APPLETON LABORATORY
NEWSLETTER

No. 180 July 1976

Responsibility for Radio Wave Propagation at the Appleton Laboratory

Discussions have taken place recently between the Astronomy Space and Radio and the Engineering Boards concerning which Board should in future have responsibility for radiowave propagation research at the Laboratory.

The Laboratory maintains a National Research Capability in radio wave propagation studies which has been supported by the A.S.R. Board since 1965. Much of this work has applications to radiocommunications in mind and has close links with activities supported by the Engineering Board through its Electrical and Systems Engineering Committee. The Engineering Board sees considerable advantage in harnessing some of the resources of the Laboratory to form an integral part of the programme which it wishes to promote in telecommunications engineering. For its part, the A.S.R. Board recognises the advantages to be gained from a closer integration of the research carried out by the Laboratory and that supported in the Universities directed towards communications.

The items on the present programme for which the two Boards have agreed that responsibility should be transferred are :

1. Studies of Minor Constituents in the Lower Atmosphere by Radiometric and other Techniques.

2. Millimetre Wave Propagation.

3. Studies of the Lower Atmosphere using Radar.

4. Reception of Millimetre Wave Transmissions from Satellites.

5. Irregularities in V.H.F. and U.H.F. Satellite Signals.

6. D-region work of interest to Communications.

7. Application of Ionospheric Knowledge to Communication Problems.

Of these items both Boards have interests in 1, 5 and 6 and will take shared responsibility for them.

The Council, at its meeting in June of this year, formally agreed with the above proposals of the two Boards and in addition agreed an identified level of resources to be transferred from the Astronomy Space and Radio to the Engineering Board.

Appleton Laboratory Committee

The Science Research Council has decided to disband existing Establishment Committees and to set up new ones with revised terms of reference. The new structure involves the setting up of Establishment Management Advisory Committees and Facility Committees. It is considered that such Committees are required to enable business to be conducted in accordance with good management and accounting practice. The Committees will also enable members drawn from the relevant scientific communities to see that central services are provided economically and planned in accordance with their wishes.

As far as the Appleton Laboratory is concerned, at the present time, only the creation of a Management Advisory Committee is involved. The general terms of reference for Establishment Management Advisory Committees are as follows :-

1. To report annually to the Council through the appropriate Boards on the operation of the Laboratory/Observatory on the basis of a report from the Director and taking into account any observations of appropriate Facility or Subject Committees;

2. To advise the Chairman of Council and the appropriate Boards on the resources required to carry out approved and proposed programmes including those required for general services and for programmes which do not have their own Subject or Facility Committee;

3. In consultation with Boards and Committees as appropriate, to exercise the financial powers of approval delegated by the Council; and

4. To advise the Director on matters affecting the running of the Laboratory/Observatory and its interaction with the scientific community in carrying out its programmes as approved by Council or by Boards and Committees under delegated powers.

The last meeting of the Laboratory Committee in its previous form was held on Tuesday 27th July. It is expected that the new Management Advisory Committee will begin its work in the Autumn of this year.

J. A. SAXTON

Retirements

Mr. J. Bell

John Bell, who retired recently, completed one career before taking up research. He joined the Royal Air Force in 1932 and through peace and war saw duty in many parts of the World including India, Greece, Singapore and various places in the Middle East. After finishing his service, in 1947, he joined the staff of the Radio Research Station, as we then were, becoming, a colleague recalls:- 'one of the small band of us who can remember the old RRS with tea in the Library, photography in the air raid shelter and Dump's observatory. He joined the Laboratory with the group of "mad youngsters" who invaded this quiet retreat of research immediately after the war. It was called "Post War Reconstruction", much to the bewilderment of one veteran, Wallace Brown; "more like !!!!! demolition" he announced to an appreciative unofficial workshop tea swindle. I find it increasingly difficult to realise that the respected middle aged staff walking along the corridors, made up that group that threatened Wallace's peace of mind, still less that they are beginning to retire!'

The change from the forces to the life of the Laboratory did not prove to be free from travel, or, indeed, combat. Back in Singapore, a civilian this time, 'Dinger' Bell was a member of our outstation staff during a time of great political unrest in those parts. It was his misfortune to be set upon and beaten up by rioters, fortunately a sound constitution enabled him to survive and continue his work for us.

To the variety of electronic engineering problems which have come his way, he has brought skill and application. Difficulties which arose were sorted out and methodically demolished to the accompaniment of comments, few but pointed, about the troubles in question.

