

NEWSLETTER

No. 148

September 1973

RENAMING CEREMONY OF THE LABORATORY

As the Staff will be aware the Science Research Council has decided to change the name of the Station to the 'Appleton Laboratory'. It is considered that the changing role of the laboratory to embrace wider interdisciplinary activity within the Council's programme should be emphasised by a more general title. The name now proposed for the Station not only meets this criterion but also enables us to honour one of the great men of radio science, and one who was closely connected with the Station from its earliest days until he died, a period spanning some forty years.

The renaming ceremony will take place on 7th November 1973 and will be carried out by the Secretary of State for Education and Science, the Right Honourable Margaret Thatcher. Lady Appleton has graciously accepted an invitation to be present.

It is proposed to place a commemorative plaque and a portrait of Sir Edward Appleton in the Entrance Hall in the space now occupied by the mural painting. (This is not to be destroyed, simply covered up). The Secretary of State will give a short address in the Staff restaurant after which she will formally unveil the plaque and portrait. All the Staff are cordially invited to attend the ceremony.

The Secretary of State has expressed a wish to see something of the Station's work and a programme of exhibits will be arranged. Details of the timing of this programme will be announced later.

J. A. SAXTON

SRC HIGH LATITUDE SOUNDING ROCKET CAMPAIGN

What is probably the largest European sounding rocket launching programme ever held is starting at Andoya in late September and is expected to continue until early December this year. Five Skylark and 12 Petrel rockets are to be launched in pre-arranged sequences from the range which lies on the northern part of an island off the northwest coast of Norway within the Arctic Circle, 69°N. The campaign is managed by the Sounding Rockets Division within RSRS and two groups on the station are taking part in the scientific programme.

The experiments are concerned with the behaviour of the Aurora Borealis, which arises from auroral substorms; these are frequently observed at high latitudes and involve the precipitation of highly energetic charged particles into the Earth's atmosphere. The substorm particles are believed to originate in the "solar wind", the stream of relatively low energy plasma from the Sun. The particles are accelerated to high energies before being precipitated into the atmosphere. The experiments are designed to examine the following processes in the substorm:-

1. Particle accelerations at onset of negative phase of auroral substorm,
2. Particle storage and precipitation during initial phase of substorm,
3. Fine structure in particle precipitation within an auroral arc,
4. Electron densities and temperatures in the ionosphere, together with thermospheric winds and electric field measurements,
5. Wave-particle interactions during a substorm and resulting VLF emissions.

The object of the campaign is to investigate these processes at various altitudes up to approximately 260 km in the case of the Skylarks, and up to heights of about 150 km in the case of the Petrel. With two exceptions the Skylarks are launched first, followed by the supporting Petrels at suitable intervals.

The rockets are launched by two teams, the Skylarks by BAC and the Petrels by AWRE. The use of two independent teams has led to numerous meetings between RSRS, BAC, AWRE and the experimenters concerned in order to decide how the desired launch conditions and times of launch can be met.

Innovations

This is a first time for:-

1. Use of the Andoya Range for Skylark Rockets,
2. Co-ordinated firings by SRC of Skylark and Petrel rockets,
3. The use of PCM telemetry designed and engineered at RSRS to fit into Petrel and Skylark,
4. The use on Petrel of a new slant ranging system using 465 telemetry, which has been developed by EMI from an RSRS preliminary design,

5. The use of the new RSRS lidar equipment to track sodium vapour released from a rocket in flight.

Two Petrel launchers are required for launching these rockets within the close time slots specified.

Transportation of ground equipment, rocket vehicles and payloads etc. to the Range has been complicated by the requirement of some experimenters to use explosive materials in the payloads for investigating neutral winds.

Reports on progress of the campaign will be given as launchings proceed.

E. W. V. ACTON

SKYLAB

On the occasion of the successful return of the Skylab astronauts the following message has been sent from the Director:

"Congratulations from all at Slough on your safe return from the ionosphere and on a good job well done."

