Rutherford Laboratory

bulletin 14

16 AUGUST - 13 SEPTEMBER 1976

RCVD Progress Report

Bill Turner has supplied the following report of the pioneer work carried out at RL for the Rapid Cycling Vertex Detector (RCVD), which could well lead to a significant breakthrough in bubble chamber research techniques. Although it is having a few teething troubles, the new apparatus is still scheduled to commence actual physics in the Autumn.

The work is the combined effort of the RCVD Group in Technology Division, the Nimrod EF Group, the HEP Bubble Chamber Group and the Nimrod Operational Crew. Mention should also be made of the major contribution by the Resin Lab. in Technology Division which made several of the key structural components.

As reported in the last 'Bulletin' the RCVD was sensitive for the first time on Sunday July 18. Initial sensitivity was demonstrated by pictures of tracks taken with a polaroid camera and it was some days later before tracks were photographed with the cameras designed specially for the purpose.

The chamber was run in bursts which were synchronised with Nimrod flat tops. The frequency of expansions within a burst was varied from 10 to 60 Hz and at each frequency the number of expansions per burst was gradually increased from 2 to f/2 (where f is the frequency) the upper limit being set by the ½ second duration of Nimrod flat top. At frequencies up to 20 Hz the chamber operated well and it was possible to obtain good pictures of tracks on the 9th and 10th expansion in a burst. An unwanted resonance was detected in the vibrator supports at 30 Hz and this limited operations around that frequency. Some attempts were made to make the chamber sensitive at 40 Hz but there was insufficient refrigeration available for more than 3 pulses per burst at that frequency.

Early pirctures were taken using slow beam spill from Nimrod but later on during a machine physics period a technique of fast spills synchronised with the cycling frequency of the RCVD was evolved, this mode of operation worked very well at a cycling frequency of 20 Hz and pictures were taken recording sensitivity on the 9th and 10th expansions in a burst.

The first commissioning of RCVD with liquid hydrogen is a noteworthy milestone in its evolution. Picture quality is not yet up to bubble chamber standards and many improvements are necessary but it was very encouraging to run successfully at 20 Hz at the first attempt with hydrogen.

Factors which contributed to the problems of running at higher frequencies were:-

1) Only one of the two refrigeration machines was reliable.
2) The vacuum in the optics cartridge was poor.
3) Optical turbulence was observed near the mirror surface at the top of the chamber.
4) The vibrator supports resonated at 30 Hz making running around that frequency difficult.

During the summer break the chamber will be stripped down and these points will be attended to. Another engineering run will then be scheduled before preparing for physics, so that the full effects of the thermal turbulence mentioned above can be investigated.

As a footnote to all users of Hall 1 who have had to suffer undue noise from RCVD in the past we are pleased to report that when the chamber is full of hydrogen, operational noise levels fall dramatically. An independent check carried out by the Safety Group has verified that noise levels are completely within acceptable limits.

DIRECTOR TO SPEAK AT BA ANNUAL MEETING

The British Association for the Advancement of Science is holding its Annual Meeting this year at the University of Lancaster from 1 - 8 September. Among the Special Lectures to be given on Tuesday 7 September is one on "The Need for High Energy Machines" to be given by the Labs Director, Dr G H Stafford, CBE.

UNWIN MEMORIAL LECTURE 1976

The Unwin Memorial Lecture 1976 entitled "Energy Research" will be given by Dr Walter Marshall, CBE, FRS, Deputy Chairman, UKAEA and Chief Scientist, Department of Energy at the Institution of Civil Engineers, London on Tuesday 28 September, at 1800 hrs. No tickets are required for admission. Tea will be available from 17.30 hrs.

BULLETIN NOTICE

The present issue again covers a period of four weeks. Normal fortnightly publication will be resumed with the next issue dated 13 September. Information for this issue should be sent to Room 42, R20, not later than Tuesday 7 September.

CHAIRMAN'S TALK

A tape of Sir Sam Edward's talk on Tuesday 3 August will be replayed in the Lecture Theatre on Monday 23 August at 12.40 for the benefit of those who could not attend previously.

LIBRARY NOTICE

A new portable microfiche reader is on display in the main Library until 27 August and then in the Atlas Computing Division Library for the following week. We would appreciate comments.

