Rutherford Laboratory

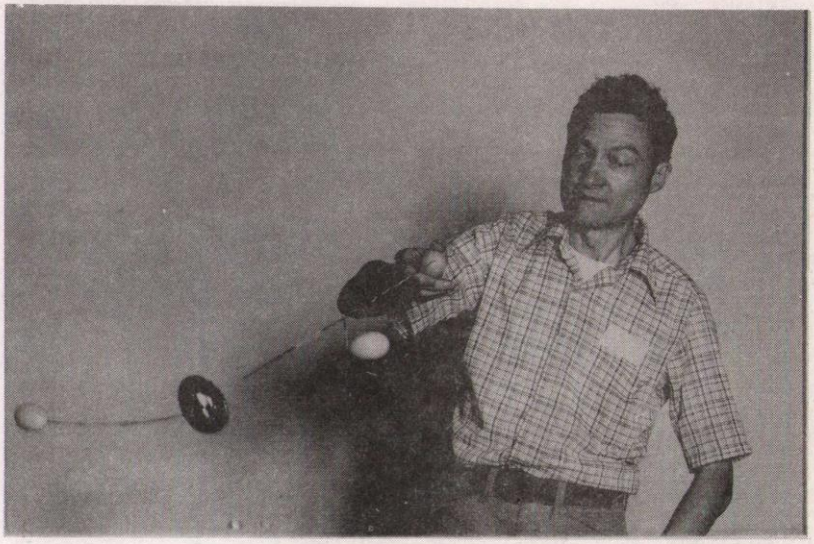
bulletin 13

19 JULY - 16 AUGUST 1976

T(r)opical Conference

A four day Topical Conference on Baryon Resonances was held at St Catherine's College, Oxford from 4-7 July during the recent heat-wave. Many overseas delegates were surprised by the untypical British weather; however they quickly discovered an excellent antidote - British beer. During the ten sessions, nearly forty papers were presented, many of these producing very lively discussion periods. David Saxon, an RL member of the Organising Committee who has kindly produced the following report, has also suggested the following explanatory note for non-specialists.

"The study of Baryon resonances examines the excited states of the proton and neutron, the particles that make up the nuclei of everyday matter." Photo - Prof Cutkosky (Carnegie-Mellon Univ USA) demonstrating his "Polish Bay" model of the proton (the particles are outside bag).



The Topical Conference on Baryon Resonances was the first occasion in three years that scientists working in the field have had a chance to get together and compare their results, and one hundred and fifteen scientists attended coming from fifteen countries.

A great deal of new experimental work and analysis of results was presented. A very large contribution of new work came from Rutherford experiments, including results from π8 and K13C and the BEGPR and RL-IC bubble chamber experiments. The data from K15 ($\pi^{\pm}$ elastic scattering) and π9 (π^{-}p charge exchange with the frozen-spin target) were received with enthusiasm as they provided a major improvement on anything previously available. Several differing analysis of world data were presented in what is best described as a spirit of healthy competition.

In his closing address, Professor Tripp (Berkeley, USA) spoke of the enthusiasm of the scientists and the large advances that have been made in understanding baryons and (listed a number of new experiments) to confirm or deny present speculations. The problem is that with the rapidly approaching closure of NIMROD, these experiments may never get done for there is no other facility in the world so well equipped for studying baryons.

So it is with an increased sense of urgency that we continue to probe into these secrets of nature.

TRAVEL & SUBSISTENCE CLAIMS Claims Office has a large backlog of work. To help to speed up the work, would claimants please:-

1. Make your claim as complete and informative as possible. Both the front and back of the form should be filled in. Be sure to include your name, address, building number, project number and, where relevant, bank account number, car details and exchange rate for foreign journeys.
   It wastes the clerk's time to chase these up.
2. Remember that subsistence allowances vary according to length of stay. Please complete the "Time" columns on the form.
3. Do not phone or call at the Claims Office to enquire how your claim is progressing. This only wastes the clerk's valuable time which she should spend in progressing claims. Yours will take its turn with the rest.

Thank you for your co-operation.

LIBRARY NOTICE The Library has received both the full sized Review of Particle Properties and the pocket version. First come - first served!

BLOOD DONORS Although there are now over a million and a half regular donors, more are always needed to enable the Service to keep pace with the increasing calls upon it, to cover retirement of donors due to age or ill health, and to avoid having to call on individual donors more than twice a year.

