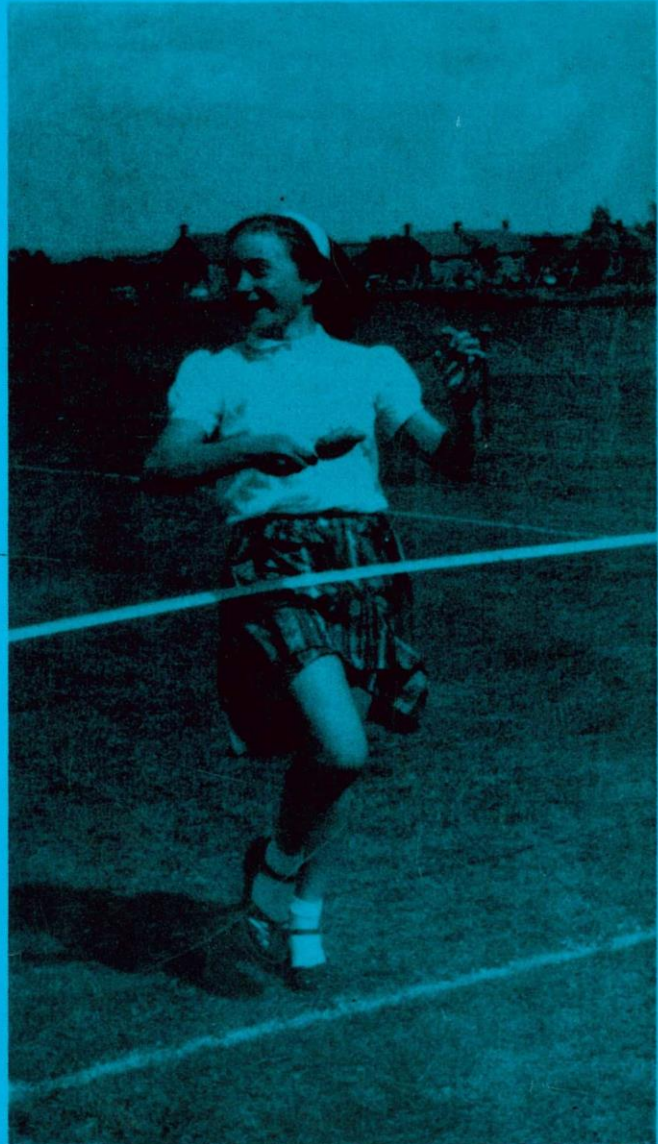




orbit

Number 36 June 1965

Journal of the Rutherford High Energy Laboratory



Cover Photograph :

The joy of achievement.
The winner of the girls'
egg and spoon race on
Open Day, 19 June.

Editorial

To have a Recreational Association or not to
have a Recreational Association.

The opening move was at the Whitley Standing Committee on 29 May 1962. 'The Staff Side said that although they were conscious of the advantages of being able to enjoy the facilities of the AERE Recreational Association and wished to continue enjoying these facilities in the indefinite future, they felt that the time was approaching when the Rutherford Laboratory should give thought to the creation of its own facilities as well. They said that the Laboratory would, in this way, add to a general air of corporate feeling among the staff apart from the more obvious benefits. The Official Side replied that this sentiment was most timely in that space was already becoming scarce and that it would be useful to have this thought in mind when planning for the future. There were, however, no funds immediately available for any such purpose. The Official Side thought too that in a matter such as this, a certain amount of self-help and enthusiasm on the part of the staff was essential for success. The Staff Side were invited to crystallise their thoughts in this direction and raise the point again.'

In the September 1962 issue of ORBIT, Alec Spurway, Chairman of the Staff Side wrote a letter which ended, 'If there are any members of the Laboratory who would like sports facilities here and are prepared to do a certain amount of work in order to get them, would they please contact me.' One person responded. So much for self help and enthusiasm. Full stop.

The matter came alive again in mid 1964. A small group of people who felt strongly about a Recreational Association formed a temporary committee to pursue this end. They were Ron Hazell, Terry Harper, Ron and Mick Hecken, Jennifer Griffiths, Dorothy Owen, Eric Kirby and Ivor Spencer. A list was circulated to collect names and to learn the sort of activities people would have liked the Association to take up. This canvas collected 300 names and suggested activities included lawn tennis (68 names), table tennis (62), record society (48), judo (45), darts (38), badminton (35) and swimming (24).

The management was fed with the results of the canvas and indicated that before a formal approach for assistance could be made, a

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F R A Hopgood, J H Coupland, A P Banford.

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committee should be elected from among the staff. It was indicated that support would be most likely in the form of capital assets rather than grants and that the magnitude of the support would be determined by Treasury approval. The management would probably want to appoint a treasurer to the Association.

This information was carried before a meeting of staff which filled the Lecture Theatre on 22 July 1964 (ORBIT, August 1964). There it was agreed '...that a Recreational Association be formed at the Rutherford Laboratory and that a committee be elected to undertake the preliminary steps towards this end.' The temporary committee listed above was elected as the committee and they hoped to report 'significant progress' to another meeting before the end of the year. Then SRC appeared on the horizon. Administrative organisation, channels of financial authorisation... all bubbled in the melting pot. No negotiations on a Recreational Association were considered possible until the modus operandi of the new regime became clear. Full stop.

