



APPLETON LABORATORY NEWSLETTER

No. 152

January 1974

SIR ROBERT WATSON-WATT AND DITTON PARK

The recent death of Sir Robert Watson-Watt, briefly mentioned in our previous issue, has been the subject of detailed comment in the newspapers and learned journals. Rather than dwell on his role as a figure in military and technological history it seems more appropriate to concentrate on his career when he was closely associated with our Laboratory, in the days when it was the Radio Research Station, and he was its Superintendent from 1927 to 1936. The work of those years culminated in his demonstration of 'radiolocation', as radar was then called, as potentially vastly superior to any other defence aid available at the time, and in his skilful formulation of its future capabilities.

It can now be seen that these were also years when the various experiments being conducted at Ditton Park were mostly related to the techniques so necessary to the successful development of a radar system. Such experiments produced an understanding of direction finding problems and directional display methods using the cathode ray tube; phase comparison apparatus for studying the angle of arrival of radio waves, and pulse transmitter, receiver and amplifier design for ionospheric studies. Thus a small, expert, team was available from the laboratory to implement the new ideas and form a cadre for training the second generation of workers.

Watson-Watt was born in Brechin, Angus in 1892 and received his early education at the local elementary school, where he was fortunate enough to have teachers, one in particular, to whom he always acknowledged his debt. His success in winning bursaries, in open competition, took him first to Brechin High School and then to the University of St. Andrews, where his studies in physics led to an interest in radio. The coming of the First World War caused him to leave his first appointment; that of assistant to the Professor of Natural Philosophy at St. Andrews and seek a position which would contribute to the National effort. After an interval he was appointed to the Meteorological Office and, during such time as was available between routine duties, he turned his attention to the application of radio direction finding techniques to the tracking of thunderstorms.

The problems of finding the bearing of a signal generated by a lightning flash made him consider applying the cathode ray tube to display such a transient phenomenon. He began to do so with some success, despite the need to use equipment which, by modern standards, was rather primitive. The coming of peace brought its own difficulties and by 1921 the Meteorological Office policy (and probably finance) was such that it was deemed more fitting for such radio based methods to be a project of the newly formed Department of Scientific and Industrial Research.

Thus Watson-Watt and his small experimental site at Aldershot became part of that Department's responsibilities and in 1924 was moved to the North Park of Ditton Park.

The West Park (site of our present building) had already been occupied for a few years by workers from D.S.I.R. and the Radio Research Board in a successful but administratively diffuse arrangement which enabled them to study direction finding and allied problems. This state of affairs continued until 1927 when, in an attempt to rationalise the administration, Watson-Watt was given overall responsibility at Slough with the title of Superintendent of the Radio Research Station.

The problems of command asserted themselves on the very day of appointment when in his own words "my home telephone interrupted my luncheon with the news that my main wooden hut, which was actually built around my 210 foot timber lattice mast, was burning fiercely. I jumped into my car and arrived in time to do nothing useful, but to watch the local fire brigade do a remarkable amount of quite needless damage". Thus passed the first stage of the Radio Research Station, soon to be reborn thanks largely to the efforts of its new Superintendent.

G.W. Gardiner

STAFF SUGGESTIONS SCHEME

1. Competition

In order to further the Staff Suggestion Scheme within the Council a competition is being organized at all establishments, the object of which is to find designs for posters which will be used to attract a wide range of suggestions from staff. All entries will be looked at by Local Committees and awards made for the two most suitable designs, prior to them being forwarded to the Central Committee for inclusion in the overall competition.

All entries for the competition need not be complete as pieces of art work, the important factor being the idea. The poster could consist of words only, a slogan for example. Arrangements would be made for the poster(s) to be drawn and printed professionally if successful.

The rules of the competition are:-

1. All SRC staff are eligible.
2. Any number of entries may be submitted
3. Designs should be submitted on A4 size paper.
4. The competitor's full name and official address should be printed in block capitals on the reverse side of the entry.
5. Designs must be certified to be original.
6. The copyright for all prize winning designs will rest with SRC.
7. Prize winning entries will not be returned.
8. The closing date will be 28 February 1974.

All entries to be submitted via the Secretary of the Local Suggestions Committee.

2. Staff Suggestions to-date

Since the introduction of the Suggestions Scheme in 1972, Local Committees at Establishments have received some 400 suggestions from staff resulting in awards varying between £5-£80 in over 100 cases.

At Appleton, 26 suggestions have been received and awards made for the following:-

Production of a Handbook of Workshop Practices	-	£10
Provision of Bootscrapers at the entrances to each Spur	-	£5
Cheaper trunk calls after noon	-	£5
Aids for typists and machine operators	-	£15
Counter bell in the Stores	-	£5

The present Appleton Laboratory Local Awards Committee is:

Dr. J.A. Lane	Chairman
Dr. D.L. Croom	Staff Side Representative
Mr. G.L. Addison	Management Representative
Mr. D.G. Back	Trades Unions Representative
Mr. T. Paterson	Secretary

Application forms may be obtained from the Library and the Secretary. Completed forms should then be sent to Mr. Paterson.

COMMONWEALTH COLLABORATIVE PROGRAMME

THUMBA JANUARY TO FEBRUARY 1974

Owing to strikes and other difficulties which have arisen in India, we have been asked by the Indians to postpone Petrel and Centaure launchings until January and February 1975. It is most unfortunate that the campaign should have to be delayed for such a long period, but this is dictated essentially by the Monsoon which occurs in the area of the range so that launch conditions are only suitable with clear skies during these months. Fortunately none of the perishable equipment had been sent to the range.

