



Rutherford
Laboratory

COMMON/CSCAL/TBM ,NERR,NCH,NGAP,ISCAN,NBR,NGR,NSCAN,NRO
IYSEL,IYSEU,IYMAX,NTRACK,NSCAN,NES,NFAIL,MAXTR,MAX
2NBEGIN,NTK,NTRY,NMISS,NSSR,NFID,MAXMIM,NFIRST,NEND
COMMON/CFID/MFX(20,3),MFY(20,3),NFDX(10,3),NFX(3),N
QTAB(2,20,3),NX(100,4),NY(100,4),XN(2),YN(8),IB(100,1)
R IDY(100,2),JDX(4),JDY(4),IHS(4),ICV(2),I
S NCF(16),IFS,NFS,FX,FY,JK,PTC,KPIC,NCUUNT,NBIN,MAXOV,MAX
T MAXN,CTA,CTB,MX,MY,JA,JB,JC,JE,XI,XJ,XK,XL,XM,XN,XO,X
DIMENSION NCTR(144),NGTR(20),GIR(112),GIR(112),MODE(21)

bulletin 8
3 - 17 May 1976

Some Containers — Some Contents

Over the next three months, five large container loads of high energy physics equipment will be leaving Rutherford Laboratory for CERN SPS - the first experimental equipment to be delivered to the new accelerator.

The design and the assembly of this apparatus was undertaken by the Nuclear Physics Apparatus Group of the RL, while most of the components were manufactured by outside industry. The equipment is now being packed ready for shipment to CERN, where it will be used in an experiment with charged hyperons.

The most massive item in this initial batch of equipment is an array of 102 lead glass Cerenkov counters. Each glass block has been accurately ground, polished and positioned to a very stringent physics specification. The active area of the array is 2.5 metres wide by 1 metre high, the total weight of the lead glass blocks is 4.7 tonnes. The whole unit is enclosed in a mu-metal magnetic shield box and its temperature is stabilised, using an air conditioning system. This counter is designed to help experimenters to distinguish between electrons and pions and to detect gamma-rays.

Another unit is an atmospheric pressure helium/CO₂ gas Cerenkov counter containing a large adjustable mirror which focusses the Cerenkov light onto an array of photomultiplier tubes. The mirror has high reflectivity and is of a special low mass structure developed at RL. The containment vessel which was manufactured in Bristol University workshops has a volume of 30 m³. The refractive index of the gas within this vessel is continuously monitored by an interferometer using

laser light. This will provide direct input to the experiment's Honeywell DDP516 on-line computer and is also thought to have important potential applications in other areas, such as environmental control, where a continuous measurement of gas concentration is required.

Other equipment includes a gamma-ray hodoscope consisting of 122 strips of plastic scintillator arranged in three layers behind a 15 mm thick lead converter. The whole assembly of scintillators and associated light guides and photomultiplier tubes is enclosed in a light-tight box. A shower counter unit is being built in collaboration with Bristol University. Two air-conditioned control rooms, each 3 m x 3 m x 6 m are being supplied to house the DDP516 and NORD 10 computer from Strasbourg, together with the CAMAC data collection system.

The mean lifetimes of the charged hyperons are of the order of 10^{-10} secs, however, as a consequence of relativistic time dilation, at an energy of 100 GeV they may travel several metres before decaying. Advantage has been taken of this fact in the construction of a special compact charged hyperon beam in the West Area of the CERN SPS. This beam will provide particle fluxes two orders of magnitude greater than those previously available allowing a significant advance to be made in our understanding of these truly "strange" particles.

The first experiment with the new beam will be a study of the weak decay properties of hyperons. It is being mounted by a collaboration between Bristol, Geneva and Heidelberg Universities together with RL and the Laboratories at Orsay and Strasbourg.

ROYAL SOCIETY SOIREE

At the Royal Society Soiree on Thursday 6 May, the Rutherford Laboratory exhibit will demonstrate a new system in magnetic levitation (or MAGLEV). A description and we hope a photo of the exhibit, will be published in the next issue of the Bulletin.

MISLAID PACKET

A small packet from Grenson Electronics Ltd containing one Grenson G.P. 150 N Printed Circuit Board, SIZE 3½" x 4½" with 18 way edge connector on one end and heat sink on the other has been mislaid on the site. The packet was addressed to Mr Hawthorne Bldg. R36. Will anybody who knows the whereabouts of this item please contact Mr Hawthorne or the Stores Officer, R56, Ext. 412 with details.