The time now seems appropriate, if the momentum of a year ago is still there, to take up this issue again. From the point of view of the negotiations, the channels of authority in the SRC have become clear and from the point of view of the Laboratory staff, a growing interest in recreational activities (and in some cases a growing need for resources) is apparent. A look at the 'Orbiting Around' sections of our journal over the past few months will indicate what is going on. Table tennis, cricket, rugby, record society, darts, have all been featured. A number of teams use 'Rutherford Laboratory' in their title.

It has been recognised from the start that the Laboratory Recreational Association should be built up in such a way that it fully recognises the existence at AERE of a flourishing, well heeled, experienced Association to which most of our Laboratory staff already belong. To attempt to duplicate the more lavish facilities of the AERE Association would be unwise even if it were financially possible. Many activities must continue to be based on AERE facilities though possibly in some cases as Rutherford Laboratory Units.

Anyone who has been involved in the running of a club or society will accept that the predominant attitude, even of members, is apathy or at best willingness to join in provided someone else does the work. It is doubtful if the Laboratory could sustain for long, very much large scale recreational activity that is specifically its own. But some people are keen and are frustrated for lack of facilities. They can only get them through a fully fledged Recreational Association as the Laboratory management cannot make resources available to individuals or small groups of people for these sorts of activity.

It seems to us that the attitude of Laboratory staff has been almost entirely apathetic and that the management has given little practical encouragement. We are now over 1000 strong with many years of existence as a separate organisation behind us. Are we going to have to have a Recreational Association?

Production of ORBIT has been held back this month to enable us to include the Laboratory Open Day.

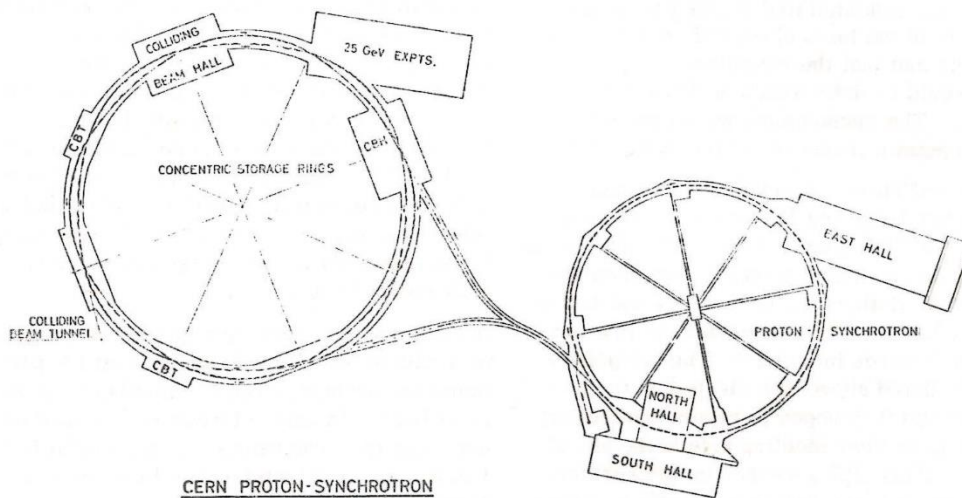
Storage Rings at CERN

At the thirtieth Council Meeting of the European Organisation for Nuclear Research (CERN) the 13 member states unanimously approved in principle the construction of intersecting storage rings at the CERN 28 GeV proton synchrotron. Exactly which of the countries will agree to finance this extension to the Geneva Laboratory's research facilities will not be known until the next Council Meeting in December, but most countries are expected to take part. (Britain's share of CERN's costs, based on per capita national income is about 25%.) The cost of the storage ring project would be around £26 million spread over six years.

Higher Energies

The storage ring project to provide colliding proton beams is one of the proposals in the three pronged European programme for the next generation of high energy physics research using particle accelerators. (The other two proposals are improvements to the 28 GeV machine and the building of a 300 GeV proton synchrotron.)

Many of the questions which have been raised by interpretation of the information coming from current research into fundamental particles and their interactions, require investi-



CERN PROTON-SYNCHROTRON
WITH CONCENTRIC STORAGE RINGS

gations at higher energies to provide an answer. By colliding beams in intersecting storage rings, a look at the phenomena occurring at extremely high energies can be provided comparatively cheaply.

The basic idea is a simple one. In the conventional accelerator, the accelerated particle is crashed into a stationary target particle and the interaction between the particles can then be examined. But the bigger part of the energy is taken up in moving the stationary particle, and whatever other particles may be created by the collision, to conserve the momentum of the system of particles - just like a cue ball pushing a stationary billiard ball in the original direction of the cue ball.

This "recoil" energy is not available for the interaction proper. A much smaller part of the original energy goes into the transformation of the particles and the creation of new particles. With the CERN machine of energy 28 GeV only about 7 GeV is useful energy.