E. W. V. Acton

CONCORDE ECLIPSE PROJECT

The Space Policy and Grants Committee recently received the report on the outcome of the Concorde Eclipse Project and, noting the success of the experiment, expressed their appreciation of the efforts made by all concerned in achieving such a highly successful outcome within the very short lead time available. They particularly asked that the Committee's congratulations and appreciation were conveyed to the members of the Appleton Laboratory staff concerned.

D. B. Shenton (A.R.D. News Sheet)

Congratulations to:

Julie Richardson and Norman Coombes who were married at Windsor on Saturday 26th January.

Ken Tapping on his engagement to Miss Jaqui Galt of Montreal on 20th December 1973.

Hanne Lennon now E.O.

Welcome to:

A.D. Osborne	H.S.O.
P.J. Richards	H.S.O.
K.S.C. Freeman	S.O.
C.L. Wrench	S.O.
D.A. Jones	P.T.O. III (Chilbolton)
G. Bloch	Vac. Worker (IAESTE)
Mrs.C.M. Percival	Typ.II (Culham)

Resignations:

Miss P.A. Belcher	Typ.II (Culham)
Miss C.A. Spears	C.A.
M.D. Ivory	A.S.O.
P.F. Blann	S.C.S.
I.M. Greenan	S.S.O.
Mrs. J.C. Palfreyman	S/Typ.I P/T

Other Changes:

P.M. Gondhalekar	S.S.O. Seconded to UCL wef 1.12.73
Mrs. E. Hurst	SO P/T Changed from Div.4 Grp 6 to Div.4 Grp 3 (Dr. J.W. King's Group)
C.R. Carter	S.S.O.)
E.W. Smith	S.S.O.) Changed from Div.4 Grp 7 to Div.4 4 (Dr. Rishbeth's Group)
K. Feldmesser	H.S.O.)
D. John	S.O.)
C. Murphy	P.T.O.IV Changed from Div.6 Grp 4 to Div.2 Grp 2. (A.J. Roger's Group)
D. Wright	S.O. Changed from Div.6 Grp 5 to Div.6 Grp 1 (Dr. Quigley's Group)

SPORTS AND SOCIAL CLUB NEWS

CRICKET

A full fixture list is again being prepared for the coming season. Matches are normally played to limited overs rules on Wednesday evenings although there are often matches arranged for other evenings or occasionally week-ends. Anyone interested in playing cricket should contact either John Kitt or myself. Notices will be placed on the Sports Club's Notice-Board giving information as to any practice evenings being arranged and a detailed fixture list will be posted as soon as available.

John Cathrew
Cricket Secretary

BADMINTON CLUB

Despite the restrictions on electricity, badminton continues to be played in the elephant shed. However the new electric fire bought just before the 3 day week came into effect has still to be christened and the Thursday evening session has been temporarily abandoned. Most members play Wednesday evening but the key is available from Tim Bevan for anybody wishing to play Monday or Tuesday.

The ACO have been making more and more use of the court as guests and if we're not careful they will start outnumbering us, so rally round you Appletonians, grasp your rackets firmly in your frost-bitten hands and into battle.

R.K. Burdett

BRIDGE CLUB

Our team in the Great West Road League was in second place in our Division at the half-way mark of the season. Results of recent matches are:-

28 Nov.	v	Ealing V (H)	lost	(Felixson Cup, 2nd round)
4 Dec.	v	Walls III (H)	won	(opponents defaulted)
11 Dec.	v	C.S.C. (A)	lost	0-10
7 Jan.	v	B.O.A.C. II (A)	drew	5-5
14 Jan.	v	West Ealing III(H)	won	8-2

A.J. Gibson

OPPORTUNITIES FOR FREE TRAVEL

Interested in overseas travel, skiing, mountain walking, rock climbing, learning French at first hand? Opportunities exist for generously paid tours to the Southern Alps and/or Pyrenees for adventurous Scientists keen to broaden their outlook or just to get away from fuel-short Britain. Convenient for Mediterranean, Spain, Andorra, Italy. Interested? Further details from D.L. Croom, Room B2.

LIST OF REPRINTS - JANUARY 1974

- H. Risbeth, R.J. Moffett
and G.J. Bailey "Vertical diffusion of O and N₂ in the
thermosphere". Planet Space Sci., 1974 22, 189-192
- C.J. Gibbins, A.C. Gordon-Smith "Anomalous absorption in the atmosphere for
and H.A. Gebbie 2.7 mm radiation". Nature, 1973, 243. 397-398
- J.R. Norbury and "Correlation between measurements
W.J.K. White of rainfall rate and microwave attenuation at
36 GHz". IEE Con. Paper 10-13 April 1973
- P.L. George and "Relationship between hf absorption at vertical
P.A. Bradley and oblique incidence". Proc.I.E.E., 1973,
120, 1355-61
- T. Hewitt and "Correlation of fading on spaced microwave paths
J.R. Norbury at 22 and 37 GHz". I.E.E. Con. Paper
10-13 April, 1973
- L.D.J. Harris "Solar microwave bursts and their association
with Solar Proton flares. Journal British A.S.
1973, 84, 9-15.
- J.R. Norbury and "Point rainfall rate measurements at Slough U.K."
W.J.K. White I.E.E. 10-13 April 1973 (Con. Paper)
- J.W. King "Solar radiation changes and the weather"
Nature, 1973, 245, 443-446.

INTERNAL MEMORANDA - NIL