



APPLETON LABORATORY NEWSLETTER

No. 216

September 1979

After three weeks as your new Director I really feel as if I've been thrown in at the deep end. First there is the move. In the very near future we need to formulate a detailed timetable for it so that as much time as possible can be given to members of staff to plan their affairs.

Then there are the new management arrangements arising from the merger of the Appleton and Rutherford Laboratories. In a scientific research laboratory the job of management is not only to manage but to create an environment in which there is free exchange of ideas and where creativity and progress is encouraged in all areas of activity. Good communication is also very important so that everyone feels involved in the projects for which the Laboratory is responsible and can share the excitement and enjoyment of success.

The Laboratory will be playing an increasing part in the planning and execution of the country's scientific space programme. Already the Laboratory can claim its share of the success of the U.K. Scientific Rocket Programme, the International Ultra-Violet Explorer, Ariel 5 and Ariel 6, and we are looking forward to successful experiments being built by the Laboratory for the Solar Maximum Mission and for Spacelab. The Infra-Red Astronomical Satellite is our next big space project, the receiving dish for which already dominates the view from the restaurant at Chilton. What needs to be done now is for the Laboratory to have a centre where a wide range of scientific and technical space expertise is available, so that we can give proper support to the University community as we anticipate the exciting developments in space which will come in the 1980's.

The Appleton Laboratory has from its beginnings in the 1920's been the centre in the U.K. of expertise in radio propagation. Many of the major discoveries in the radio field have emanated from Appleton. We live at a time of enormous growth in the communication field; communication by satellite link is now commonplace. During the next decade or so we will experience a further explosion in world wide information and data exchange which will affect the lives of all of us. Agencies responsible for telecommunications will be looking for new frequency bands and the means to handle and control large quantities of information. It is my intention that the Appleton Laboratory should not only continue its traditional role of being the national centre for propagation research, but should also move into new areas of work in communication technology.

Radio techniques are also an important means of investigation of the earth's atmosphere especially in its upper layers. The new European Incoherent Scatter facility being built in Scandinavia which is being supported by our laboratory will provide the means for new investigations of the atmosphere at high latitudes.

The Laboratory is already very familiar with its role as a centre for support of University research. Because the Science Research Council exists primarily for the support of Universities, it is even more important in the future that the Laboratory works very closely with the University community. A University teacher has a duty first to teach and secondly to pursue research. The parallel in a Research Council Laboratory is that the staff in carrying out their primary duty to provide support for research should also have an involvement in the research itself. I believe therefore that the research and support roles of the Laboratory should be more closely integrated, the ideal arrangement being one in which joint Appleton-University teams are involved in both support and research.

My own main field of scientific interest is that of the observation from space of the earth's atmosphere, oceans and solid surface. The science of meteorology has already been revolutionised through space observation; a continuous view on a global basis of the circulation of the whole atmosphere can now be realised. In this year, 1979, is taking place the Global Weather Experiment - by far the largest co-ordinated international scientific experiment man has yet undertaken. Leading on from this experiment, the problem of climate is being tackled. How and why do changes of climate occur? Is man's activity in any way likely to lead to changes of climate? To tackle these questions we shall have to learn a great deal more about the circulation of the oceans as well as that of the atmosphere. Here space observations will again be important; there is plenty of scope for new and ingenious methods of remote sounding observations to be developed. Many scientists throughout Europe are keen to see a European programme in earth observations from space.

I believe that the Appleton Laboratory should take a lead in stimulating interest in British Universities in this important research area which will provide a new focus for some of the Laboratory's work.

Finally I would like to thank all of you for the welcome you have given me as your new Director. I have been very impressed by everyone's willingness, despite the very real problems and uncertainties you are all facing, to co-operate with me in shaping the activities and organisation in the new merged laboratory situation.

Marcus Antonius' eulogy over a supposedly deceased Appleton in the last issue borrowed heavily from Julius Caesar Act 3 Scene 2. Let me assure you of Appleton's continued vitality and encourage you with words from the same play Act 4, Scene 3:

"There comes a tide in Appleton affairs
Which taken at the flood leads on to fortune;
Omitted, all the voyage of its life
Is bound in shallows and in miseries
On such a full sea are we now afloat,
And we must take the current when it serves
Or lose our ventures."

I am looking forward to getting my sea legs.

John Huxley

RETIREMENT OF DR. HORNER

Frederick Horner came to Ditton Park in 1956 from the Radio Department of NPL. Previously he had had a distinguished scholastic career at the University of Manchester proceeding to BSc in Electrical Engineering in 1939 and MSc in 1941, and subsequently to DSc in 1968.

