



APPLETON LABORATORY NEWSLETTER

No. 180

August 1976

History Re-enacted

On Monday, 2nd August 1976, a team from BBC-TV arrived to film an episode in a series called "The Secret War", to be screened in January 1977.

The episode filmed at Appleton was concerned with the early history of radar, with which this Laboratory, then the Radio Research Station with Watson-Watt as its Superintendent, played such a crucial part. In 1935, our former Deputy Director, A.F. Wilkins, then a young scientific officer, carried out a historic demonstration near the BBC transmitter at Daventry, which showed that aircraft could in fact be detected by the radio waves reflected from them. He used a frequency of 6 MHz. Mr Wilkins and the BBC team asked the Director if we could re-create this experiment here at Slough, using aircraft from Heathrow as "targets", as they felt that the original apparatus, now in the Science Museum, could not be made to work in the field. A simpler solution was therefore adopted.

The Daventry transmitter was replaced by a low-powered CW oscillator in Measurements Lab. operating at about the same frequency as the original experiment, and a half-wave dipole for receiving was set up near the Old Building. A commercial receiver and oscilloscope were mounted in a Land Rover. In the original experiment, a phasing system using a goniometer was used to reject the ground-ray, but a suitable goniometer was not available, so that a single dipole had to be used. With only a single receiving aerial the direct pick-up from the oscillator was considerable and could not be rejected adequately by orientation of the aerial. To overcome this, the DC component at the receiver output due to the pick up was blocked by a CR network connected as a high-pass filter. This simple measure was very successful. The display was in the form of a small bright spot on the cathode ray tube, as in the original experiment, and the rhythmic vertical deflections due to the low frequency doppler output as the aircraft passed overhead were easily observed. On the day the BBC came to film, Mr Wilkins came back to star in this reconstruction of the historic experiment. For once, you-know-who's law failed to operate. The weather was fine, the wind blew in the right direction, so that sufficient aircraft took off from Heathrow on the right runway to overfly Ditton Park and provide some excellent responses, which the BBC were able to film.

D. Howard

Library Journals

At the meeting of the Library Committee on 16th August it was decided to discontinue the purchase of the following journals in 1977:

Astrophysical Journal Supplements.
Atomic Data and Nuclear Data Tables.
International Aerospace Abstracts.
Journal of Fluid Mechanics.
Journal of Physics A (general physics).
" " " G (nuclear physics).
Production Engineering.
Soviet Physics - JETP.

The additional journals listed below will be obtained in 1977:

Atmospheric Environment.
Journal of Aerosol Science.
Journal of Chemical Physics (probably in microfiche).
Microwaves, Optics and Acoustics }
Electronic Circuits and Systems } New IEE journals.
Solid State and Electron Devices }

It was also decided to purchase Physics Abstracts and Electrical Engineering Abstracts in microfiche form from 1977. A microfiche reader will be made available in the Library.

W.C. Bain.

Staff News

Congratulations to :

Ufuk and Necla Yilmaz who were married on the 7th July in Istanbul.

Bob and Helen Young who were married on 31st July at St Mary's Church, Langley.

Valerie Williams, now D.P.

Welcome to :

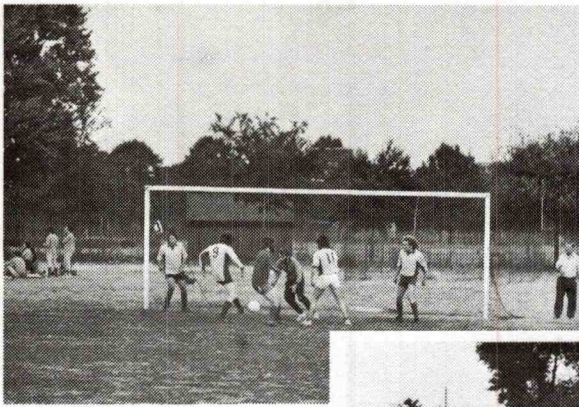
K. Dove	S.C.S.
B.E. Money	S.C.S.
K. Weatherhead	S.C.S.
P.R. McNamara	S.C.S.
F. Gadbury	Cfn. I
B.A. Parker	P.T.O.3 (Culham)

Resignations, etc. :