CLOSURE OF ROMNEY GATE

Owing to the closure of the Romney Gate at AERE, anyone visiting the AERE Medical Centre for treatment or to keep appointments must now use the Fermi Avenue or Main Gate.

FILM BADGE NOTICE

It is Period 9. Colour Strip - BLUE for $\beta\gamma$ and neutron packs. Please check you are wearing the correct dosimeter and that all old ones are returned.
Next film change - Monday 6 September.

Training 1976 - 77

Employees of the Rutherford Laboratory may now apply for training concessions for courses at local Colleges and application forms for this purpose are available from Local Admin Offices. Prospectuses and timetables for local Colleges are being distributed to Local Admin Offices and the Libraries as they become available. The Training Officer Mr T F Gubbins, will be available to advise prospective students after 23 August and appointments may be made on Ext. 266.

Attention is drawn to the recent publication of CEM9 on Training. The principal effects of this for day-release students will be that book allowances will be 50% of the cost of essential text books (CEM9-C11) and subsistence will generally be payable for attendance at college (CEM9-C16).

Prospective students should note the following arrangements for enrolments:-

OXFORD POLYTECHNIC Department of Science NEWBURY COLLEGE OF FURTHER EDUCATION Department of Technical Studies	Enrolment on first day of class.
ABINGDON COLLEGE OF FURTHER EDUCATION Department of Engineering and Science	Students may enrol at the Harwell Education Centre, Bldg 455, AERE, at 10 am on Thursday 9 September. Please note change from last year.
OXFORD POLYTECHNIC Department of Engineering	It is hoped to have enrolment cards available in Training Section by the end of August and these must be completed by Friday 10 September.
READING COLLEGE OF TECHNOLOGY Departments of Electrical and Mechanical Engineering	Mr G L A Taylor will take enrolments and discuss problems with students in the Board Room, Building R20, at 9.30 am on Friday 3 September.

The following students must enrol at the College in person at the times shown in the prospectus:-

Those who wish to attend other Colleges or other Departments of the above Colleges.

Those who wish to attend Oxford and Reading Engineering Departments but do not meet the above deadlines.

Those (other than prospective Reading Engineering students) who wish to discuss problems with College staff.

HARWELL EDUCATION CENTRE COURSES 1976/77

Over 300 copies of the AERE Course booklet are being distributed in the Laboratory. Copies can be seen in DAO's Offices, the Libraries and Training Section.
This booklet consists mainly of a timetable and the 1975-76 booklet must be consulted for syllabuses of most courses.
Applications from Rutherford Laboratory staff to attend AERE courses must be made on Form N552 to Training Section, Building R20, and not direct to AERE, although enquiries may be made to the telephone extensions mentioned in the booklet.

SRC MANAGEMENT COURSES 1976/77

Copies of the SRC Course Programme are expected towards the end of August and they will be distributed as for the AERE booklets.

CIVIL SERVICE COLLEGE COURSES 1976/77

Civil Service College course booklets have already been distributed to appropriate Group Leaders. The booklets can also be seen in the Libraries, and Training Section.

READING COLLEGE OF TECHNOLOGY - Short Courses

Information has been received about the following one-term evening courses. Further information from Training Section.

Colour Television Theory
Colour Television Practical
Introduction to Micro-Processors
Electronics for Mechanical Engineering
Introduction to Analogue & Digital Interfacing
Simple Feedback & Control Systems
Theory, function & applications of Integrated Circuits
Applications of Semiconductors

RUTHERFORD LABORATORY BULLETIN *Published by the Scientific Administration Group* *Editor:* H F NORRIS

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Deadline for Insertions: 1000 hours Tuesday 7 September

SALES TO EMPLOYEES — Sales of scrap metal/plastics as set out in RLN 12/73 will be made on 27 August, 10 and 27 September.

SEMINAR AT AERE — A Seminar will be held on Tuesday 31 August in Conference Room 8.9 at 14.15 hrs, when Prof. Masaa Doyama will talk on "Studies of Lattice Defects and Phase Transitions by Positron Annihilation".