ROBERT NAISMITH

We much regret to announce the sudden death of Robert Naismith at the age of 73. A member of staff for many years and a co-worker of Sir Edward Appleton he made many contributions to the study of the ionosphere. It is hoped to include a fuller appreciation in a later Newsletter.

STAFF NEWS

Congratulations to :

Martin and Carol Hall on the birth of their daughter Susan Louise on 6th September.

Alan and Linda Smith on the birth of their daughter Lisa Margaret on 3rd September.

Lynne Kennedy now Photoprinter I

Doug. Watts now C.O.

Welcome to :

J. T. Delury	S.P.S.O.
B. J. P. T. Warburton	A.S.O.
D. P. Haworth	S.C.S.
J. G. Wardrop	Vac. Worker
M. J. D. Courthold	S.O.
J. F. R. Braby	A.S.O. (U.C.L.)
D. E. Cam	Cfn. I

Resignations :

A. Liput	S.C.S.
R. A. Camley	Vac. Worker
M. P. Vieyra	Vac. Worker
Miss B. Okolotowicz	Vac. Worker
R. W. Whittington	P.T.O. IV
Mrs. D. J. Scattergood	A.S.O. P/T
L. Kell	S.C.S.
C. G. Constantinon	S.C.S.
Miss M. A. Hayes	Vac. Worker
Miss A. E. Davies	Vac. Worker
Miss G. L. Davies	Vac. Worker
D. L. Hirst	Cfn. I
E. G. Coles	Cfn. I
D. L. Petrie	P.T.O. IV (E.S.R.O.)

Other Changes :

D. J. Stanley	A.S.O. now Deputy Shift Leader
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STATION NEWS

The Director and Dr. Lane attended a special international meeting of Study Group 5 of G.C.I.R., to discuss radio propagation in preparation for final study group meetings which will be held in Geneva in February. The meeting was held in Bournemouth from 25 September - 1 October.

The Deputy Director has been re-appointed to the Electronics Board of the I.E.E.

Dr. King attended a meeting of the General Scientific Assembly of the International Association of Geomagnetism and Aeronomy (IAGA) at Kyoto, Japan, from September 9th to September 21st. Meetings of the Steering Committee for the International Magnetosphere Study were held during the same period and Dr. King also attended these.

Mr. Bradley attended the Fall meeting of the United States National Committee of U.R.S.I. at Boulder, Colorado, from August 21st to 24th.

P. A. Vaughan, P. S. Trowbridge, H. C. Bevan and T. J. L. Jones travelled to U.S.A. on 15th September. They had discussions on IUE at Bendix Corporation, Sturbridge, Massachusetts and Westinghouse and returned on 21st September. Mr. Bevan and Mr. Trowbridge also visited Goddard Space Flight Centre and returned on 25th September.

The IUE team who have been visiting ESRO for design review talks on solar paddles came to RSRS on 26th September, Marconi Space and Defence Systems Ltd on 27th September and University College London on 28th September.

SPORTS AND SOCIAL CLUB NEWS

BONFIRE NIGHT - 5 NOVEMBER

We shall need help to transport children from Homes in the Slough, Langley and Gerrards Cross area to our Bonfire Night. If you are willing to help please forward your name to Mrs. Baldwin, at the same time letting her know how many children you will be able to take in your car.

HOUSEHOLD GOODS

Christmas Book Lists are now available from Mrs. Scammell. There is also a small selection of sample books and toys for your inspection. It would be appreciated if you would place your orders as soon as possible.

BRIDGE CLUB

The A.G.M. was held on 7 September and last year's committee was re-elected. We intend to hold club evenings at monthly intervals and these will be advertised on the Sports and Social Club notice-board. Please sign the list a few days in advance if you would like to play on these occasions. In addition we will be playing Team-of-Four matches in the Great West Road League.

Barry Martin and Mike Johnson played in the Southern Region Civil Service Sports Council Pairs Championship held at Basingstoke on 16 September and finished in 7th place out of 18 pairs.