As his friend says :- 'With 'Dinger's retirement the ending of a chapter in the history of this Station is heralded. The list of those who will end up under "resignations etc." in the next few years includes most of the 1947 entry who, during a time when most people changed jobs on average once every five years, remained at Radio Div., RRS, RSRS, Appleton Laboratory!'

We all wish him a long and happy retirement and look forward to still hearing a few pithy remarks about people and things whenever we meet.

Mr. C. Clarke

Cecil Clarke, until he retired on 30th June, was one of the few remaining members of staff who served the Laboratory or its predecessors before the war, albeit for only a few days. His early contributions to the programme were largely on radio direction finding, under Dr. Hopkins, first to measure winds by tracking sounding-balloons, and then to locate thunderstorms by recording atmospherics. Both of these facilities were adopted by the Meteorological Office for routine operations. The wind finding technique has long been replaced by radar tracking, but thunderstorms are still tracked by the Meteorological Office direction-finding network based on the equipment designed at the Laboratory.

When the plans for the International Geophysical Year (1957/58) were drawn up, it was decided that the Laboratory would carry out a programme of measurements of natural radio noise, and Cecil was a key man in assembling the equipment and acquiring data.

The next landmark in his career was his appointment as Officer-in-Charge at the Singapore outstation, which was expanded to fulfil not only its existing role of recording the vagaries of the ionosphere and thunderstorms, but also the tracking of earth satellites and the reception of telemetered data from them. The changing programme led to the retirement of the Singapore station in 1971 when redundancy was a characteristic of facilities rather than staff. Cecil had played a major part in the success of the activities there during its busiest period. He has also had much to do with the corresponding activities in the Falkland Islands which expanded and decreased in recent years like a solar flare, though not to the point of extinction.

A period in London Office following his final return from Singapore gave Cecil a taste for more general duties, and many members of staff will remember him best for the wide variety of activities he has undertaken to keep a waterproof roof over our heads, to house the staff in an acceptable degree of comfort, to meet the reasonable (and sometimes unreasonable) demands of staff for design, workshop and photographic services, and to guide the younger members of staff along the pathways of academic advancement. There can be few members of staff who have not encountered him directly wearing at least one of his many hats. His chairmanship of the Laboratory IPCS Committee during a particularly difficult period also brought a different range of contacts with most of the scientific staff, and was typical of the way in which he would devote tireless energy to a cause which he thought was right.

Anyone who knows Cecil well will have no illusions about his ability to occupy his time in retirement, and, in addition to his horticultural pursuits, he is already playing a new and significant part in local council affairs with the same enthusiasm as he devoted to his official duties. The Laboratory will wish him every success in making the most of his well-earned retirement.

Staff News

Congratulations to :

Keith Burrows on his being appointed a Fellow of the Institute of Physics.

Resignations, etc. :

S. Beatson	Cfn.	Resigned
C. Clarke	P.S.O.	Retired

Other Changes

M. J. D. Courthold	S.O.	on detached duty at U.C.L. (I.U.E.)
P. S. Trowbridge	P.T.O.1	transferred to Department of Trade
Mrs. N. Gallacher	C.A.	returned to U.K.E.A. (end of Secondment)

Cricket

V. A.C.O. (Won)

An easy victory with an excellent knock from John Kitt.

APPLETON	121-6	A.C.O.	48-7
Kitt	75	Paterson	3-1

V. Beaconsfield D.C. (Won)

56 in 4 overs including 23 in one over saw us home easily.

APPLETON	90-3	BEACONSFIELD	85-6
Paterson	48 NO	Hayes	3-25
Bell	26 NO		

V. I.C.I. (Won)

Our second ever victory over I.C.I., never an easy team to beat.

APPLETON	95-4	I.C.I.	71-9
Bell	46 NO	Allnutt	3-16
Hassan	23		

V. Prudential (Lost)

Some hard hitting by the Prudential opening bowler against a weakened Appleton attack enabled Prudential to beat us comfortably.

APPLETON	83 A.O.	PRUDENTIAL	84-4
Johnson	23	Hayes	3-20
Wrench	19		

V. Lilly Research (Lost)

Always tough opposition who this time gave us a hiding.

APPLETON	82-7	LILLY	83-1
Martin	23		
Richards	33 NO		

V. De La Rue (Won)

The result was never in doubt.

APPLETON	74-3	DE LA RUE	73-9
Paterson	27 NO	Sandal K.	3-11

V. Burtons Biscuits (Won)

An opening stand of 67 in 8 overs got us off to a good start.