TELEX — In view of the increasing cost of telephone calls staff are asked to make more use of the cheaper telex system where this is appropriate. Details of the service are given on page 6 of the current Rutherford Laboratory Telephone Directory. Telex forms for sending messages are available in DAO's offices or from Stationery Stores (Building R1) and messages should either be typewritten or written in block capitals and kept as brief as possible.

A letter box is now available on the door of Room 73, R20 (Telex Room) where messages can be left without interrupting the operator. Recipients of incoming messages will be notified by telephone and a copy of the message either left for collection in a box outside the door of Room 73, R20 or it can be sent through the regular messenger service.

OVERSEAS VISITS — Dr J B Forsyth, to Finland, 15-22 Aug. as invited speaker to Fifth Sagamore Conference.
Mr A R Cash & Mr R L English, to CERN, 16-20 Aug, in connection with work to be undertaken in conjunction with the Daresbury Group.
Dr K Konishi, to West Germany, 22 Aug - 5 Sept., to participate in Summer School at Bielefeld.
Dr W Venus, to CERN, 23-24 Aug., to attend SPSC Meeting.
Dr G A Ringland, to DESY, 23 Aug - 1 Sept., for discussions.
Mr S Ballard & Mr R Riddiford, to CERN, 23 Aug - 3 Sept., for installation work on WA3.
Dr G Manning, Messrs D A Gray, A Carne, G H Rees, J R M Maidment & N M King, to CERN, 24-26 Aug., to attend ECFA Committee for Accelerator Studies.
The Director, to DESY, Hamburg, 28-31 Aug., to attend PETRA meetings.
Mr M J Hotchkiss, to CERN, 28 Aug - 1 Oct., to work on WA3.
The following will be visiting ILL - Mr D C Salter, 29 Aug - 3 Sept for technical liaison with ILL staff; Mr F F Freeman & Dr B H Meardon, 29 Aug - 9 Sept., to carry out approved experiment; Dr J B Forsyth, 30 Aug - 13 Sept to carry out approved experiment.
Dr S F Cox, to Amsterdam & Leiden, 1 Sept - 4 Nov., to attend International Conference on Magnetism & to visit Komerhingh Onnes Lab.
Mr D A Gray, to CERN, 5-6 Sept., to attend ECFA meeting.
Mr H Roskell, to CERN & ILL, 5-14 Sept., for discussions.
Dr G E Kalmus, to CERN, 7-9 Sept., to attend BEBC Users' Committee.

More Farewells

The departure stories for this issue produce some variety. Bill Young has retired after a working life of 49 years, Martin Donald (plus family) has left to sample the Californian sunshine, and Harold Parr & Ernie Medway have taken early retirement. To all, best wishes, good luck & good health.

In 1927 the Royal Air Force acquired a new recruit; it also acquired its first Air Marshall, Sir Hugh (later Lord) Trenchard who commanded the RAF from 1919-1929. His emphasis on staff training led to the foundation of the Cranwell Cadet College, the Andover Staff College & the Apprentices' School at Halton, Bucks.

It was to this School that the new recruit, a 16 year old, ex grammar-school boy called Bill Young, was posted to serve a 3 year apprenticeship as an aero-engine fitter and to become one of the renowned Halton boys. After passing out, Bill spent the next 9 years at various stations in the UK including a year at Aden.

In 1939 Corporal Young was transferred to the Fleet Air Arm to serve initially on carriers. Following a short stay on 'Illustrious' he was posted to 'Formidable' and was on board for her sea & air trials. However war cut short the final shake-down cruise and the carrier was diverted into the 'Med' where, as Bill says - "we got bashed up necessitating a visit to the USA for repairs". The rest of his Naval service was shore based mainly on instructing before returning to the RAF at the end of 1943 as a Flight Sergeant.

An 'emergency' commission in 1946 as a Stores Officer was followed in 1948 by a permenent commission and 2½ years in the Middle East clearing up lease-lend affairs. Back in the UK in September 1950 he became Deputy Chief Air Movements Officer at Lynham. During this period he remembers the secrecy surrounding the passengers and cargo for one special mission. Later the secret was exploded - it was the Bikini Atoll atomic bomb team & weapon.