Donors should be between the ages of 18 and 65, and in normal health, they should not have had jaundice or undulant fever because these conditions may be transmitted through blood. Donors are asked to give their blood at donor clinics held in their place of work, and receive an invitation well in advance, telling them the time and place.

Giving your blood is a real opportunity to help others at the cost of perhaps half an hour or so once or twice a year.

Please support the next donor clinic which will be held at the Rutherford Laboratory in September. Fuller details will be given nearer the date.

CAMAC COURSE A CAMAC course will be held at Daresbury Laboratory from 3-5 August 1976. Further information from Training Section, Ext 266. Nominations on Form N522 by 27 July please.

INTERNAL EVENTS

NIMROD LECTURE SERIES
Monday 19 July
11.30
Lecture Theatre

The Commissioning of the SPS.

Dr E Wilson/CERN

SEMINAR IN COMPUTING
Tuesday 20 July
11.00
R61 Conference Room

DISSPLA - An Interactive Graphics Package.

P Preuss/Integrated Software Systems Corp San Diego

HEP SEMINAR
Wednesday 21 July
11.00
Lecture Theatre

Measurement of Polarisation in $\bar{p}p \to \pi^-\pi^+$ and $\bar{p}p \to K^-K^+$

M Coupland/QMC

HEP SEMINAR
Wednesday 21 July
15.00
R61 Conference Room

Sister Trajectories in the Dual Model

N Törnqvist/University of Helsinki

HEP SEMINAR
Monday 26 July
11.00
R61 Conference Room

Searching for Heavy Leptons with Longitudinally Polarised e^+-e^- Beams

M Gronau/Technion, Haifa

NIMROD LECTURE SERIES
Wednesday 28 July
11.00
Lecture Theatre

Reports on the Tbilisi Conference

Drs G E Kalmus, F Close and T G Walker/RL

HEP SEMINAR
Thursday 29 July
11.00
R61 Conference Room

Test of Charge Symmetry in High Energy Neutrino Interactions

G Fisk/Fermilab

NIMROD LECTURE SERIES
Monday 2 August
11.30
Lecture Theatre

Multi-Eikonal Production Theory

Dr R Arnold/ANL

STAFF MEETING
Tuesday 3 August
11.00
Lecture Theatre

Professor Sir Sam Edwards, FRS, Chairman of the Science Research Council will preside

Closed Circuit TV will operate in the R22 Coffee Lounge

HEP SEMINAR
Wednesday 4 August
11.00
R61 Conference Room

Exchange Degeneracy Breaking and the Pomeron in Scattering and Particle Domains

W Bishari/Weizmann Institute

NIMROD LECTURE SERIES
Thursday 5 August
0930
Lecture Theatre

The title of this lecture to be given by *Professor G F Chew* will be announced later

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OVERSEAS VISITS

Messrs L Phillips, J Spencer and G Clark, to CERN, 20-30 July for installation of equipment on Hyperon and Omega beamlines.
Mr P-F Smith, to France, 21-22 July to attend computer workshop at Neuilly sur Seine.
Mr A C McPherson, to Erice, 22 July-9 Aug, to attend International School on Subnuclear Physics.
Mr H O Normington, to CERN, 23 July-4 Sept, for installation work on Hyperon 300 and WA3 and dismantling of WA3 apparatus.
Mr A G Dobbs and Mr H Hawthorne, to CERN, 26 July-6 Aug, for installation work on WA3.
Mr J W Burren, to CERN, 27 July-6 Aug, for discussions.
Dr A R Gillman, to CERN, 27 July-28 Aug, to work on WA3 experiment.
Dr D A Scott, to the USA, 31 July-21 Aug, to attend Summer Institute on Particle Physics at SLAC and have discussions at Fermilab.
Dr K Robinson, to Canada, 8-13 Aug, to attend Symposium on Large Engineering Systems, at University of Manitoba.
Mr P Kent, to Amsterdam, 9-12 Aug, to attend ECI Conference.
Dr C J S Damerell, to CERN, 11 Aug-3 Sep, to work on WA3 experiment.
Dr C A Scott, to the USA, 11 Aug-4 Sept, to attend Applied Superconductivity Conference at Palo Alto and visit ILL.
Dr J B Forsyth, to Finland, 15-22 Aug, as invited speaker to Fifth Sagamore Conference on Charge, Spin and Momentum Density.