APPLETON	97-8	BURTONS	80 A.O.
Kitt	37		
Sandal K.	26	Bevan	5-20

V. De La Rue (Won)

The return match was very one-sided.

APPLETON	128-7	DE LA RUE	62-9
Richards	65	Richards	3-16
Bell	20		

V British Aluminium (Won)

The return match following our early season tied game.

APPLETON	86-5	BRIT. ALUMINIUM	85-6
Kitt	24 NO	Hayes	3-11
Martin	17	Bevan	2-12

V. Wargrave (Lost) - afternoon match

A very fast outfield against a good batting side who took full advantage of it. An Appleton last wicket stand of 53 in 5 overs gave the score some respectability.

APPLETON	142 A.O.	WARGRAVE	256-9
Paterson	55 NO		
Buck	16		

V. R.G.O. (Lost) - Sports day

An excellent game we did not look like losing until the last 2 overs.

APPLETON	97-3	R.G.O.	98-7
Martin	41 NO	Paterson	3-15

V. Burtons Biscuits (Won)

The second match with Burtons. Appleton 19 for 4 at the halfway stage, won 3 overs later after the Burtons opening bowlers came off.

APPLETON	50-4	BURTONS	46 A.O.
Paterson	19 NO	Buck	3-21
Wrench	14 NO	Hayes	2-5
		Dove	2-3

Newsletter Contributions

Will all contributors please ensure that, when possible, material is submitted by the Fifteenth day of each month.

Letter to the Outstations

Dear Colleagues

Were we the Chinese, which we're not, there might be some case for calling this the year of the Ladybird. It has become next to impossible to avoid stepping on one of these small creatures scurrying about, intent upon its own affairs; still we do try. They, for their part, seem to be concentrating on the rising price of aphids and what the Government intends to do about it, giving only superficial attention to the danger from our lethal plates.

Those wise in these matters could, no doubt, explain how this population increase and our present odd climate relate to one another. For our part, it's just another of the curiosities of the Year the Moat Dried Up. Admittedly, a few small pools remain with fish not so much swimming as twitching about in them, but by far the larger area is fissured, surface hardened mud, feet deep in places with large, rather dead, mussels embedded at various levels therein. It is possible to walk across to the far bank provided care is taken to choose the most dried-out bits. (The penalty for failure being a shoe-full of slime.)

In the spirit of research, an expedition was recently mounted to undertake just that. This eventually succeeded in so far as the bullrushes on the opposite bank were reached. A landing could, without doubt, have been effected had we not borne in mind possible political complications and the thought that our sea-faring neighbours might put a shot across our bows - or some such place.

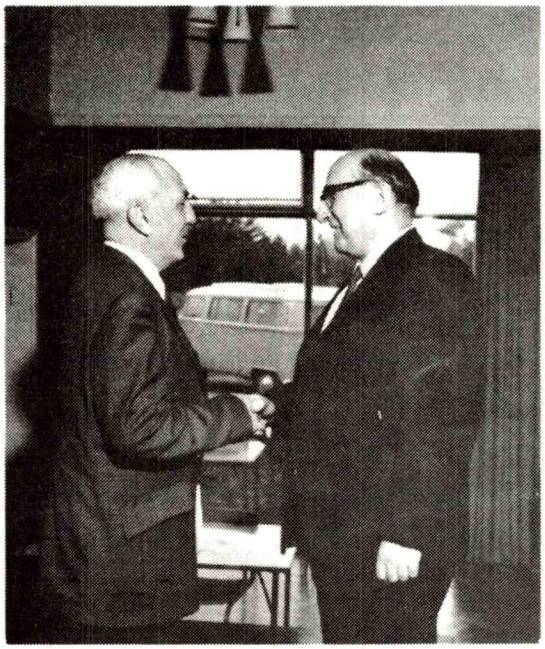
Still, the occasion has been marked and the intrepid explorers didn't put a foot wrong - well almost - for it must be owned that among the souvenirs of the occasion are the mud-caked shoes of