Obviously if it were possible to fire two identical particles at one another with equal energy and in opposite directions there would be no momentum to conserve, no recoil, and the whole of the energy of both particles would be available for the interaction. The storage rings to be built next to the existing machine will enable two beams of protons accelerated to 28 GeV to be directed at one another. When these beams collide, the effect of the 56 GeV collision will be equivalent to firing an accelerated beam of the fantastic energy of 1,700

GeV at a stationary target. The cost of the storage rings will be only about 5% of such a conventional accelerator. The main limitation of the project is that only proton-proton collisions can be investigated at this high energy whereas on the conventional accelerator beams of many types of particle could be provided.

The CERN Project

Experiments to discover and solve the problems likely to be encountered in this complex and novel project have been in progress, using electron beams in small scale apparatus, both at CERN and in America. CERN have an electron storage ring model in operation called CESAR (CERN Electron Storage and Accumulation Rings). Up to 100 pulses from a 2 MeV Van de Graaf have been stacked in the ring giving a circulating current of 20 milliamps. It was recently announced from the Stanford Accelerator Centre in America that the first ever particle collisions in storage rings have been achieved using 300 million electron volt beams of electrons.

The CERN proton storage rings will be built as follows: Alongside the existing accelerator, two concentric magnet rings will be constructed in a circular underground tunnel over 2500 feet in circumference. Hundreds of pulses of protons from the accelerator will be fed into one ring and stored, building up a circulating current of over 10 amps. The magnetic field will be of constant value so as to keep the protons orbiting the ring in a ribbon beam several centimetres wide for hours (thousands of millions

of revolutions). To achieve this, the tube in which the protons travel must be pumped down to a very high vacuum, as low as 10^{-10} mm of mercury, so that collisions with air molecules will not scatter the protons into the walls of the tube. A similar process will build up a beam travelling in the opposite direction in the other ring.

The reason for storing so much beam in each ring is that when the beams collide it will be rather like two galaxies hurtling through one another where, despite the millions of stars in each galaxy, the number of collisions between stars is comparatively small. The more protons that can be stored in each beam the greater the collision rate and it is hoped that a rate of about ten thousand collisions per second will be achieved.

The rings will not be exactly circular but distorted so as to intersect in eight places. At

the right time, the two stored beams, previously orbiting so that they did not touch one another, can then be made to collide almost head on at the intersections. Appropriate detectors will be assembled round these points to identify and measure the properties of the particles resulting from the collisions. Experimental halls will be built at two of the intersections.

Two years ago, France offered a piece of land, adjoining the Swiss territory on which the CERN site is built, for construction of the storage rings. If construction begins soon it is expected that the project could be completed in 1971. The colliding proton beams should provide Europe's scientists with a fascinating glimpse of how matter behaves at extremely high energies long before it would be possible to achieve these energies using conventional accelerator techniques.

THE Accelerator WORLD

News and views
from the world of
high energy physics,
accelerators,
and computers.

Extracted Electron Beam

A full energy electron beam was extracted from the 1 GeV electron synchrotron at the National Nuclear Laboratory of Frascati in Italy on 11 Feb. This makes the Frascati accelerator the first electron synchrotron in the world with an external electron beam facility.

Construction of a 160 MeV cyclotron at the Physical Sciences Institute of Milan University has been completed and proton beams of energy up to 65 MeV have so far been achieved.

OLX

The first on-line experiment (OLX) to be run at the Laboratory, has successfully completed a simulated run. "On-line" means that data from experimental equipment is fed directly to a computer for some degree of analysis while the experiment is proceeding. In general, experiments do not need a full analysis of their data immediately, but sufficient analysis to keep the experiment running correctly, ensuring that the right sort of information is being collected etc., is sometimes very important and is always useful.

This first on-line experiment is a collaboration between AERE, University College London, Southampton University and the Rutherford Laboratory. They use the P3 beam line and are investigating the f_0 resonance, produced in the interaction $\pi^- + p \rightarrow f_0 + n$. The decays of the f_0 into two π mesons should yield information on the spin of the f_0 and the experiment will also look for the decay of the f_0 into a pair of K mesons.

The experimental equipment has the following elements:

- (a) Thirteen sonic spark chambers with five condenser microphones on each

chamber which will enable particle tracks to be precisely positioned.

- (b) A data handling and storage system, in the P3 local control room in Experimental Hall No.1, which will store data from the microphones until ORION is ready to receive it.
- (c) Transmitter receiver stations in the local control room and the ORION computer room which have connecting cables 350 yards long (the signals take 1.5 microseconds to travel down them).
- (d) ORION itself which will monitor the experiment and, using the DDP 224, send messages back to the local control room to indicate whether the complicated electronic system is functioning properly. These messages will be received on a typewriter and memory oscilloscope in the local control room.

Many people have been associated with the design, construction and operation of the system and the following list mentions only a few - John Austin and Guy Page from AERE Electronics Division together with Les Bird from the P3 team designed the data handling and storage system; Carl Stahlbrandt, on leave from CERN, built the transmitter - receiver stations; John Collie and Sylvia Norris from the Laboratory and John Hague from the P3 team wrote the ORION programmes. The chief engineer on ORION, Pete Price, and his staff have been very helpful in solving the data input problems and the ORION operators have shown great patience with the hordes of P3 personnel that periodically descended upon them.