ACCOMMODATION REQUIRED

The Accommodation Section would be grateful to receive details of furnished accommodation available for short stay summer visitors, for renting during the months of July, August and September. Please phone Ext. 476.

CIVIL SERVICES COLLEGE COURSES 1976 - 77

Civil Service booklets have been received and have been distributed as

follows:-

Main Series of Courses and Seminars - to Division Heads, Group Leaders, DAOs, Libraries and Training Section.
Management Services and Accountancy Courses, Courses for Staff in Small Departments and Small Groups - to Administration Division Group Leaders, Libraries and Training Section.

ADP Training Courses - Group Leaders of Computer Operations Groups and Finance and Accounts Groups, Libraries and Training Section.

FILM BADGE NOTICE

It is Period 5, Colour strip - YELLOW for $\beta\gamma$ films and neutron packs. Please check that you are wearing the correct dosimeters and that all old ones are returned.

NATIONAL SAVINGS CERTIFICATES

Weekly cycle ending 24 April 1976. Certificates can now be collected from the Cash Office, R20. New members wishing to join the scheme can obtain enrolment from the Cash Office.

INTERNAL EVENTS

HEP SEMINAR

Tuesday, 4 May
11.00
R61 Conference Room

Future Counter Experiments with Charged Hyperon Beams

R M Brown/RL

HEP DATA HANDLING SEMINAR

Wednesday 5 May
13.30
R61 Conference Room

'G EXEC', a Generalised Data Handling System

K Jeffrey/Institute of Geological Studies

HEP LECTURE

Thursday 6 May
15.00
Lecture Theatre

Why do Muon Physics at the SPS?

E Gabathuler/RL. A non-specialist talk for both scientists & engineers.

NIMROD LECTURE SERIES

Monday 10 May
11.30
Lecture Theatre

Alignment Effects in Pion-Deuteron and Proton-Proton Total Cross-Sections

Dr C Wilkin/UCL

DIRECTOR'S STAFF MEETINGS

Tuesday 11 May
10.30 and 15.00
Lecture Theatre

The Director will preside

Closed circuit TV will operate in the R22 Coffee Lounge

HEP SEMINAR

Wednesday 12 May
11.00
R61 Conference Room

The Frascati Meeting and Preparation for Experiment at PETRA

W L Turner/RL

NIMROD LECTURE SERIES

Monday 17 May
11.30
Lecture Theatre

A New Baryon Spectroscopy?

Professor R H Dalitz/Oxford

EXTERNAL EVENTS

CHERWELL-SIMON LECTURE/UNIVERSITY MUSEUM OXFORD - 1630 hrs.

7 May: Prof Abdus Salam/Imp Coll - Probing the Heart of the Matter.

THEORETICAL HEP SEMINARS/NP DEPT OXFORD - 1430 hrs

7 May: Prof R Brout/Brussels - A non-Abelian Model of Confinement Through Flux Lines.
14 May: Dr D Wallace/Soton - Subject to be announced.

ELEMT. PART. PHYS. SEMINARS/NP DEPT OXFORD - 1430 hrs

6 May: Prof D H Perkins - Report from the Wisconsin Conference on Production of Particles with New Quantum Numbers.
13 May: Dr C H Llewellyn Smith - Prompt Leptons in Proton-Proton Collisions.

THEOR. PHYS. SEMINARS/CLARENDON LAB - 1615 hrs

6 May: Prof R Brout/Brussels - Theory of Monopoles, Flux Lines and Quark Confinement.
13 May: Prof C Zeeman/Warwick - Applications of Catastrophe Theory to Physics.

COLLOQUIA/CLARENDON LAB - 1615 hrs

14 May: Dr R E Richards/Oxf - What can MMR tell us about Highly Organised Biological Systems?

LOW TEMP & SOLID STATE PHYS SEMINARS/CLARENDON LAB - 1430 hrs

13 May: Dr P Day/Oxf - Optical & Neutron Measurements with Ferro-Magnetic K_2CrCl_4 .

SEMINARS IN COMPUTATION/NP LAB, OXFORD - 1630 hrs

6 May: Dr B Ford/Oxf - Transformation of Numerical Software.

13 May: Mr F R Pettit/Oxf - Dynamic Generation of Hardware Diagnostic Programs.

THEOR. PHYS. SEMINARS/QMC - 1615 hrs

10 May: Dr J Gunson/Birmingham - Statistical Mechanics of the Two - Dimensional Coulomb Gas & the Quantised Sine Gordon Equation.