More Retirements

Apologies to those not yet included and to those who are still waiting for photos and copies of previous bulletin. Have now run out of space, time, paper, pencils, and even typists so please be patient. To all old friends and colleagues recently departed, my personal best wishes, good health and good luck and, keep in touch.

There are few people on the site who worked on the pre-1960 computers such as the Ferranti Mercury and the IBM 704. Barbara Stokoe was one of these, but she has now accepted premature retirement to satisfy other interests besides computers and computing. Barbara came straight from University in October 1958 to the computer section of the Theoretical Physics Division at AERE. At that time use was being made of "remote" computers at Aldermaston and Risley, and Barbara experienced some of the many problems associated with early data transmission methods, ie, by motor cycle, car, plane and train. She was invited to join the Atlas Lab by Dr J Howlett in 1963 and has worked there ever since. Following involvement in the development of the Atlas Fortran compiler and the implementation of the Hartran system, Barbara played a major role in the development of data processing for the UK space programme. Three years ago she took charge of the Application Group at Atlas and was successful in giving an identity to a group whose interests spread over many scientific disciplines. She was also involved in the management of the Atlas Lab over the last few years. In thanking everyone for the presents, a set of cut glass claret glasses and a cut glass rose bowl, and for their good wishes, Barbara said she would be paying a lot more attention to her house at Hampstead Norreys - and would enjoy seeing her colleagues when they passed that way. She emphasised how much she had enjoyed working on the Harwell site and the very special place that Atlas would always have in her thoughts. Barbara intends to spend more time now with the local village activities which will certainly benefit in many ways from here interests and experience.

* * * * *

It's difficult to imagine AERE, Harwell with a complement of about 40 but Bert Mellanby, who has taken early retirement, assured me that such was the situation when he arrived in June 1946 - 30 years ago, to work in the design office of the new Ministry of Supply establishment. Bert came from Fort Halstead, another MOS establishment in Kent, where he had been concerned with the design of weapons, so it made quite a change to work on the development of GLEEP and BEPO, the first reactors to be built at Harwell. During his years at Harwell, Bert worked on the Van der Graaf Generator, ZETA development under Dr Toneman and the Cyclotron which was for long, the pride and joy of Dr Pickavance who later was to become the RL's first Director. Bert's association with the RL began with the design of the PLA, later moving on to Nimrod and of latter years, beam line design for Nimrod. Ron Russell, on behalf of friends and colleagues, presented Bert with a cheque which will, in due course, be converted into a pair of lightweight binoculars. Ron wished him a long and happy retirement remarking that Bert's youthful appearance belied the fact that he was probably the longest serving member on site. In reply, Bert spoke of the pride he felt in having taken part in the creation of two major laboratories. He expressed his thanks to everyone for the gifts and wishes, in paricular, his colleagues in the R2 Design Office.

* * * * *

"It is an honour for me to make this presentation to Ken (Harris) on his early retirement and it is fitting for it to be done in a design office since it was in a design office that Ken started at Devonport after completing his Dockyard apprenticeship there." The occasion was the presentation to Ken of English cut glass wine glasses and a decanter by Bert Hadley on behalf of Ken's friends and colleagues. He joined AERE in early 1955 as a design draughtsman under George Simmonds and worked on parts of the ZETA project, where, as the first draughtsman allowed to work outside the drawing office, he did all the control circuits and diagrams for the project. He was successful in applying to join the Nimrod design team coming over to the RL in 1959 as an ADE. By 1963 he was working on CCTV installation, plunging mechanism controls etc and by 1964 had done some design work on the Track Analysis Machine (TAM). The TAM section was set up in 1965 and Ken was chosen to manage it together with the Electronics Repair and Instrument Shop in R18, which he has done ever since with great success. He has taken early retirement younger than most and he has taken effective steps for the future so that when he moves back to his beloved Devonshire (to Plymouth in fact) he will have a number of strings to his bow. Ken will have more time for his hobby of breading wire haired dachshunds and collect even more Crufts and Kennel Club cups and certificates. Ken would like to say goodbye to all he couldn't see personally before leaving and thanks for some happy memories of the Laboratory.