DDP 224

On 21 May, a small computer, known as the DDP 224, arrived at the Laboratory. The computer is from the Computer Control Corporation (CCC) Boston, USA, and it has been installed in the ORION Computer Room. It will be linked directly to ORION serving as a junction box for information coming especially from on-line experiments to ORION. This information can be processed to varying degrees before being fed to ORION for further analysis, thereby increasing the effective capacity of the computer. The first of the on-line experiments is described above. Another of the connections to the DDP 224 will be from the Hough Powell Device (HPD) for automatic scanning on photographs from bubble chambers. A graph-plotter and CRT display will eventually be used in conjunction with the new computer.

The computer arrived at 2.30 p.m. on 21 May. After installation the power was switched on at 9.30 p.m. the same day and at 10.30 p.m. the first programme was run through the computer. Acceptance tests began on 25 May and to date (4 June) it has run for 24 hours a day for 210 hours with only three faults (two of which were in the first 10 hours).

Octopus at LRL

At the Lawrence Radiation Laboratory in California, U.S.A., a computer network, known as 'Octopus', has been brought into operation. It will exploit to the full the built in time-sharing capabilities of a CDC 6600 computer. The system enables a scientist to carry on a dialogue with the computer without ever leaving his desk. From these remote stations, via telephone lines, the scientist can contact the computer to put questions, receive answers, make changes to his programme or to obtain a print out of his data. This avoids the long delays in 'turn-around' implicit in the traditional 'batch-monitor' systems.

The remote stations are controlled and co-ordinated at the computer by a specially designed teletype synchroniser, monitored by one unit of the computer. The 6600 consists of eleven essentially independent computers ten of which (known as peripheral processor units or PPU's) have separate memories and can execute programmes independently. The eleventh unit is a central processor - a very high speed arithmetic device. In addition to their individual memories, all eleven computers share a large central memory which contains 131,072 60-bit words. With Octopus

the first 31,072 locations have been allocated to storing the principle Octopus executive program (called GOB - Generous Omnipotent Benefactor). Over 100 programs simultaneously fed into the system can be handled at the same time.

When the scientist at his office wishes to use the computer he types a brief identification and description on his teletype unit. This consists of the problem name, the user identification, the maximum time to be assigned to the calculation, the priority etc. (To guard against indiscriminate use of high priorities, an automatic accounting system multiplies the actual time used by a factor according to the priority assigned and charges the user on this basis).

When the computer signals acceptance of the problem the user can monitor the program as it proceeds, take a sample of results from time to time, interrupt the program if desired or, alternatively, go and play bridge while his results are preserved for him.

Further economy measure:

A Rutherford Laboratory advertisement at the time of the change in postal charges concluded - 'If you are interested, please send a post card (now 3d postage) quoting reference...'

"We have had various bits of news concerning the Nimrod fiasco in some newspapers. One report even said that the Experimental Area was littered with debris from the alternator... Some distance.

Bob Bennett
Letter from New Zealand

Equal pay for equal work?

"The Rutherford Laboratory Restaurant requires 2 women or 1 man for kitchen wash-up and general cleaning duties"

Advert in "North Berks Herald"
20 May.

"They are always concerned about the events in Geneva. 'What are CERN's latest plans?' And so on. By comparison, the usual reaction to a mention of the Rutherford Laboratory is, 'Do you have an accelerator?'"

Harold Wroe
Letter from Brookhaven

Open Day 1965

In contrast to the usual Laboratory Open Days it was decided this year to try to lay on a social occasion for the families and friends of Rutherford Laboratory staff, rather than to present the scientific work of the Laboratory in any formal way. A considerable number of scientific exhibits were nevertheless on display but the emphasis of the day was on various entertainments on the field opposite the Restaurant.

As Saturday 19 June approached, it looked as if the monsoon season was well under way. Torrential rain soaked the Laboratory throughout the week. But on Saturday the sun blazed down and turned a threatened fiasco into a considerable success. Probably about 700 people came and those who remembered the 5000 strong crowd the previous Open Day were thankful for the space to breathe in.

There was more than enough to do and see. The exhibits had a fair quota of visitors, the roundabouts, swings and sideshows did good business and the children's sports went well. The Lecture Theatre was much more lively than at most functions held there. Donald Duck, Mickey Mouse, Chilly Willy and Woody Woodpecker held their young (and not so young) audience in rapt attention without once invoking the π meson.

Set teas were served in the Restaurant where

the guests included Sir Harry Melville, Chairman of the Science Research Council, and the Mayor of Abingdon. Cups of tea were served throughout the afternoon in the Coffee Lounge and the roof of the Lounge was decorated with brightly coloured, helium filled balloons being stored while their owners put both hands to their beakers.

