.M. Binnie (Imp. Coll.)	An Investigation of Narrow Bosons Produced in π^+p Collisions.
Wed, 21 Dec, 11 a.m. Conf. Rm, R.1.	High Energy Physics Discussion Group	D. Morgan	Notes on the σ enigma
Wed, 21 Dec, 3.30 p.m., Lecture Theatre	Special Lecture	Prof. A. Salam (Imp. Coll.) will lecture on some aspects of higher symmetries and elementary particles.	

Social News

CHRISTIAN FELLOWSHIP. A meeting of Prayer, Intercession and Meditation in preparation for Christmas, will be held in the P.L.A. Conf. Rm, R.12, on Thursday, 22 December, at 12.30 p.m. All are welcome.

RECORD SOCIETY. 12.30 p.m., Tuesday, 20 December, Lecture Theatre.

"Hark! The Herald Angels Sing", a collection of cherished carols, sung by the Hamburg Students Choir.

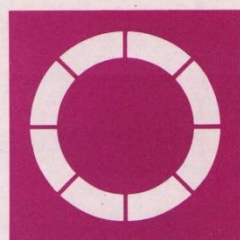
CIVIL SERVICE MOTORING ASSOCIATION - Extension to membership. Membership of the C.S.M.A. is now open to all personnel of the SRC, UKAEA and MRC. Please write to C.H. Booth, Bldg R.20 giving details of Bldg No., and telephone extensions, for application forms. Existing members at present unknown to Mr. Booth are asked to contact him so that they may be advised of local events.

ABINGDON LIVE CRIB: Sing your favourite carols and see the whole Christmas story enacted in the Market Place, Abingdon, on Thursday, 22 December, 6.15 - 7.15 p.m. (If wet, in the Abbey Hall).

Rutherford Laboratory
16.12.66.

H.F. Norris Ext 484
Sci. Admin Group
Bldg R.20

No. 51/66
23 Dec 66



Rutherford Laboratory Bulletin

General News

SCIENTIFIC ADMIN. NOTICE. The next Bulletin, No. 1/67 will be published on Friday, 6 January.

PRESENTATION John Maoken of the FLA Engineering Group was presented with the British Empire Medal at State House on Tuesday, 20th December. The presentation was made by Mr. Goronwy Roberts, M.P. Joint Minister of State for the Department of Education and Science.

NIMROD ANNUAL SHUTDOWN. From 17 January, 1967, Nimrod will be shutdown for six weeks. During this period extensive modifications will be carried out as part of the installation programme for two new extracted beams being built in the main experimental area. When completed, in the early part of 1967, one of these beams will provide particles for the British National Hydrogen Bubble Chamber, whilst the other will serve several counter experiments and also the Heavy Liquid Bubble Chamber.

Part of the shield wall between the machine and the main experimental hall will be modified, and together with the installation of beam transport components, will allow the extracted beams to be brought into the experimental hall.

In the machine itself, the extraction magnet and quadrupole, and their plunging mechanisms will be reinstalled. The two targets required for the new beams and their beam output systems will be built up.

Some modifications to the shield wall in the parasitic area will be made to allow a new beam to be constructed. A target mechanism for this beam will be installed which will enable the target position to be varied both radially and azimuthally. This facility will increase the feasibility of this beam.

A suitable New Years Resolution for a lot of people is obviously going to contain the words "hard work".

ROYAL INSTITUTE LECTURES. The Royal Institute has arranged the following two lectures. Tickets are required for both lectures and applications should be made to Mrs. M.C. Gould, Personnel Branch, R.20, Ext 575 by the 28 December.

Tuesday, 10 Jan, at 5.30 p.m.: "Problems of Science Policy" by Sir Harrie Massey, MSc, DSc, PhD, LLD, FRS, Quain Professor of Physics, U.C.L.

Thursday, 12 January, at 5.30 p.m.: "Problems of Research in Universities and Government Establishments", by Lord Bowden, MA, PhD, MICE, Principle of Manchester College of Science & Technology.

Both these lectures will be held at the Royal Institution, 21 Albermarle St, W.1.

VISITORS Thirty members of Ultra Electronics Ltd., London, will visit the Laboratory on Wednesday, 4 January, 1967.

RADIATION PROTECTION NOTICE. The next film period commences 28 December.

Period No.1, Colour Strip - Purple for β & fast neutron films.
Please change your films at the earliest opportunity.