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"We shall miss him very much especially the constant challenge of reading his handwriting" - a comment from Ron Russell which produced gales of laughter from the friends and colleagues of Harold Wicks on the occasion of his early retirement at the end of June. Harold joined the Lab in '62 from Aldermaston where he had worked for 6 years, following a career of 17 years in the Admiralty. After a period in the supply group, Harold managed the electrical engineering side concerned with experiments in the Nimrod halls and was also in charge of precision magnetic measurements and field plotting. Retirement for Harold will mean extra time and opportunity to indulge in a number of local activities. At present he is Chairman of the Pangbourne Working Man's Club and Vice-Chairman of the local branch of the British Legion. As Ron said, "Harold is a great inventor of games, also very good at designing garden furniture so the parting gift from friends and colleagues should prove very useful - a circular saw and a set of designs". In reply, Harold not only thanked everyone but made a presentation of a cup to the Rec Soc for the Cribbage Club, accepted with grateful thanks by Peter Craske on behalf of the Society.

* * * * *

It was a very hot day, was Wednesday 30 June. Fairly late in the afternoon the phone rang and a voice said, "Sorry for the short notice but try and be in R12 Conference Room at 4 o'clock for Swan's presentation". I'm glad I made it 'cos with more than a tang of the Navy it turned out to be a very amusing occasion. Mr N F P Swan-Taylor (the N stands for Norman) known affectionately to so many people as Swan, had opted for early retirement and a large number of colleagues were present to make sure he left! Swan served in the Navy during the last war, in motor gun boats and indeed was at the Normandy landings. He joined AERE in January 1949 eventually to work in the uranium shop on the development of containment cans. In 1955, Swan moved to the RL to work on the installation and later, maintenance of the Proton Linear Accelerator until its closure. Since then he has worked on Nimrod beam lines and as a member of the Nuclear Physics Apparatus Group. Joe Marsh, in an entertaining and amusing dialogue (its impossible to keep Swan quiet), recalled the early days and how, over the years, a great team spirit had been built up; Swan had contributed to this throughout those years. He was very sorry Swan was leaving but invited him to come back from time to time - an invitation which was greeted by a large shout of "NO". Swan enjoyed that moment. Joe concluded by handing over an electric shaver and a copy of a well known Cyclopaedia, parting gifts from friends and colleagues. Looking round the packed room, Swan remarked that there was not one present he had not worked with - in drawing office, R9, PLA, CERN. He felt that they had formed a team which had earned a very good name on the site.

Premature retirement at the end of June means for Frank Telling a chance to relax, but for the Lab and in particular for the Scientific Admin Group, it leaves a hole which will be difficult to fill. Frank's career commenced with a 5-year engineering apprenticeship at the Great Western Railway's Swindon works. Then came the war and from 1940 to '45, the Royal Fleet Auxillary Service claimed his time. A desire to see more of the world was fulfilled by 2 years in the Merchant Navy. Ashore once more, Frank joined the Pile Engineering Group at AERE in the summer of 1947, as a Control Room Operator on GLEEP and BEPO, Harwell's first 2 reactors. In 1952 he moved to Engineering Services to spend 3 years on estimating and costs, followed by 2 years on work and method study before joining, in 1957, the Engineering Project Team building NIMROD. There followed a period of 7 years during which time Frank was Personal Assistant to the Chief Engineer, Mr Bowles, Secretary of the Nimrod Project Committee and helped with the early planning of the Daresbury Lab, being for a time Secretary of the NINA Project Committee. In 1964, he became a member of the enlarged Scientific Admin Group with special responsibilities for University Agreement and Conference organisation. In addition he was Secretary of the Division Heads Committee for 6 years, serviced most of the Senior Management Committees at the Lab and served on a number of working parties on specific subjects for NIRNS, SRC and RL. On the publication side, Frank edited the 1966 Annual Report and co-edited AR's up to 1974. His contribution to the work of the Laboratory was recognised by the award of the MBE in the 1975 New Year's Honours List. Friends and colleagues gathered in R61 Conference Room to hear Jim Valentine speak of Frank's career, remarking that Frank was always willing and always did something - he never came back with questions. Frank, he felt, had been the backbone of the Scientific Admin Group and his departure would leave a hole which would be difficult to fill. On behalf of friends and colleagues he presented Frank with a portable radio and wished him a long and happy retirement. In reply, Frank thanked everyone for the gift and good wishes, he said he was sad at leaving the Lab and friends but he hoped to keep in touch. He had been in at the birth of two major establishments and had many memories especially of the early and exciting days. The following letter has been received from Frank: "I didn't manage to say goodbye to all my friends at the Laboratory before I left. Please convey through the Bulletin my sincere thanks to all for contributing so generously to my retirement presentation. I've really enjoyed my years at the Rutherford Laboratory and I wish to record my sincere thanks for all the help and encouragement given to me. With my very best wishes for the future".