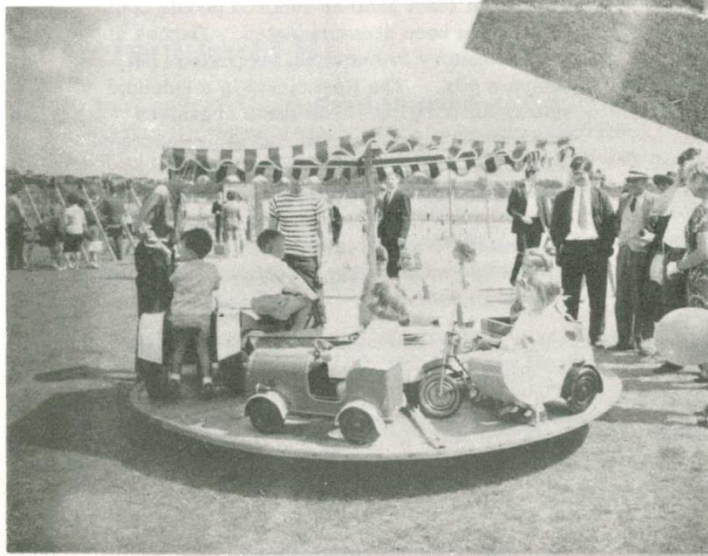
It was a happy afternoon.

The Open Day Ball at night also went extremely well but at least another hundred people could easily have been accommodated. Dances at the Laboratory are not well supported. It seems a pity. The Restaurant is a splendid setting for a dance. The three organised prior to the Open Day Ball had to be cancelled for lack of support, so perhaps we should be thankful that it was possible to hold this one at all. About 90% of the dancers were workshop people with their wives and friends and, with two notable engineering exceptions, no senior staff were present.

The organisers had done a good job. The band was probably the best that has ever been brought in; there was a good buffet and the Coffee Lounge made a very comfortable bar. A special word of praise and thanks should go to the Restaurant staff for their services throughout the day and night.