After 2 years at Lynham & a brief stay at Bircham Newton, Bill moved to Bridgenorth, a large RAF depot, to take charge of the Stores & M.T. Sections, retiring from there in 1960 as Squadron Leader Young, with 33 years service behind him.

Bill joined the RL in August 1960 as a Clerical Officer in Personnel working on recruitment where apart from a year (1962-63) on the organisation of the new restaurant, he stayed until his final appointment in July 1967 as DAO in Nimrod Division. This position he held until his second and final retirement in July this year.

At least 120 people were present in the Lecture Theatre to hear Jim Valentine talk about Bill's career at the Lab and to present parting gifts from friends and colleagues. Remarking that Bill was no ordinary HEO, for instance he drives a fat Rover, he said that a lot of the credit for the restaurant must be given to Bill although he felt his real career at the Lab had started at Nimrod.

In reply Bill thanked everyone for the gifts, a pair of Zeiss binoculars and a glossy book on British birds. He had been fearful on leaving the RAF as to whether he would be able to fit into civvy life. A few weeks at the Lab was enough to discover that people were no different - they understood language that was good, bad and Airforce.

Retirement for Bill means more time for gardening, wood working, sewing, walking and bird watching (his wife is a member of the RSPB).

The following letter was received the day after his presentation:-

"I was greatly heartened but also a little overwhelmed by the astonishing turnout to see me off yesterday afternoon and the exceedingly generous presentation which followed. I wish to thank all the many good friends who contributed, organised and attended on the day.

After sixteen very pleasant years at the Lab, I retire with mixed feelings, fully aware that I shall miss the friendliness and good fellowship that I have experineced but also looking forward to the greater freedom of movement which, I hope will come when I am no longer on the payrole.

I offer my thanks for those happy years and my wife, who was delighted with that magnificent armful of flowers I was commissioned to take home to her, joins with me in wishing the very best for the future of the Lab and its compliment."

At the end of July, old friends & colleagues of Martin Donald gathered in the R61 Conference Room to wish him well in his new venture and to present him with a parting gift.

Marshall King who made the presentation, said that Martin's case was a bit unusual, since he was leaving, not to go into retirement but to carry on the torch of accelerator and storage ring design in California.

Marshall continued - "I am sure I am not alone in applauding his firmness of purpose and his courage in taking this step. Martin has lived in this area much longer than most of us; indeed I believe most of his life. After leaving Oxford in 1959 he went to work at EMI for 3 years on microwave guidance systems. He came to work at the RL in 1963 and apart from a brief voyage to the frozen tundra of Daresbury Land, has been with us ever since. When he joined me in the old Beams Physics Group back in 1967 I received the impression that being a keen fisherman, his reason for returning was chagrin in discovering that there were no salmon in the Warrington Canal".

Marshall continuing on this theme said that aside from fishing and swimming, Martin engaged in many other outdoor activities - "his departure is a bitter pill to swallow in cricketing and punting circles. His skill in combining the arts and crafts of swimming and punting at one and the same time has to be seen to be properly appreciated. Let us hope that his arrival on the West Coast (Martin is already well known on the Californian academic circuit) will create a revival of those very British sports among our Californian friends".

In reviewing Martin's career at the Lab, Marshall spoke of him as a splendid colleague for the past 9 years and recalled particularly his fine work on the CERN SPS - and on EPIC. "We shall miss his keen insight into theoretical accelerator design problems".

After the presentation of a telescopic fly fishing rod and reel Marshall concluded by wishing Martin, his wife Barbara and their two children, every success in their new life in Berkeley saying "perhaps he will spare us a thought back here when he is casting into those sparkling trout streams in the Sierras".

Martin thanked everyone for their good wishes and for the gift - just what he wanted; he had enjoyed his years working at the Lab.

He has asked me to say cheerio, through the Bulletin, to all he was unable to see before his departure.

Through the international fraternity of machine designers we shall no doubt hear of Martin's progress, both in his professional career and, in his extra mural activities!

* * * * *

It is difficult to imagine a more popular member of an evening or night shift than an ex confectioner especially as said member had at one time worked at the Savoy Hotel. None of your burnt toast & baked beans but, at the drop of a hat, anything from hot cross buns to a full scale Xmas dinner - resulting, no doubt, in a touch of one-up-manship over other shifts.