SRC TEAM BLITZED After their fine wins in the first two rounds of the Curtis Bennet Competition, the SRC Cricket team were on the receiving end in their third round match against a very strong MOD (Procurement and Executive) team at Greenwich.

Batting first, SRC struggled against some very fast and accurate bowling. Except for a very brave knock by Terry Paterson (Appleton) who scored 34 plus many bruises, the batsmen were unable to cope with the MOD bowlers and were all out for 69 runs. Then MOD scored the required runs without losing a wicket.

A crushing defeat but it must be remembered that the MOD team fielded five Minor County players. They had already accounted for the DTI (all out 20) and the Treasury (all out 44) in the previous rounds so in that light, the SRC score of 69 doesn't look too bad. SRC team - Ray Smith, Steve Hancock, Bob Blowfield, Ben Patel, Doug House, Bob Witty - RL; Terry Patterson, Barry Martin - Appleton; Mike Poole - Daresbury and Ian Midson, Keith Layham, Mike Jeffries - London Office.

Catherine Gould, who took early retirement at the end of June, joined the RL on the first of June 1964, a few weeks after the formal opening of the Laboratory and the inauguration of Nimrod by the Rt Hon Quintin Hogg, the Secretary of State for Education and Science.
One suspects that her return to Government service contrasted strongly with her inauguration into the Civil Service in an office in Millbank, overlooking the Thames. Catherine's work in those days was mostly of the Parliamentary type, such as Hugh Gaitskell's Private Office when he was Minister of Fuel. When thrown out of the Civil Service by the marriage bar, she found herself virtually unemployable in the outside world. However, she found the commercial world couldn't manage without accountants, so became one. During her twelve years at the Lab, Catherine has held, in her own words, "three very enjoyable posts". Two of these posts were in the Personnel Group, first in travel and then in non-industrial recruitment before moving out of the group to become manager of Office Services. In future she says she will have only one person to manage - her husband. She hopes, in future, to spend only summers in the UK and in winter intends to find the sun elsewhere. Catherine has sent the following message: "Very many thanks to everyone who contributed to my leaving presents. They will remind me of my happy years at the Rutherford and all the co-operation I had from so many people. To those colleagues I was unable to say it personally, Goodbye and Best Wishes".

* * * * *

It makes a change to write about someone who did not serve in the Senior Service. Ben Kingdon, who left at the end of June on early retirement, served in the RAF during and after the last war being concerned with ground radar. In 1947 he left the RAF and joined the AERE unit at TRE, Malvern to work initially on RF modulators. From 1948 until he moved to Harwell in 1953, Ben worked on the development of a prototype 2 MeV linear accelerator, under Les Mullett who became the RL's first deputy director. After working on wave guides, cavities etc for a year he became involved in the 50 MeV Proton Linear Accelerator, the RL's first operational accelerator. Ben joined the Lab in 1956 and after a further 2 years on the PLA, joined Peter Wilde to work on ferrites etc for the primary frequency generator for Nimrod. In 1960 he left ferrites, cavities etc to join the newly formed Scientific Admin Group with Chris Heming and Geof Cooper staying for 9 years before moving into Finance and Accounts as a computer programmer, a post in which Ben's well known meticulous attention to detail proved invaluable. He has contributed a great deal to Lab life, both in his work for the Christian Fellowship and in the field of music. Ben has been an active supporter of the Record Society, a violinist and a conductor and has a vast on-line store of knowledge on music and musicians. It was therefore appropriate that his parting gifts included a record and a record voucher presented to him on behalf of his many friends and colleagues by the Secretary to the Lab, Jim Valentine, who wished him a long and happy future.

CHRISTIAN FELLOWSHIP The programme for the next four weeks is as follows:-

30 July: How good is your Bible knowledge? All are invited to a quiz at 12.30, R12 Conference Room.

6 Aug: All are invited to the monthly prayer meeting to pray for those in need and to give thanks to God for all his blessings. 12.30, R12 Conference Room.