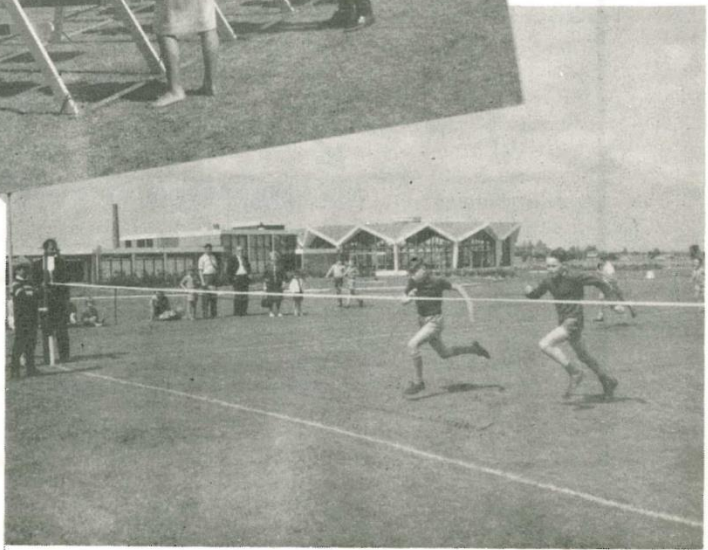


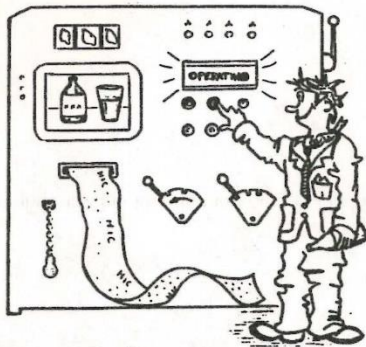
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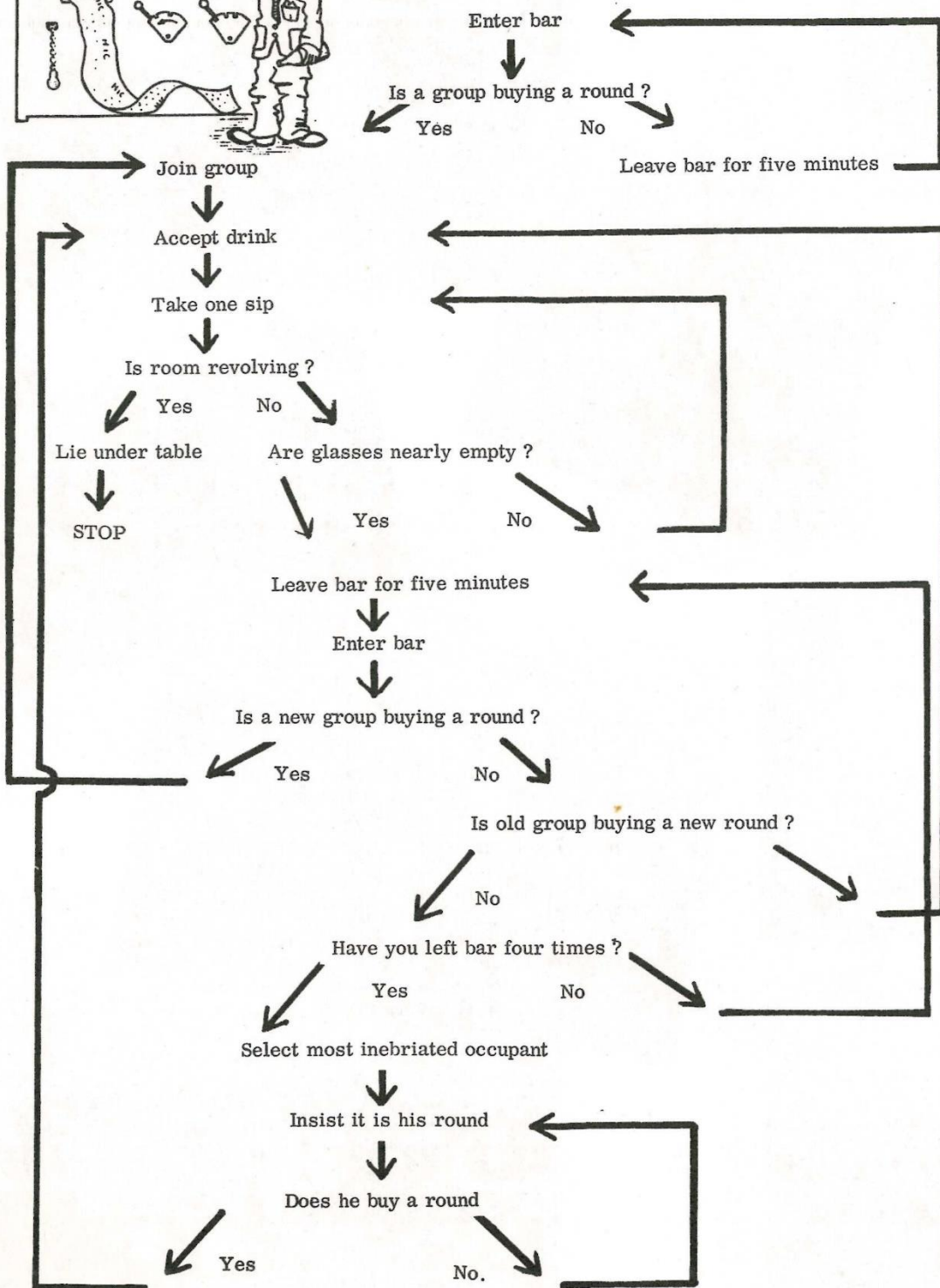
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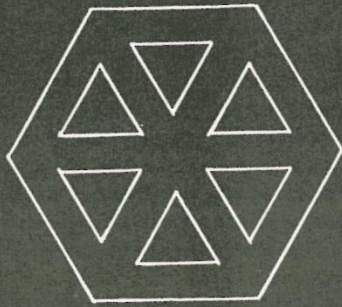


FLOW DIAGRAM

(The computer programmer's impecunious route to inebriation.)



Oxford International Conference on Elementary Particles



OXFORD INTERNATIONAL CONFERENCE ON ELEMENTARY PARTICLES

In September this year the Rutherford Laboratory is to organise a large international conference on elementary particles in Oxford. The Conference will open on 19 September with an inaugural address by Lord Bowden, Minister of State for Science, and continue until 25 September. Five hundred and fifty scientists from over thirty countries throughout the world will take part.

Although international in scope, the Conference will be rather European in character, the participants from U.S.A. being relatively few, considering the large number of American scientists working in this field. In fact the Oxford International Conference on Elementary Particles, as it will be called, is the third of a series of European conferences which caters specifically for the many European high energy physicists who are unable to attend the large two-yearly 'Rochester' series. These Conferences started as an annual meeting at Rochester USA but have since been held at CERN and Dubna USSR. The conferences of the two series are now held in alternate years. The earlier Conferences of the European

series, at Aix-en-Provence and Sienna, attempted to include a higher proportion of younger physicists and this aim has been retained by the organisers of the Oxford Conference.

The initial decisions about numbers of participants from different countries were taken in December last year by an international committee whose chairman is Dr. Pickavance. The organisation of the Conference is the responsibility of a committee chaired by Dr. G.H. Stafford, head of High Energy Physics Division, the other members being Professor P.T. Matthews of Imperial College, and T.R. Walsh and R.C. Pepperell of Scientific Administration Group. Dr. Stafford and Professor Matthews are also members of the international committee.

The planned number of participants was originally 500 but the demand for extra places after the first wave of invitations went out, was so insistent that the organisers felt obliged to provide an additional fifty. Even so there will be many disappointments, and it looks as if hundreds of extra places would have to be provided to satisfy everyone. However such large numbers create severe problems of communication and organisation. With 550 participants the Conference will span central Oxford. The sessions devoted to individual topics are to be held in various lecture theatres in the university science area, while the full sessions, at which all participants meet together, have to be held in the Playhouse Theatre. The administrative and social centre for the Conference will be at Rhodes House.

Various social events are being arranged for the participants and their families, including a visit to the Laboratory and an 'Old English Ox Roast' with music and dancing by a group of local Morris Men.