EXTERNAL COURSES. The Borough Polytechnic, London, SE1, have announced the following courses:

"Aspects of Digital Communications", a course of ten lectures on Tuesday afternoons, 2.00-4.00 p.m., commencing 10 January.

"Basic Transistor Measurements", a laboratory course of nine meetings; Course T, on Tuesday evenings, 6.00 - 8.30 p.m. commencing 10 January.

and Course W, on Wednesday evenings, 6.00 - 8.30 p.m. commencing 11 January. Both course (T & W) are identical.

Further information can be obtained from Mrs. M.C. Gould, Personnel Branch, R.20 Ext 575.

CONFERENCES 18-20 Jan: 1967 International Conference on programming for flying-spot devices, at Munich, Germany.

26 Feb-11 March: VI International University Seminar. Topic: Special problems in High Energy Physics, at Schladming, Austria.

27 Feb - 3 March: International Conference on High Energy Physics and Nuclear Structure (Attendance by invitation), at Rehovoth, Israel.

Machine Schedules

NIMROD Period 2- Cycle 10 (13.12.66. - 17.1.67.)

Machine Physics; High Energy Physics (K7, K1 and π 4)

Full details of Cycle 10 were given in Bulletin No. 49/66.

P.L.A.

Date	Team	Experiment
24-27 Dec		Christmas Shut-down
28-30 Dec		Maintenance
31 Dec-1 Jan	Queen's Univ. Belfast & Westfield Coll.	
2-9 Jan	AERE	Proton induced reactions on Mg^{26} (p-t) Reactions on Sn isotopes

External Events

The following lectures will be given at the I.E.E. Savoy Place, London, during the next fortnight:

Wed, 4 Jan, 5.30 p.m.: "Effect of Excitation Regulation on Synchronous-Machine Stability", by L.J. Jacorides & B. Adkins

Wed, 4 Jan, 5.30 p.m.: "Modular Construction in Electronic Instrumentation", by H.A. Gebbie (NPL) & H. Bisby (AERE)

Thurs, 5 Jan, 5.30 p.m.: "Electric Traction in the Railways of the Future", by J.A. Broughall

EVENT AT AERE

Thurs, 5 Jan, 2 p.m. Conf, R, Bldg 8.9.	Joint Applied Maths Gp Seminar	Mr. M.J.D. Powell	On Best L_2 Spline Approximations
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Internal Events

Tues, 3 Jan, 2.15 p.m.-5 p.m. Lecture Theatre	Nimrod Proposal Lecture	Dr. T.G. Walker	A Proposal to Study the Associated Production of Y^* 's and their Decay
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The above lecture will be preceded by a Nimrod Ops Meeting.

Wed, 4 Jan, 2 p.m. Conf. Rm, R.12.	P.L.A. Seminar	Dr. A. Zucker (Oakridge) & Dr. H.H. Atkinson (RHEL)	Reporting on the "Conference on Polarised Targets and Ion Sources" held at Saclay, 5-9 Dec, 1966.
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Social News

RECORD SOCIETY 12.30 p.m. Tuesday, 3 January, 1967, Lecture Theatre

"Going Places", Herb Alpert and his Tijuana Brass

A Musical Pinatre from this famous trumpeter and his band

Dates for your diary: 27 Dec-10 Jan, Daily Mail Schoolboys and Girls Exhibition, Olympia, London
4-14 Jan, International Boat Show, Earls Court, London
4-14 Jan, Racing Car Show, Olympia, London

CHRISTIAN FELLOWSHIP. Thursday, 29 Dec, 12.30 p.m. PLA Conf, Rm, Bible Study on St. John's Gospel, Ch. 15, led by Frank Smith, Accounts Section.

Thursday, 5 Jan: 12.30 p.m. PLA Conf. Rm. A meeting of Prayer, Intercession and Meditation. All are welcome to both meetings.

The Editor would like to thank all those who have helped in the production of the Bulletin during the past year, from the typist who has had to decipher his hurried scrawl, the members of the Reproduction Section who have always produced 750 copies on time each week, and the messengers and post-ladies who have delivered all these within 24 hours of the proof copy leaving the editorial desk each Thursday afternoon.

And to conclude this last edition in 1966, a Happy Christmas to all our readers and a prosperous New Year.

Rutherford Laboratory
22.12.66.

H.F. Norris Ext 484
Scientific Admin Group
Building R.20