13 and 20 Aug: A time of sharing with each other the things nearest and dearest to us. What makes a Christian tick? Does his faith depend on things seen or unseen? If you want to know more in an informal atmosphere, come along, usual time and place.

SPORTS DAY 1976

Some 150 competitors and supporters from the Rutherford Laboratory attended the ninth annual SRC sports day. The Lab's sportsmen and women went as holders of the Cricket, Netball, Men's Doubles Tennis and the Bowls (Triples) events and returned as Cricket, Football, Bowls (Pairs) and Bowls (Triples) champions.

Eight teams entered for the Bowls Triples competition, the eventual winners, Cyril Grindrod, Alec Goode and Peter White having a comfortable win over a London Office team in the first round, a close win over another LO team in the second round and quite a battle in the final against a Daresbury team. Daresbury took an early lead and at 11-3 seemed to be well on their way to victory. However, the RL team fought back well, eventually to run out comfortable winners by 22-14.

The Bowls Pairs competition produced 4 teams, two each from Daresbury and the Rutherford Laboratory. Due to late arrival owing to transport problems, the first round, RL v RL and Daresbury v Daresbury ensured an inter-laboratory final. This turned out to be a most enjoyable game with the RL team of Eric Kirby and Les Harding holding on in a very close match to run out winners by 20-12. Light relief was provided by (a) the arrival overhead of Concorde on its way to Heathrow, a novel sight for most of the Northern visitors, and (b) the terminology used by the Daresbury 'Crown Green' players, the Southerners, of course, play on flat greens with twice the bias on their woods.

After the defeat in the Civil Service Competition, reported elsewhere, the RL cricketers enjoyed themselves and retained their grip on the cricket cup. After losing 2 early wickets, Ben Patel and Bob Blowfield each with 53 not out, put RL in an unbeatable position in their semi-final against RGO. Scores - RL 134 for 2, RGO - 89. In the other semi-final Atlas lost to Daresbury in the last over so once more the old rivals met in the final, a repeat of last year with the same result, a win for RL. Daresbury lost 8 wickets for 100 runs leaving an easy task for the in-form RL batsman. Bob Patel - 43 and Mike Yates - 25 gave RL a good start and Bob Blowfield and John Culley easily knocked off the remaining runs needed. A good all round team performance and the fourth successive victory. Well done.

Four of the six teams entered from the RL reached the quarter finals of the six-a-side soccer competition. Unfortunately, Rutherford 'C' (Nomads) lost 0 - 1 to Daresbury 'B' and Atlas lost 0 - 2 to Rutherford 'A' (C&A) and Rutherford 'B' who had battled through most of the other quarter final with a severe injury to John Halliday, lost 2 - 3 to RGO in the last few minutes of the game. This left the C&A team of Jeff Bizzell, Duncan Denton, Malcolm Edwards, Martin Guest, Jerry Ireson, Ron Lawes and Jim Taylor to carry the RL flag into the semi-finals where they beat London Office 'A' by 1 - 0. In the final, superb goals by Jim Taylor, Ron Lawes and Jerry Ireson gave victory over RGO (last year's winners) by 3 - 0 in what turned out to be a one-sided game - C&A even missed a penalty. Thanks to a saved penalty by Malcolm Edwards in a qualifying game, C&A did not concede a single goal throughout the entire competition ending with an aggregate of 18 - 0 in 6 games.

Other sports - Daresbury beat Appleton in the Netball final. (Very little opposition from the Chilton site girls owing to lack of practice).

Appleton won the Men's Doubles Tennis, but all three RL teams put up a good show.

RGO, the holders again took the Mixed Doubles. Surely there must be some lady tennis players on site this year, the RL lacked a single entry.

The Chess was won by Appleton, the holders with the sole RL team finishing third out of 8 teams. It seems a pity that with so many chess players at the RL, we could only field one team.

To end this report, a special word of thanks to the First Aid men - Alan Watson and Bill Almond, Cricket Umpire - Frank Cook and the Football Refs - Brian Prior, Dave Lucas and John Carr.

TABLE TENNIS NEWS

Copies of suggested rules for the Rutherford Table Tennis Club are now available and have been sent to Ladder Members. The first AGM is to be held on Wednesday 28 July at 12.30 in R15 when the rules will be finalised and officers elected. Please come and give your support. Further copies of the rules can be obtained from John Varley, R2, Ext 6363.