B.S. Lake	S.C.S.
A.E. Childs	Cfn. I

Reprint List

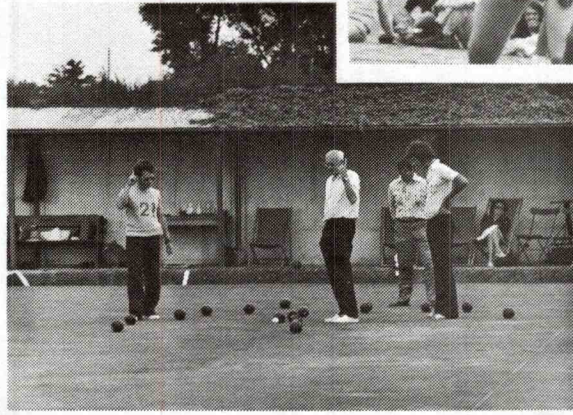
Owing to pressure in Office Services, the Reprint List for August will be printed in next month's Newsletter.



Globular Cluster



Group Velocity



Digital Signalling



Control System



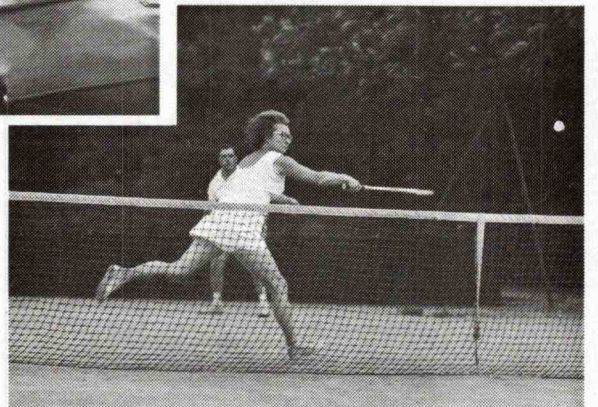
Power Spectrum



Recombination Time



Moments of Inertia



Particle Acceleratress

Sportsday '76

or

Natural Philosophy Discovered

SPORTS & SOCIAL CLUB NEWS

Bowls

We entered two triples teams this year (Alex Carroll (skip), Hugh Hopkins, Paul Tipper, and Roy Bailey (skip), Cecil Clarke, Ross Meadows). As usual, we relied heavily on the expert performances put up by our two skips. Unfortunately our two teams were drawn to play each other in the first round - or perhaps fortunately, since this did ensure we had a place in the semi-final, against Daresbury, but we lost. The final was won by Rutherford. However, a most enjoyable day was spent in pleasant surroundings, good company, and excellent weather.

R.W. Meadows.

Chess

Seven teams from four establishments competed in a round robin tournament for this year's title. Appleton A won again, even more convincingly than last year, losing only one game in eighteen. Individual scores were:

Eric Bramley 6/6, Chris Burrows 5/6, Rodney Buckland 6/6.

R.A. Buckland.

Football

The first team did brilliantly in a number of exciting games and throughout the whole competition we did not concede a single goal. Why, you ask, did we not win the cup? Because, I reply, we only managed to score 1 goal and so got knocked out on goal difference in the early rounds.

The second team tried hard but failed to score any goals in a mini-league containing some of the best teams. Never mind chaps there is always next year, and the year after.

A. Buck.

Netball

After many trials and tribulations we fielded a team for Sports Day and clad in our new royal blue outfits we stepped out for our first match against Rutherford, and won this game 9-2. We waited eagerly for our next opponents but R.G.O. never did turn up to play us. This walk-over enabled us to reach the semi-final against London Office. We won this game by the convincing margin of 13-3. Unfortunately 'nerves' set in during the final and we lost 2-5 to Daresbury.

The Appleton team was eventually made up from the following :

Mary Thrift
Lesley Richardson
Yvonne Dias
Sally Harries

Jackie Richardson
Veronica O'Keefe
Linda Chipperfield
Jackie Creek.

Lastly a special thank you to all those girls (and boys) who turned out for the practice matches but were unable to play on Sports Day.

J. Richardson.

Sailing

A sailing section of the Laboratory Sports Club has been formed and has been very active during July and August. Introductory sailing sessions have been held on Datchet Reservoir in Wayfarer dinghies hired from the T.W.A. at weekends. About forty people have participated in these sessions with informal tuition from the experienced members. Many people have been out several times and demand is continuing at a high level. Details are available from the Sports Club notice board and the acting committee members.