As Division Head of RRS from 1960, he was involved in the development of the station programme of rocket and satellite experiments as well as in the more traditional propagation work. He became Deputy Director in 1969. As Director from 1977, he has had to lead the Laboratory during this most difficult period in its history, at the same time as being heavily involved with international radio matters. He has had heavy commitments to CCIR, to the Inter-Union Commission on Frequency Allocations for Radio Astronomy and Space Science of which he is currently Secretary, and to the 1978 Preparatory Meeting for the World Administrative Radio Conference. In this sphere his work is far from over, he faces a gruelling stint as a UK delegate to the World Administrative Radio Conference in Geneva from September to December.

In the sporting field he has acquitted himself with distinction, having represented the Laboratory at tennis and badminton. As accomplished dancers he and Elizabeth have played a full part in the social life of the Laboratory. In the literary field I can recall some amusing contributions to the Newsletter.

The Laboratory will wish to join me in wishing Fred and Elizabeth a long and happy retirement. At the same time we welcome John Houghton as Director and look forward to the future success of our varied activities in the new environment.

H. RISHBETH

Dr. Horner's retirement was marked by the gift of a carriage clock. This was presented by Dr. Rishbeth at a meeting which included many former colleagues as well as present staff. All joined in wishing Dr. and Mrs. Horner well for the future.

STAFF NEWS

Staff will have seen that, with effect from 1st October 1979, the Director General will be Master of St. Cross College, Oxford. We offer our congratulations to Dr. Stafford on his new appointment.

Congratulations to:

Ufuk and Necla Yilmaz on the birth of their daughter Eral on 13th June.

Alan and Linda Chipperfield on the birth of their daughter Emma Elisabeth on 8th July.

Two former members of staff, Tony Thomas and Heather Welch who were married recently.

J. E. Pateman now P.T.O. II
F. W. Salter " P.T.O. II
A. L. Reid " E.O.

Welcome to:

Mrs. J. M. Wiltshire	C.A.
Mrs. N. P. P. Taylor	C.A.
S. R. Purves	S.C.S.
W. K. So	S.C.S.
M. G. Pike	S.O.
J. D. Gilbert	P.T.O. III
A. R. O'Hea	P.T.O. III
B. J. Maddison	S.O.
P. R. Barnes	Vac. Wkr.
D. V. P. Starkey	A.S.O.
A. Muzlish	Vac. Wkr.
Miss C. Grubb	A.S.O.
B. A. King	Vac. Wkr.
I. D. Beharrell	S.O.
L. P. Baldwin	H.S.O.
A. S. Hundal	S.O.
Miss D. Evans	Vac. Wkr.
M. Meaney	S.C.S.
P. M. Roberts	S.C.S.
S. Gardiner	S.C.S.
S. B. Snaith	S.C.S.
R. D. Tarring	S.C.S.
R. J. Miles	S.C.S.

Resignations, etc.

A. Swallow	S.C.S.
R. Chadha	Vac. Wkr.
Z. Yab	A.S.O.
J. D. Bates	S.C.S.
P. Bamford	S.C.S.
M. A. Johnson	H.S.O.

Resignations, etc. (cont'd)

Miss H. Welch	C.O.
W. J K White	S.S.O.
D. J. Marshall	S.C.S.
Miss B. K. Pooni	C.O.
D. M. Webster	S.O.
H. Nykamp	S.C.S.
Miss A. K. Kapur	C.O.
J. L. Monks	A.S.O.
A. F. Thomas	Photographer
Mrs. J. Early	S.C.S.
M. F. Russell	S.C.S.
B. Casiero	S.C.S.
S. C. F. Dale	S.C.S.
Miss K. Smith	C.O.
P. Bains	S.C.S.

Other Changes, Transfers, etc.

B. P. Gardner	S.E.O. to R.O.E.	from A.L.
Mrs. H. Lennon	E.O. to A.L.	from Winkfield
R. J. Emery	P.S.O. to E.S.T.E.C.	from A.L.

SPORTS & SOCIAL CLUB

INDOOR SPORTS DAY - FRIDAY, 20TH APRIL 1979
HELD AT NORTON RECREATION CENTRE

Just after 0745, on what seemed to be a reasonable day, we set out full of beans despite the fact that the majority of us had not breakfasted. Most of the journey was pretty uneventful apart from stops, until we reached nearer our destination, when the fun - some might use a different word or words - started. Due to bad navigation and also lack of information (excuses, excuses), we went round in circles. Instead of arriving at the Centre with participants awake and yet apprehensive, we eventually, with guidance from a local garage, reached the Norton Recreation Centre about half-an-hour late. All the credit (!!!) can only be attributed to the Navigators who wish to remain anonymous.