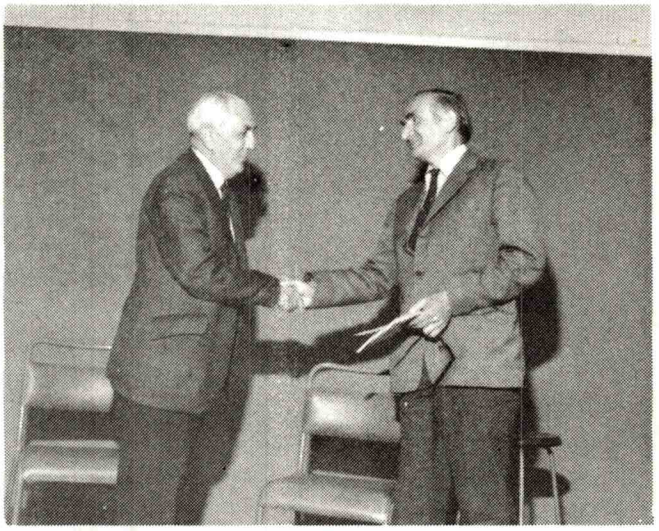
Yours sincerely

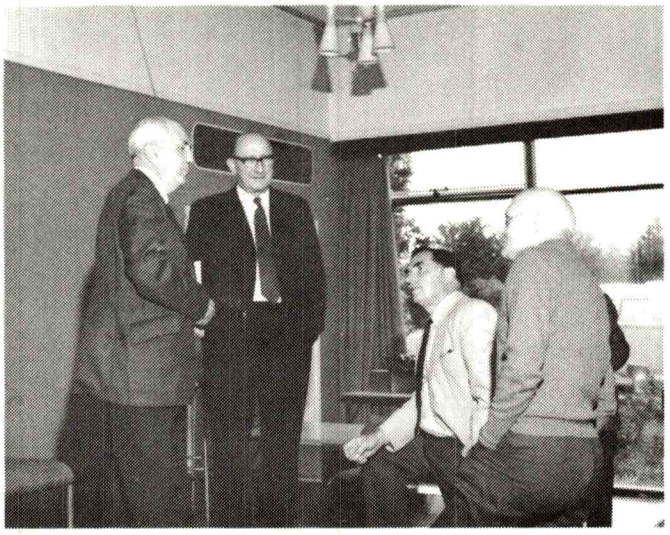
The Editor

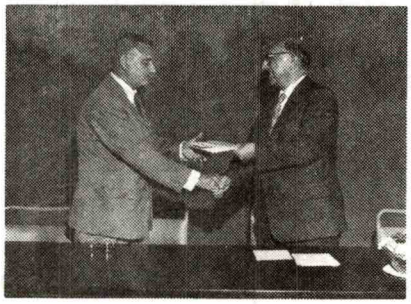
People in Pictures I - Valediction

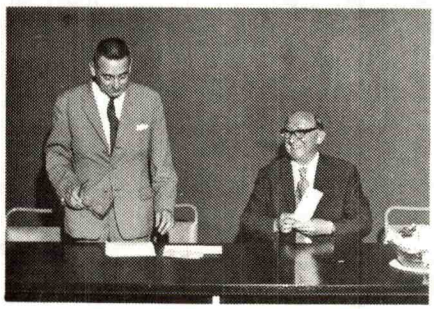
John Bell and Cecil Clarke receive tokens of good wishes at their retirement ceremonies.

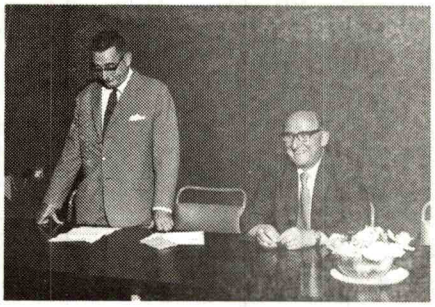












People in Pictures II - Celebration

Eileen Barnes and friends mark her twenty-one years as a member of staff.

Reprint List July

A1189 D-region rocket measurements under winter anomaly absorption conditions
W. C. Bain, P. H. G. Dickinson, W. J. G. Beynon, E. R. Williams, F. Arnold and D. Krankowsky
Nature, 1976, Vol. 261, no. 55 pp 118-119

A1129 The energy and pressure balance in the corona
R. W. P. McWhirter and R. Wilson
Phil. Trans. R. Soc. London, 1976, Vol. 281, pp 331-337

A1116 The interstellar ionization balance due to ultraviolet radiation
P. M. Gondhalekar and R. Wilson
Phil. Trans. R. Soc. London, 1975, 279, 331-336

A1100 The coherency between precipitated and trapped energetic electrons at high latitudes.
S. K. Adjepong, M. J. Rycroft, R. Dalziel, R. J. Pratt and G. R Thomas
J.A.T.P., 1976, Vol. 38, 637-645

A1153 Solar proton and electron precipitation effects detected by ionosondes
W. R. Piggott and E. Hurst
J.A.T.P., 1976, Vol. 38, pp 619-622

Internal Memoranda

NIL