HIGH ENERGY SEMINARS/CAVENDISH LAB - 1500 hrs

5 May: P J Litchfield/RL - Status of Baryon Resonance in SU (6)
12 May: P J Crozier/Cavendish - Diffractive Channels in Eikonal Models.

HEP SEMINARS/4th FL SEMINAR RM., MANCHESTER U - 1600 hrs

13 May: D Broadhurst/Open Univ - An Introduction to Bag Models & their currents.

THEOR. PHYS. SEMINARS/MANCHESTER U - 1430 hrs

12 May: Prof J M Ziman/Bristol - Where have we got to in the Theory of Disorder.

LECTURE SERIES/DARESBURY LABORATORY - 1400 hrs

11 May: C Mahaux/Liege - Theories of the Nuclear Shell Model.

NP DIV. COLLOQUIA/CONF. RM., HANGAR 8, AERE - 1530 hrs

6 May: N A Armstrong/North of Scotland Hydro-electric Board - Hydro-Electric Generating and Pumped Storage Schemes.
13 May: J Bell & D Cooper/Inst of Hydrology - The Use of the Neutron Probe to Measure Soil Moisture Fluxes.

A Time of Departures

A number of old friends and colleagues have recently departed with more to follow. The outstanding fact that nearly always surfaces during informal chats with people leaving, is the intense loyalty and warmth of feeling for the Rutherford Laboratory and their belief in its future.

Lets take some recent departures in no particular order except ladies first. Liz Fraser joined the Lab in 1967 working in the R1 Admin Office for Peter Nicholls, following promotion and moves to Accommodation and later to R2, she has worked for the past 18 months in the Claims Office, R20.

Last Friday, Jack Wyatt, Head of Personnel Group, presented Liz with an attractive cut glass bowl, a parting gift from her colleagues and friends. She was married in May 1974 and is about to start a new career best explained by Liz in the following message:- "Cheerio to all the people I didn't say goodbye to and thanks for the super present. My apologies to anyone still waiting for payment for their claims. I'll be back soon bouncing the baby."

The previous week has seen the departure of George Didcock who joined the Lab in 1960 after 5 years at AERE. George has been around the Nimrod area for nearly 16 years, originally as a member of the leak detecting team on the vacuum vessels and later on radiation monitoring as well as vacuum work.

For the past 30 years, gardening has been a very rewarding hobby for George and he has been averaging something over 100 first place awards each year for a long time, as well as cups, medals, blue ribands etc. Bob Carr, Head of Nimrod Mechanical Engineering Group, presented George with a quartz crystal controlled watch and a scroll of appreciation from his colleagues. Before wishing George a happy retirement, Bob spoke of his achievements both at work and in his garden, commenting that apart from seeking vacuum leaks he understood that George grew outstanding leeks.

The following letter has now been received - "George Didcock would like to thank all his friends and colleagues who contributed to his retirement present. To those people he didn't manage to see before he left he says Goodbye and Good Luck". I feel sure George will continue collecting awards for a long time to come.

John Roan who has worked on the Chilton site for 21 years, 17 of these at the Lab as a member of the Engineering Services Department, has taken early

retirement. John left last Friday and has gone to the West Country to live in Lynton where he has a cottage.

By his own request there was no official presentation, nevertheless his colleagues showed their appreciation of his years of service by giving him a 2 speed drill. John a man of few words - well - most of the time, has this to say - "I would like to thank everyone who contributed to my retirement present. I wish to say thanks for the memories to everyone I was unable to see before leaving". Best wishes to you John in your new life 'out West".

Another long serving member, George Stevens has also taken early retirement. George joined the Civil Service 45 years ago as an apprentice in Woolwich Arsenal (7 years) and working on a number of projects including gas bearings from their inception, X Ray diffraction & finally in the Specifications & Manuals Section for 3-4 years before joining the Lab in June 1961, since when he has been concerned with outside manufacturing, records and sanctions.

Last Friday Bert Brooks, Head of Engineering Services, presented George with a well known make of pipe in a suitable engraved case as a parting gift from his many friends and colleagues.

Bert, after speaking of his long career in public service said that George, a quiet but very determined man had earned the esteem and great affection of his colleagues. His interests had ranged from golf, fishing, ballroom dancing to classical music, and as he was a keen D.I.Y. man he would have much to occupy him in retirement.