How we fared in the various events is outlined by the event organisers. Even though we did not win any cups we enjoyed ourselves both during the games and afterwards at the Hot Pot Disco at Daresbury.

We left Daresbury just after 2230 and arrived at Appleton at about 0200 on Saturday morning, having to face yet another drive - home. Still it was a good day.

Badminton

Due to injury, holidays and overseas duty, we fielded only two pairs for the Badminton Tournament at the SRC Indoor Championships this year - one men's doubles pair (Dr. Horner and Peter Hicks) and one mixed doubles pair (Janet Deviny and Charles Sethna).

Matches were decided on an aggregate of points in 2 games except in the semi-finals and finals which were decided on best of 3 games. Dr. Horner and Peter Hicks started off well by winning their opening match, but in their second match they won the first game, lost the second, and lost on aggregate.

Janet Deviny and Charles Sethna once more repeated their previous year's performance by winning all their preliminary matches and coming through to the finals match, which they lost by one game to two after a hard fight.

CHARLES SETHNA

Bridge

Due to long travel, bridge players having left and other reasons, we were able to enter only two pairs. Bridge as you know is a game of knowing your partner well, audacity and of course lots of luck. Anyway one of our pairs - Barbara Rathbone and John Monks - very narrowly missed winning when the scores were worked out at the end of the marathon session of nearly three hours. The second pair of Robert Pratt and Hari Shah, playing together for the first time, did not do too badly by coming about the middle of the table. Come back partner ..., all is forgiven.

HARI SHAH

Darts (or No Bullseyes Got)

Due to lack of interest 2, 5-man teams plus 2 reserves dwindled on the day to 1, 4-man or 3-man and 1 woman team, I should say.

After our first defeat, we borrowed another player and still lost. Then for some reason, we were not allowed to complete our fixtures. Hence the title N.B.G. The players were

Heather Welch
Tony Thomas
Mike Russell
John Witney

TONY THOMAS

Squash

The Appleton Laboratory Squash Team performed with spectacularly average success on the courts at Runcorn. Due to prior engagements the legendary Hashim Khan was not able to play for us, and so the team comprised Dick Holdaway, Martin Courtier and Sarah Griffin (temporarily recruited from R.G.O.). In the first match, Dick beat the Daresbury No.1 while Martin narrowly lost to their No.2.

Before the second match against Rutherford, certain quantities of ale were consumed. We lost. Even Hashim has been known to lose (in 1937).

The team is now undergoing altitude training for next year's assault on Swindon.

JONAH BARRINGTON
(Otherwise known as
True Blue Dick Holdaway)

Table Tennis

We were two lonely Appletonians short of practice and short of captain (ill) facing three healthy and well-trained table tennis veterans of a Sussex league. Further encouraging news was that their captain, Gordon Taylor, was winning 85% of his games in the league.

No breeze in the room; perhaps a ray of sun carried it? It suddenly rumoured that a local junior champion, Marie, lonely as well, desperately wanted to play. Charity, fairness or extra confidence? Our opponents quickly decided to adopt this illegality (Marie) into our team, without knowing which fury they were going to run into. As good news never comes alone, the unanimous vote of Nick Myer, my colleague, promoted me captain, last ingredient necessary for a start.

Marie with red hair and Viking blood in the veins, allied violence and accuracy during 3 games of superb rallies which kept our mouths open for a very long time. Gordon, with 40 years more experience stored behind his glasses, finally managed to overcome the storm.

After half of my ace-services went into the net or onto the floor, I started to guess where the table was. The match became well balanced but my increasingly successful attacks came too late.

Nick displayed a very spectacular defence against fierce attacks but most of the points he lost were unfair! After every 10 consecutive miraculous acrobatic returns of "killing" shots, he was invariably sprawling on the floor and therefore caught unaware by the 11th one.

At Daresbury, last year, love of spin and trajectories was shared by 4 members of the Satellite Orbits Group tracking network: Russell Eberst and Alan Pickup (ROE), Gordon Taylor (RGO) and myself. But they did not share the same table tennis ball - they went into the final. This year, Gordon and I shared the same ball but not the points (he greedily took 60% of them) and Gordon reached the final.