Ernie Medway, a professional confectioner for 19 years forsook the hot stove in November 1947 to become a Lab attendent at AERE. His first job he recalls was on Thermal Diffusion for Bob Bowring; later in General Physics Division he worked for Dr London & in about 1954 started on a long association with Ralph Dawton which only ended in 1970. During these 16 years Ernie had built & operated equipment associated with a wide variety of work. In 1960 he came over to NIRNS although still working at AERE (and for a time at Oxford) as f[illegible] the years 1960-64 he was associated with the Electrostatic Generator project for Oxford University. From 1964 on he continued to work at AERE (on secondment) mainly on ion sources before joining the Chemical Technology Group at RL in 1970. The move meant another change of work for Ernie, dealing with cryogenics & of course resins, his final contribution being the metallurgical polishing of specimens, in particular superconducting wires.

Ernie took premature retirement leaving in July & his presentation party held in the R12 Conf. Room provided ample evidence of his confectionary skills. He and his wife arrived with trays of goodies including vol-au-vents, cakes etc which the large number of friends and colleagues enjoyed to the full. David Evans in presenting Ernie with a cheque thanked him for his contributions to the Laboratory's work and wished him a long and happy retirement.

Ernie wishes to thank all his colleagues, past and present, for their help and friendship throughout many happy years and says cheerio to all he was unable to see before leaving.

* * * * *

It was fortuitous that Wednesday, 30 June was Mrs Parr's birthday, and what better way of celebrating the occasion than a drink at her husband's local, the Black Lion at Woodcote. What husband Harold did not expect was the 'This is your life' reception he received. Unfortunately ill health had meant absence from work during the period leading up to his premature retirement date at the end of June. However his colleagues at the Lab, with the co-operation of Mrs Parr and the Landlord of his local, were determined to give Harold a good send off, and they succeeded.

In early 1939 Harold volunteered for the RAF and served for most of the war in the Middle East as a driver, first in the Western Desert and later in Palestine. Returning to civvy life in 1946 he spent the years until 1959 as a driver at M.U. Milton. There followed 2 years at AERE progressing from GW3 to GW11 chargehand.

A new career started on 2 January 1961 when Harold joined the RL as a Non-Tech 4 in the Nimrod vacuum section, at a time when the Nimrod vacuum vessel was under development. He played an important part in this work, becoming very involved in resin work. What is generally known as the Resin Lab was first formed in about 1961 as an off-shoot of the old Nimrod vacuum section and Harold stayed in this group through its various moves from R1, R8, East Wing and finally West Wing R34.

Often known as Mr Resin he accumulated a vast store of practical information and a feel for resins, the sort of knowledge not available in text books and his early retirement is a loss to the Lab.

David Evans wished Harold many years of happy retirement and on behalf of friends and colleagues presented him with a portable radio, a pewter tankard and various other gifts.

A message has been received from Harold expressing his thanks for the gifts and to all those who turned up at the Black Lion. He says cheerio to all he was unable to see before he left.

CHRISTIAN FELLOWSHIP

27 August:- All are welcome to see some slides of Israel, shown by Ken Potter who went there earlier this year.

3 September:- Have you ever thought that when all else fails in a very trying situation, prayer is the answer? If you would like the Fellowship to remember a need in their monthly prayer meeting please contact any member of the Fellowship or come along to the meeting.

10 September:- All members of the Fellowship are invited to an informal discussion-cum-annual meeting to discuss the forthcoming programme and election of committee members.

All meetings are at 12.30 in the R12 Conference Room.

TABLE TENNIS

The first official AGM of the Rutherford Table Tennis Club was held in R15 on 28 July. Ten members were present. The meeting agreed to the proposed rules and voted the following into office for next season.

Chairman	-	Mike Greenwood, R2 Ext 6692
Secretary	-	Eric Thomas, Atlas Ext 6219
Members	-	John Emerson, R9 W/S Ext 284
		John Varley, R51 Ext 6681

John Varley will remain in charge of lunchtime table tennis, and Eric Thomas will be in charge of local league teams.

Eric Thomas gave a brief report of last season's league performance. Teams for the coming season must be finalised by 20 August, at the moment there are enough people interested to form two teams.