The committee is considering the purchase of a club dinghy suitable for racing and training for next season. This boat would be kept at an existing local sailing club which has yet to be selected, for use by section members. The Sports Club have offered to provide a suitable loan for this purpose.

Rules for the section are being drawn up and it is proposed to hold a General Meeting to elect a properly constituted committee of nine including four officers in September.

K. Pavitt.

TENNIS

There has always been a good representation from Appleton in the tennis tournament and this year we provided seven pairs (five mixed, two men's), which was more than from any other SRC establishment. Playing conditions were to put it lightly, far from ideal with a gusty wind whirling clouds of dust from the parched courts. However, everyone, including those who played ten sets appeared to have enjoyed themselves. Final results were encouraging, with Appleton regaining the men's trophy after some excellent play by Paul Gardner and Dave Stanley. Dave, who came in at almost the last moment, produced his best volleys just when winners were needed. In the mixed doubles, Dr and Mrs Horner were back in form again to finish runners-up to the title holders. Ironically they produced their best play when defeating Richard Smith and Shelagh Mackinnon who finished joint fourth with Neil Bramley and Wendy Willard. Other members of the team were Richard Brazier and Phil Muzlish, Jack Moore and Joan Scislowski, and Tim Bevan and Joyce Johnson.

R.W. Smith.

RETIREMENT

Mr A.E. Childs

Mr Albert Childs retired on 21st July. That is undoubtedly a fact. It is, however, one which confuses the minds of many of us, long made up to consider him a perpetual and very present help in trouble. Trouble with heating, or lack of it; with electricity wanted or unwanted; a bringer of light and an unraveller of time-warps on those occasions when there has been a slaves' revolt against the master clock, each dependent dial turning every one to his own way. In all such circumstances Bert Childs came amongst us and restored cosmic harmony.

In view of all this it is surprising and even more confusing to find that he has only been a member of our staff since 1972. Prior to that time his

visits were conducted under the mantle of the M.P.B.W., later D.O.E. and our A.C.O. neighbours also benefited from his skills. His work has brought him into contact with staff involved in pretty well every aspect of our work and we all have reason to be grateful to him.

A formal token of this gratitude was presented by the Deputy Director. At a ceremony to mark the occasion, he voiced the wish of us all that Mr Childs should enjoy a long and happy retirement.

Letter to the Editor

Dear Sir

I am told by a staff member, albeit in semi-jocular vein, that I "ignored" him in the street.

I have poor eyesight, which often varies according to what I have been doing. Although I have three pairs of glasses I often wear none, unless driving. So I often fail to see people I know even when I know them well, and certainly when I do not.

If I have "ignored" anyone may I please crave indulgence via your columns, and ask to be at least given the benefit of the doubt?

Thank you.

Frank Bale.

Letter to the Outstations

Dear Colleagues

We continue to enjoy the sunshine and rail at the lack of rain. My having thus referred to this state of affairs should be more than sufficient to ensure its instant upset. Indeed, were this not of itself enough, bear in mind that a British Bank Holiday is upon us.

Surely the confluence of two such powerful forces for the production of meteorological change can scarcely fail. My modest contribution will, I trust, be noted for the benefit of legions of climatologists, yet unborn, who will surely harvest a rich yield of theses from our present dessication.

So far as our laboratory microclimate is concerned, you will see that its long time presiding genius, Bert Childs, has retired. Some of us recall, when first coming into our present building, the impressive sight of the Heating Plant with its shrill alarm bell which rang, though none could tell why, or, for that matter, turn it off. Bert's influence calmed these Plutonic forces and we owe him our thanks for the fact that, among other things, they comforted us with warmth rather than threatened us with explosion.

Time moves on. We now have the added complication of air conditioning and, in the New New Building an even higher standard of comfort. There are, it's true, signals safe yet slightly sinister, in the shape of little buttons marked FIRE 1, FIRE 2, etc., however, no missile silos or torpedo tubes are in evidence so I suppose it's all right provided we leave the knobs alone.

An injunction not needed twice to one as in awe of machinery as,

Yours sincerely,
THE EDITOR.