The last big international conference on elementary particles was the Dubna meeting of August last year. Since then there has been a great deal of interest in the apparent violation of CP invariance by the K^0_2 particle and, in recent months, much theoretical work on relativistic theories of unitary symmetry. Both these subjects will undoubtedly be extensively discussed at Oxford. But besides these 'headline' topics there will be a wealth of reports on careful experimental investigation of the behaviour of elementary particles and of the theoretical developments which promise to bring order to the extraordinary variety of these phenomena.

'I would like so much to be in Oxford at that time, but I have not got any invitation... My last hope are you. Do you think it is possible for you to seduce the Secretary of the Conference?'

A letter from Italy.

Letters to the Editor

(Pseudonyms are accepted provided the author's name is known to the Editor.)



Sir,

It is nearly a year since an article appeared in "Harlequin" to give many of us our first glimpse of what has been happening on our doorstep at the Rutherford Laboratory. We have become aware of a recent change made on the hoardings, and have been unlearning the initials "NIRNS" and learning new ones, namely "SRC".

To find out more about SRC, I, this week, invested three pence in "Cherwell", the Oxford University Newspaper, which features SRC on its front page. I see that last term's President of the Council, Fred Arsenault (Keble), commented that the Council "must realise that it cannot continue to run like a university club". I see also that a special meeting is to "take a critical look at the role and functioning of the Council", and that "a new plan will be put forward which could free the SRC from Proctorial jurisdiction".

I hope that before long you will give us your side of the story, at first hand, in another "Harlequin" article, in case we run the risk of being misinformed. In the meantime, may I wish SRC all success in the fight to free itself from this Proctorial jurisdiction? You have nothing to lose but your good name.

D A Tyler

Editor "Harlequin"

'Cherwell', The Oxford
University Newspaper, 19 May.

Sir,

I hope it is in order for an outsider to write to you. I am provoked into doing so by two comments in your May issue, both of which suggest that a road should be built through East Hendred to relieve the pressure on the A.34 and Rowstock cross-roads.

Is not this a shocking suggestion? Even if it were not defined as a main road, such a road would inevitably become one. In an ideal world no village would have a main road through it. East Hendred is one of the few villages which, in this respect at least, is ideal in our far-from-ideal world. Ought it to be destroyed simply to reduce a congestion which persists for, perhaps, a total of an hour a day? I believe that most of my fellow residents feel as I do, that we would allow such a road to be built only over our dead bodies - as indeed they probably would be if the road builders were to prevail.

K E B Jay

On 12 May the American Federation of Labour and the Congress of Industrial Organisation produced their estimate of a decent wage - "to meet the necessities of life, pay taxes and enjoy a few amenities, with no allowance for luxuries or savings". This family man's basic wage they set at \$6,418 or £2,292 at the standard rate of exchange.

Orbiting Around

Editor: H F Norris
Building R20, Ext. 484.

Night out at the Social Club

The Darts Finals were held in the Social Club on the evening of 21 May. This year, fifteen teams were competing, each of four players. Apart from the team event, the best player from each team played in the singles, two of the remaining three players being nominated for the doubles event.

After a shaky start, (at that stage it would appear that sufficient "bottled" courage had not been consumed. Ed.) players settled down to a steady game and the finals of each event were reached. These were really hard games but none more so than the singles final when Roy Griffiths just missed getting out on 152. However, Bill Oliver really deserved his win after playing so consistently well.

The winners and runners up in each event were:

Team of four	<u>Winners</u>	R. 9 Fitters
(Team:- Alan Wells, Roy Griffiths, Colin Underwood and Tudor Morgan)		
	<u>Runners Up</u>	R. 18 Electronics
(Bernard Keen, Ron Trim, Mick Rose, Les Patton)		
Doubles	<u>Winners</u>	R. 18 Electronics
(Bernard Keen and Les Patton)		
	<u>Runners Up</u>	Admin.
(Ron Pike and Eddie Smith)		
Singles	<u>Winner</u>	R. 25 'A'
	Bill Oliver	
	<u>Runner Up</u>	R. 9 Fitters
	Roy Griffiths	

Malcolm Arnold

Record Programmes

The programmes for July, to be held in the Lecture Theatre at 12.30 p.m. are as follows:

6 July	Sibelius, Symphony No. 5.
13 July	Rimsky Korsakov, "Scheherazade"

There will be no programmes from mid-July until mid-September when, from 14 September, programmes will again be presented weekly.

Comings and Goings

R G Hockin and J Fathers join Central Engineering, E C Jennings joins HEP Electronics Group; R D Downs joins HEP Counters Group.

A Macwilliam and A Rouse join General Administration; Miss R I E Borbone joins Scientific Administration, Miss S I Milne, Miss A J White, W K Fretton and R C G Williams join Atlas Laboratory Operations Group.

A B Jones joins Nimrod Machine Physics Group; Mrs A E Steer joins HEP Bubble Chamber and Emulsion Group; C F Osborn and B Paris join Nimrod Machine Engineering Group.

J S Phillips has returned from Borough Polytechnic for six months and is attached to Nimrod Beams.

Mrs J P Dawkins, Mrs M V C Bennett, M Brain, P B Akers, D Hudson, J W H Rigby and M E Weavers have left us.