AERE Lunch-Time League - 1975/76 Season.
The RL entered two teams in this league, the matches being played in either the Air Hall or Social Club at AERE. The 'A' Team of Dick Carter, Peter Horton, Geoff Tappern and John Varley had many good matches and finished in the top half of division 1. Many thanks to Arthur Chilvers and Ray Butt, County and Division I standards respectively, who turned out for the 'A' team on occasions. The all ladies 'B' team of Lesley Powell, Rachael Sutton, Mary Allen and Shirley West although finishing bottom of Division II, enjoyed all their matches putting up spirited opposition against a number of strong teams. Good fun was had by all.
Many thanks to Don Liquorish/AERE, for running this event. It is hoped that the RL will enter even more teams in the coming season.

Division I: Final Position

Team	P	F	A	P
Atlas 'A'	14	102	24	24
NP	14	87	39	24
IPU	14	67	59	18
RL 'A'	14	69	57	16
RRD 'A'	14	62	64	14
New Works	14	48	78	12
H8	14	36	90	2
H10	14	33	93	2

Division II: Final Position

Team	P	F	A	P
H10 'B'	14	101	25	26
RRD 'B'	14	96	30	24
424 'B'	14	77	49	18
424 'A'	14	76	50	16
Atlas 'B'	14	57	69	12
424 'C'	14	54	72	8
Atlas 'C'	14	34	92	6
RL 'B'	14	10	116	2

The Table Tennis Ladder Competition is making steady progress and new members, who can enter at any time, are always most welcome. The Table Tennis room is in the R15 Recreational Hut. At the time of going to press the top five positions are:-
1/ Peter Kent, 2/ Eric Thomas, 3/ Kenichi Konishi,
4/ John Varley, 5/ Tim Pett.

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.

SRC GOLF TOURNEY

This year the inter-establishment clash was held at Wentworth, that much televised course near Ascot. Teams from Appleton, Daresbury, RGO and London Office (including Swindon) in addition to two teams from RL took part.

As was almost inevitable this year the weather turned out to be very hot and dry but the course played very well and all those taking part enjoyed the event. The organisation was this year the responsibility of Appleton Laboratory and John Delury (a former colleague) was in charge, ably assisted, among others, by his lady wife, Mavis.

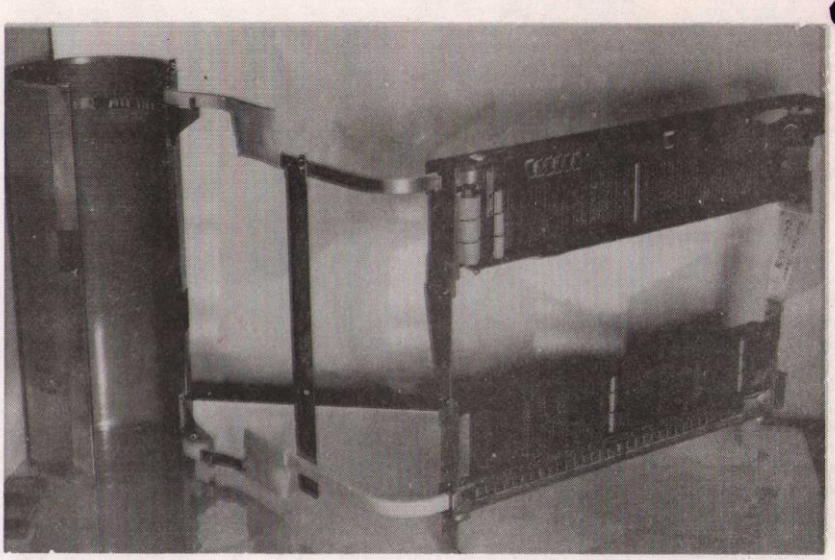
The day's play resulted in a win for the Rutherford Laboratory whose two teams came first and second and the Brian Flowers Trophy can now be seen in the display cabinet in the R1 foyer.

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

Room 42 Building R20
Rutherford Laboratory
Chilton Didcot Oxon
Abingdon 21900 Ext 484

Deadline for Insertions 10.00 hours Wednesday 11 August

First Equipment For RMS



A typical Cylindrical Capacitive Read-out Spark Chamber using film wire and low mass technology in its construction. This particular chamber (No 3) contains approximately 2,500 wires connected to the electronic read-out box shown on right of photo. The largest chamber, 1m in diameter, contains nearly 5,000 wires.