A. J. GIBSON

WINE CIRCLE

A wine-tasting, for members only, will be held in Room A11, at 1 p.m. on Tuesday, October 9th. The admission fee will be a minimum of half a bottle of wine for each member, although anyone who has joined during the past twelve months will be admitted free.

Members are reminded that supplies of wine and beer making equipment and materials can be obtained from Frank Bennett, at a reduced price.

Any suggestions about the Wine Circle's program for the coming year will be welcome.

CHILDRENS' CHRISTMAS PARTY

The Party will take place on December 8th, instead of December 27th.

LETTER TO THE OUTSTATIONS

Dear Colleagues

In glancing round and about the other day, one impression was that times winged chariot had received a generous bit of rocket assistance. Behold, on the now traditional site of our Firework Night bonfire a very considerable heap of brushwood had already appeared.

A hasty glance at the calendar and newspaper reassured me that the year had no phase shifter in circuit. A general enquiry evinced no bout of over anticipation on the part of the Sports and Social Club. Why then so soon a start?

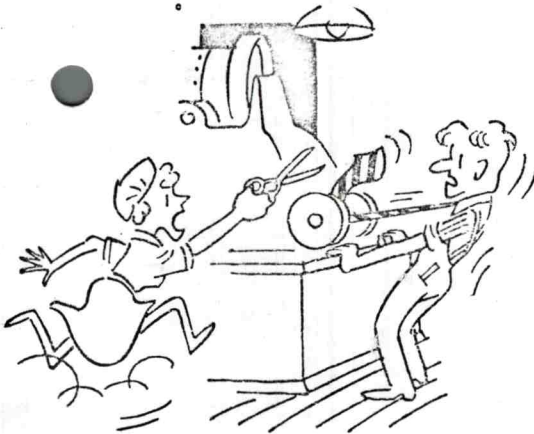
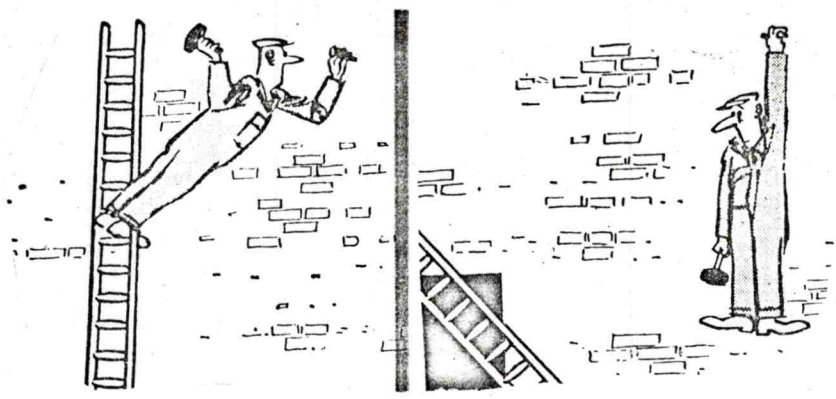
It seems that the principle of 'ill-winds' is in operation and that we are double beneficiaries of the unhappy affair of the Dutch Elm beetle. We gain wood for our amusements and the felling of trees has opened up a number of vistas to delight the eye - well one, at any rate, discloses a misty view of Windsor Castle with cabbage patch in foreground. Some of the others are more inclined to evoke visions of missing teeth.

If indeed the Sports and Social Club can add to the heap their usual impressive harvest of wood, boxes, cardboard, umpteenth drafts of learned papers and those special things-we'll-discard-without-looking-at-in-case-we-want-to-keep-them, the celebration should be impressive.