Table Tennis (cont'd)

Is there a way to bring back an Indoors game trophy to Appleton?

As table tennis balls do, artificial satellites are spinning on curved tracks. Why not a competition ROE - RGO - Appleton on Ariel 6? One photometric period measurement: 1 point. One timed position: 1 point. Well! I forgot! This is an OUTDOORS game

PIERRE

Volleyball

Although at one time it seemed that we might have had sufficient players to form two volleyball teams for Daresbury this year, in the end this proved not to be possible and, by the time 20 April arrived, we were down to six, just sufficient for one team with no reserves. However, this did not prevent us setting out from the Laboratory early on 20 April, hopeful but not very confident that we might do better than last year, when we came bottom of our league.

The competition was organised on much the same lines as last year with the participating teams divided into 2 leagues, AL being one of the 3 teams in League 2. In order to give each team a minimum of 4 matches, any one team played the other two twice, with a maximum of 15 minutes per match. The winning team in each league was the one with the highest aggregate points.

The AL team received a big boost in morale when we won our first game against Rutherford 'A' 15-3; we then went on to win the remaining games 15-1, 5-2. Due either to weaker opposition or to the extra practice we had put in this year, we ended up after our 4 matches top of League 2 with a total of 120 points. Daresbury 'A', last year's winners, came top of League 1 with a total of 119 points.

The final, decided on the basis of the best of 3 games with no time limit, proved to be a hard but enjoyable match; unfortunately, we only managed to win the 2nd game so, in the end, were beaten by the better team. Nevertheless, the fact that we reached the final represented a considerable improvement over last year's performance and I would like to thank each member of the team for their efforts on 20 April. I am sure the other members of the team will forgive me if I also make special mention of Alan Buck and Graham Thomas whose experience and skill undoubtedly contributed much towards us reaching the final.

The team was as follows:-

Pam Burt, Paul Bamford, Alan Buck, Dave Parker, Graham Thomas, Jim Foster (captain).

The League 2 and Final results were:-

RL 'A'	v	AL	3-15, 1-15, 2-5
DL 'B'	v	AL	3-15, 3-15, 0-6
RL 'A'	v	AL	3-15, 11-11, -
DL 'B'	v	AL	13-15, 7-8, -

Final: DL 'A' v AL 15-9, 8-15, 15-3.

Volleyball (cont'd)

Finally, our thanks to other members of staff who turned out to help us practice, with a special thanks to Mary Robinson who had been at practices as an intended member of the team and then, at the last minute, was unable to join us at Daresbury.

J. E. FOSTER

SPORTS DAY

At last June came and, as usual, promising not to be any better than average. Still Thursday, 28 June 1979, was a day in the Wimbledon fortnight, hopes were high that it would turn out to be a reasonable day and lo and behold we were proved right. It was a good day at Chiswick in more ways than one in that we won, I really mean WON, two trophies, bowls and hockey. After the presentation of prizes we made our way to good old Appleton canteen (staff restaurant) where for £1 only consumed steakletts and chips with bread and butter and danced till midnight to the lively music of a live three piece band (one of the 'pieces' is Dave Bailey from the Workshop) with breaks in between to consume low priced drinks. It was a good, noisy evening enjoyed by all SRC personnel. I would like to take this opportunity to thank everyone who helped prior to the event and also that evening. It was very hard work trying to feed and keep supplying drinks to nearly 180 people.

Coming back to Sports Day, Peter Hicks was the photographer on the day and we will see his handiwork fairly soon. He also organised Tug-of-War in which we did not participate due to lack of fairer sex and that also was the reason why there was no Netball team this year despite many strenuous efforts at persuasion. May be we will have better luck next year and see our Royal Blues in action.

It fell to us again to provide First Aid at Chiswick which was managed very well by Tony Lucas, Bob Smith and Hari Shah (in between playing hockey). Many thanks to our first aiders who coped superbly with the usual crop of injuries.

I can do no better than give below the organiser's reports of the events we participated in. One hopes that we shall continue to win at forthcoming sports days!

HARI SHAH

Bowls

Appleton Laboratory entered only one team in the Bowls Tournament this year - Eric Bramley, Ray Bailey and Norman Ferguson made up a triple which won the major competition. On paper we had a strong team - nevertheless last year's winners from Daresbury gave us a very close game in the semi-final. The other finalists were a triple from Rutherford "skipped" by a very pleasant lady bowler who was just one of three ladies bowling in the tournament - we enjoyed our day immensely.