Congratulations to:

Alf White, HEP Engineering, and his wife Gladys, on the birth of a daughter, Anne Susan, on 4 May.

Vernon Edwards, Nimrod Machine Physics, and his wife Joan, on the birth of a daughter, Susan Jane, on 6 May.

Joy Dawson, Office Keeper R25, and Alex James on their recent engagement.

Ivor Spencer, R9 Workshops and his wife Muriel, on the birth of a son, Christopher, on 25 May.

Christine Snow, General Administration - Applied Physics Division, on her marriage to Alan Wilson, Institute of Economics and Statistics, Oxford on 10 June.

Hazel Davis, General Administration - Scientific Administration Group on her marriage to Harry Marriott on 19 June.

Suggestion Awards

At the twenty seventh meeting of the Suggestion Awards Committee held on Wednesday 16 June, 1965, the following awards were made:

£10 to G Beckwith whose proposed modifications to scintillator box assemblies are being adopted, resulting in the saving of many man hours in PLA experimental "Setting Up" time.

£7 to D A Hutchings whose proposal to use hard wood wedges to keep shims in place on bending magnets had been adopted. These wedges have also proved successful in other fields.

Joint Award of £1 10 0d to H McGrath and T Morgan whose suggestion had drawn attention to a safety hazard.

£1 10 0d to S Spanner whose suggestion to place emergency instructions in R1 lift would be adopted.

An encouragement award of £1 was made to E J Timson.

B Briscoe,
Secretary.

Jock Holliday

Jock Holliday, who joined the Rutherford Laboratory in May 1961, retired on 1st June at the age of 65. He decided to retire after a prolonged illness, from which he is now recovering very well, to look after his wife who is ill herself.

Jock, one of the old school of highly skilled craftsmen, was very popular with his colleagues and will be missed not only for his personality but also for his skills in many fields.

He had moved south from Scotland for the benefit of his wife's health and we hope that both he and his wife will soon be fit again and will enjoy his retirement for many years to come.

A Lifes Work Done

Bert Rivers, who retired at the end of June, is looking forward to celebrating his 72nd birthday in August. He started work in 1907 and since joining A.E.R.E. sixteen years ago he has only had two days sick leave. At the time of his retirement he was the Rutherford Lab's oldest employee. These bald facts conceal so much in Bert's working life. The whole of Orbit would be insufficient to give more than a glimpse of his varied and interesting life.

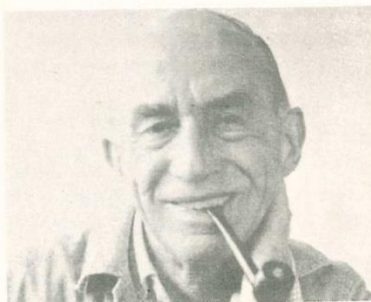
Starting work at the age of 14 he was employed on the Lockings Estate as a farm labourer from 1907 to 1948. In these early days the Lockings Estate had an area of 10,000 acres and it belonged to Lady Wantage, until she died in 1920. (Smoking at work was strictly forbidden!)

During this time his life changed with the advances in farming methods. He progressed from driving horses to driving tractors, as a particular instance, in fact he made this change at the earliest opportunity as he saw that the days of the horse on the farm were numbered. This, at a time when most people were certain that the horse was irreplaceable.

After the death of his wife in 1946, and of one of his sons in 1948, Bert decided to leave the district and go to live with one of his sons. But as no suitable work was available, he returned after a fortnight to his old haunts. He soon obtained employment with the grounds department of the Ministry of Works at AERE. October, 1959 found him outside the fence working at the Rutherford Laboratory where he has been ever since.

At the age of 70 Bert married again and now lives at Steventon. He admits to feeling about 50, and looks about the same age. Retirement? Well there are so many things to do; the first job will be to re-decorate his flat. Invariably one asks, how does he retain his youthful spirit. The answer in his own words is, "I never worry about anything". He is a man who is always more than willing to extend the helping hand to anyone in need, and he is looking forward to enjoying his retirement, not passively, but one can guess, with a lot of activity. His cheerful, open disposition, will be missed by his colleagues.

Our best wishes Bert, for a long and happy retirement.



A Lifes Work Started...



Peter Wingrove, who is the first Rutherford Laboratory Apprentice, completed his training on 7 June. Not many people can have finished training on a Bank Holiday - Whit Monday this year fell on 7 June.

Peter spent the first two years of his training at the Northampton College of Advanced Technology on instrument making.

When his family moved to Newbury he was offered and subsequently accepted an apprenticeship with the NIRNS to be trained in the UKAEA Craft Apprenticeship Scheme at Harwell, commencing 8 October, 1962. The last ten months of this training period was in the R9 Workshop under the supervision of Cyril Daniel, where he is now employed as a skilled craftsman.

Peter became Chairman of the Harwell Apprentices Association last September, for one year. In off duty hours he plays football for Newbury Town F.C. and amongst his other activities, enjoys badminton and boating.

We should like to extend to Peter our best wishes for the future.

Roll up Roll up

(More photographs from Open Day)