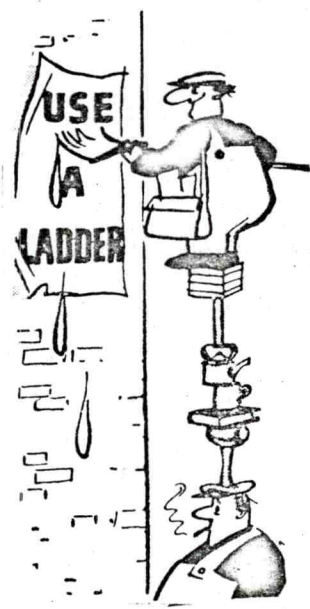
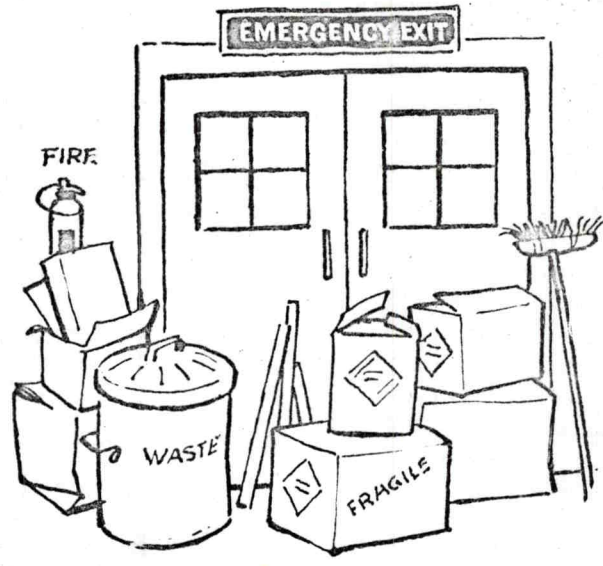
The Netherlands has given us a back-handed benefit for the fifth of November. Come to think of it it's not the first time. Guy Fawkes himself learnt his explosive trade a-soldiering in the low countries, or so says a reference book of,

Yours sincerely,

THE EDITOR.