George had previously spoken to me about his time at the Lab which he said was the happiest of his whole career. His feelings are best expressed in the following message - "I wish the Lab every success in the future, that work flows in, and that younger members of the staff are able to have a settled mind as to their future".

Finally I hear that Atlas is saying goodbye on Tuesday 4 May, to Eric Walton who is leaving after 3 years to join the new European mid-range weather forecasting centre at Bracknell.

My best wishes and as Editor, my thanks to all for giving their time and co-operation in enabling me to tell a little of their stories. It is with regret that with so many departures eminent some curtailment in future stories seems unavoidable - or in other words, space is limited.

RUTHERFORD LABORATORY BULLETIN

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Editor: H F NORRIS

Deadline
for
Insertions

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PLASMA PHYSICS SUMMER SCHOOL

The Culham Plasma Physics Summer School will be held from 5 to 16 July 1976. As before, it is an introductory course in plasma physics and its applications in other branches of physics and in technology. The course will be suitable for final year undergraduates and post-graduate research workers. Anyone interested should apply immediately and further information can be obtained from Training Section, R20.

SALES TO EMPLOYEES

Sales of scrap metal/plastics as set out in RLN 12/73 will be made on 7 and 21 May.

OVERSEAS VISITS

Mr M R Harold, to DESY, Hamburg, 2 - 7 May, for discussions on PETRA.
Dr J B Forsyth, to ILL, Grenoble, 3-11 May to carry out approved experiment.
Mr R J Gray, to CERN, 3-5 May to attend meetings for Hyperon 300 Experiment.
Dr B H Bracher, to CERN, 3-12 May for discussions.
Messrs. H O Normington, W Russett and A G Dobbs, to CERN, 3-14 May for installation work on Hyperon 300.
Mr M Snowden, Dr D C Larbalestier, Dr C A Scott, Mr G Gallagher-Daggit, Mr R Malton and Mr D Evans to Grenoble, 10-15 May, to attend 6th International Cryogenic Engineering Conference (ICEC6). Dr Larbalestier and Dr Scott will be presenting papers at this conference.
Dr G A Ringland, to Paris, 16-21 May, to lecture at Laboratoire de Physique Théoriques des Particules Élémentaires.

SOCIAL NEWS

TABLE TENNIS NEWS

A Table Tennis Ladder Competition has been started in the Recreational Hut R15. The competition is open to all members of the Rutherford Recreational Society. The Rec. Soc. has provided a trophy for this competition which can be seen on display in the show case in the foyer of R1. At present the top five players are:-

- | | |
|--------------------|-------|
| 1. Kenichi Konishi | R1 |
| 2. John Varley | R2 |
| 3. Peter Kent | Atlas |
| 4. Robin Aitken | R1 |
| 5. Kate Crennell | Atlas |

The 'A' team in the Didcot League has had one of its most successful years finishing in second place in Division 2 remaining undefeated throughout. However, in their 22 games they recorded the unusually high number of 11 draws. Bob Hopgood and Eric Thomas formed the nucleus of the team and lost only one doubles match. Rob Witty also helped before he had to rest from playing and a special commendation is due to Roger Arnold who toiled throughout the season without winning a game.

In the AERE lunchtime league the 'A' team of Peter Kent, Eric Thomas and Tim Pett won Division 1. The 'B' and 'C' teams played in Division 2 and were able to enjoy some close games.

For further information on the Ladder competition, please contact Gordon Scott, Ext. 293 or John Varley Ext. 6363. Team enquiries to Eric Thomas on Ext. 6219.

CHRISTIAN FELLOWSHIP

All are welcome to join in a time of prayer led by John Thewlis of the Atlas Computing Division on Friday 7 May. As usual the time is 12.30 and the venue the R12 Conference Room.

The letter of Paul to Colossians contains much regarding practical Christian living as well as the Spiritual. All are welcome to join for a half hour of study on Friday, 14 May in the R12 Conference Room at 12.30.

RECORD CONCERTS

Tuesday 4 May at 12.40 in the Lecture Theatre. 'James Last a Gogo' - a selection of well-known numbers from this popular artist, guaranteed to set your feet tapping.

Tuesday, 11 May, 12.40 in the Lecture Theatre "James Galway Show - Pieces" - a dazzling display of virtuosity from "the Man with the Golden Flute", who is fast becoming a well-known TV personality.