NORMAN FERGUSON

Cricket

The cricket tournament was again 6-a-side, with 5 teams playing on a simple league basis. Our teams were:-

<u>'A'</u>	<u>'B'</u>
Richard Brazier	Paul Bamford
Vic Brown	John Canning
Alan Buck	Alan Smith
Bill Hayes	Neil Urquhart
Vin Patel	Charles Whitlock
Graham Thomas	Charles Wrench

The key match proved to be the very first one in which our 'A' team lost to the eventual winners Rutherford 'A'. We scored 84-3 off the allotted 9 (8 ball) overs, and Rutherford passed our total with an over to spare. The 'A' team then beat RGO and Appleton 'B' and were conceded the final match by Rutherford 'B' to finish as runners-up. Our 'B' team didn't actually win a match but at least provided Alan Buck with the satisfaction of a hat-trick.

GRAHAM THOMAS

Football

It's not every year that the Appleton Football Club can boast of a magnificent victory on the field, and this year is no exception.

The second team lost both their qualifying games 3-0 despite great effort on their part. The first team narrowly lost their first game 0-1 but then went on to win their second game 3-0 against a team who must surely have been the worst there. The first goal was a long shot by Steve Martin and the second was from the head of Dave Hall. Steve volleyed in a second goal after a wall pass with Dave Collerton. The first team thus qualified for the quarter final and were winning this 2-0 at half-time after the goals from Doug Bates and Dave Collerton. Unfortunately, in the second half our firm grip was loosened to the extent of losing 3-2. The participants were:-

Steve Martin, Dave Hall, Doug Bates, Tony Clarke, Parvin Bains, Dave Pearce, Phil Richards, Dave Collerton, Chris Brown, Alan Meredith, Mick Russell and John Witney.

The Football Club still lives, however, and is to be found playing 5-a-side at Montem once a week.

STEVE MARTIN

Hockey

Five teams took part in the second mixed hockey 6-a-side tournament, two from Central Office, and one each from Rutherford, Appleton and RGO. Like the previous year, the competition was played on a league basis with all teams playing each other once. It proved to be a close contest with first Rutherford (the holders), then RGO taking over the leadership. The final result was not known until the last game had been played, a keen game between Rutherford and Appleton, with Appleton eventually running out the winner by 4-1.

Special mention should be made of the Appleton girls Janet Deviny and Mary Thrift whose determined efforts, together with Hari Shah's, particularly in the last two games enabled Richard Holdaway (2), Vid Sandal (1) and Terry Paterson (9) to score the goals which won the tournament.

Final Table

	<u>P</u>	<u>W</u>	<u>D</u>	<u>L</u>	<u>For</u>	<u>Against</u>	<u>Pts</u>
Appleton	4	2	1	1	12	4	5
RGO	4	1	3	-	2	1	5
Rutherford	4	2	1	1	3	4	5
Swindon A	4	1	2	1	5	2	4
" B	4	-	1	3	0	11	1

TERRY PATERSON

Tennis

Normally we reckon to enter at least six pairs in the doubles tournament but this year because of resignations and sickness we could muster only two. Our mixed doubles pair, Wendy Dane and Richard Smith, followed a disastrous start with a splendid comeback which included the defeat of the defending champions. They finished third out of an entry of eleven with a total of 41 games out of 50. In the men's doubles, Fred Horner and Arthur Roberts also started badly by losing their first match but won their next to finish second in what proved to be a most disappointing tournament with only three pairs competing. We hope for better success next year.

RICHARD SMITH

LETTER TO THE OUTSTATIONS

Dear Colleagues,

Mists, mellow fruitfulness and that; the season's signs are there for all to see. Students, time-expired, with no remission for good conduct or undetected crime, write reports. Marvels, these, of swift transcription. With Mozartian speed, the work of months is committed to paper in days, as shades of the College close around the growing youth.

Every prospect pleases a little less as Vacation workers vanish overnight. A few weeks of our company, then off to become, according to temperament, second Faradays or to make a mark in their real world as bookies runners, stockbrokers and such like.

At Ditton Park we sight small seasonal milestones. That handy sink of old charts, reports, sump oil and the odd hut, the November bonfire is a building. Twilight creeps up towards closing-time. Thoughts of fleeting years, a touch of the eheus affects the maturer - all right then, older-mind.

Still, cheerfulness keeps breaking in. There are visions of toast, cosy hearths and muffins; a pretty scene. Not true but no matter, chocolate-box art has its place in the scheme of things, at least for such as,

Yours sincerely,

The Editor.