Delivery and installation of the first batch of detection equipment for the Rutherford Multiparticle Spectrometer (RMS) is now complete. This giant piece of apparatus, based on the magnet used some years ago for the Rutherford 1.5 metre bubble chamber, will be used initially in a study of the reaction $\pi^{+}p \rightarrow K^{+}\Sigma^{+}$ in the resonance region using a hydrogen target in a Nimrod beam.

The initial batch of detection equipment manufactured by the Nuclear Physics Apparatus Group includes multiwire proportional chambers, scintillator assemblies, cylindrical and flat spark chambers, and a large scintillator hodoscope, all of which have their own support structures and gas handling systems.

The multiwire proportional beam chambers and scintillator assembly is designed to detect and to track beam particles into the hydrogen target, allowing their momentum and position to be determined. The target area chambers, eight cylindrically-shaped spark chambers (of which four have now been delivered) and a multiwire proportional chamber, are used to detect the outgoing particles from the reaction. The multiwire proportional chamber can be used as a trigger device to detect the presence of appropriate particle combinations. Downstream of the cylindrical chambers and the large proportional chamber are five double gap spark chambers, providing further information on the outgoing particles. The exit aperture of the magnet is covered by a hodoscope assembly, allowing time-of-flight measurements to be made so that low-energy protons and pions can be distinguished from each other.

The cylindrical chambers in the target area were made up using the 'film-wire' technique developed at RL. In this method small diameter wire is bonded onto thin plastic material, particularly necessary because many of the wires are at an angle to the axis of the cylinders, and so form a helix. The film-wire is bonded to expanded polystyrene cylinders, a very low mass material. Because of the close mechanical tolerance required, special techniques for machining the polystyrene had to be developed.

The complete system of eight cylindrical spark chambers, ten downstream spark chambers and four side spark chambers will be equipped with capacitative read-out, giving a total of some 76,000 wires.

Behind the magnet is a large, pressurised Cerenkov counter, with 18 mirror/photomultiplier assemblies, that will be used to measure the position of low energy pions.

For the future, a frozen spin target is being developed at RL, based on an original design by CERN, which should be capable of achieving proton polarisations of more than 90 per cent.

MISSING EQUIPMENT

A halter microphone, AKG Model D109, complete with long lead and plug has been removed from the lectern in the Lecture Theatre. Anyone with information on the present whereabouts of this item is asked to contact either Mr A Hipwell, R18, Ext 573 or the Editor.

Gents Bicycle, Frame No 2724 GU, RL No 22 (AERE No 401 - probably overpainted). Information on the present whereabouts of this item to Inventory Section R20, Ext 570.

One oscilloscope Telequipment Type D66, Serial No 442163 returned from repair in February 1976 but not received by owners. Anyone knowing the whereabouts of this oscilloscope is asked to Contact Roger Gray, Ext 213 or Martin Evans, Ext 218/6359.

FILM BADGE NOTICE

Period 8 commenced Monday 12 July. Colour Strip - ORANGE for $\beta\gamma$ films and neutron films.

Six monthly TLD change for people with surnames commencing C, D, E and F.

Please check that you are wearing the correct dosimeters and that all old ones are returned.

Please note: Next film badge change, Monday 9 August when the colour strip will be BLUE.

LECTURE COURSE IN "LASER PHYSICS"

A course of lectures in Laser Physics will be given at the Laboratory by Professor Alan Gibson of the University of Essex from 1-15 September. Although these lectures have been arranged mainly for Laser Division staff, some places are available for other members of the Laboratory who should apply to Division Heads through their Group leaders.

Lectures will be given each day from 9.15 to 10.15 and 14.00 to 15.00 in R12 Conference room. The general level will be that of an undergraduate university course.

BULLETIN NOTICE

This issue of the Bulletin will cover a period of four weeks. Lectures during this period are likely to be arranged at very short notice so anyone interested in attending these should keep a check on the TODAY notice boards. Copy for the next issue of the Bulletin should be sent to the Editor as soon as available irrespective of the deadline which is Wednesday 11 August.

STOP PRESS

The Rapid Cycling Vertex Detector was sensitive for the first time on Sunday, 18th July. Tests are proceeding to optimise running conditions.