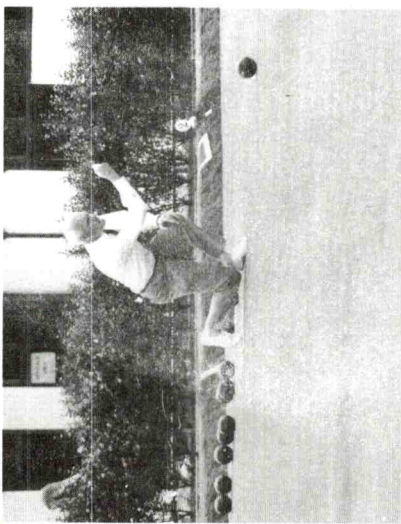
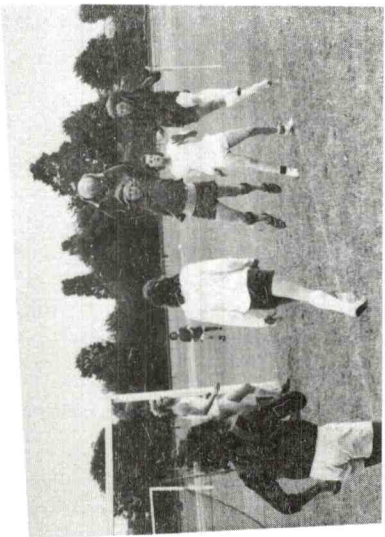
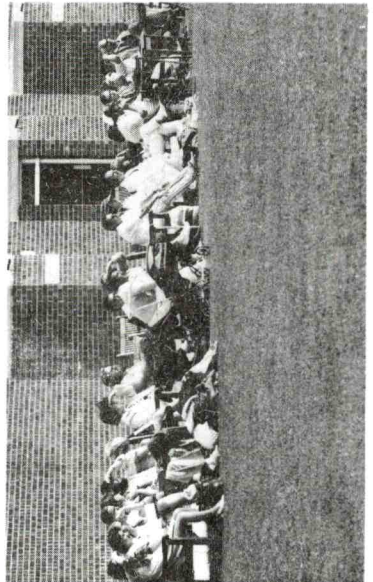
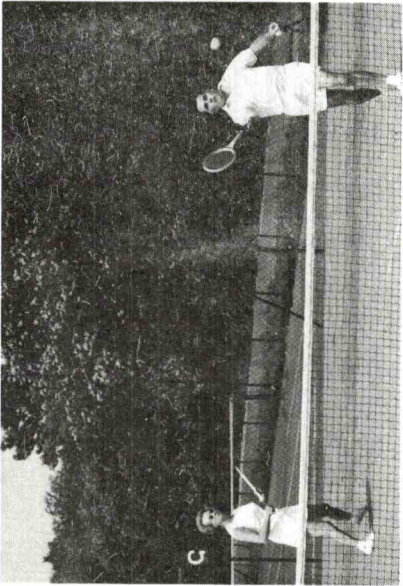
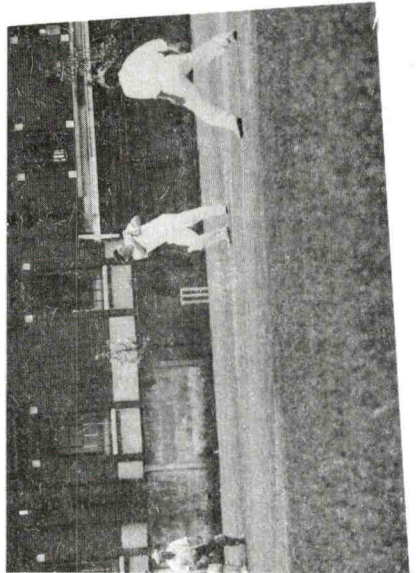
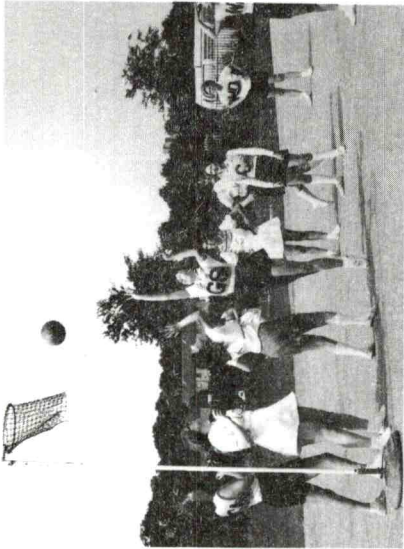
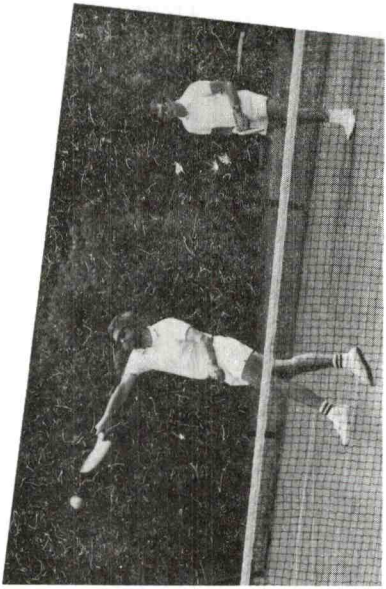


let's
make
it
safe!



This space has been "donated"
by the Safety Committee.





LIST OF REPRINTS - SEPTEMBER 1973

- H. Rishbeth "Electromagnetic transport processes in the ionosphere"
Physics and Chemistry of Upper Atmosphere (D. Reidel
Publishing Co.) 1973 - 43-53
- L. Thomas "The oxygen-hydrogen atmosphere"
Physics and Chemistry of Upper Atmosphere (D. Reidel
Publishing Co.) 1973 - 133-142
- T. H. Legg "Long Baseline Interferometry of the Seyfert Galaxy 3C84"
N. W. Broten Nature 1973 Vol. 244 18-19
D. N. Fort
J. L. Yen
F. V. Bale
P. C. Barber
M. J. S. Quigley
- A. M. Zavody "Effect of scattering on radiometer measurements
of attenuation in rain" Electronics Letters 1973
9 328-329